Zambian Basic Education Course

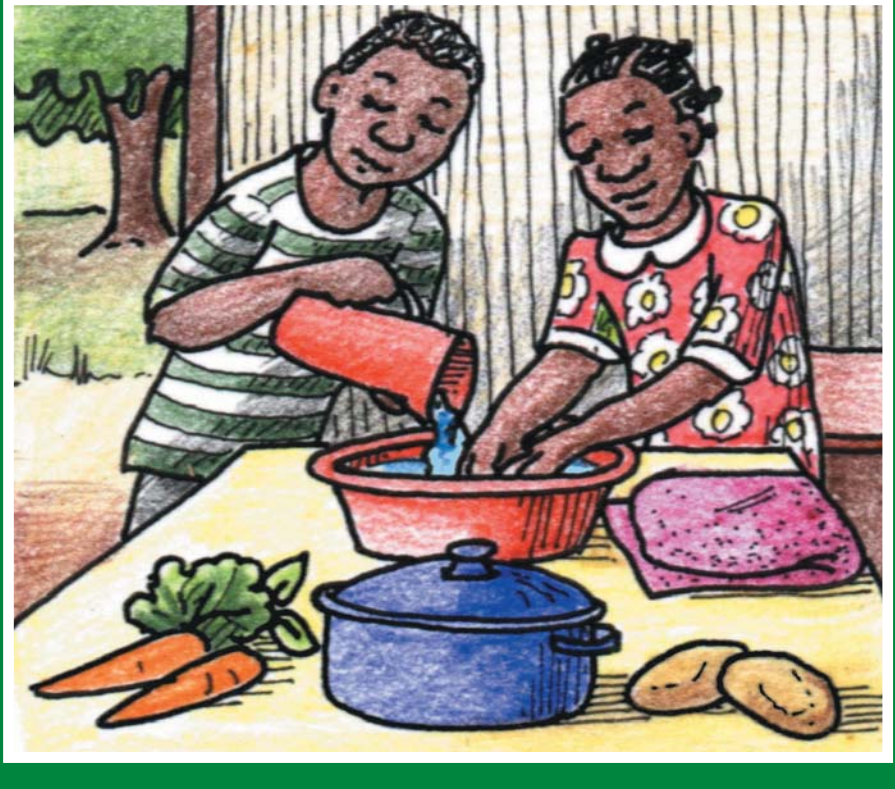
Government of the Republic of Zambia

Ministry of Education

NUTRITION EDUCATION

Supplementary Material

Teacher's Book Grade 4



Zambian Basic Education Course

NUTRITION EDUCATION

Supplementary Material

Teacher's Book

Grade 4

Authors:

Mukelabai Songiso
Simon Hikaula
Janet L. Shamapango
Tomy B. Zulu

Technical collaboration and
financial support by

Illustration, Layout & Design: Mel Futter

Disclaimer

The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

2007

ISBN 9982-54-002-5

FOREWORD

Good nutrition is an essential prerequisite for effective learning, as well as for normal growth and long-term health. Nevertheless, levels of chronic malnutrition among small and school-going children continue to be persistently high. In recognition of this problem and in response to the Ministry's National Education Policy (Educating Our Future, May 1996) on improvement of the nutritional status of schoolchildren, the Ministry of Education in collaboration with FAO has produced these action-oriented Grade 4 nutrition education materials to extend the Nutrition Education in Basic Schools (NEBS) initiative already developed for Grade 2 schoolchildren. As in Grade 2, these materials focus on building lifelong healthy practices and attitudes as well as on establishing basic knowledge of nutrition, health and hygiene. They aim to consolidate learning by involving children's families in the learning process and strengthening links between the school and the home, while raising consciousness of nutrition-related problems among teachers and in the school as a whole.

It is my belief that these materials will contribute to the improvement of the nutritional and health status of school children, not only in Luapula but also in the country as a whole. Furthermore, it is my sincere hope that these materials will, together with other interventions by collaborating partners, have a sustainable impact on the nutritional status of the community as a whole.

Lillian L. Kapulu (Mrs)
Permanent Secretary
Ministry of Education

ACKNOWLEDGEMENTS

These educational materials have been made possible with financial assistance from the Food and Agriculture Organization (FAO) of the United Nations to the Ministry of Education under Projects TCP/ZAM/2893 (Phase 1) and Project TCP/ZAM/2803 – Nutrition Education in Primary Schools.

Many individuals have contributed to these materials. We would like to thank Ellen Muehlhoff of the Food and Nutrition Division of FAO for technically directing and supporting field activities and materials preparation throughout. Mr. Mukelabai Songiso was not only responsible for project implementation as National Project Coordinator, but contributed tirelessly to developing and preparing these materials, drawing on his years of teaching in different parts of Zambia.

While the writers take full responsibility for these education materials, they would like to acknowledge the special contribution made by Jane Sherman, the International Education Consultant for the Nutrition Education in Primary Schools Project. She guided the authors not only in terms of content but also more importantly in terms of approach so that the materials might have a practical impact on the children and their families.

The authors would also like to thank the following for their valuable contributions during the development of the materials:

Mr Freddie Mubanga	Nutrition Consultant and Acting Director National Food & Nutrition Commission
Mrs Mereby Sikazwe	Curriculum Development Specialist
Mrs Valerie Mulwanda	Senior Inspector of Schools and Provincial Project Coordinator - Mansa
Mr Don Kayembe	Nutritionist – Improving Household Food Security and Nutrition in Luapula Valley Project – Mansa
Mr Flint Mutale	Deputy Principal, Mansa College of Education

We also thank the teachers from the pilot basic schools who pretested the materials in class and through peer teaching at workshops in Nchelenge district.

CONTENTS

INTRODUCTION

These education materials are intended to help tackle the widespread problem of malnutrition among Zambian school children. They are based on the basic school classroom curriculum for nutrition education as identified by teachers, heads teachers, local nutritionists and education standards officers. The geographical area targeted was Luapula but most of the issues apply equally to other Zambian provinces.

Many school-age children in Zambia suffer from malnutrition. Particularly common problems are protein-energy malnutrition (PEM), vitamin A deficiency and iron deficiency. Children with these deficiencies are stunted (small for their age), do not grow well, are vulnerable to disease, are often listless and inattentive and do not do well at school. They may also have other more specific health problems, such as poor eyesight and anaemia.

The reason for these dietary deficiencies may be that children do not get enough to eat, but even more that their diet does not give them the *variety* of foods they need.

Another problem is that many schoolchildren do not eat frequently enough. Children need to eat often to maintain their energy levels, yet even when food is available in the home, many children go to school without breakfast; some eat only one meal a day[1]. This has a detrimental effect on their learning as well as on their long-term growth and health.

These nutritional conditions are aggravated by other health problems. Widespread diarrhoeal diseases contribute to malnutrition and put lives at risk; these infections (and others) are spread by poor personal and environmental hygiene and sanitation. Malaria, like other serious diseases, causes loss of appetite, weakens the body and can lead to protein-energy malnutrition. Malaria is also one of the major causes of anaemia in malaria-endemic areas such as Luapula. Prevention and correct treatment of these diseases can therefore improve nutritional well-being considerably.

All these problems can be tackled by natural means, with local resources, and are therefore priorities for education. In designing these materials it was also felt important to start from the positive idea of promoting good health rather than the negative idea of curing illness. These lessons encourage good dietary and hygiene practices which will help learners throughout their lives and benefit their children as well.

The materials are in two main parts. Chapters 1 to 3 on Food and Diet focus on specific foods, nutrients, diet and eating practices, while Chapters 4 to 6 on Health and Hygiene deal with keeping clean, diarrhoea and malaria.

Each lesson contains activities aimed at promoting specific outcomes in behaviour,

[1] Situation analysis on school health and nutrition in Mwense, Nchelenge and Chienge districts, Luapula Province, Zambia, prepared by Phoebe Bwembya for the FAO and the Ministry of Education, Government of Zambia, for Project TCP/2AY/8923, 2000

attitudes, knowledge and understanding. There is a short reading text, an "Ask Yourself" activity to allow for personal application of the message, a **Remember!** message (often to be taken home) and suggestions for homework and remedial work. Each chapter has an overall revision exercise and possible extra-curricular events are suggested. The Lesson Notes include briefing materials for teachers on health and nutrition issues and related learning challenges, as well as detailed suggestions for lesson implementation.

Within the classroom activities there is ample scope for individual and group assessment; overall assessment of learning is carried out by means of focus group discussions before and after the teaching programme.

The methodology aims to:

- encourage active participation by both learners and teachers
- build on the personal experience of both learners and teachers, including experience and practices at home
- build motivation and a sense of personal pride in one's own behaviour
- aid learners' cognitive development in the practical application of concepts, the understanding of abstract representation and the use of direct observation and exploration of the environment
- build life skills such as decision-making, educating others and working independently.

Classroom lessons are only a small part of what schools can do for children's learning about nutrition. The WHO concept of the "health-promoting school" sees health education as developing not only in the regular classroom curriculum, but also through action in the whole school environment and through contact with families and the community. This wider approach has the best hope of making a practical impact on daily practices. These materials therefore call on the family and community to reinforce the lessons of the classroom, and encourage teachers to extend nutrition and health messages beyond the classroom into the whole school and the home.

GENERAL TEACHER'S NOTES

These Notes introduce the principles of the teaching programme, its content and methodology. They conclude with a checklist of decisions that teachers should make before starting the lessons. Please read the Notes carefully and then complete the checklist.

The tripartite curriculum

Successful nutrition and health education must interact with the whole school, the community and the family. These materials help to promote these interactions.

Whole-school involvement

Beyond the classroom, the school can promote good nutrition in many ways. For example it can:

- give educational back-up to interventions from the health services (e.g. deworming, food supplements)
- discuss and monitor food consumption on the premises (e.g. the school feeding programme, snacks brought by children, food vendors)
- set up hygiene rules, organize Open Days, exhibitions and demonstrations
- encourage school staff to act as role models for a healthy lifestyle
- establish a school garden and teach children to grow and prepare good food.

The Lesson Notes in this Teacher's Book therefore often advise teachers to discuss urgent issues with other school staff or the head teacher, or raise them at PTA meetings or in the school Health and Nutrition Committee.

Involving the community

The community is automatically involved in informal nutrition education: it is a "living laboratory" where children observe and experience food production, distribution and consumption - in fields, shops, eating places and neighbours' homes. The school can extend and illuminate these contacts with trips, speakers and projects. It can call on local government services for their expertise, for example, health, sanitation, agricultural and community services. Local farmers, fishermen and factories may also have expert knowledge of aspects of nutrition. Local commerce, NGOs and community organizations can help with sponsorship, funding, publicity and practical help. Some suggestions for involving the community are given in the materials.

Parents and families

Since the home is where children learn about nutrition and health every day, it is crucial to create a good partnership between school and family, so that what is learnt at school is reinforced at home. There are many ways of doing this. For example, families can be invited to Open Days and can contribute to them; health and nutrition questions can be discussed in the PTA; parents can come to the school to demonstrate or talk about food production and preparation.

In these materials, families are directly involved with the teaching through homework. Learners are expected to ask parents about health and nutrition questions, to talk at home about what they have learnt at school, and to take home messages for discussion with their families.

Meetings with parents In preparation for this role, it is advisable to call a meeting of parents and teachers before the start of these lessons so that parents will know what to expect and can be consulted on what the school is planning. At this meeting the head and teachers should:

- discuss topics and learning outcomes with the parents (the list of **Remember** messages in Appendix 2 makes a useful summary)
- outline the proposed curriculum content
- inform parents that they will be involved in the homework given to their children in order to reinforce learning.

A follow-up meeting at the end of the lessons is also desirable to get parents' views on the success of the programme.

Relationships with parents/families There may be a need for tact in dealing with families. Parents may not be pleased if (for example) their children are asked to report to the class on home practices, or if children start criticizing the family's customary behaviour. Teaching will not succeed if it is in conflict with the home.

Schools can on the other hand strengthen the bond with families by:

- looking for what is good in home practice and reinforcing it
- showing respect for established values, customs and beliefs
- asking parents to share their expertise in preparing and producing food
- calling on families to support the messages of the lessons.

The materials: contents

The first three chapters are about food and diet.

- In Chapter 1 (OUR FOOD) learners extend their knowledge of sources of foods, food groups, availability and cost, and are expected to become "experts" on one or two specific foods.
- Chapter 2 (FOOD FOR LIVING) extends learners' understanding of nutrients and their functions and the nutritional profiles of particular foods, and raises the question of what is "good" food.
- Chapter 3 (OUR DIET) looks at meals and eating practices. The emphasis is on evaluating particular dishes as well as individual foods and on building up ideas of good food and good eating by which learners can evaluate their own diets.

Chapters 4 to 6 deal with some aspects of health and hygiene which have a particular impact on nutritional status. Overall, they try to show how reducing disease is in the power of the community, including the learners.

- In Chapter 4 (KEEPING CLEAN) learners look at the importance of good hygiene practices and assess their own behaviour in relation to themselves, their food and water, and their surroundings.
- Chapter 5 (DIARRHOEA) applies this learning to diarrhoeal diseases, which are both prevalent and dangerous.
- The final Chapter 6 (MALARIA) explains the dangers of malaria, its causes, how to treat it and above all how to prevent it.

The materials: components and lesson elements

The materials consist of a Pupil's Book and a Teacher's Book with Lesson Notes. Background information in the Teacher's Book gives technical information for each

lesson and suggests some of the teaching challenges. It is only for the teacher and should not be given to learners as notes.

Lesson elements

All the lessons follow approximately the same format. The lesson elements are:

- *Feedback on homework* At the beginning of the lesson, this calls for learners to report on homework done after the previous lesson.
- *Introduction* The Introduction leads into the lesson, using the pictures in the Pupil's Book, calling on learners' homework or discussing their personal experience.
- *Activities* The activities aim at direct practice of the intended lesson outcomes. Teachers may want to use other activities which they think are more suitable for their learners. They know their learners best. However, they should make sure that the activities do practise the lesson outcomes. Above all, learners should learn actively by doing, talking and thinking and not only passively, by being told.
- *Reading text* The Reading passage reinforces the rest of the lesson and sums up the essential points. Learners must therefore read it for meaning and not just as an exercise in turning letters into sounds.

  Since there may be a wide range of literacy in the class, the Lesson Notes suggest many ways of helping all learners to arrive at the meaning. There is little new information or new vocabulary. Learners may be asked, for example, to pick out individual words, find ideas they have already expressed, read out a single sentence, complete a sentence, match words with pictures, and so on. Good readers may help weaker ones; teachers can discuss the meaning with the class.

  The Reading is generally not essential to the classroom lesson. Teachers should assess the learners' ability to handle the reading task in the time available. Alternatives are to give the Reading for homework, ask learners to read it before class, or make it an optional extra for "high fliers".
- *Ask yourself* This activity is intended to develop in learners the capacity to evaluate their behaviour, knowledge or attitudes through self-questioning. Learners should write the truth about themselves. There is often no "right" or "wrong" answer and teachers should emphasize that the answer is personal. Teachers may demonstrate asking and answering the questions for themselves, to give learners the idea.

  Ideally, learners write their answers in their exercise books in class or at home, following the example in the box on the right. In this way they build up a personal profile for themselves. If this will take too much time, an alternative is for learners to respond orally – in pairs or in small groups.
- *Remember!* The **Remember** messages focus on the essential point of the lesson. All the messages are listed together in the Teacher's Book in Appendix 2. In each lesson, a learner or the teacher should copy out the message large, hang it up and explain it, asking the class to give examples. The messages for each chapter should remain on display in the classroom while the class is doing the chapter, so that they can be used to revise the whole chapter at the end.

  Take-home messages Some of the **Remember** messages have a label in the Pupil's Book saying "Take this message home!" These "take-home messages"

are also listed at the end of the Pupil's Book, with a translation in the familiar language and a decorative border which learners can copy. If the lesson has a "take-home" message, ask learners to copy it out large at home or at school, take it home, explain it to the family and pin it up. To make their messages more impressive they can make a decorative border. N.B. Copying the messages in class is time-consuming and should be avoided.

- *Homework* Two or three homework activities are given for each lesson, including one small writing exercise. Some kinds of homework revise the lesson and some prepare for the next lesson. They may involve individual research, discussion with families, self-observation or actual actions. Teachers should decide which exercises they want learners to do and how much they can cope with. They may also give learners a choice.

  Homework is used to involve families in lessons and is part of the dialogue between school and home. Parents should be expected to contribute comments and information, but also practical responses such as giving children breakfast and snacks to carry to school. Teachers should think carefully about possible reactions in the home when deciding what homework to give.
- *Remedial work* There is a remedial activity at the end of every lesson for learners whose learning needs reinforcement. This may involve talking with other learners, observing, enquiring, demonstrating or studying pictures, but seldom demands much reading or writing. The teacher may monitor discussion between learners, or the learners may report their activities to the teacher.

Other programme components are:

Event Track

A chapter can culminate in a special event involving teachers, learners and parents and even the public at large. Such events can enhance parents' interest in health and nutrition questions, and show them what their children have learnt. They may take place at PTA meetings, Open Days and other public gatherings. They may include, for example, plays or sketches, songs and dances, posters, models, maps, surveys, presentations and so on. There are ideas in the Lesson Notes at the end of many of the lessons.

Revision

Revision and recycling are built into the materials. Learners prepare for the lesson by raising questions at home. The Reading text, the Ask Yourself activity and the **Remember** message repeat the main points of each lesson in both general and personal ways, and the homework reinforces these points through communication with families or written work. The optional "event track" activities (see above) can be used to recycle lesson content. In the "Revision" section at the end of each chapter, all the **Remember** messages are recalled in order to review the whole chapter.

Continuous assessment

The purpose of these materials is not to bring every learner to the same level, but to move individuals forward from their personal starting points and improve the

overall "class culture". Opportunities for monitoring individual progress are created by the Ask Yourself activity, written homework and small-group work, by asking open questions and encouraging learners to answer freely. Peer evaluation is suggested for Chapter 4 (Keeping Clean). Above all, teachers should listen as much as they talk, to find out what learners think, feel and know.

Final assessment

There is no formal test with these lessons. The group's overall progress is assessed informally through focus group discussions before and after the lessons (pre-assessment and post-assessment). Guidelines, questionnaires and evaluation criteria for these assessment discussions are given in Appendix 1, Assessing Learning.

It is best to evaluate the food and nutrition lessons (Chapters 1 to 3: Appendix 1A) separately from the health and hygiene chapters (Chapters 4 to 6: Appendix 1B). This gives a total of four discussions, two before and two after. Teachers should leave time in their programme for these extra sessions.

The classroom approach

The materials aim not only to improve learners' knowledge, but also to have a practical impact in terms of behaviour and attitudes. At the same time they try to take account of children's development. For example, at Grade 4 learners have a fairly developed sense of self, and many already have family responsibilities. They still respond strongly to direct experience but are beginning to get used to forms of abstract representation. The general approach reflects these considerations.

Experience, participation, communication

As far as possible the messages of the lessons are related to learners' own previous experience and reinforced by hands-on experience in the classroom and by observation and discussion at home. Teachers' own experience is frequently called on.

Finding out

Learners are expected to ask and discover whatever they can. Teachers are also urged to find out how learners and their families think, behave and feel about each topic, and this process is built into every lesson. This will show them more clearly what needs to be learnt and what points need particular emphasis.

Motivation

A sense of pride in one's own behaviour needs to be built up. The lessons suggest several ways – e.g. a focus on improving one's own performance, recognition for achievements, opportunities for demonstrating knowledge and skills, even inexpensive prizes. Teachers may have other successful strategies.

Abstract representation

Many devices assist the transition to abstract representation: for example, cards representing particular foods; pictures; representative stories; stick figures and models; walking through processes; physical metaphors. Very basic tables, diagrams and graphics are part of the reading load, with simple tasks and back-up from classroom activities.

Individualization

Learners are expected to be able to undertake small tasks on their own, for example finding out and informing the class about particular foods, or being responsible for specific "**Remember** messages". They are also expected to be able to reflect on their own practices, describe their own attitudes and undertake some new behaviour on their own initiative. There is scope for different individual learning styles in the variety of modalities (verbal, visual, kinaesthetic).

Vocabulary

Very little technical vocabulary is used (terms like *protein* and *vitamin* are introduced at Grade 6). However, standard terms for talking about diet and health are emphasized (e.g. energy, growth, health, ingredients, well-balanced meals, symptoms, fever) and some special concepts like bacteria are given extensive attention. If there are other words new to the learners, the teacher will have to teach them as well, using the local language where necessary. Local names (for example, for foods or diseases) should be used alongside standard names.

Taking the book home

It is essential that learners can take the learners' book home with them. On a practical level, this saves class time spent copying out homework and messages, and allows learners to review what they have learnt in class. Even more importantly, it helps to take nutrition and health messages out of the classroom into the community: it is much easier for learners to discuss lesson topics with their families if they can show the pictures and read out the messages.

Language

Learning through English is good for second-language development and is a worldwide trend at all levels of education. However, teachers should use the familiar language wherever necessary.

Notes on methodology for Chapters 1 to 3 (the "Food Chapters")

There are many ways of talking about diet. We can discuss, for example:

- the nutritional value of the particular foods we eat (e.g. Are oranges a good food?)
- the nutrients in foods, what they do for us and how much we need (e.g. What does vitamin C do? Is it in oranges?)
- the particular kinds of food we should eat (e.g. Should we eat lots of fruit?)
- how these kinds of food should be combined in meals or eaten as snacks (e.g. Is it good to eat fruit with meals? Or as snacks?)
- when we eat and how often (e.g. How often should we eat in a day?).

The "food chapters" look at all these aspects of food, but keep coming back to the main practical questions *What do we eat? Can we eat better in order to be healthy?*

Food cards

Nutrition is best learnt with real foods and real meals. In these chapters it is often suggested that real food samples are brought into class. However, it is not practical

to do this all the time. Often pictures are used in the Pupil's Book. Using written names of foods is another alternative, but these are not as recognizable as real foods and they cannot be moved around easily to make food groups, meals and food combinations.

We suggest that pupils make individual cards for each common food, with a picture and the name of the food. These can be handed out, put on display and moved around. Pupils should adopt these cards individually: in this way each food is represented by a particular pupil, who can speak on its behalf. Pupils can collect information on their particular foods and write it on their food cards.

Food tables

Food tables are introduced in Chapter 2. These illustrate the idea of nutrients. They show that some foods are richer in some nutrients than in others, and that all foods have a combination of nutrients. The tables also introduce learners to the idea of finding out for themselves and help them to "read" graphic information.

All tables show the same foods. This means that in each table there are some foods which do not have a value. For example, the table in Lesson 2.4 shows foods with a high protein content: in this table vegetable oil has no stars because it has very little protein. In this way children can see that each food has a different "nutrient profile": it is good for some things and not so good for others.

The tables are only a very rough guide to the nutritional value of foods. Many aspects are not shown. For example, some nutrients are more easily absorbed from some kinds of food; dried foods have higher concentrations of some nutrients; some nutrients are destroyed in cooking. It is also not possible to show in a table that nutrients do not act alone, but depend on each other to be effective.

Before you start: an action checklist

Before you start teaching, check through the ten points below and decide what to do. Tick (✔) the appropriate boxes

1. *Contacts with parents/caregivers* are essential to the success of the programme.

   a) Before starting, you should meet parents/caregivers to:
      - explain what the lessons are aiming to do
      - present the "take-home" messages (at the end of the Pupil's Book)
      - explain how families can be involved through the learners' homework
      - ask parents to show interest and encourage learners in new behaviour.

   Can you arrange a meeting before the lessons? ❐

   b) During the lessons you should learn about families' ideas and practices through discussion and feedback on homework. But frequent personal contact is even better.
   Can you encourage parents to visit and discuss?
   Could parents sit in on some lessons? ❐

   c) After the lessons you need to hear from families about the effect of the lessons, problems and so on. You can use the take-home messages as a basis for discussion.
   Can you arrange a meeting after the lessons? ❐

2. *Group assessment* There should be focus group discussions with the learners before and after the course to find out what they have learnt. Guidelines, questionnaires and evaluation criteria are in Appendix 1: Assessing Learning. It's best to have separate discussions for Chapters 1 to 3 (food/nutrition) and Chapters 4 to 6 (health/hygiene). This will mean four sessions in all.

   It's advisable to have two people: one to lead the discussion and the other to take notes.

   Can you set aside time for the four extra sessions?
   Can you get a helper (e.g. a teacher or PTA member)? ❐

3. *Taking books home* Learners should be able to take books home.
   Can you make sure this happens?
   Can the books be protected (e.g. with a plastic cover)? ❐

4. *Reading passages* The Reading passages are not essential to the lesson, but they reinforce the points well. Moreover, learners take pride in reading them, and it impresses parents too. Consult the teaching notes for some of the Reading tasks before answering these questions.
   Will your class be able to manage the Reading tasks in class? ❐

If not, will you ask them to
a) *look at the Reading before coming to the lesson?*
b) *look at the Reading at home after the lesson?*

5. *Food cards* For the "food chapters" (1 to 3) learners should make "food cards" from card or paper. They should be about half the size of this page. You will need about 80 cards.
Have you got enough card/paper for the food cards?
If not, can you find an alternative?

6. *Ask yourself* Learners generally ask and answer these questions mentally and then write their own personal answers. But the writing may be too much for some of your learners, or take up too much of the lesson. Take a look at a few of the Ask Yourself activities.
What will you do?
a) *Do the writing in class?*
b) *Give the writing for homework (make it optional)?*
c) *Let learners tell each other – in pairs or small groups?*
d) *Discuss learners' answers in the whole class?*
e) *Choose different solutions according to the lesson?*

7. ***Remember*** *messages* There is a message (or two) for each lesson. Each message should be written out large, held up so learners can give examples, and then hung up next to the other messages for the chapter. The messages should remain on display until the end of the chapter.
Do you have enough card/paper?
Will you use the border (end of Pupil's Book)?
Can you display these messages in the classroom?

Take-home messages Fifteen of the lessons have messages which are specially for taking home. Learners should copy the messages on card or paper in class or at home, explain them to their families and pin them up on the wall at home.
Will learners be able to find card or paper to copy the messages?
Can you suggest possible sources (e.g. calendars, cardboard boxes)?

8. *Homework* The speaking homework should generally have priority. Can your learners manage the written homework as well, if they write in the familiar language? Take a look at the homework for one or two lessons.
What do you plan to do?
a) *Give only the speaking homework?*
b) *Give both pieces of homework?*
c) *Give both pieces of homework to a pair of learners?*
d) *Give different homework depending on the lesson?*

9. *Event track* You should choose one "event track" project for each chapter. There are ideas at the end of some of the lessons. Look through the first chapter and choose one you like.

   Where will you find the time for the "event track" project?

   a) *An extra lesson?*
   b) *A little time from several lessons?*
   c) *Extra-curricular time?*

10. *Language* Although the materials are in English, it is important to use the familiar language as far as possible. What you do depends on what your class can manage.

    What approach will you use?

    a) *Will you use some English?*
    b) *Will you translate the Reading?*
    c) *Will you ask learners to write in English?*
    d) *Will you ask learners to write in the familiar language?*

LESSON NOTES

CHAPTER 1

OUR FOOD

THIS CHAPTER

Learners at this age not only know what foods they eat, but also a great deal about them – where they come from, how they are produced, what forms they take, how they are prepared and so on. They also know what they normally eat, and when. This chapter calls on this knowledge, organizes it and extends it. The range of foods eaten is explored. Learners look at typical meals and how they are made up. Individual learners are expected to become class experts on one or two of the foods they eat. Wall displays of local foods and local meals are begun, to be maintained in Chapters 2 and 3. This chapter also uses the Ask yourself activity to start an enquiry into learners' own diet, which continues through all three "food chapters".

Lesson 1 establishes the foods learners eat most often and looks at food sources.
Lesson 2 asks about shopping for food, and looks at cost and quality.
Lesson 3 discusses seasonal availability and how to have good food all year.
Lesson 4 identifies food groups.
Lesson 5 looks at how typical meals are made up from the main food groups.

Event track

You may wish to organize a final event to recycle and publicize the messages of the chapter. This display or performance can be in class, or put on for parents, other classes, or an Open Day. It can be prepared at any time after the lesson it relates to. Projects for this chapter:

- *Food map* (Lesson 1) Learners make a map to show where local foods come from.
- *Shop talk* (Lesson 2) practises shopping for food quality.
- *Seasonal foods* (Lesson 3) dramatises the need for varied food throughout the year.
- *Making meals* (Lesson 5) acts out choosing foods to make up a good meal.

LESSON 1: WHERE DOES FOOD COME FROM?

Background Information for teachers

Our main food sources are plants and animals. (Salt and water however are minerals.) Household food comes from home gardens, fields, the bush, rivers and lakes, shops and markets. Different foods are grown, caught, gathered, traded or purchased, depending on the customs, skills and resources of the household and the community.

Learners certainly know a lot about where their daily food comes from and how it is acquired. We need to check this knowledge.

Outcome

Learners should be able to

- say where their food comes from and how it is acquired.

Time: 30 minutes

Teaching and learning aids

- paper or cardboard for the **Remember** message
- cards/pieces of paper to make food cards, fairly large if possible
- an example of a "food card" (see the example at the end of this lesson)
- five large labels saying
  HOME FIELDS BUSH RIVERS AND LAKES SHOPS AND MARKETS

Introduction

- Ask learners how many foods they can see in the picture (fruit, cabbage, pumpkin plant, bananas, maize, chicken, fish, oil).
- How are the people getting these foods? (buying, growing, catching, picking, gathering).

Activity 1

- Ask learners what foods they ate yesterday (individual foods, not dishes). Make a list on the board and leave space for more.
- Ask what other foods we can add. (Learners may have forgotten cooking oil, salt, sugar; they may add foods which are out of season, or foods gathered from the bush and from fields.) Build up a fairly complete list.
- Pick out three or four foods. Ask
  - if they come from plants or animals
  - where they come from (home/ fields/ rivers/ lakes/ shops/ markets)
  - how we get them (grow, gather, catch, rear, buy, trade etc.) and how we process them.

Reading

Call out the sources of food in the Reading (fields, rivers etc.) one by one.

Learners find these words in the reading passage and show each other. Ask for a volunteer to read the passage aloud.

Activity 2 (Food cards)

a) Each learner chooses one food from the list on the board (OR allocate foods to individuals). This will be "their" food and they will be the experts on it. Make sure all the common foods are taken. The teacher may also take a food and develop a food card along with the learners to show them how.
b) Give out blank cards and ask learners to write the names of "their" foods in large letters on the cards at the bottom, leaving space for a picture. Show them an example of a food card (see next page). Go round to check spelling.
c) In small groups, learners discuss where the foods on their cards come from, following the three questions for Activity 2 in the Pupil's Book.
d) Write up on the board the five main food sources (or put labels on the wall) – HOME, FIELDS, BUSH, RIVERS/LAKES, SHOPS/MARKETS. As learners decide where their foods belong, they can stick up their cards under the label. Some foods may have more than one source.
e) Collect the cards.

Ask yourself activities in this chapter are an investigation of learners' own diet.
Asking the question Read the question aloud to the class. Say you are asking yourself this question. Look at the foods on the board and show that you are checking them off in your mind. Pause for learners to ask and answer the question mentally.

Answering the question Learners can write in class, write at home, or share their experiences orally in class - in pairs, in groups or with the class as a whole. Explain the word *diet* in the box (= *what we eat every day, normally*).

Remember

The teacher or a learner writes the **Remember** message on a piece of paper or cardboard, displays it in the classroom and reads it aloud. S/he should call out *Homes! Fields! Bush! Lakes and rivers! Shops and markets!* one by one while learners give food examples for each. On the back of the message write the title of the lesson. Leave the message on display for the rest of the chapter.

Homework

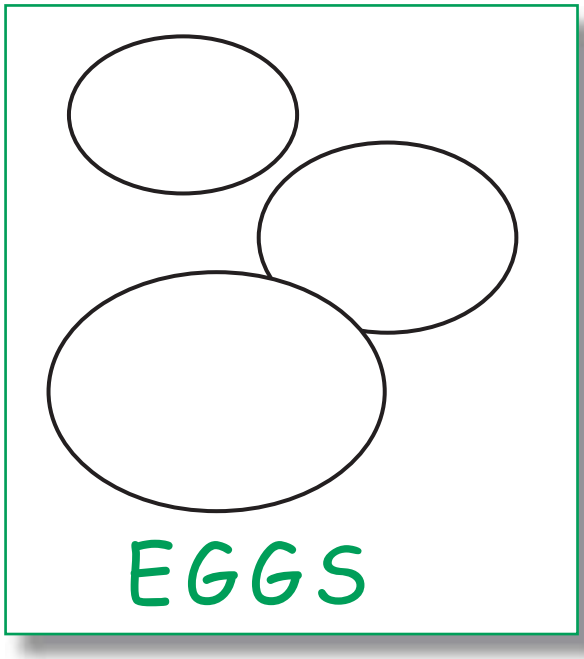
A Learners find out about bought foods in preparation for the next lesson. Ask them to bring to the lesson empty packets/containers from bought foods.

B Explain to learners that they will prepare the cards for "their" foods in the next lesson. There will be a picture on the front and information on the back. Show the example of the "food card" again. For homework they have to

a) draw a picture of "their" food which will fit on the card (N.B. for some foods they could bring a piece of the food to stick onto the card);
b) write some information about the food – go through the example in the Pupil's Book, giving one or two examples.

EXAMPLE OF A "FOOD CARD"

FRONT



BACK

Eggs come from chickens and guineafowl.

We collect them every day.

We eat some of them.

We keep some of them to get more chickens.

I don't eat a lot of eggs.

Eggs are an animal food.

We can eat them all the year.

They give some energy.

They are good for helping us to grow.

N.B. If learners can manage the writing, they can write information on the back of their "food cards" in many of the lessons. Encourage learners to do this neatly and carefully. However, it is to be expected that the cards will become quite messy and tattered with constant handling, and that the information will not be complete. Time is allowed at the end of Chapter Two for re-writing the cards in a final presentation form.

Remedial work (if necessary)
Learners practise putting food cards into five boxes or labelled areas marked HOME, FIELDS etc. as in Activity 2d.

Event Track (optional) *Food map*
Get learners to develop the picture at the beginning of the lesson, showing how common foods are produced and acquired locally. Plan the general design together. Include a lot of local landmarks (e.g. well-known trees, fields, roads, bridges, buildings, shops, markets). Make it as big as possible – it can occupy a whole wall. Get volunteers to draw single parts relating to one food or one area (e.g. mango tree, vegetable patch, fishing, the market etc.) and stick them onto the main picture. Give the picture a title: WHERE OUR FOOD COMES FROM. Train learners to stand by it and talk about and point out particular foods/groups of foods.

LESSON 2: FOODS WE BUY

Background information for teachers

Learning to buy food is a major part of handling the diet. Learners should know what prices to expect, how to select food of good quality and how to have an informed dialogue with a shopkeeper/vendor. They probably know a lot about this already from helping parents with shopping, although girls may know more than boys. This lesson calls on this knowledge, organises it and extends it.

Red palm oil is promoted in the Reading, as it is a particularly valuable food in the diet. It is a concentrated source of energy, like other oils and fats (e.g. vegetable oil, margarine, butter) but is also rich in vitamin A, which protects the body from disease (see Chapter 2).

Outcomes

Learners should be able to

- give the prices of some commonly bought foods
- select food of good quality (safe and fresh) when shopping
- discuss purchases with the seller.

Time: 30 minutes

Teaching and learning aids

- paper or cardboard for the **Remember** message
- food cards from the last lesson
- glue or paste for sticking pictures to food cards
- pins for sticking food cards on the wall (it should be possible to detach cards easily, move them around and put them back)
- poster paper if possible
- a few empty food packets/containers from bought foods

Feedback from homework

a) Check the food pictures (or food samples) produced by learners.
b) Give learners their food cards and let them stick their homework pictures/samples onto the appropriate cards (this can also be done for homework). N.B. It does not matter if there are not pictures for every card.
c) While learners are doing this, check their written homework. If learners can manage the writing, they can copy it onto the back of the appropriate food card. Make sure they leave space for further information.

Introduction

Look at the picture. Ask *What are all the people in the picture doing?* (shopping/trading) *Where are they?* (supermarket, shop, stall, garden fence) *What are they buying?*

Activity 3
Learners produce empty food packets/containers from bought foods and give a little information about them.

a) Tell the class about some food you bought recently, its quality and price (make up a story if necessary and include some dialogue if possible).
b) Make four columns on the board (or on a poster) and head them FOOD WE BUY, WHERE, PRICE, QUALITY.
c) Learners give this information for the foods most often bought by households. Write up what they say, or get volunteers to do this. As you do this –
   - Get information about the kind of food (*What kind of salt? iodised? What kind of fish/oil/beans?*) If learners have brought containers or wrappers, use the labels to provide information.
   - Ask *Why do we buy it? Why don't we produce it?*
   - In the price column, include a typical quantity (e.g. half a kilogram, one litre etc.) – e.g. K4,500 per litre.
   - For quality, ask *How do you know it's good? What is it like?* E.g. –
     - fresh fish doesn't smell bad, has bright eyes, is shiny and firm
     - vegetables are fresh and crisp, with no wilted leaves
     - street foods are freshly prepared and well wrapped
     - meat is refrigerated
     - palm oil is bottled
     - groundnuts or maize are dry, with no mould.

   Learners should be able to tell you that "good quality" means (a) fresh, and (b) safe.
   Learners responsible for these foods add this information to their "food cards".

N.B. Spend plenty of time on this activity – it is a good opportunity to find out what learners know and think and what households do.

Reading
The Reading shows an "informed customer" as a role-model.
Learners look at the pictures. Ask about the situation - *Who are the people? What does the customer want? Does she buy anything? Why/Why not?*

a) Group the class into threes, with each learner taking one of the roles.
b) Read the dialogue together with the class, helping them to make out the meaning.
c) Let the threes practise the dialogue together on their own. Go round to check their reading and to make sure they are giving meaning to the words.
d) Ask for a volunteer group to act out the scene in front of the class.

Activity 4 (optional)
This is an interesting and informative activity for both learners and teacher. If you do not have time for it in this lesson, consider giving an extra lesson to it.

a) Pick two learners to be "sellers" of a food (e.g. fish). You and another learner are the buyers. Role-play buying/trading the food, discussing quality and price.

b) Put learners in fours, two sellers and two buyers. They choose a food, then prepare and role-play a similar shopping dialogue. Go round and listen.
c) Get one of the best groups to perform their dialogue to the class.

Ask yourself
Use this activity to find out learners' habits and skills in shopping.
Asking the questions Read the questions aloud to the class. Demonstrate asking and answering the questions for yourself. Give real replies, e.g. *Well I'm quite good at shopping. I know the right prices for … and … I can choose good beans and groundnuts which will keep well. This is how I do it... How about you?* Pause to let learners ask and answer the questions mentally.
Answering the questions Learners can write in class, write at home, or share their experiences orally in class - in pairs, in groups or with the class as a whole.

Remember
The teacher or a learner writes the **Remember** message on a piece of paper or cardboard, displays it in the classroom and reads it aloud. S/he should ask other learners to give examples. On the opposite side write the title of the lesson. Leave the message on display for the rest of the chapter.

Homework
Homework A takes home the message about red palm oil.
Homework B prepares for the following lesson. Learners write about their chosen food. Go through the example in the box with the learners, giving one or two examples. Explain "availability". Also explain how to deal with the alternative sentences (they must choose only one!).

Remedial work (if necessary)
Learners find out the prices of three or four common local foods and where they are sold, and report back to the teacher or to the class.

Event track (optional) *Shop talk*
If you have done Activity 4, improve the three best shopping dialogues, then prepare and perform them. A presenter explains that shopping requires knowledge and experience and then introduces each dialogue.

LESSON 3: WHEN CAN WE EAT IT?

Background information for teachers

To have a good diet, it is important to have enough food at home every day. People who produce most of their own food, and depend on rain, know that many foods are not available all year round. Fresh vegetables may only be available at the end of the rainy season or (preserved) for only part of the dry season. Groundnut stocks

may run out in the later part of the dry season. Ants and berries, wild fruits and mushrooms are only available for a short time during the rainy season. In some areas there is a limited supply of fish from April to July and it is very expensive in June/July.

These "food gaps" can seriously affect the diet of households and communities, reducing the number of meals and the variety of foods. This is particularly true during the period from the end of the dry season to the next harvest. Cost may also decide whether households can maintain their supplies of some important foods.

Grade 4 learners may not have a well-developed idea of the yearly cycle of events, but will certainly be aware of the rainy and dry seasons. It is enough to establish that some foods are sometimes less available and the main reasons for this. Young children cannot do anything about these fluctuations in supply, but they can recognise them and find out how families try to compensate for them.

Outcomes

Learners should

- be able to say when some foods are not available and why
- find out how families try to ensure food supplies all the year.

Time: 30 minutes

Teaching and learning aids

- paper or cardboard for the **Remember** message
- a few samples of real food

Feedback from homework

Ask learners what families thought about the shopping dialogue.

In small groups, learners show each other their written homework about food availability. Go round to look at what they have written.

Introduction

a) Books closed. Draw the "season clock" from the Pupil's Book on the board, write in the first three months and indicate the positions of the others. If there is time, learners can copy the clock into their exercise books.
b) Ask learners to tell you the missing months. Write them on the clock face.
c) Ask the opening questions – *What month is it now?* etc.

Activity 5

Together decide where to draw lines across the clock to divide the seasons (e.g. from October/November to April/May). Learners draw the sun and the rain in appropriate places around the clock to show the dry and rainy seasons.

Activity 6

a) Hold up some samples of real food and ask *When can we eat it?*

- *all the year?* (move your hand around the clock)
- *part of the year? which part?* (indicate the season on the clock)

b) In small groups, learners use the clock in the book to show each other when "their" foods can be eaten.

c) If there is time, learners may write the information on their food cards – e.g. *available all the year / only available in the rainy season*. Go round to check their accuracy and their writing (and the spelling of *available*!).

d) Feedback to the whole class.
Ask "all-year foods" to stand up with their cards. Check they are correct.
Ask "seasonal foods" to stand up and show cards. Check they are correct.

e) Collect the cards.

f) Ask why some foods cannot be eaten all the year. Encourage all possible answers.

Reading
Learners scan the Reading text to see if some of the answers are the same as the reasons they have just suggested. Volunteers read each part of the text. Help learners with difficult words like *available, allowed, collect*. After each part, ask learners to give examples of particular foods.

Ask yourself
These questions are general, not personal, and follow from the examples in the Reading activity, so there is no need for private self-questioning. Read the questions aloud to the class. They can then work in pairs or groups to write the answers in their exercise books, or call out answers for the teacher to write up on a poster. Alternatively, ask learners to write the list for homework.

Remember – a "take-home message"
The teacher or a learner writes the **Remember** message on a piece of paper or card, displays it in the classroom and reads it aloud, emphasizing the word ALL. S/he should ask other learners to give some examples.

Draw learners' attention to the label on the message and say this is an important message which should be taken home. Learners should copy the message, pin it up at home and explain it to their families. They may do this in English or in the local language, using the list of **Remember** messages at the end of the Pupil's Book. Discuss how they can do this.[2] To make it more decorative they can make a special border like the one at the end of their book.

Homework

A Learners find out how to classify "their" food (on their food card) in preparation for the next lesson. The classification of foods is quite difficult, so it is enough if learners ask the question and get some ideas.

[2] Learners should be able to take the Pupil's Book home and copy the message for homework. If they cannot do this, teachers can ask them to copy the message into their exercise books and then re-copy it at home. Alternatively, teachers can provide paper for the class to copy it direct.

B Learners find out how to improve the availability of foods all the year. Discuss the homework with them. Emphasize that we want answers about particular foods - for example, what to do when there are no more groundnuts or fresh vegetables. Give an example from your own knowledge and experience.

Remedial work (if necessary)
Give learners a season clock as in the lesson, with two sun symbols and two rain symbols on scraps of paper. Ask them to draw lines across to show the dry and rainy seasons and copy or stick on the sun and rain symbols.

Event track (optional) *Seasonal foods*
Plan a presentation about the seasons, following from the homework. Make two big symbols for sun and rain, one on each side of the room. First stage Learners enter one by one, carrying particular foods. They say what foods they represent and when they can be eaten and go to the "dry" side or the "rainy" side of the room. Second stage The presenter points out where most of the foods are and asks *What can we eat when there aren't many foods?* Some "foods" explain that they can be eaten for a long time and why (e.g. they are smoked, dried, turned into jam). They move to the middle to join up the seasons. All join hands and dance in a ring.

LESSON 4: WHAT KINDS OF FOOD ARE THERE?[3]

Background information for teachers

There are several commonly recognized groups of foods. Examples are:

Cereals:	rice, millet, maize, sorghum (plants with heads of grain)
Roots/tubers:	sweet potato, cassava (underground parts of plants)
Fruit:	mangoes, oranges, jackfruit, pawpaw, bananas, guava, pineapple, avocado pears (parts of plants with seeds or pips).
Vegetables:	all leafy vegetables, and also pumpkin, tomatoes, peppers
Animal foods:	meat, fish, poultry, birds, insects (these are all animals) and dairy products (e.g. eggs, milk), which come from animals

[3] Some of the common food classifications are rather loose. a) "Vegetables" generally means plants eaten as food (except fruit and cereals). However, many "vegetables" (e.g. tomatoes and pumpkins) are technically fruit. "Vegetables" is often used of roots and tubers (e.g. cassava, sweet potatoes), but it is convenient to put these in a separate category because they have a lot of carbohydrate. When Zambians talk of "vegetables" they generally mean green leafy vegetables. b) Fats and oils are not really a "food group" but are found in many foods, e.g. fatty meat and fish, milk, oilseeds and some vegetables. Concentrated forms are margarine, butter and oil. c) Sugar is also found in many foods (e.g. fruit) but is particularly high in sweets and sugarcane. For teaching purposes, accept any reasonable classifications and don't confuse learners with fine distinctions.

Legumes:	beans, cowpeas, soybean, lentils, groundnuts, bambara nuts
Fats, oils:	red palm oil, margarine, vegetable or salad oil. Examples of *oilseeds* are sunflower seeds, sesame seed, flax seed.
Sugars:	sugarcane, honey, refined sugar, sweets (biscuits and soft drinks contain a lot of sugar)
Flavourings:	salt, pepper, spices

N.B. Breastmilk is a complete food. If the mother is well nourished and has enough milk, breastmilk provides everything a baby needs for the first six months of life.

Outcome

Learners should be able to

- identify common foods as members of food groups (fruits, cereals etc.).

Time: 30 minutes

Teaching and learning aids

- paper or cardboard for the **Remember** message
- a large sign or label saying "OUR FOOD"
- large "food group" labels saying

CEREALS	VEGETABLES	ANIMAL FOODS	FRUIT
ROOTS	FATS, OILS, SUGAR	LEGUMES	FLAVOURINGS

Feedback from homework

Give out food cards.

Learners tell the class what their families said about how to have many foods all the year. They may mention:

- drying, smoking, preserving in some way (e.g. drying and storing cassava)
- storing food (and building storage structures)
- cultivating dambos during the dry season
- selling food for cash to buy other essential foods
- growing drought-tolerant plants in the home garden during the dry season
- conserving water for dry-season cultivation.

Praise all good ideas. If there is time, learners can record ideas on their food cards.

Introduction

a) Learners say what kinds of food they thought of for Homework A, with examples. As they are mentioned, show the labels for the main food groups.

b) Look at the diagram KINDS OF FOOD. Name some of the sections and ask learners to find them and say what is in them – e.g. *Find the animal foods! What foods are there? Fish and ...?*

c) Ask learners to name the remaining sections using the labels in the book.

Activity 7

a) Bring individual learners representing the main food groups to the front of the class. Give each a "food group" label to hold (CEREALS, FRUITS etc.).
b) Explain that they have to put all the foods into the right groups. One by one, learners hold up their food cards and name "their" food. The class discusses how to classify the food and the learner goes to stand in the right group. In the discussion, bring out the characteristics of each kind of food, as in the Reading (e.g. *roots like cassava grow under the ground*).[4]
c) Go on until all the learners and their foods are standing in groups.
d) Pin up the "food group" labels on the wall and get each group to pin their food cards under or around the label, as in the "Kinds of food" diagram in the Pupil's Book. Give the title OUR FOOD to the display. Leave the display on the wall.

Reading

Each learner finds a sentence in the Reading that refers to his/her food group and prepares to read it aloud. Read the text around the class, a different learner for each sentence.

Activity 8

Explain the tables to the learners. The first row of each table has been completed. Do the second row on the board with the help of the class, then ask learners to work in small groups to complete the third row. If there is time, add another row. This activity can also be done for homework.

Ask yourself

Asking the questions Demonstrate asking and answering these questions about your own family. Make clear that this is not about particular foods but about *kinds* of food. E.g. *Well, we eat a lot of roots and cereals, because we eat nshima twice a day and usually some maize too. We also eat lots of vegetables, and we eat legumes – groundnuts and beans and soya - quite often. And there's always a little oil in the meal, and salt of course. We don't eat so much fruit – we should eat more. How about you?* Pause for learners to ask and answer the questions mentally.

Answering the questions Learners can write in class, write at home, or share their experiences orally in class - in pairs, in groups or with the class as a whole.

Remember

The teacher or a learner writes the **Remember** message on a piece of paper or card, displays it in the classroom and reads it aloud. S/he should call out the food groups (*cereals, animal foods,* etc.) and ask for examples. On the opposite side write the title of the lesson. Leave the message on display for the rest of the chapter.

[4] If necessary, point out that vegetables are not only green leaves. They can also be pumpkin, tomato, marrow, okra, onion, eggplant, carrot, cucumber, cabbage, cauliflower etc.

Homework
A & B Both homework activities encourage learners to look at the ingredients of their meals. This is in preparation for the next lesson.

Remedial work (if necessary)
Learners practise putting food cards (or real food samples) for common foods into boxes or labelled areas marked CEREALS, VEGETABLES, ANIMAL FOODS etc. (as in Activity 7). If they are very uncertain, use only two or three easy categories.

LESSON 5: OUR MEALS

Background information for teachers

In Zambia most main meals are based on a starchy staple food, usually *nshima*, made with cassava and/or maize flour. This is eaten with a relish made with vegetables, beans, groundnuts, meat or fish. Fruit is not usually part of a meal.

We can start to improve meals by looking at the *kinds* of food we put in a meal. Apart from the staple, there should be legumes or animal foods: if there is no meat, fish or eggs there should be beans, groundnuts or cowpeas. We usually need a little fat, both to give us energy and to help us to absorb micronutrients like vitamin A from green leafy vegetables. The fat can come from groundnuts, meat, or cooking oil (preferably red palm oil, which is rich in vitamin A). We must have vegetables every day[5], if possible three or four, and dark green leafy vegetables as often as possible. Fruit after the meal is very important, because its micronutrients help the body to absorb nutrients, especially iron, from vegetables and beans.

These foods together supply the variety of foods the body needs for energy, growth and health (see Chapter 2). They not only do this separately, they also work in combination. For this reason diet is improved not only by eating "all the right foods" but also by eating "well balanced meals" with a lot of different foods.

Outcomes
Learners should be able to

- describe the kinds of food in a meal
- explain what kinds of food are needed in a meal
- improve a meal by adding what is missing.

Time: 30 minutes

Fruit after a meal

[5] "Vegetables" here includes pumpkin, tomato, marrow, okra, onion, eggplant, carrot, cucumber, cabbage, cauliflower etc. as well as green leafy vegetables.

Teaching and learning aids

- paper or cardboard for the **Remember** message
- a large circular piece of paper or card saying MEALS

Review of previous lesson

Shuffle the food cards and hold up a few. Ask learners to put them in the right categories in the wall display.

Feedback from homework

In small groups, learners show each other their written homework about the composition of individual meals. Go round and look at their work. Pick out one or two meals to use with the whole class.

Introduction

a) Put up a large circular sign saying MEALS. This can be on the wall, on the board, or in the middle of the floor.
b) Ask one or two learners to describe their meals again to the whole class. As they do this, write the foods in the circle. Put the staple food (*nshima*) in the middle and the other foods around it, as in the diagram in the Pupil's Book.[6]
c) Explain that the food we eat at every meal, the one that fills us up, is the *staple* food. *Nshima* is our staple food. Show how we make meals by adding things to the staple food.

Activity 9

a) Learners look at the diagram in the book. To clarify the diagram, go quickly through each category, including the staple, asking for local examples.
b) Ask learners what they think is necessary for a *good* meal. Bring out that we should have:
    - a staple food
    - animal foods OR legumes
    - some fat or oil (preferably red palm oil)
    - some vegetables (and dark green leafy vegetables frequently)
    - some flavourings
    - some fruit after the meal (especially orange/yellow fruit, such as mango, guava or pawpaw).
c) The class work together to make up a good (realistic) meal which has all these things. Write up the ingredients (or put food cards together, or bring learners together with their cards to stand in a ring around the staple food). This meal will be recorded in Activity 10 and used in the homework.

Reading

Call out the good meal elements listed in the Reading (e.g. *Animal food! Staple food!*) but not in the same order as the Reading. Let the learners

[6] As with other activities in these chapters, the teacher may represent the foods using real food samples, cards, the learners responsible for those foods, or by writing up the food names.

find them in the passage. As you do this, allocate each element to a learner. Read the first sentence aloud yourself, then call on learners to read each part.

Activity 10
Tell learners to draw the good meal they made in Activity 9. They work in small groups to record the good meal in the spaces on the diagram. Go round to check, then draw the diagram correctly on the board, or get a volunteer to do so.

Ask yourself
Asking the questions It is quite difficult for learners to generalize about the meals they eat. Show them how to do this by describing your own meals - e.g. *My meals usually have nshima. With this I eat a lot of groundnuts and vegetables, like cassava leaves and amaranthus. I often eat fish, cooked in oil, but not often meat. I don't eat enough fruit with my meals. What about you? Think!* Pause for learners to ask and answer the questions mentally.

Answering the questions As before, choose ONE way for learners to answer the questions. They can write in class, write at home, or share their experiences orally in class - in pairs, in groups or with the class as a whole.

Remember - a "take-home message"
The teacher or a learner writes the **Remember** message on a piece of paper or cardboard, displays it in the classroom and reads it aloud, emphasizing the word ALL. S/he asks the class to say what should be in a good meal. On the back of the message write the title of the lesson. Leave the message on display.

Draw learners' attention to the label on the message and say this is an important message which should be taken home. Learners should copy the message, pin it up at home and explain it to their families. They may do this in English or in the local language, using the list of **Remember** messages at the end of the Pupil's Book. Discuss how they can do this.[7] To make it more decorative they can make a special border like the one at the end of their book.

Homework
In Homework A and B, learners report to families on the contents of a good meal and use the meal diagram to describe a meal they ate at home.

Remedial work (if necessary)
Using the meal-making diagram in the Pupil's Book, learners select food cards to make up three recognizable meals.

Event track (optional) *Making meals*
Groups of learners present themselves as individual foods in food groups (fruits; vegetables; animal foods; legumes; flavourings; cereals; roots and tubers; fats/oils/sugar) and stand around in a big semicircle. Four other learners are the "meal-

[7] Learners should be able to take the Pupil's Book home and copy the message for homework. If they cannot do this, teachers can ask them to copy the message into their exercise books and then re-copy it at home. Alternatively, teachers can provide paper for the class to copy it direct.

makers". They stand in the middle holding a rope or string in a circle.

- *What shall we make for our meal*? they say.
- One learner calls: *Start with me! I am cassava I am nshima. I am your staple food!* They let him/her into the middle of the rope circle. *That's not enough*, they say. *What can we eat with the nshima?*
- Other foods put themselves forward until there is a complete meal inside the rope circle. Fruit comes last to complete the meal, saying *Don't forget me!*
- The four meal-makers present the meal, explaining how it contains all the important elements.
- Finally they mime washing their hands and sitting down to their meal.

REVISION OF CHAPTER ONE

At the end of the chapter ask for volunteers to read out all the **Remember** messages to the class. After each message, ask learners to call out the examples (as they have practised in each lesson), and ask them why the message is so important.

CHAPTER 2

FOOD FOR LIVING

THIS CHAPTER
Most people have ideas of what foods are good for you nutritionally. These ideas may have something to do with nutritional value but also often have to do with status, cost and tradition. This chapter looks at these "food values" in relation to the particular foods and dishes of the region. Most attention is given to nutrients and their functions (e.g. food for energy, food for growth) and to looking at meals in these terms. Through learners' individual exploration of particular foods it is established that some foods are particularly rich in some nutrients, but that *all* foods contain *many* different nutrients. Learners continue to look at their own diet and learn how to keep a food diary.

Lesson 1	establishes that food gives energy and that some activities need more energy than others.
Lesson 2	identifies high-energy foods and high-energy meals.
Lesson 3	looks at how to maintain energy levels during the day.
Lesson 4	introduces the idea of food and meals for growth and repair.
Lesson 5	promotes foods (mostly fruit and vegetables) which are rich in micronutrients and are essential for staying healthy.
Lesson 6	applies the idea of "very healthy foods" to learners' own diet.
Lesson 7	focuses particularly on foods and dishes rich in vitamin A and iron.
Lesson 8	sums up information on particular foods.

Event track You may wish to organize a final event to recycle and publicize the messages of the chapter. This display or performance can be in class, or put on for parents, other classes, or an Open Day. It can be prepared at any time after the lesson it relates to. Projects for this chapter:

- *Food cards* (Lesson 1 and whole chapter) displays foods for learners to classify and talk about.
- *Energy for the day* (Lesson 3) is a display of written homework.
- *Best dishes* (Lesson 4) presents good food combinations with high-protein foods.
- *Food diaries* (Lesson 5) is a display of learners' food diaries.
- *What do you eat?* (Lessons 6) Learners role-play interviews about good or poor diets.
- *Food for Straw Boy* (Lesson 7) shows the value of vitamin A and iron in a poster.
- *Making meals* (Lesson 8) emphasizes the value of all foods and of variety.
- *Strong food* (whole chapter) dramatises the value of foods for energy, growth and health.

LESSON 1: FOOD FOR ENERGY

Background Information for teachers

Energy is needed for all activities, both physical and mental. It is needed, for example, to think, to breathe, and in all kinds of movement. In fact, learning at school also takes a lot of energy, even if learners are sitting still.

This lesson introduces the idea of getting energy from food by contrasting "being full of energy" with "being tired". It also touches on the concept of different energy needs for different levels of activity, and introduces the idea that some of our daily foods give us more energy than others.

Outcomes

Learners should be able to:

- explain that food is needed for energy
- recognize that different activities require different amounts of energy
- mention some foods which give a lot of energy
- describe some high-energy meals and snacks.

Time: 30 minutes

Teaching and learning aids

- paper or cardboard for the **Remember** message
- extra paper for the OUR MEALS display

Feedback from homework

Learners report what families said about the "good meals" and (from Homework B) the home meal the learners described. Let learners explain their homework meal diagrams to each other in small groups. Go round and check.

(Optional) It is a good idea to build a display of OUR MEALS to go with the OUR FOOD display. If you decide to do this, use this time to pick out a few typical meals from learners' homework to start the display. Ask learners to copy the meal diagram onto another piece of paper. Put these paper meals on the wall with the heading OUR MEALS. Leave room in the display for further meals.

Introduction

a) Ask learners *Are you tired? Or are you full of energy?*
b) Do a physical activity with the whole class – e.g. bending and stretching, dancing in a line, clapping in rhythm, singing a song.
c) Afterwards, say: *You have a lot of energy! You can dance/clap* (etc.). *Where do you get your energy?* (Hope to get the answer *From our food!*)

Activity 11

a) In groups learners discuss pictures and questions. Go round helping as necessary. Listen carefully for misconceptions.

b) Groups report back. Help learners to see that ALL the people in the picture are using energy, even the one who is sleeping. Ask them which people are
   - using A LOT of energy (playing netball, hoeing the plants)
   - using QUITE A LOT of energy (walking and talking, sweeping, reading)
   - using ONLY A LITTLE energy (sleeping).

   Check that they understand that they need food for energy for all activities – working, playing, thinking, learning (and also breathing, growing and sleeping!).[8] Remind them that they are all using energy all the time, even when they are asleep!
c) Finally, ask learners what they want to do with their energy. Give some choices, e.g. *What do you prefer to do with your energy? Work or play football? Walk to the shops or talk with friends? Go to school or clean the house?*

Reading

a) Learners count the words *energy*, *need* and *food* in the text (4, 4, 3).
b) Ask what activities are mentioned in the text (*learn, play, work* etc.) Which of these are shown in the pictures?
c) Ask them to find and read out the question in the Reading. What do they think is the answer?
d) Learners read silently to find the answer to the question, and report back.

Activity 12

a) Ask learners to tell you about the last meal they ate. What was in it? (Remind them about elements like oil, salt, tomatoes.) Ask *Which of all these foods give us most of our energy?*
b) Learners look at the pictures in the book. Tell them to cover up the right-hand column.
c) Read out the descriptions of what people are eating. For each picture, ask learners to guess *which* foods are giving a lot of energy. Together, check the answers in the right-hand column.

Ask yourself

This activity makes learners think about their personal energy needs.
Asking the questions Briefly demonstrate asking and answering these questions yourself. Include some vigorous activities, and some less vigorous ones like sleeping, breathing, thinking, studying. Remind learners that they are *growing* more than adults do, and need energy for this too. Pause for learners to ask and answer the questions mentally.

Answering As before, choose ONE way for learners to answer the questions: writing in class, writing at home, pairwork (or work in small groups), or class talk. Writing should follow the example in the **My diet** box.

[8] Nutrients do not work independently. For example, the body needs energy to ensure that the proteins are properly utilised for growth. Without energy no growth can take place.

Remember
The teacher or a learner writes the message on a piece of paper or cardboard, displays it in the classroom and reads it aloud. S/he asks the class to give examples of foods which give a lot of energy. On the opposite side write the title of the lesson. Leave the message on display for the rest of the chapter.

Homework
A Learners tell their families a few foods that give energy and ask about others in preparation for the next lesson.
B *Written work* Learners keep a food diary for one day. They choose the day, and write down everything they eat on that day. They should record all the ingredients that go into their meals. Tell them to find out what the ingredients are by asking their family or by helping in preparing the meal.
Go through the form and make sure they know what to do. Ask them how they will remember to do it and how they will find out ALL the ingredients.

Remedial work (if necessary)
Learners learn the foods in the right-hand column of Activity 12 and give several examples of foods which give a lot of energy.

Event track (optional) *Food cards*
Make a display of all the "food cards" made by the learners. As the lessons progress, train learners to pick out various kinds of food – e.g. animal foods, cereals, high-energy foods, foods good for hair and eyes etc. – from the display, and to quiz each other.

LESSON 2: EATING FOR ENERGY

Background information for teachers

All foods we eat provide us with a combination of nutrients. Nutrients include carbohydrates, protein, fat, vitamins and minerals. A healthy diet is one that provides adequate amounts of all these nutrients. Most foods contain a combination of all these nutrients. However, some foods are full of carbohydrates, while others contain a lot of protein. Some foods are also good sources of fat, while other foods have plenty of vitamins and minerals.

Carbohydrates are found in almost all foods. The foods that supply most of our daily energy are staple foods such as rice, wheat, maize, millet, sorghum, cassava root and sweet potatoes. They are full of carbohydrates.

Good concentrated sources of energy are fatty foods, including groundnuts, avocado, soybeans, fatty meats/fish, and fats and oils like margarine and vegetable/salad oil. Red palm oil is very high in energy and also rich in vitamin A. These concentrated sources

of energy are usually added to meals in sauces and relishes. They are used in small quantities as their energy value is very high. Oils and fatty foods are especially important in child feeding as small children need a lot of energy for growth and brain development.

Most learners and their families do not need to be convinced that they should eat staple foods. However they do need to recognize the value of high-energy foods and to know how to increase the amount of energy in a meal. They should also begin to recognize that some foods give a lot of energy in a small quantity – that is, they are *rich in energy*.

Outcomes

Learners should be able to

- name some foods which give a lot of energy
- say how to increase the energy in a meal.

Time: 30 minutes

Teaching and learning aids

- paper or cardboard for the **Remember** message
- extra paper for the high-energy meal picture
- (if possible) a plate of *nshima*, a maize cob, some millet or bread, a few groundnuts, a spoonful of oil and a spoonful of sugar

Feedback from homework

a) Ask learners to show each other their food diaries and explain them. Go round to check that they have done the work satisfactorily. Tell them they will need their diaries again later.
b) Ask what parents said about foods which give a lot of energy.

Introduction

Give out food cards. Let learners think about "their" food. Do they think it gives a lot of energy or not very much? Ask for a few guesses.

Activity 13

a) Learners look at the table THE ENERGY IN FOOD. Explain that the stars show how much energy each food gives. Give some examples from the table.
b) In pairs learners find "their" foods in the table.
c) Check round the class. Ask learners who have foods with three and four stars to stand up and say their food names.
d) Ask a few questions about food groups – e.g. *Do fruits give a lot of energy? What about cereals? And nshima? And meat?*
e) Learners whose foods have three or four stars write "It gives a lot of energy" on the back of their food card. If there is not enough time, ask them to do this at home.

Reading

Read the first two lines aloud. Then ask learners to find names of high-energy foods in the passage. Volunteers read lines 3 to 5, then read the last two lines yourself.

To explain the idea of *energy-dense foods*, hold up a plate of *nshima* and a spoonful of oil (or draw them). Explain that just a little oil gives as much energy as a lot of *nshima*. Oil is *rich in energy*. Ask learners to put the maize and the millet/bread with the nshima, and the sugar and groundnuts with the oil. Explain that we need a lot of maize or bread but only a little sugar or groundnuts. Oil, sugar and groundnuts are *rich in energy*.

Activity 14

a) Look at the diagram in the Pupil's Book and read the instructions.
b) Together, make up a meal which is full of energy, adding foods around the staple in the diagram. Try to include all the different *kinds* of food (e.g. oil or groundnuts with the relish; beans or fatty meat; a guava afterwards). Make sure it is a realistic, edible meal.
c) Give the meal a title. e.g. *A good meal for energy*. If there is time, draw the meal and display it.
d) Collect food cards.

Ask yourself

Learners continue looking at their own diet.

Asking the question Demonstrate asking and answering this question for yourself. E.g. *Most of my energy comes from nshima and maize. But I also eat a lot of groundnuts and beans. And salad oil with my relish. What about you?* Pause for learners to ask and answer the question mentally.

Answering the question Learners can write in class, write at home, or share their experiences orally in class - in pairs, in groups or with the class as a whole. Make sure learners are really choosing energy foods.

Remember

The teacher or a learner writes the **Remember** message on a piece of paper or cardboard, displays it, and reads it aloud, asking for examples. The examples are important, as they will be repeated at home. Make sure learners mention adding oil or groundnuts to meals, and eating cowpeas and beans.

On the back of the message write the title of the lesson. Leave the message on display for the rest of the lesson.

Homework

A To reinforce Activity 14, learners tell families about adding energy to meals.

B *Written work* The written homework encourages learners to use the table and prepares for the next lesson. Give an example so they know what they have to do. Ask learners to bring a snack full of energy to the next lesson.

Remedial work (if necessary)
Name any five foods from the table (e.g. mango, eggs, bread, vegetable oil, beans) (or give learners appropriate food cards). Ask learners to find in the table which of these five foods give a lot of energy (three/four stars).

LESSON 3: ENERGY THROUGH THE DAY

Background information for teachers

School children need a lot of energy, for working, playing and learning. They use up their energy very quickly. This means it needs to be "topped up" frequently during the day. Ideally, they should eat three meals a day, with snacks in between. For learning, it is very important that they have breakfast before coming to school, and something to eat while at school. If not, they may be tired or inattentive during lessons and will not learn well.

Teachers, parents and learners should all be aware of the connection between eating often and learning well. If many learners are not getting anything to eat in the morning, the question should be brought up at a PTA meeting so that parents and teachers can discuss solutions.

Outcomes

Learners should be able to

- explain that energy is needed throughout the day
- show they know that eating affects learning.

Teaching and learning aids

- paper or cardboard for the **Remember** message.
- matches
- high-energy snacks brought by teacher or learners (e.g. maize, sweet potato, groundnuts, bananas)

Feedback from homework

Ask what foods we eat between meals. If necessary, give the word *snacks*. Which snacks give a lot of energy? Show some real examples of high-energy snacks, brought by learners or teacher.

Introduction

Ask *How often should we eat? Is it all right to eat just once a day? And when?*

a) Light a match and let it burn down. Tell learners the match is being "eaten". It is like food. It is giving energy. The flame is the energy. When all the match has burnt, the food is finished, the flame goes out. There is no more energy.
b) Light another match and ask learners to tell you what is happening.
c) Explain that this is how our bodies use food. We eat food and it gives us

energy (the flame). When the energy is all used up we are tired. The flame is dead.

d) Ask *How can we go on having energy to do things? How can we keep the flame going?* To demonstrate, light another match; when it is nearly burned out, light another match from the first one, then a third.

e) Get learners to tell you that we keep the flame alive by giving it more food. We keep ourselves going by eating more food. We need to eat often so that we will always have energy for all the things we want to do. We need lots of matches to keep the flame alive. We need food *frequently*.

Activity 15

Learners look at the diagram in the book and explain it to each other in pairs. After this, call on one or two learners to explain it to the class.

Reading

a) Learners look at Reading A. Read it aloud to them, more than once if necessary. At the end, ask the questions in the text and let them discuss the answers. Learners should come to the conclusion that Chalo has not taken in much food but has used up quite a lot of energy. As a result, he will probably feel rather tired in the middle of the morning.

b) Talk learners through Reading B and Reading C, asking comprehension questions – e.g. *Does Mule get up late or early? What does she have for breakfast?* Read the questions at the end of each Reading but do not answer them.

c) Give Reading B to one half of the class and Reading C to the other half. Ask them to read the passage to each other in small groups and discuss the questions. Make sure there is a good reader in each group.

d) Groups feed back to the whole class. They should be able to say that Mule (Reading B) will probably be full of energy in the mid-morning, because of the big breakfast and two snacks, but Muke (Reading C) will probably be tired and inattentive. He has used up a lot of energy and eaten nothing.

Ask yourself

Use this activity to notice which learners do not have breakfast or a snack in the morning. This will seriously affect their school work.

Asking the questions Demonstrate asking yourself these questions and answering them. Pause for learners to ask and answer the questions mentally.

Answering the questions Learners can write in class, write at home, or share their experiences orally in class - in pairs, in groups or with the class as a whole. Make sure they understand they have to choose from the alternative answers in the box (A or B).

Remember – a "take-home message"

The teacher or a learner writes the **Remember** message on a piece of paper or cardboard, displays it and reads it aloud, asking for examples of food that can be brought to school. On the opposite side write the title of the lesson. Leave the message on display for the rest of the chapter.

Draw learners' attention to the label on the message and say this is an important message which should be taken home. Learners should copy the message, pin it up at home and explain it to their families. They may do this in English or in the local language, using the list of **Remember** messages at the end of the Pupil's Book. Discuss how they can do this.[9] To make it more decorative they can make a special border like the one at the end of their book.

Homework
A Emphasize the importance of eating food before coming to school and carrying food to eat at school. Discuss the homework with learners. What do they think parents will say?
B *Written work* Learners have the three examples in the Reading to help them. However, this is their first piece of free writing. It will need to be corrected by the teacher, even if the peer correction option is adopted in the next lesson.

Remedial work (if necessary)
Ask learners to take the **Remember** message home and do what it says. They should report to the teacher for two or three days to repeat the message and say what they have done.

Event track (optional) *Energy for the day*
Select three or four of the best accounts of morning activities and eating from Homework B. Get their writers to copy them out, leaving space down the side for illustration, and ask the class's best artists to illustrate them with little pictures of learners' actions. Display these on a poster with the title ENERGY FOR THE DAY. A poster like this can be used at a PTA meeting to raise the issue of the importance of breakfast.

LESSON 4: FOOD HELPS US TO GROW[10]

Background Information for teachers

The previous lessons dealt with the energy that the body needs for physical activities and to support growth. Apart from this, certain foods are needed by the body for physical growth, brain development, repair and healing. The main nutrient for growth and repair is protein.

[9] Learners should be able to take the Pupil's Book home and copy the message for homework. If they cannot do this, teachers can ask them to copy the message into their exercise books and then re-copy it at home. Alternatively, teachers can provide paper for the class to copy it direct.
[10] The idea that certain foods are particularly "good for growth" is a simplification. First, ALL nutrients help us to grow: we need carbohydrates and micronutrients as well as proteins for the growth process. Secondly, most foods contain some protein, just as most foods contain most other nutrients. If children ask questions, explain this, but concentrate on getting across the idea of the different functions of foods.

Growing children need a lot of protein, otherwise their bodies and brains do not have the chance to grow properly. Often this is not even noticed – people just think they are thin and small. Sick people also need a lot of protein in their daily food in order to recover quickly. People suffering from HIV/AIDS need one third more protein than a healthy person, to recover, gain weight, and stay well.

In Zambia there is a strong dependence on maize and cassava meal. By themselves these do not have enough protein for a good diet. Cassava meal in particular contains very little protein. For a good diet, maize and cassava meal need to be eaten with foods that are rich in protein, such as beans, cowpeas, groundnuts, bambara nuts, soya beans, meat, fish, caterpillars, eggs and milk. The message for families is that children need to eat several of these protein-rich foods every day if they are to grow properly and that children must get *as much relish as adults*.

Many high-protein foods are expensive, and some are only eaten on special occasions (e.g. chicken). It is therefore important for children and their families to know which cheaper or more available foods contain a lot of protein – for example, fish, *kapenta* and *chisense*, beans, cowpeas, soya beans, groundnuts, bambara nuts, eggs, caterpillars and flying ants.

Outcomes

Learners should be able to:

- say which foods help them to grow
- suggest good meals for growth
- say which of these foods they eat and how often.

Time: 30 minutes

Teaching and learning aids

- paper or cardboard for the **Remember** message
- tape measure or ruler
- food cards

Feedback from homework

a) Ask if learners have brought food to eat at school. Ask what their families said. Encourage learners to share their food with those who have not brought any.

b) Peer correction (optional) Learners give their written homework to a friend to read. Readers should say if the writers are getting enough food in the morning.

c) Take in learners' written homework for correction.

Introduction

Books closed. Give out food cards.

a) Ask several learners of different ages how tall they are. Who is the tallest? If there is time, measure one or two learners – stand them against a wall, mark their heights on the wall with a pencil, then measure from the ground up with a ruler or tape measure.
b) Ask *Are you getting bigger? Are you bigger than last year? Will you get even bigger? What makes you grow?* Hope to get the answer *Food*! Then ask *What food helps you to grow?*
c) Get learners to make some guesses about what are good "foods for growth". Display the cards for the foods mentioned. Make it clear that these are only guesses; you are now going to find out if they are right.

Activity 16
Books open. Learners say which foods are in the pictures, matching the words and the illustrations. They then compare these foods with the foods they guessed before.

Activity 17
a) Learners look at the table FOOD FOR GROWTH. Explain the meaning of the stars and give one or two examples. A food which has many stars helps us to grow a lot; a food which has no stars does not help us to grow much.
b) In small groups, learners check "their" foods in the table and share the information. If their food has two stars or more they should write on their food cards – e.g. *X helps us to grow a great deal / a lot / quite a lot*.
c) Ask for reports on some foods – e.g. cassava, cowpeas and beans, eggs, sweet potatoes, bananas, maize meal. Do these foods help us to grow? A lot? Only a little?
d) Emphasize that they need to eat several of these "growing foods" every day.

Reading
a) Ask learners to find all the foods mentioned in the Reading (congratulate them if they discover *breastmilk* as well as *beans, meat* etc.).
b) Ask close comprehension questions about the text: *What do these foods do?* (They help us to grow.) *What else do they do?* (They help to mend our bodies.) *What is the best food for babies?* (Breastmilk.)
c) Finally, ask for a volunteer to read the whole passage aloud.

Activity 18
a) Look at the figures in the Pupil's Book and read out the instructions. Say *Let's give a big meal to Kanyanta and Kasuba.* Put the staple food in the middle, and plan a meal with a lot of energy and growth foods.
b) Get a learner to copy the planned meal and display it. Give it a title – e.g. *A good meal for people who need to grow and get well.*

Ask yourself
Asking the questions Tell learners that these are important questions for them because they are growing fast. Read the questions aloud and pause for learners to ask and answer mentally.

Answering the questions Learners can write in class, write at home, or share their experiences orally in class - in pairs, in groups or with the class as a whole. If they do the writing, make sure they understand the alternative answers in the box. N.B. Look out for learners who are not eating protein food regularly (e.g. meat, fish, eggs, beans, soya, groundnuts). These are the children at risk.

Remember
The teacher or a learner writes the **Remember** message on a piece of paper or cardboard, displays it in the classroom and reads it aloud. S/he should ask the class to give examples of foods that help us to grow. On the opposite side write the title of the lesson. Leave the message on display for the rest of the chapter.

Homework
Homework A is a direct message to parents. Teachers should use their judgment about whether it will work. Homework B reinforces learners' knowledge of individual foods.

Ask learners to bring a sample of any common food to the next lesson.

Remedial work (if necessary)
As for Lesson 2.2. Learners have to find which foods are good for growth from the table in the same way.

Event track (optional) *Best dishes*
Develop the idea of "best dishes". Some learners present themselves as "good growing" foods, and say their names. Other "foods" stand in a circle around them and say their names. Each "good growing food" calls on one or more other foods to make a special dish and they go off together.

LESSON 5: FOOD KEEPS US HEALTHY

Background Information for teachers

Apart from carbohydrates and proteins, other essential nutrients are vitamins (e.g. vitamins A, B, C and E) and minerals (e.g. iron, folate, zinc, calcium). These are called *micronutrients* because they are found in very small quantities. They are vital for growth, health, protection from illness and the proper functioning of the body. Foods containing these micronutrients need to be eaten daily. In Luapula there is often a lack of these nutrients in children's diet, especially iron and vitamin A (these receive special attention in Lesson 7).

Micronutrients are found in all foods. Many fruits and vegetables

are rich in them. Particularly valuable are orange and yellow fruits and vegetables (such as pumpkin, guava, pawpaw and mango) and dark green leafy vegetables (for example, cassava leaves, pumpkin leaves, bean leaves and amaranthus). Red palm oil is very rich in vitamin A. Among animal foods, eggs and liver have many important micronutrients and so has dried fish. Small fish like *kapenta* and *chisense* are particularly good because the liver is eaten with the whole fish.

To simplify the picture for learners, these foods are presented here as "foods for health". However we must remember that these foods also have all the other food functions (e.g. growth, energy), and all other foods also give us micronutrients and are also "foods for health".

The best way to make sure that the body gets all it needs is to have a wide variety of food every day. Fruit should be eaten with or after every meal. This not only provides important vitamins but also helps the body to absorb the iron in plant foods (i.e. green leafy vegetables and beans).

Outcomes

Learners should be able to:

- identify some foods rich in micronutrients as "very good for health"
- show they value fruits and vegetables for health.

Time: 30 minutes

Teaching and learning aids

a) paper or cardboard for the **Remember** message
b) a large sign or label saying FOOD GOOD FOR HEALTH
c) samples of foods (brought by teacher or learners): these should include some foods rich in micronutrients (e.g. mango, *kapenta*, liver, guava, egg, dark green leafy vegetables, red palm oil) and some which have more of other nutrients (e.g. cassava, millet, sugarcane, sugar, rice, groundnuts).

Feedback from homework

Give out food cards.

a) Ask learners which foods are good to help them to grow. Ask what their families said about these foods and about having them every day.
b) Take several "growing foods" one by one and ask the homework questions (*Is it easy to get? Is it produced at home? Can you eat it all year?*).
c) Finally ask what people like to eat with it. Put food cards (or learners with their cards) together to make familiar dishes.

N.B. Use this feedback session to promote "growth foods" and ways of eating them. Show personal appreciation of good dishes. If it seems that some high-protein foods (e.g. beans, *chisense*) are not much eaten, or not valued, say how good they are, how much you like them, suggest some appetizing ways of eating them and ask for other ideas. In changing attitudes, a teacher's influence can be powerful!

Introduction

a) Draw three stick figures on the board (one running, one big, and one with a big smile). Say they are three children you know and give them names. Explain that the first (X) is full of energy, the second (Y) is growing big and strong, and the third (Z) is always healthy, never sick.

b) Ask: *Do you want to be like X, with lots of energy to do things? Why?*
Can food give you energy? (Yes!)
Do you want to be like Y, and grow big and strong? Why?
Can food help you to grow? (Yes!)
Do you want to be healthy, like Z? Why?
Can food keep you healthy? (Yes!)

c) Explain that all food gives you energy, helps you to grow and keeps you healthy. But some food is VERY good for health. Put up the sign saying FOOD GOOD FOR HEALTH.

Activity 19

Learners look at the picture. Read out the captions for the pictures and ask learners which foods they think are very good for the health. The answers are: *kapenta*, sweet potato leaves, red palm oil, guavas, mango, orange, pumpkin. (Remember that cassava and maize are mainly sources of energy.)

Activity 20

a) Learners look at the table FOODS THAT KEEP US HEALTHY in the Pupil's Book.[11] Explain how to use the table: look along the line and count the stars – the more stars the better. Give one or two examples from the table.

b) Ask learners to find some foods which have no stars. What does this mean? Explain that these foods do not do much to keep us healthy, but they are good for other things (e.g. giving energy, helping us grow).

c) In small groups, learners find "their" foods in the table.

d) Learners report back, putting foods (or food cards) with two or more stars on the "GOOD FOOD FOR HEALTH" desk.

e) Learners sort the "very healthy" foods into *fruits*, *vegetables*, *animal foods*, *cereals*, *roots*, and *fats and oils*. Help them to see that many of the "healthy" foods are fruits and vegetables.

f) In their groups, learners add information to the appropriate food cards – e.g. *This food is very good for our health.*

Reading

Read out the questions, or get learners to do so. Groups take one question each and find the answers in the table, then report back. This

[11] This table gives a very crude idea of the "healthiness" of particular foods. In the first place, *all* foods are healthy if they give us the nutrients we need. Secondly, different nutrients help each other to function properly. For example, fat or oil helps vitamin A in fruit and vegetables to be absorbed into the body. Then, the table has been put together combining values for iron, vitamin A and vitamin C only, excluding other micronutrients. Finally, the values themselves are very roughly calculated. For these reasons, teachers should not rely on the table heavily, but just use it to show the value of certain foods, for example, fruits, vegetables, liver and *kapenta/chisense*.

can be done more quickly with the whole class calling out answers, but it will not give so much opportunity to slower learners.

Ask yourself
Use this activity to find out how many kinds of fruit and vegetable are normally eaten by the learners.

Asking the questions Demonstrate asking yourself these questions and answering them. Pause to let learners ask and answer the questions mentally.

Answering the questions Learners can write in class, write at home, or share their experiences orally in class - in pairs, in groups or with the class as a whole.

Remember
The teacher or a learner writes the message on a piece of paper or cardboard, displays it and reads it aloud, asking for examples. On the opposite side write the title of the lesson. Leave the message on display for the rest of the chapter.

Homework
A Decide how learners should discuss this subject with their parents.
B *Written work* Go through the table to make sure that learners understand what to do. Remind them that they can include all sorts of foods like eggplants, cabbage, onion, carrot, okra, pumpkin, cucumber etc. (find examples in the table). Ask if they can remember to write down all the fruit and vegetables they eat (they will probably need reminding every day).

Remedial work (if necessary)
Let learners find out from the table all the fruits and vegetables that are very good for their health (with three or four stars). Question them about which fruit and vegetables they found.

Event track (optional) *Food diaries*
If the written homework exercise (B) is successful, get learners to repeat the diary for another week. Choose three or four representative diaries and display them anonymously on a chart. Write underneath: ARE THEY GETTING A VARIETY OF FOOD? Food diaries also make a good point for discussion at a PTA meeting.

LESSON 6: FOODS WHICH ARE GOOD FOR HEALTH

Background information for teachers

Many people believe that fruit and vegetables are not particularly important in the diet and that a meal of *nshima* and fish or meat is complete. Often fruit is not considered part of a meal or an essential element of the general diet. Learners and their families must

understand the need for variety and the importance of consuming vegetables and fruit daily.

They also need to recognize the great value of cooking green leafy vegetables with oil or groundnuts.

The lesson presents two role-models who have healthy diets. Teachers should do everything they can to support the behaviour of these role-models and reinforce it by talking about healthy aspects of their own diet.

Outcomes

Learners should be able to:

- say that fruit should be eaten with/after meals
- say that green leafy vegetables should be cooked with oil or groundnuts
- demonstrate how to eat a variety of fruit and vegetables in a day.

Time: 30 minutes

Teaching and learning aids

- paper or cardboard for the **Remember** message

Feedback from homework

a) Ask learners if they can name some foods which are very good for health. Ask what families said about eating foods like this.

b) Learners look at their food diaries. Write on the board How many *different fruit and vegetables* did you eat? Read out the question. Emphasize that each kind counts only one, even if they ate it several times.

c) While they count, go round and look at their work. Congratulate learners with high scores, but also make it clear that they are very *lucky* to have such good diets.

Introduction

Say that we should have *many* different fruits and vegetables every day to keep healthy. Ask for examples.

Reading

a) Explain to the class that they are going to read about two people who have interesting jobs: Mukelabai and Mwenya. Ask which one they would like first.

b) Read the quotations aloud, with gaps, pausing for learners to complete the gaps. For example:

Mukelabai: I'm a ..... I'm hoping to play for the national ..... next year. I need a lot of ..... and I have to keep very ..... I eat a lot of ..... and ....., and a lot of ..... every day. I especially like ..... with ..... I have ..... with every meal.

Mwenya: I'm a ..... My job is very interesting but it's very hard ..... I can't afford to get .....! I always have a good ..... and something

to eat during the day. I eat a lot of ..... every day to keep me ..... I like mangoes and ....., bananas and ..... I always have ..... after a meal and often in the middle of the .....

c) If there is time, suggest they choose one quotation and read it again in pairs.
d) Ask the questions *What are their jobs? What do they eat? Why do they eat these things?*
e) Say that Mwenya and Mukelabai know three important things about food. What are they?
   - that fruits and vegetables are very important for health
   - that they should eat fruit with a meal
   - that they should cook vegetables with groundnuts or oil.

Activity 21

a) Tell learners your own favourite foods for health and ask learners for theirs.
b) Say you're going to describe a day of healthy eating with five different "healthy foods" in it. E.g.

   When I wake up I'd like to eat ....
   Then before I go to work I could have .... with my breakfast.
   In the middle of the morning I'll have.....
   My main meal will be..... and .....
   With the main meal I must also have some fruit .....

   Count off the "healthy foods" on your fingers, and hold up five fingers at the end. Make sure you talk about fruit *with a meal* and explain that this is a very healthy habit.
c) Tell learners they must describe another day with five (other) healthy foods (including fruit with a meal). They should say what they will eat, and when. Remind them that they must not forget the groundnuts or oil with green leafy vegetables. Put them in small groups to plan the day. They should choose someone to report back to the class.
d) When groups report back, praise all realistic plans. Get the class to keep a count of all the *different* foods mentioned and show approval as the number mounts. *The more the better!* At the end ask learners how many "healthy" foods they mentioned all together.

Ask yourself

This activity takes the dietary planning activity in Activity 21 into learners' own lives. Demonstrate asking yourself these questions and answering them. Learners answer the questions mentally for themselves. They can then complete the writing in class or at home. Alternatively, ask volunteers to say what they plan to eat this week, following the example in the box, or ask learners to tell each other in pairs what they have decided.

Remember – a "take-home message"

The teacher or a learner writes the **Remember** message on a piece of paper or cardboard, displays it and reads it aloud, asking for examples. On the

opposite side write the title of the lesson. Leave the message on display for the rest of the chapter.

Draw learners' attention to the label on the message and say this is an important message which should be taken home. Learners should copy the message, pin it up at home and explain it to their families. They may do this in English or in the local language, using the list of **Remember** messages at the end of the Pupil's Book. Discuss how they can do this.[12] To make it more decorative they can make a special border like the one at the end of their book.

Homework

A Give learners the option of telling or reading to their parents about Mwenya and Mukelabai.

B *Written work* The words of Mwenya and Mukelabai in the Reading are the example for the writing. But this is free writing and therefore quite difficult. Allow learners to write as much or as little as they like.

Ask for volunteers to bring food samples to the next lesson.

Remedial work (if necessary)
Discuss with learners which fruit and vegetables they eat often, which ones they like, which ones are good for their health and how they can eat them every day.

Event track (optional) *What do you eat?*
Role-play interviews with the two workers in the Reading.

LESSON 7: SPECIAL FOODS

Background information for teachers

Growing children in Zambia often do not get enough vitamin A and iron. The general messages for the diet are to eat *kapenta* or *chisense* and liver; to have plenty of fruit and vegetables every day - especially dark green leafy vegetables, orange and yellow fruits, cowpeas and beans; to add red palm oil or groundnuts to vegetable relish; and to eat fruit after meals.

This lesson introduces the idea that specific foods can have specific effects. This idea is helpful, but do not insist on it. All foods contain many different nutrients; learners should not get the impression that each food has only one function.

[12] Learners should be able to take the Pupil's Book home and copy the message for homework. If they cannot do this, teachers can ask them to copy the message into their exercise books and then re-copy it at home. Alternatively, teachers can provide paper for the class to copy it direct.

VITAMIN A

Having enough vitamin A in the diet is very important. It helps people to see clearly at night, prevents blindness, protects people from diseases and helps them to recover quickly. It also helps to make strong healthy skin, hair and teeth.

Vitamin A is found in some animal foods (milk, eggs, *kapenta*, liver, fish liver), in orange and yellow fruits (pumpkin, orange-coloured sweet potatoes, ripe mangoes and ripe pawpaw) and in dark green leafy vegetables.

One tablespoon of red palm oil, 1 small mango, one egg-sized piece of liver, one small pawpaw, one medium-sized yellow sweet potato, 1.5 cups of green leafy vegetables – each of these is enough to meet a person´s daily vitamin A requirements.

Vegetables rich in vitamin A should be cooked and eaten with vegetable oil, red palm oil or groundnuts, because vegetable vitamin A needs fat to be absorbed by the body. Red palm oil is especially good because it is also very rich in vitamin A.

IRON

Iron makes the blood red, which means it can carry enough oxygen around the body. Oxygen is needed to produce energy so people can be healthy and active. Without enough iron, people become anaemic, their blood becomes "thin" and pale. Many children are anaemic as a result of malaria (malaria destroys red blood cells); intestinal worms can also make children anaemic. Pregnant women are often at risk of anaemia.

Anaemic people often look pale (with pale eyelids and lips), feel weak and tired, and are more likely to get sick. Anaemic children do not do well at school. If a teacher notices a child with severe anaemia, the child should be sent to the nearest health centre for treatment.

Iron deficiency anaemia can only be prevented by reducing malaria and worms, but it can be reduced through changes in eating patterns. Iron is plentiful in many local foods, e.g. dark green leafy vegetables, liver, beans and cowpeas, groundnuts, *kapenta*, dried caterpillars, grasshoppers and pumpkin seeds.

To absorb iron from plant foods, the body also needs vitamin C at the same meal. So meals with green leafy vegetables, beans and cowpeas should be followed with a piece of fruit rich in vitamin C, for example guava, orange, mango (especially unripe) and pawpaw, or a drink made from fresh limes/lemons with sugar.

Outcomes

Learners should be able to:

- mention particular foods which are good for eyes, skin, hair and blood
- advise particular foods for particular people
- suggest dishes good for eyes, skin, hair, blood.

Time: 30 minutes

Teaching and learning aids

- paper or cardboard for the **Remember** message
- a small human figure roughly made out of dry grass (the "Straw Boy")
- samples of real foods (some rich in iron and vitamin A, some not), brought by teacher or learners. N.B. It is important to have some real food samples for this lesson, but food cards can be used as well.

Feedback from homework

Ask what parents said about Mukelabai and Mwenya, fruit with meals, and oil with green leafy vegetables. If learners have done the written work, ask them to read it to each other in small groups while you go round looking at their work. Praise good writing, interest, good diet and effort.

Introduction

a) Give out food cards. Ask learners to say what foods they have brought and put them on the desk. Add food cards to make up about 15 foods.
b) Ask *Which foods are good for you?* (all answers will be right!).
c) Explain that *all* foods are good for you. But some are good in special ways.

Activity 22

a) Touch your *hair, nails, eyes* and *skin* and ask *What's under the skin?* (*blood*). Write up all these words in a list. Then discuss the questions in the Pupil's Book (*What is good hair like? What can good eyes do? etc.*) Agree on a word or two to answer each question and write them up - e.g.
   hair - strong, shiny, springy, black
   skin – smooth, not dry
   eyes – clear, see well in the dark
   nails – strong, not broken
   blood - red, makes you strong.
b) Refer to the picture. Do the boys have bright eyes? clear skin? strong hair?
c) Ask learners if they care about these things, and why. Praise all good reasons, including the desire to look good and feel good.
d) Present the "Straw Boy". Say his skin is dry and spotty, his hair is brittle and pale, his nails are broken, his eyes are dim, and his blood is thin and pale – in fact (squeeze him) he doesn't have much blood at all. He's always tired (make him droop). He's always sick (make him lie down). He needs special foods. But what? Lay out the food samples and cards around the Straw Boy and ask *Which of these will make him better?*

Activity 23

a) Learners look at the food table for this lesson. Help them to see what foods will be good for Straw Boy's eyes/skin/hair. Learners find some of these foods among the samples and put them on top of Straw Boy.
b) Do the same with foods for "good blood".
c) "Revive" the Straw Boy and say: *He has eaten all these foods* (name them). *Now his hair is ....., his skin is ....., his nails are ....., his eyes are*

....., *his blood is*..... (learners call out the words on the board). *He is full of energy. He is never sick.* Make the Straw Boy dance.

d) Look at the foods which have cured the Straw Boy. Let learners sort them into animal foods, green leafy vegetables and orange/yellow foods. The liquid one is oil. This will make them easy to remember.

Reading

The Reading reinforces the previous activity, with real people instead of Straw Boy.

a) Make small groups, with some good readers in each group.
b) Give one of the texts to each group. They read it aloud and the group prepares to answer the question at the end of the passage.
c) Feed back to the whole class. Help learners to see that Muke's mother especially needs the foods in the second column of the table (iron), and Masuba needs the foods in the third column (vitamin A).

Activity 24

Learners remain in their groups. Each group thinks of a dish for EITHER Muke's mother OR Masuba, using some of the "special foods". They describe the dishes to the class, who vote for the ones they like best.

Let learners copy the chosen dishes and display them, with a title (e.g. *A good meal to make our eyes bright; A good meal for the blood*).

Ask yourself

Asking the questions Learners will by now understand that they should answer these questions for and about themselves. Go through the questions one by one allowing time for learners to think of their answers.

Answering the questions Learners can write in class, write at home, or share their experiences orally in class - in pairs, in groups or with the class as a whole. Pay special attention to learners' conclusions about staying healthy.

Remember

This message revises the "special foods". The teacher or a learner writes the message on a piece of paper or cardboard, displays it and reads it aloud, asking for examples of yellow and orange fruits and vegetables, dark green leafy vegetables, animal foods, legumes and oil.

On the opposite side write the title of the lesson. Leave the message on display for the rest of the chapter

Homework

A & B Both homeworks reinforce the lesson and get learners to repeat their ideas.

Each learner should now be an "expert" on a particular food. Tell learners that in the next lesson they will be completing and revising (or re-making) their food cards. So for the next lesson they should know:

- where "their" food comes from
- how we get it
- what it costs (if bought)
- what kind of food it is
- if we can eat it all the year
- how we eat it
- what it is good for – what it gives us.

Remedial work (if necessary)
Give learners food cards or pictures of foods in the book. Ask them to pick out foods which are dark green, orange, yellow, or come from animals. When they report back, emphasize that these foods are special and very good for us. Ask them to pass this knowledge on to family members.

Event track (optional) *Food for Straw Boy*
Take the Straw Boy and glue him to the middle of a poster. Around him put food cards (or food samples) of foods rich in vitamin A and iron. Make sure some of the fruit and vegetables are coloured (dark green, orange, yellow). Train learners to explain the poster to visitors, including the "colour code".

LESSON 8: GOOD FOODS

Background information for teachers

"Nutrition education" has many aspects. One of them is knowledge of individual foods – where each one comes from, how it is produced and acquired, how it is prepared and what it is rich in. This lesson sums up and revises the knowledge of individual foods accumulated during the previous lessons. It also reinforces some aspects of the developing idea of "good" food: high nutritional value, availability, good taste and ease of preparation.

Outcomes
Learners should be able to

- give and understand extensive information about individual foods
- identify individual foods from descriptions of their uses and values
- select particular foods as valuable in the diet, and say why.

Time: 30 minutes

Teaching and learning aids

- paper or cardboard for the **Remember** message
- new blank cards or paper to replace old food cards

Preparation
Check learners' writing on the food cards and correct it. Make a note on each card of what is needed (e.g. a new picture, more information).

Feedback from homework
If learners have done the written homework, they should read it out to each other. While they do this, go round and check their writing. If you find some good dishes, ask learners to copy them for the OUR MEALS display.

Introduction
Ask learners to recall what particular foods are good for. Bring out the fact that each food has many functions, not just one.

Activity 25
Learners stay in their groups. Give out the food cards.

a) Learners look at the table WHAT FOODS GIVE US in the Pupil's Book. Show them how to use the table by giving a few examples, e.g. –
Cassava flour/nshima gives a lot of energy, but on its own it doesn't help us to grow very much and doesn't give us much for our health.
Pawpaw gives us a little energy and is also good for keeping us healthy. It doesn't help us to grow very much.
b) Learners check "their" foods in the table and tell their group about them.
c) If there is time, learners finalize their food cards. If cards need to be made again, give out fresh paper. Each card should have a picture and the name of the food on the front, and information on the back about:
   - where the food comes from
   - how we get it
   - what it costs (if bought)
   - what kind of food it is
   - if you can eat it all the year
   - how you eat it
   - what it does for us (gives energy, helps us grow, good for health).
d) As learners work, go round helping and checking.
e) As the cards are finished, finalize the display of OUR FOODS.

Reading
The Reading prepares learners for the following activity.

a) In small groups, learners choose someone to read one of the riddles aloud. When the group has guessed the riddle, they whisper the answers to the teacher (the answers are *kapenta* and cassava leaves).
b) As each group finishes the Reading, tell them they must choose a food from their group and prepare to describe it in the same way.

Activity 26
Each group describes a food without saying its name, in the same way as the Reading. The class guesses what it is.

Ask yourself

The question of "excellent foods" is not personal and can be discussed with the whole class. This is a good informal test of learners' understanding of the whole chapter. Look at the questions and ask learners to recommend particular foods. They should then say why (the reasons are more important than the choices). After the discussion, learners can write about their own choices in class or at home, following the example in the box, or the teacher can summarize learners' answers and display them on a poster entitled EXCELLENT FOODS.

Remember

This message reinforces the idea that each food has many nutrients. The teacher or a learner writes it on a piece of paper or cardboard, displays it in the classroom and reads it aloud, asking for examples. On the opposite side write the title of the lesson. Leave the message on display for the rest of the chapter.

Homework

In Homework A, learners carry their recommendations back to their families. Homework B gets learners to extend their knowledge to another food. This should not be difficult after the class work. This piece of free writing will need to be corrected.

Remedial work (if necessary)

Using the table, learners should find four foods which are "good all round" – i.e. good for energy, growth and health all together (lots of stars). If necessary, they can get help to read the table.

Event track 1 (optional) *Making meals*

Present the whole class, seated. Learners representing staple foods stand up and come forward. Then learners representing relish foods (including oil, salt etc.) join them and group to form popular meals. Add on a learner "fruit" to every meal. Snack foods come forward to stand between the meals, until all the learners are standing. Get them to make a ring. The presenter says that we need ALL the foods to have a good diet, and all the foods help all the other foods. To demonstrate this, learners all turn to the right and pat the person in front on the back. They then break up the circle and shake other learners by the hand.

Event track 2 (optional) *Strong food*

Divide the class into "foods", "learners" and "diseases". The "foods" should represent a good range of common foods. They can carry a piece of the food, or a big label; act like the food (e.g. a chicken); or try to look like the food in some way. The "learners" are normal learners. The "diseases" should look like monsters and carry labels such as *diarrhoea, colds, malaria*.

a) The "foods" present themselves in "food groups" (cereals, animal foods etc.), say their food names and stand back in a big semicircle.
b) The "learners" enter and stand in the middle, looking exhausted.

c) The presenter says *Our learners are very tired. Who will give them energy?* High-energy foods come forward and dance with the learners.
d) The "learners" crouch down. *Our learners are very small,* says the presenter. *Who will make them grow?* "Growth foods" come forward, pull the "learners" up onto their toes or lift them in the air.
e) The "diseases" enter and present themselves. They threaten the "learners", who look scared. *Who will protect our learners from diseases?* says the presenter. "Healthy foods" come forward and make a ring round the "learners", defying the diseases.
f) Two learners are left out of the circle and are caught by the "diseases", who start to eat them up. *Rescue them!* calls the presenter. All the foods rush to rescue the two. The "diseases" retreat.
g) The learners arrange themselves in three circles. In the middle some "learners" are held up by "growth foods"; around them "energy foods" dance with other "learners"; round the outside the "health foods" make a ring to protect everyone. The "diseases" look on frustrated from the outside. The presenter calls *Foods for energy! Foods for growth! Foods for health!* Everybody cheers.

REVISION OF CHAPTER TWO

At the end of the chapter ask for volunteers to read out all the **Remember** messages to the class. After each message, ask learners to call out the examples (as they have practised in each lesson), and ask them why the message is so important.

CHAPTER 3

OUR DIET

THIS CHAPTER
Chapter 3 looks at some general aspects of diet – the meals we eat, who eats what, and when and how often we eat during the day. Food practices differ from area to area, but some common problems are:

- Individual meals are not well-balanced and do not provide everything a growing child needs.
- At family mealtimes, children and other family members do not get enough of the foods they need, in particular the relish, which contains the important proteins, fats, and micronutrients. Families are often not aware of this.
- Children often don't eat frequently enough during the day to maintain their energy levels, especially in the morning, before and between school sessions. As a result, they suffer from short-term hunger and fatigue and do not learn well.

Lesson 1 looks at the composition of meals and how to improve them.
Lesson 2 deals with particular food needs during the life cycle.
Lesson 3 explores eating frequency and helps learners to evaluate their diet as a whole.
Lesson 4 revises the idea of good diet in relation to the needs of the sick.

Event track
You may wish to organize a final event to recycle and publicize the messages of the chapter. This display or performance can be in class, or put on for parents, other classes, or an Open Day. It can be done at any time after the lesson it relates to. Projects for this chapter:

- *Good meals* (Lesson 1) is a display of meal pictures.
- *Balanced meals* (Lesson 1) Learners take the roles of the elements of a good meal.
- *Our diet* (Lesson 3) is a poster of good descriptions from the homework.

LESSON 1: BALANCED MEALS

Background information for teachers

Each individual meal should ideally contain a variety of foods for energy, growth and health. We can evaluate meals either with the food groups approach practised in Chapter 1, or using the food functions from Chapter 2. Here learners use both: they work in pairs to evaluate specific meals and see how to make them more balanced.

Outcome
Learners should be able to
- say if a meal is well balanced and make suggestions for improving it.

Time: 30 minutes

Teaching and learning aids
- paper or cardboard for the **Remember** message
- if possible, paper for drawing

Feedback from homework
If there is time, learners read what they have written about another food to learners who are "experts" on that food. Collect the written homework for correcting.

Introduction
Ask learners to describe the meal in the Pupil's Book.

Activity 27
On the board, roughly draw the meal from the Pupil's Book. Ask learners to call out the ingredients as you label the picture. Call attention to the word *ingredient* and use it several times. Leave the drawing on the board.

Ask *Is this a good meal? What is a good meal?* Help learners to recall the ideas of a good meal from Chapters 1 and 2. Introduce the idea of *well-balanced* (meaning complete, providing everything you need).

Reading

a) Put learners in groups of four. One pair reads Reading A and the other reads Reading B. Afterwards the pairs tell each other what their Reading said.
b) Pairs discuss the questions at the end of the Reading and decide if the meal in the picture is well-balanced. When they report back make sure the class "experts" on particular foods have their say. Ask them to suggest how the meal can be improved (N.B. It has everything except fruit).
c) Add the missing ingredient (fruit) to the picture on the board.

Activity 28
a) Let small groups draw a picture of another meal, labelling all the ingredients. Go around helping. Make sure they have not forgotten any ingredients (e.g. oil, salt). Praise those who also know how to prepare the dish.
b) Groups evaluate their own meals as in Activity 27, decide how they can be extended and add extra ingredients.
c) A member of the group holds up the picture while a reporter from the group explains why it is a good meal.
d) Put up the best pictures in the OUR MEALS display, with a title, e.g. *Well-balanced meals*.

Ask yourself
These questions are not very personal and can be discussed with the whole class. The first two answers should be *YES*!! For the third question, call on two or three learners to say how particular foods or dishes are prepared. Learners can write their own examples in class or at home, or the teacher can make a poster entitled WELL-BALANCED MEALS with examples suggested by the class.

Remember – a "take-home message"
The teacher or a learner writes the **Remember** message on a piece of paper or cardboard, displays it and reads it aloud, asking the class for examples. Do this rapidly, as it is only a repetition of the lesson. On the opposite side write the title of the lesson. Leave the message on display for the rest of the chapter.

Draw learners' attention to the label on the message and say this is an important message which should be taken home. Learners should copy the message, pin it up at home and explain it to their families. They may do this in English or in the local language, using the list of **Remember** messages at the end of the Pupil's Book. Discuss how they can do this.[13] To make it more decorative they can make a special border like the one at the end of their book.

Homework
A Learners describe a well-balanced meal to their families, as in Activity 28.
B *Written work* Learners draw a rough picture of their family and label it in preparation for the next lesson.

Remedial work (if necessary)
Ask learners to find out from classmates or other people what a balanced meal is, get an example of a balanced meal and describe it to the teacher.

Event track 1 (optional) *Good meals*
Choose the best three meal pictures from the lesson. Train learners to describe what makes the meal good *either* in terms of food functions (growth, energy etc.) *or* in terms of food groups (vegetables etc.) – or both!

Event track 2 (optional) *Balanced meals*
Learners representing the individual foods in a well-balanced meal present themselves one by one. They say what they are and what they give us (e.g. *I am cassava. I give a lot of energy. If you eat me you can work and play.*). Then they come together to form a meal. Together they say *This meal is very good for you. It gives you energy...* (etc.).

[13] Learners should be able to take the Pupil's Book home and copy the message for homework. If they cannot do this, teachers can ask them to copy the message into their exercise books and then re-copy it at home. Alternatively, teachers can provide paper for the class to copy it direct.

LESSON 2: SPECIAL FOOD NEEDS

Background Information for teachers

Everyone needs many different foods daily. However, people's food needs also vary, both in quantity and in the combination of foods they need. This depends on their age, level of physical activity, and health. For example very active people (e.g. agricultural labourers) need a lot of energy in their diet.

People also have different food needs at different times of their lives. Everyone who is growing needs extra protein in the diet and a lot of micronutrients – for example, babies, children and adolescents. So do young women preparing for motherhood, pregnant women and breastfeeding mothers.

Sick people also need special attention, including people with HIV/AIDS. Their protein and micronutrient needs are much higher (about 30%) than those of healthy people. Eating plenty of fresh fruit and vegetables, beans and groundnuts, and fish or meat will help them to stay well longer.

Other people simply need more attention to their diet because they are neglected – for example, orphans and old people.

These needs are not always recognized and it is important that families give fair shares to everyone, especially of the relish, which contains most of the protein, fats and micronutrients in the meal. One way to do this is to make sure that each member of the household has a separate plate, so that parents can see how much each family member is getting.

Outcomes

Learners should be able to:

- show they understand individual food needs
- explain the eating pattern at home and how it affects them.

Time: 30 minutes

Learning and teaching aids

- paper or cardboard for the **Remember** message

Feedback from homework

Ask what families said about the balanced meals learners described.

Introduction

a) Draw your own family (or another one) on the board in stick figures and label it *me, sister, baby* etc. as learners have done for homework. Leave it on the board.

b) Give a little information about the people in your drawing: in particular, mention people who are sick or old or very young; women who are pregnant

or breastfeeding; people who are very active; learners at school.

c) Learners show each other their own labelled pictures of their families and explain them. Go round to make sure the pictures are clear.
d) Explain that different people in the family have different food needs. Now we will look at Muke's family.

Activity 29

a) Learners look at Muke's family in the book and identify the people. Bring out the idea that the girl lying down indoors may be sick.
b) Discuss the pictures and the questions one by one. Help learners to realize what people's food needs are and why – e.g.
   - those who need a lot of energy are active people – e.g. the children playing, the man carrying water and the woman cooking;
   - those who need a lot of food for growth and health are
     - the children and the baby (because they are growing)
     - the pregnant woman (because a child is growing in her)
     - the sick child (who needs to repair her health)
     - the old woman (who needs to maintain her health).

Reading

Tell learners to cover up the right hand column of the text. Explain they will look at the boxes one by one.

a) Ask learners to find the words *growth, health, pregnant* and *breastfeeding* in the text. If necessary, practise the pronunciation.
b) Ask for a volunteer to read the A1 text aloud. Discuss the answer to the question, then look at the A2 box to check.
c) Do the same for the B texts and the C texts.
d) (If time permits) Ask the volunteers to read the texts again. Stop after each example and ask *Why?* (e.g. *Why do pregnant women need a lot of relish?)* This gives meaning to the text and also revises previous lessons.

Activity 30

Go back to your own "family picture" on the board.

a) Remind learners about any babies, young children, sick people, old people, pregnant women or breastfeeding women in your picture. Put a circle around them. Say these people in your family need to eat a lot of relish, to help them to grow and be healthy.
b) Ask what foods these people should eat. If possible give examples from your own experience of (e.g.) good weaning food for babies, the right food for a pregnant friend, a good diet for a sick relative. Emphasize the value of breast milk for babies.
c) Pick out schoolchildren, people who work very hard, and (again) any pregnant women or breastfeeding women. Put a square around them. Say these people need a lot of energy. Ask what they should eat.
d) Ask if they have any such people in their family. Let some learners give examples and say what these people should eat – e.g. *My aunt is going to have a baby. She should eat a lot of fish, beans, vegetables and fruit.*

e) Put learners in pairs to talk about the food needs of individuals in their own families.

Ask yourself

Asking the questions Demonstrate asking and answering these questions for your own family. Be very particular – e.g. *My grandfather should eat more fish and vegetables and fruit, I think. The trouble is he doesn't think fruit is good and he never eats it.* Tell learners to think about just *two* people in their family, and then about themselves. Pause for them to ask and answer the questions mentally.

Answering the questions Learners can write in class, write at home, or share their experiences orally in class - in pairs, in groups or with the class as a whole.

Remember

The teacher or a learner writes the **Remember** message on a piece of paper or cardboard, displays it and reads it aloud.

The class have to give examples of people who have special food needs.

On the opposite side of the message write the lesson title and number. Leave the message on display for the rest of the chapter.

Homework

A Learners talk to their family members about the special food needs of family members and themselves. Decide how this can be done without offending families.

B In preparation for the next lesson learners keep a third kind of food diary. They write down everything they eat on this day, at certain times. Go through the example with them so that they understand what to do. They can start completing the box in class but will have to finish it at home.

Remedial work (if necessary)

Get learners to talk about the family pictures they drew for homework (if they missed the homework they can draw them again). They should say which of their family particularly need food for energy, food for growing and food for health.

LESSON 3: OUR DIET

Background information for teachers

There are many ways of evaluating a daily diet.

- *Nutritional content* is the first way. The diet should have enough food for energy, growth and health, and enough of all the food groups.
- *Balanced meals and a balanced diet* mean that we are eating these foods in the right amounts and proportions, and in good combinations.
- *Variety* helps to ensure that all the nutritional elements are present. It also makes the diet more interesting and appetising.
- *Individual needs* are different. An individual's diet should match his/her personal needs.
- *Frequency* is important. Growing children need to eat meals two or three times a day, with something before coming to school and snacks in the morning and afternoon.
- *Food security* means all these things. It also refers to having safe, clean food and a balanced, varied diet all year round, including the "hungry season".
- *Good eating* also means appetising food, freshly prepared, which looks good.

These have all been covered in previous lessons. This lesson brings them together so that learners can look at their own diets from several points of view and evaluate them with a range of criteria.

Outcomes

Learners should be able to

- evaluate their diet in several ways
- propose some improvements.

Time: 30 minutes

Teaching and learning aids

- paper or cardboard for the **Remember** message

Feedback from homework

a) Learners look at their food diaries (or think about yesterdays' eating). Ask:
   - how many times they ate in the day
   - how many meals they had
   - how many other things they had to eat (snacks)
   - how many different foods they ate
   - if they ate before coming to school.

   While they are counting, go round and check their diaries.

b) Get some feedback. Be careful not to expose learners who have very poor

diets. Say they are very *lucky* if they ate often, especially before school, had several meals and snacks, and many different foods.

Introduction
Say we are going to see who has a good diet. Introduce the four children in Activity 31 and say we are going to see if they eat well, if they have a "good diet".

Activity 31

a) Put learners into small groups, making sure that each group has some good readers.
b) Each group reads about *one* of the children and discusses if the child has a good diet. Go round helping and commenting.
c) Feed back to the whole class. This should lead directly into the Reading.
d) If you think there is too much for the learners to read, read out the cases yourself and let the class discuss them one by one.

Notes on the cases
The four cases show that a good diet doesn't necessarily depend on wealth.

- *Mulenga*, though rich, has an unhealthy diet. There is very little variety and few fruits and vegetables. He is certainly eating too much carbohydrate and fat, and not taking enough exercise: this is probably why he is so fat.
- *Mwape* has a good diet. She has two meals a day and snacks, plenty of variety, and some good food to eat in the dry season too. *Chisense*, beans and groundnuts provide protein. There are lots of green leafy vegetables and other vegetables, and plenty of fruit. However the family should eat fruit *with* meals.
- *Kasuba* is lucky: his father brings a lot of fish, his mother provides red palm oil and they have fruit with every meal. He also has plenty of snacks to give him the energy he needs for his activities. It would be even better if he started the day with a good breakfast.
- *Kanyanta* has a very limited diet – mostly *nshima* and cassava leaves and sometimes no fat or oil to go with it. She is probably not getting enough energy and certainly not enough protein or micronutrients. She needs more of everything, and more variety.

Reading
The Reading summarizes the principles of a good diet. It should confirm and reinforce the principles which have come out in the discussion. Learners again divide the texts among the groups. Ask them to make connections between the Reading and the cases – e.g. *It says you should have two or three meals a day – Mulenga and Mwape have two meals a day. So this is good.* Groups feed back to the whole class.

Ask yourself
Learners look at their family's diet as a whole and pick out points for improvement. Use this activity to check that learners are aware of what makes a good diet.

Asking the questions Demonstrate asking and answering these questions for yourself – e.g. *Well, we eat quite often but we don't have many different foods every day.* Pause for learners to ask and answer the questions mentally.

Answering the questions Learners can write in class, write at home, or share their experiences orally in class - in pairs, in groups or with the class as a whole.

Remember – a "take-home message"

The teacher or a learner writes the message on a piece of paper or cardboard, displays it and reads it aloud, asking for examples. Leave the message on display for the rest of the chapter.

Draw learners' attention to the label on the message and say this is an important message which should be taken home. Learners should copy the message, pin it up at home and explain it to their families. They may do this in English or in the local language, using the list of **Remember** messages at the end of the Pupil's Book. Discuss how they can do this. To make it more decorative they can make a special border like the one at the end of their book.

Homework

In Homework A learners tell families about their dietary needs and in Homework B they describe their family's diet. Decide how they can do this without offending. If you decide to give Homework B, it will need to be collected and corrected.

Remedial work (if necessary)

Learners read one of the dietary descriptions in Activity 31 or ask someone to read it to them. They should discuss in pairs if it is a good diet and why/why not, then tell the teacher.

Event track (optional) *Our diet*

Pick out some good descriptions of diet from the homework and make them into a poster entitled OUR DIET. Correct the writing, get learners to make a fair copy and ask the class artist to illustrate them with pictures of foods mentioned, houses, meals etc.

LESSON 4: FOOD FOR SICK PEOPLE

Background information for teachers

People with long-term illnesses, or conditions such as AIDS, need to build up their strength and resistance to infection. They therefore need a diet that is highly nutritious and tasty. Meals should be frequent and well-balanced, with plenty of maize and cassava, groundnuts, beans, chicken, meat and fish, as well as vegetables and fruit, and some fat or oil. If there is diarrhoea or vomiting, food and fluids are necessary to replace what is lost.

Prolonged sickness often leads to loss of appetite, nausea, weakness or depression, and patients often eat less food than they need to get well. Sore mouths can make eating painful. Patients need to be encouraged to eat often by giving small amounts of food and highly nutritious drinks (such as *munkoyo*). Food should be easily digestible, tasty, locally available and inexpensive.

Outcomes
Learners should
- recognize the dietary needs of sick people
- develop skills for encouraging sick people to eat.

Time: 30 minutes

Teaching and learning aids
- paper or cardboard for the **Remember** message

Feedback from homework
Get some reports on what families said about diet, and collect descriptions of family diets for marking.

Introduction
Talk about a sickness you had and how long you were sick. Ask learners if they have ever been sick for a long time? A week? Two? Do they know anyone who has been sick for a very long time?

Activity 32
Look at the picture. Introduce Kanyanta's older sister, who has been sick for a long time. She is very weak. She needs a special diet! What should she eat and drink? How much? How often? Learners suggest everything they know that makes a good diet: this is a good opportunity for reviewing their understanding.

Reading
Ask learners if they can find the ideas they mentioned in the last activity in the Reading text. Encourage them to pick out the ideas in any order. Afterwards ask a volunteer to read the passage aloud.

Activity 33
What if the sick person doesn't want to eat?
a) Explain Kanyanta's problem and read out the dialogue. In pairs, learners role-play the two sisters, repeating the dialogue.
b) Discuss what Kanyanta can do (e.g. mash up the sweet potato, heat it up, give the pumpkin a little at a time, flavour it with honey or spice, try again later, try the *munkoyo* with a straw, in any case give something to drink).
c) Learners role-play the dialogue again, starting the same but making further suggestions until the sister is persuaded to eat.

Ask yourself
Asking the questions Ask and answer these questions for yourself, calling on your own experience if possible. Pause for learners to ask and answer the questions mentally.

Answering the questions Learners can write in class, write at home, or share their experiences orally in class. N.B. The answers can be about either the content of the diet or how to encourage people to eat.

Remember – a "take-home message"
The teacher or a learner writes the message on a piece of paper or cardboard, displays it and reads it aloud, asking for examples. Do this quickly, as it is only a repetition of the lesson. On the opposite side write the lesson title. Leave the message on display.

Draw learners' attention to the label on the message and say this is an important message which should be taken home. Learners should copy the message, pin it up at home and explain it to their families. They may do this in English or in the local language, using the list of **Remember** messages at the end of the Pupil's Book. Discuss how they can do this.[14] To make it more decorative they can make a special border like the one at the end of their book.

Homework
A Learners report the dramatic situation of Kanyanta and her sister to their families.
B *Written work* Learners revise their ideas of highly nutritious foods by thinking of some which would be good for the sick person in the story.

Remedial work (if necessary)
In pairs, learners think of six foods which would be very good for a sick person, and why, then report to the teacher. The reasons they give are as important as the suggestions themselves.

REVISION OF CHAPTER THREE

At the end of the chapter ask for volunteers to read out all the **Remember** messages to the class. After each message, ask learners to call out examples (as they have practised in each lesson). For each message, ask why it is so important.

[14] Learners should be able to take the Pupil's Book home and copy the message for homework. If they cannot do this, teachers can ask them to copy the message into their exercise books and then re-copy it at home. Alternatively, teachers can provide paper for the class to copy it direct.

CHAPTER 4

KEEPING CLEAN

THIS CHAPTER

Good hygiene habits are particularly important in nutrition. One reason is that they are essential to personal health, and this affects how well the body can use the food it gets. Another is that they directly affect the preparation and consumption of food.

Family training has already given learners many habits and routines for keeping things clean. (Learners may also have also acquired ways of avoiding the regular cleaning chores!) Often however they may not understand the reasons for these practices, and as a result cannot change them, adapt them, or explain them to others.

Children need good hygiene routines, but also a good understanding of why they are necessary and some motivation for doing them. The three are not the same, and each one by itself is not enough. These lessons try to extend the understanding, reinforce the practices and enhance the motivation.

The school's responsibility goes beyond the classroom lessons. Good hygiene should be part of the school's culture and policy. For example, lessons on washing hands are not likely to have an impact on learners' behaviour if the school has no clear expectations about handwashing – or indeed if it has no soap or running water. Teachers are urged to review the school's practices and how they affect learners, and to raise urgent questions with the head teacher, the PTA or the education authority.

Lesson 1	asks learners to look at standard cleaning routines and the general reasons for them; learners describe their own cleaning tasks.
Lesson 2	introduces the concept of bacteria, which is reinforced throughout the chapter.
Lesson 3	applies the knowledge of bacteria to understanding how diseases are spread.
Lesson 4	looks at why hands should be washed, when and how.
Lesson 5	shows the various ways food is contaminated and how to prevent it.
Lesson 6	investigates how sources of water are contaminated and discusses if local water sources are clean and safe.
Lesson 7	deals with how to sterilise drinking water and practises hygienic routines for fetching, carrying and storing it.
Lesson 8	looks at why surroundings must be kept clean and how; asks learners to review their usual cleaning tasks and decide how to extend them.

Event track

You may wish to organize a final event to recycle and publicize the messages of this chapter. This display or performance can be in class, or put on for parents, other classes, or an Open Day. It can be done at any time after the lesson it relates to. Projects for this chapter:

- *Bad bacteria* (Lessons 2 and 3) is a display on how to kill germs.
- *How diseases spread* (Lesson 3) Learners demonstrate how bad bacteria carry diseases.
- *Washing hands* (Lesson 4) is a demonstration of how and how not to wash hands.
- *Chalwe's Day* (Lesson 4) practises giving advice on when to wash hands.
- *Clean food* (Lesson 5) Learners give advice on food hygiene.
- *Water map* (Lesson 6) is a poster of local water sources, drawn by learners.
- *Safe water* (Lesson 7) is a demonstration of how to sterilize water.

Note on methodology

Stars Most of the written homework is about what children do themselves to keep things clean. Learners should look at what their friends have done and award stars to pupils who do most to keep things clean, and in this way keep all of us healthy. This is not a competition, but a recognition by the class of useful members of society. It also favours learners who don't shine academically, but who are doing a valuable job outside school. Stars can be stuck onto exercise books or simply drawn on with a pen or pencil.

Prizes and certificates If possible, organize a prize for those who have most stars at the end of the chapter. A possible prize is a cleaning kit made into a doll: for the body, a big spoon or a bottle of chlorine, a duster and a dischcloth for the scarf and skirt, a coloured plastic scrubber for the hair, and so on. Alternatively, make a good-looking certificate.

Teachers should use their judgement about stars and prizes: in some contexts they will work, in some not.

It may be necessary to point out that the stars are not an official school mark.

LESSON 1: KEEPING THINGS CLEAN

Background information for teachers

Most of our personal cleaning activities centre on ourselves, our surroundings, our food and water. These different areas of activity are the frame of reference for the whole chapter. This lesson looks at learners' existing hygiene practices and their attitudes to them; it also starts to explore their understanding of why they do them.

Outcomes

Learners should be able to:

- say what people do to keep things clean
- explain generally why it is important to be clean
- describe their own personal cleaning tasks.

Time: 30 minutes

Teaching and learning aids

- paper or cardboard for the **Remember** message

Feedback from homework

Ask what families said about diets for sick people, and what foods learners thought of for Kanyanta's sister. Also ask *Why?* (e.g. pumpkin is very good for health; *nshima* gives a lot of energy).

Introduction

a) Look at the main picture for the whole chapter. Ask what is happening there and let learners answer freely, so that they can familiarize themselves with its contents.
b) Turn to the pictures for Lesson 1. What are the children in the picture doing? (washing clothes, washing hair, boiling water, washing dishes, sweeping).
c) Ask what all these actions have in common (they are all cleaning things). Establish exactly what is being cleaned and how.

Activity 34

a) Write up four headings across the board: OURSELVES, OUR FOOD, OUR WATER, OUR SURROUNDINGS and encourage learners to read them out. Say these are all things we try to keep clean.
b) Look at the questions in the book.
c) Divide the class into small groups and give one of the four questions to each group. They have to think of three or four answers to their question.
d) Groups report back. Write up some of their suggestions under the four headings. Make sure that some school cleaning tasks are mentioned.
e) Choose some of the actions learners have mentioned and ask them to explain why we do them.

N.B. Ask a lot of questions to find out how learners see things. This will give you an idea of their ideas of dirt, contamination, carriers, bacteria and disease.

Reading

a) Learners find the sentence in the Reading that refers to the work of their own group.
b) Learners find the part that explains why we need to be clean (the last two sentences).
c) Volunteers read out each part of the text in order.

Ask yourself

Demonstrate asking these questions and answering them – e.g. *Well, I quite like cleaning the house but I hate washing clothes because it takes so long… What about you?* These questions are not private, so learners can call out some answers. Follow this with writing in class or for homework; or summarize learners' answers on a poster entitled FEELINGS ABOUT CLEANING, and display it.

Remember

The teacher or a learner writes the **Remember** message on a piece of paper or cardboard, displays it and reads it out, asking for examples. On the back

of the message write the title of the lesson. Leave the message on display for the rest of the chapter.

Homework
A In preparation for the next two lessons, learners get parents' ideas on why it is important to be clean.
B *Written work* Learners list all the tasks they have to do to keep things clean at home and at school. Tell them to think of everything they personally do.

Remedial work (if necessary)
Ask learners to look at the picture in the lesson, think of five other things we do to keep things clean, and report to the teacher.

LESSON 2: BACTERIA

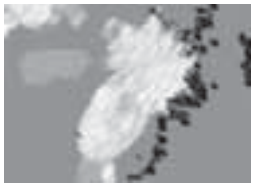
Background Information for teachers

Many bacteria are useful to us: for example bacteria make manure and compost decay so that crops can get nutrients in the soil; bacteria make sour milk and cheese; bacteria in the body help digestion. But some bacteria are harmful to us. They cause diseases such as diarrhoea, cholera, dysentery and typhoid; they infect wounds and create tooth decay. Bacterial diseases can be treated (among other things) with antibiotics. Antiseptics and disinfectants are used to treat wounds and kill bacteria in sanitation systems; soap and salt are both antiseptic. Bacteria can also be killed by boiling and by adding chlorine to water.

From the practical point of view, it is often enough for learners to know that dirt is dangerous and to keep things clean. However they must begin to learn that the most dangerous kinds of "dirt" are all around us, invisible and alive, and can grow and move and cause disease. Apart from food hygiene, the concept of bacteria is also basic to understanding food conservation and food processing.

Outcomes
Learners should be able to:

- demonstrate awareness of invisible microscopic life
- give basic information about bacteria, in particular their relation to disease, how they are carried and how they can be killed.



Time: 30 minutes

Teaching and learning aids

- paper or cardboard for the **Remember** message
- a teaspoonful of soil
- scraps of paper/cardboard to make "bacteria"

- pins, thread and paste for displaying "bacteria"
- small pieces of unwrapped, moist food, a few raw vegetables or fruit
- a lump of dirt of some kind
- a glass of water
- a slightly dirty knife
- well-known disinfectants, antiseptic ointments, salt, soap, washing powder, chlorine

Feedback from homework

In small groups, learners read to each other their written homework about their cleaning tasks. Say you want to know who in the class does the most cleaning. As they read, go around to check their writing. Learners say who does the most cleaning; the teacher checks and puts a star on these learners' homework.[15]

Find out briefly what families said about why it is important to be clean.

Introduction

Apart from people, what living things can they think of? (Get several suggestions.) Which is the biggest? Which is the smallest?

Activity 35

To find out what learners already know about bacteria, test the class as follows.

a) Put learners in groups of two or three and ask them to discuss and write down the smallest living thing they can think of. Go round to see what they have written. Get independent results for each group (i.e. don't allow one child to tell everyone the "right answer" – this will not show what most learners know!). If necessary, give them a clue by saying they are so small you cannot see them.

b) When they have the answer (bacteria/germs) look at the pictures of bacteria in the book. If we can't see them, how can we have pictures? (these are magnified by a microscope).

c) Give three more questions to be discussed in the same groups:
   Are bacteria good or bad for us?
   What do they do to us/for us?
   Where do they live?

d) In the feedback, bring out that there are good, bad and neutral bacteria; that some help us (e.g. in our digestion), but some cause infections and diseases. Some live on food or in water, on rubbish, on skin and hair, and some inside the body. Most of them like warmth and moisture.

Reading A

Read the Reading text aloud to the class while they follow in their books. Explain that *bacteria* is plural (i.e. bacteria <u>are</u> ....). Ask comprehension questions:

What are bacteria?
What does invisible mean?
Are all bacteria bad?

[15] See Star Awards in NOTE ON METHODOLOGY at the beginning of this chapter.

How are they dangerous?
What diseases do they give us?

Activity 36

a) Show a teaspoon of soil and tell the class that it contains about 1 billion bacteria. Let learners guess what that means (a billion = a thousand million = 1,000,000,000).
b) If you personally have used a microscope, describe what you saw. Mention that bacteria are all different shapes (refer to the pictures). They are obviously alive – you can see them move and divide.
c) Give out scraps of paper/cardboard and ask learners to draw imaginary pictures of some bacteria. Discuss these questions:
Where in this room do you think there are bacteria?
Learners make suggestions and put their "bacteria" in appropriate places – e.g. hang them on threads, stick them on skins, hair, hands, clothes, water cup, pin them onto food and dirt, drop them into water.
How can bacteria move and get into your body?
Learners point out various possibilities (e.g. hand to mouth, breathed in, drunk, eaten). Encourage them also to see indirect ways, involving the knife, water and food – e.g. flies bring bacteria from dirt to food, dirt on knife carries bacteria to fruit, hands carry dirt to drinking cup etc.
How can bacteria be killed?
Discuss possible answers, including boiling and freezing. Learners may name household disinfectants, antiseptic ointments or antibiotics. Show what you have brought and if possible point out the words disinfectant and antiseptic on product labels. This will help them with their homework.

Keep the learners' picture "bacteria" for use in following lessons.

Reading B (optional)
Like Reading A, Reading B revises the previous activity. Give small groups one text each, reminding them of the questions (e.g. *Where can we find bacteria? How do they move around? How can they be killed?*). Each group should find at least one answer. Finally, ask the questions again, one by one, and get a volunteer to read out each part of the text.

Ask yourself
Asking the questions Read out the questions and show that you are thinking about them. Tell learners there is no right answer: they must think and decide for themselves. Pause for learners to ask and answer the question mentally.

Answering the questions Make sure that learners understand they have to choose between the alternative answers A and B. Learners can write in class, write at home, or share their experiences orally in class - in pairs, in groups or with the class as a whole. The reasons they give will show if they have understood – e.g.

- *I am afraid of bacteria because you cannot see them, because they can give you diseases* (not *because they are very small)*
- *I am not afraid of bacteria because I know how to avoid them, because I know how to kill them* (not *because I am strong)*.

Remember
The teacher or a learner writes the **Remember** message on a piece of paper or cardboard, displays it and reads it aloud, asking the class for examples. On the opposite side write the title of the lesson. Leave the message on display for the rest of the chapter.

Homework
A Learners talk to their parents about bacteria.
B *Written work* Learners research the bactericidal products available. Ask them to bring labels or containers if possible.

N.B. Ask learners to make simple models of cockroaches, mice and flies using clay or grass or twigs and bring them to the next lesson.

Remedial work (if necessary)
Share out the following questions so each learner has only one or two questions to remember. Ask learners to look at the things in the picture on the right (Activity 35), discuss the questions, agree on their answers and report back.

- What are these things called?
- How big are they? Can we see them?
- Where can we find them?
- Are they good for us or bad for us?
- How do they move around?
- Why are they important?

Event track (optional) *Bad bacteria* (for Lessons 2 and 3)
Organize a display or presentation on ways of killing and preventing bad bacteria.

a) *Products* Have one section on products such as salt, soap, soap powder, disinfectants, chlorine, antiseptic ointments. These can be represented by the materials themselves or by labels or containers from the products. Each product has a label and an explanation of how to use the product. For a presentation, learners demonstrate their use.
b) *Methods* Have another section on methods of killing bacteria. Use pictures to show boiling water and re-heating food or (for a demonstration) show these activities. You can also show freezing (for example, icecream), which stops bacteria from multiplying and kills some of them.
c) *Prevention* can be represented by learners' own pictures of covering food, washing hands etc. For a presentation, learners demonstrate the activities.

LESSON 3: HOW DISEASES SPREAD

Background Information for teachers

Diseases can be spread by direct contact - for example, if a sick person coughs or sneezes, touches something which is then used by a healthy person, or handles food which is eaten by healthy people.

Diseases can also be spread indirectly. If faeces and dirt are left in the open, bacteria from them can be picked up by flies, mice and cockroaches and carried to human food. They can also be washed into the water supply and contaminate our drinking water. This is a very common cause of the spread of diarrhoeal diseases.

Of course, bacteria are not the only cause of disease, and diseases are spread in other ways. This lesson only establishes the basic idea of how infectious diseases are carried by bacteria.

Outcomes

Learners should be able to:

- say and show how some diseases are spread
- take measures to prevent the spread of diseases.

Time: 30 minutes

Teaching and learning aids

- paper or cardboard for the **Remember** message
- paper "bacteria" from the last lesson
- two simple models of human figures (made of straw/sticks/clay)
- objects to represent flies (e.g. bits of wire with straw wings)
- a plate, a cup, a knife and some food
- something to represent a heap of rubbish

Feedback from homework

Ask what parents said about bacteria. If there are some unscientific ideas, do not condemn them: just say that scientific opinion is different.

Written work Learners call out names of products and show labels/containers. Ask learners to look at each other's writing and see who has written the most things that kill bacteria. Award stars or praise for the best lists (correct items, correctly written).

Introduction

Tell the learners about someone you know who was sick (N.B. not with malaria or AIDS). Ask them to think of other people they know who had diarrhoea, cholera etc. How do they think these people got these diseases? Encourage plenty of ideas so that you can see what learners really think. Check from the conversation that learners understand the word *diseases*.

Activity 37
Learners look at the pictures. Emphasize that the pictures show how diseases spread from person to person. Learners should say what is happening in each picture – both what they can see and what they can't see – that is, invisible bacteria (this will recall the previous lesson). Bring out the idea that bad bacteria carry disease.

Reading
a) Ask learners to find the difficult words in the reading (e.g. *bacteria, cough, sneeze, disease, spread*). Help learners to read them correctly.
b) Ask them to find the part about water. Help them to read it. Do the same with the part about coughing and sneezing, then the part about hands, then flies.
c) Get individuals to read each part again.
d) Ask the class if they can remember the four ways (without the book).

Activity 38
The following activity is quite elaborate but is the easiest way to demonstrate how bacteria are carried, and will help learners to interpret the diagram in their book. If necessary, give it an extra lesson.

Say we will now show how bad bacteria give us diseases.
a) Put a model of a person in one part of the room and say this is Muke. He is sick, full of bad bacteria; scatter paper "bacteria" all round him. When he coughs and sneezes the bad bacteria come flying out (demonstrate). He also touches things (e.g. spoon, plate) and the bad bacteria stay on them.
b) In another place put something to represent dirt and rubbish. Say this is a place where some people go to defecate and urinate, so it is very dirty. Scatter more "bad bacteria" in this place. There are also a lot of flies (put objects to represent flies).
c) Put the second model child on the rubbish and say this is Chalo. He often plays here. He gets his hands into everything.
d) Say that the river is near the rubbish and show where; show that it's easy for the bad bacteria to get into the water; put some there.
e) Put plates/cups/utensils/food near the learners.
f) Ask learners how the bad bacteria can get to us and inside our bodies. Learners work this out in groups and then demonstrate. If they have understood well, they should be able to show that:
   - flies can carry bacteria from dirt to food, which we eat
   - Muke coughs and sneezes bacteria over us, which we breathe in
   - Muke coughs and sneezes bacteria over our food, which we eat
   - Muke and Chalo touch our food, or things we use for food
   - we touch things which Muke and Chalo have touched, then put our hands in our mouths
   - we shake hands with Muke or Chalo and then eat our food without washing our hands
   - we wash our hands in the water from the river
   - we drink water from the river.
g) Learners look at the diagram in the Pupil's Book. Together they have to find several different ways for the bad bacteria to get to the people, and

show and explain them to each other. Go round listening and checking understanding.[16]

Keep the "bacteria" for future lessons.

Ask yourself

This is a general question, not a personal one. Let the whole class think of what we need to do (or not do) to prevent diseases. Some possibilities are:

- Cover food from flies.
- Don't put your fingers in your mouth.
- Wash hands before eating.
- Don't let sick people near others' food.
- Sterilize water.
- Don't touch dirty things.
- Give sick people their own plates.
- Don't cough in people's faces.
- Wash hands before preparing food.
- Be sure your drinking water is clean.
- Don't defecate or urinate in the open, especially not near water sources.

Learners may have other ideas. The important thing is that they see the connection between their own behaviour and the causes of disease. After the discussion, learners write their personal DO's and DON'Ts, in class or at home, following the example in the box.

Remember – a "take-home message"

The teacher or a learner writes the **Remember** message on paper or cardboard, displays it and reads it aloud, asking the class for examples. On the opposite side write the title of the lesson. Leave the message on display for the rest of the chapter.

Draw learners' attention to the label on the message and say this is an important message which should be taken home. Learners should copy the message, pin it up at home and explain it to their families. They may do this in English or in the local language, using the list of **Remember** messages at the end of the Pupil's Book. To make it more decorative they can make a special border like the one at the end of their book.

Homework

A Learners prepare for the next lesson by finding out how to wash hands.

B *Written work* Go through the homework with the learners. To give an idea of an educated adult attitude, describe what you do yourself – e.g. *Well, I wash my hands often. And I stop my children playing in the dirt. When they are sick I don't let them touch our food. What about you?*

Remedial work (if necessary)

Learners in pairs choose either the picture or the diagram from the lesson, and use them to explain to each other how diseases spread.

[16] N.B. Make sure learners do not relate this diagram to people who are HIV positive. HIV is a condition, not a disease, and is not contagious or infectious.

Event track (optional) *How diseases spread*
Do Activity 38 as a presentation. The teacher or a student introduces the elements and explains the "bacteria". Then pairs of learners show how diseases are carried. One in each pair transports the "bacteria" while the other explains what is happening.

LESSON 4: WASHING HANDS

Background information for teachers

Hands are one of the main carriers of disease because they touch many things and are used in many tasks, including preparing and eating food. They should be washed frequently. Learners need to become very aware of what their hands do. At this age they probably already have the habit of handwashing, but may need to extend it. The important things to learn are when to wash hands, how to wash them, and why.

Hands should be washed before eating food, preparing food, feeding children, and drawing water. They should be washed after using the latrine/toilet, doing dirty tasks, changing the baby's nappies and eating food.

Washing hands without soap and clean running water is not effective. Soap kills the bacteria and lifts them off the skin, while the water washes them away. It is also important that dirt is not left between the fingers or under the nails.

It is essential for learners to be able to wash their hands at school properly and at the right times. If the school facilities are not adequate, or if the school has no policy of promoting handwashing, teachers should bring up these questions at a staff meeting or PTA meeting.

Outcomes
Learners should be able to:

- show they know when to wash their hands
- demonstrate the best way of washing hands
- explain why it is important to wash hands.

Time: 30 minutes

Teaching and learning aids

- paper or cardboard for the **Remember** message
- (optional) objects to make the Chalwe story real – e.g. a maize cob, a hoe, some dishes, some berries, a water container, a satchel, some books

Feedback from homework
Ask learners to look at each others' written homework and read out some of the things they do to prevent disease. Ask them to say who has made the best list (lots of actions and all good ones). Award stars or praise.

Introduction
To make learners more aware of what hands do, and the "danger moments", learners look at the pictures and say what the hands are doing, and what else their hands do during the day.

Activity 39
Tell the story of Chalwe's Day -

a) Tell the class they will see a day in the life of a girl called Chalwe. Ask for a volunteer to represent Chalwe.
b) Tell the story of Chalwe's day, while "Chalwe" mimes the actions. Tell the class to watch Chalwe's hands. A possible story is below, but teachers should change it as necessary to make it true to learners' lives.

CHALWE'S DAY

(* Stars show where Chalwe should wash her hands, either *after* touching dirt, or *before* doing something which requires clean hands.)

Chalwe gets up early.
She washes herself.
She gets dressed.
She plays with some puppies.*
She takes a cob of roast maize to eat at school.
On the way to school she visits her sick friend Mule.
She gives Mule some water to drink.*
*On the road, she picks some berries and eats them.
She arrives at school.
She studies hard for two hours.
At break she goes to the toilet ("Chalwe" goes out of classroom and returns).*
*She eats the maize.
After school she puts her books in her satchel.
She walks home.
On the road she finds a useful plastic bottle and takes it home.*
*She helps her mother to prepare the food.
She cleans the baby.*
*She eats with the family.
She helps to clear up the meal and clean the dishes.
*She helps to feed the baby.
She carries rubbish to the rubbish hole.*
*She goes with her little brother to fetch water for the house.
She does her homework.
She goes to bed.

c) Tell the story again. This time the class have to stop the story to tell Chalwe when she should wash her hands, and why.

If there are difficulties, let the class or "Chalwe" argue, or ask questions, e.g.

Class: *She should wash her hands before she eats the berries.*
Chalwe: *How can I wash my hands when I am walking to school?*
Class: *She should have washed them at her friend's house OR*
She can wash her hands AND the berries when she gets to school.
Teacher: *Could she wash her hands in the river?*
Class: *No, because the water may be dirty.*

Reading

Books closed. Say the first sentence to the class aloud (*Always wash your hands before...?*). Let the learners give answers (e.g. *eating food*). Then say *Always wash your hands after...?* and let learners answer in the same way. Then ask the learners to open books and read the passage in pairs.

Activity 40

Check on *how* hands are washed.

a) In groups, learners prepare to show how they wash their hands.
b) Groups do the mime, saying what they are doing. Look for four points:
   - running water (jug or tap, not using water others have used)
   - clean water (i.e. not in the river)
   - soap
   - attention to nails and between fingers.

   Each time a learner mimes one of these actions, give a point to the group.
c) Ask learners to explain why each of these things is important:
   - running water (because otherwise the water remains dirty)
   - clean water (because dirty water makes your hands dirty)
   - soap (because it kills the bacteria and removes them from the skin)
   - washing between fingers and under nails (because dirt stays in these places).
d) Find out if there any practical problems washing hands in this way, e.g.
   - there is no soap
   - there is no running water or no-one to pour it
   - everyone expects you to wash in the same bowl.

   This will prepare learners for the **Ask yourself** activity.

Sing this song with learners:

This is the way we wash our hands,
Wash our hands,
Wash our hands.
This is the way we wash our hands
With soap and running water.

Ask yourself

Asking the questions Demonstrate asking and answering these questions for yourself. Give an honest answer, to encourage learners to do the same. E.g. *I wash my hands quite a lot. But sometimes I forget. For example… How about*

you? Pause for learners to ask and answer the questions mentally. Make sure they understand they have to choose A or B in the box.

Answering the questions Learners can write in class, write at home, or share their experiences orally in class - in pairs, in groups or with the class as a whole. Notice which learners have real practical difficulties in washing their hands properly – e.g. lack of clean water, lack of soap, different social practices (e.g. all using the same bowl).

Remember – a "take-home message"

The teacher or a learner writes the **Remember** messages on a piece of paper or cardboard, displays them and reads them aloud, asking for examples. On the opposite side write the title of the lesson. Leave the messages on display for the rest of the chapter.

Draw learners' attention to the label on the messages and say that these are important messages which should be taken home. Learners should copy the messages, pin them up at home and explain them to their families. They may do this in English or in the local language, using the list of **Remember** messages at the end of the Pupil's Book. To make them more decorative they can make a special border like the one at the end of their book.

Homework

A The homework aims to get learners to pass on the message about washing hands.

B *Written work* Discuss with learners how they will manage to remember to keep the diary, which day they will do it, and so on.

C This homework is optional, to prepare for the following lesson.

Remedial work (if necessary)

Learners in pairs demonstrate to each other the best way to wash hands, then report to the teacher. Ask them to explain why handwashing is important.

Event track 1 (optional) *Washing hands*

Follow up the handwashing demonstrations. Ask several groups to demonstrate washing their hands "wrongly" (all in the same bowl, or without soap, or in the river). Finally some "good washers" arrive and do it right, with a song. The good washers then explain why their way is the best.

Event track 2 (optional) *Chalwe's Day*

Perform the story of Chalwe's Day. A presenter narrates, "Chalwe" mimes the actions, and individual learners say at each point why Chalwe should wash her hands.

LESSON 5: KEEPING FOOD CLEAN

Background Information for teachers

Food can be contaminated by insects and animals such as flies, cockroaches and mice. It should be covered or wrapped to prevent this. Fruit should be washed before eating. Food can also be contaminated by dirty hands and utensils. Hands should be washed before handling food or eating it. Pots, plates, pans, spoons, knives, cups need to be washed. Lastly, food can "go off" because of bacteria from the air or inside the food. Leftover food has to be reheated to boiling point to kill off the bacteria.

Learners need to

- be aware of the sources of danger (air, flies, people's hands, utensils)
- recognize how food can be contaminated (at home or in the market)
- take precautions (wash hands, food and utensils; cover or wrap food; re-heat food).

If food is provided by the school, or eaten on the school premises, there are plenty of opportunities for observing and discussing food hygiene; the responsible school staff or food providers should be involved and consulted.

If there are food vendors near the school, learners should observe and discuss what they sell and how hygienic it is. Vendors can also be drawn into discussion with the school.

Outcomes

Learners should be able to:

- show they know how to keep food clean
- practise good food hygiene.

Time: 30 minutes

Teaching and learning aids

- paper or cardboard for the **Remember** message
- homemade paper "bacteria" from Lessons 2 and 3

Feedback from homework

Find out how learners teach little children to wash hands, and what they tell them.

Written work Ask learners to look at each other's handwashing diaries. How often did they wash their hands in one day? Do they think this was enough? (6 to 10 times a day is reasonable). Ask learners to say which are the best diaries (plenty of handwashing, plenty of good reasons, clear and correct). Award stars or praise.

Introduction

Produce the homemade paper "bacteria" and revise the basic ideas by asking:

Where are bacteria? (everywhere, e.g. in air, people, dirt, soil)

How are they carried? (e.g. by flies, animals, hands, air, water)
How do they get into food? (flies, mice, hands, air, dirty water, soil and dirt - e.g. on vegetables or eggs)
What happens if bad bacteria get into food? (they make you sick)
So why is it important to keep things clean?

If necessary, go back to the picture diagram in Lesson 3 to help learners explain.

Activity 41

a) Learners say what families do to keep food clean (from Homework C). Make sure they mention:
- washing hands
- washing plates, cups, knives, pots etc.
- washing food
- covering food
- wrapping food or putting it in containers
- cooking food (which kills bacteria)
- reheating food.

Point out that food MUST be reheated to boiling point – just warming it is dangerous, because bacteria love warm food.

b) Learners look at the pictures. Ask what Mule and Muke do to keep things clean. Read the caption to each picture and let learners say what is happening in each (see the Key below), and how each action "keeps food clean". Establish that Picture 3 could be cooking OR reheating food.

c) Ask if they do these things at home.

d) (Optional) If there is time, discuss the two questions about bacteria. Small groups take one picture each and discuss where the bad bacteria are and what is happening to them. Groups report back to the class (e.g. *the bacteria are in the dirt and are being washed away; they are being killed by cooking; they are being killed by the soap; they are in the air but they can't get into the pot*).

Key to pictures

1a Wrapping a snack to take to school
1b Washing a fruit or vegetable before eating it
2 Washing hands before preparing food
3a Washing vegetables
3b Cooking food or re-heating it
4a Covering food
4b Washing hands before eating
5a Covering leftover food
5b Cleaning dishes
6 Throwing rubbish in a pit

Reading

a) Read out the first three lines of the text to the class and explain them.

b) Ask learners to find the difficult words *wrapping* and *re-heating*.

c) Learners read the rest of the text in pairs (or call out the lines one by one). As they do this, they find the picture that matches each activity.

Activity 42
Learners discuss the questions in the Pupil's Book. Here are some possible answers.

What kinds of food should we wash? Why?	*food that we don't cook*, e.g. fruit (guavas, lemons) *food with dirt on it* – e.g. anything from the garden
What kinds of food do we not need to wash?	*food that has its own "wrapping"* – e.g. groundnuts, bananas, pawpaw
What kinds of food should we cover? Why?	*cooked food* *raw cut food* (e.g. meat, cut fruit) These attract flies and bacteria from the air.
What kinds of food should we wrap or put in a container?	*anything that attracts flies or mice* (e.g. grains, snacks) *anything that's loose* (e.g. rice, salt)
What kinds of food should we reheat?	*leftover food*, because it begins to decay with bacteria from the air. Remember: heat it to boiling.

Ask yourself
Asking the questions Ask the whole class this question (it's no secret!). Many will say that their mother is in charge of the food. Together, read the first sentence in the box and decide how to complete it. Then ask the class how they can help this person. They have to think of their own ideas. Pause to allow them to think about their answers.

Answering Choose ONE way for learners to answer this question: writing in class, writing at home, pairwork, or class talk.

Remember – a "take-home message"
The teacher or a learner writes the **Remember** message on a piece of paper or cardboard, displays it and reads it aloud, asking for examples of how to keep food clean. On the back of the message write the title of the lesson. Leave the message on display for the rest of the chapter.

Draw learners' attention to the label on the message and say this is an important message which should be taken home. Learners should copy the message, pin it up at home and explain it to their families. They may do this in English or in the local language, using the list of **Remember** messages at the end of the Pupil's Book. To make it more decorative they can make a special border.

Homework
A "A person selling food" could be a street vendor, a stall, a shop, a bar, a restaurant or café. Learners who have difficulty getting to a shop can ask their parents. If there are food vendors around the school, encourage learners to observe what they sell.

B Learners record what they do regularly to keep food clean.

C Finding the water source is in preparation for the next lesson.

Remedial work (if necessary)
Singly, in pairs or groups, learners find the ten things in the pictures that are done to keep food clean. For each, they explain how this action keeps food clean.

Event track (optional) *Clean food*
One group of children (or the teacher) demonstrates or mimes some "food actions", while the others call out what should be done to keep the food clean, or invite the audience to do so. Some possible demonstrations and responses are:

- I'm going to eat a guava. (Wash it first!)
- I'm going to prepare some vegetables. (Wash your hands, wash the knife.)
- I'm going to serve some food. It's dinner time. (Make sure the plates are clean.)
- We've just finished eating. (Wash the pots and plates.)
- I'm going to eat some groundnuts. (Wash your hands.)
- I'm going to cut this lemon. (Wash it first – and is the knife clean?)
- I've just bought a little rice. (Put it in a container.)
- We've just finished eating – there is some relish left over. (Cover it.)
- Now we can finish up yesterday's food. (Reheat – to boiling.)
- I'm going to eat some roast maize. (Wash your hands.)
- I'm going to get some palm oil in this container. (Clean the container.)
- I'm going to cook some sweet potatoes. (Check the pan is clean, and the knife, wash the sweet potatoes.)

LESSON 6: SAFE WATER TO DRINK

Background Information for teachers

In general, water is "safe" if it is not in contact with people, animals and wastes of all kinds. Water from boreholes is generally safe, and so is water from protected wells. Animals often fall into open wells. Water from taps is as safe as its source, but it is dangerous if people handle the tap or drink directly from it. Open water sources like rivers, lakes and ponds or open wells can easily be contaminated, for example by people or animals urinating and passing stools nearby, by people bathing and washing clothes.

Learners need to know where their water comes from and how safe the source is. They should also know how to behave in order to keep water sources clean.

It is important that the school has a water policy which is supported by parents and learners. This may include rules about keeping water clean or not wasting it, or plans for improving water supply or facilities. Often there is a good policy but it is not known to the learners, or even to their parents. If this is the case it should be brought up at a staff meeting or PTA meeting.

Outcomes
Learners should be able to:
- say where their water comes from
- decide if the water source is safe and clean.

Time: 30 minutes

Teaching and learning aids
- paper or cardboard for the **Remember** message
- a glass of clear water

Feedback from homework
Ask what foods in shops (or sold by vendors) are wrapped and which are unwrapped. Discuss why. N.B. There are many different wrappings for many different purposes (e.g. to keep food dry, to stop it drying out, to contain it, to fix the amount, to make it look good, to protect it). It will be instructive if learners have discovered some foods which should be wrapped and are not.
Written work Ask learners to look at each others' homework and find who does the most to keep food clean. Check nominations and award stars and/or praise.

Introduction
a) Learners look at the main picture at the beginning of the chapter. Ask them to find sources of water and people carrying water.
b) Ask *Which water is safe to drink?* and get some responses.
c) Hold up a glass of clear water and ask *Is it clean? Is it safe? How do you know?* Encourage a lot of responses.
d) Establish that water can be "dirty" even if it looks clean, because bacteria are invisible.

Activity 43
a) Learners look at the pictures and decide what Chalo and Muke are saying.
b) Give the glass of clear water to two volunteers, who read out or act the dialogue in the bubbles.
c) The class discusses the questions *Should Mule drink Chalo's water? Why? Why not?* Help them to see that
   - the water is probably not safe
   - it may contain dangerous bacteria (which can't be seen)
   - if Mule drinks it she could get sick
   - the water should be boiled or have chlorine added.

   This will revise previous learning about bacteria and sickness.

Activity 44
a) Look at the pictures and read out the first three lines. Ask learners to find the river, the borehole and the well in the picture.
b) Ask where their water comes from and how it comes to their house (from Homework C). Make a list of the class's water sources on the board (or on a poster), or draw a rough map. Add the school's water source. Put the title OUR WATER SOURCES. Explain *source* (where something comes from).

c) Ask how water sources can get dirty. How can bacteria get into the water? They can get ideas from the main picture at the beginning of the chapter. Point out that Mule's well is not safe (it is uncovered).
d) Ask if they think their own water sources are safe, and why/why not. As they give reasons, write SAFE or NOT SAFE on the list or map of water sources.

Reading
a) Check that learners can read the words *people, animals, urinate* and *bathe*.
b) Read the beginning aloud and pause after *Water gets dirty if...* Ask learners what they think it will say next. When they make a good guess, encourage them to find the line in the text and read it out to the class.
c) Discuss what this information means for their own behaviour (e.g. don't urinate in the stream, don't drink river water).

Ask yourself
Use the activity to learn where individual families get their water from, and how safe it is.

Asking the questions Demonstrate asking these questions and answering them for yourself. Emphasize that learners must think about their own water sources. Pause for learners to discuss or think about the answer.

Answering the questions Choose ONE way for learners to answer the questions: writing in class, writing at home, pairwork, or class talk. Point out that learners must choose A or B in the box.

Remember - a "take-home message"
The teacher or a learner writes the **Remember** message on a piece of paper or cardboard, displays it and reads it aloud, asking for examples. On the opposite side write the title of the lesson. Leave the message on display for the rest of the chapter.

Draw learners' attention to the label on the message and say this is an important message which should be taken home. Learners should copy the message, pin it up at home and explain it to their families. They may do this in English or in the local language, using the list of **Remember** messages at the end of the Pupil's Book. Discuss how they can do this. To make it more decorative they can make a special border.

Homework
A Learners find out from their families how to sterilize water. Ask them to get details if possible (e.g. how long to boil the water, how much chlorine to use, how much it costs).

B This homework will give you an idea of how learners are involved in the handling of water. Go through the example, and together build up another sentence to describe another water task (e.g. I fill the water jug for washing our hands every day). Remind learners that this must be a true record.

Remedial work (if necessary)
Give learners four questions to discuss or think about: *What makes water dirty? Where does your water come from? Is it clean and safe? How do you know?*

When they are ready with the answers, they report to the teacher.

Event track (optional) *Water map*
Develop the map of local water sources into a poster, using pictures drawn by learners. Also show how water is conveyed to homes (e.g. pipes, taps, water tanks, hand-carried containers). Health hazards should also be shown in pictures. Train learners to stand by the map and explain which water sources are safe and clean and which are not, and why. Finish with the dialogue between Mule and Chalo.

LESSON 7: DRAWING AND STERILIZING WATER

Background Information for teachers

To make water safe it must be sterilized by boiling or by adding chlorine. Both methods have advantages and disadvantages. Boiling water is expensive in fuel and time. Chlorine costs money (though very little) and leaves a faint taste.

Simple hygiene precautions in drawing and storing water will also prevent contamination. In fact water is often contaminated by dirty hands while being transported to the home in open containers. In the home, it should not be stored in open containers or touched with dirty hands.

Collecting, sterilizing and storing drinking water are tasks in which learners are often involved. They need to establish good routines and know the dangers.

Outcome
Learners should be able to:
- state and demonstrate how to draw, sterilise and store water.

Time: 30 minutes

Teaching and learning aids
- paper or cardboard for the **Remember** message
- an open bucket or container
- a water can with a screw top
- a home container for drinking water, with a lid/top
- some water

Feedback from homework
In small groups learners look at each others' written homework. While they do this, go round to get an idea of what they have written. If it is a lot, it may be necessary to mark some homework outside class. Ask learners to describe some of their water tasks and to nominate those who have done the homework well (a lot of tasks, clearly explained). Check nominations and award stars and/or praise.

Introduction
Point out the word *sterilizing* in the title of the lesson and explain that this means making water safe for drinking. To check learners' basic understanding ask:

- What does it mean if water is not safe? (It contains bad bacteria.)
- How do the bacteria get in the water? (Recap of previous lesson.)
- What will happen if you drink water which is not safe? (You will get sick.)
- What do you have to do to the bad bacteria? (Kill them.)
- What is the word for killing bad bacteria? (*Sterilizing*.)
- How do you kill the bad bacteria? How do we sterilize water? What did families say?

Activity 45
Look at the pictures. What is happening in each picture? (boiling water and adding chlorine). Ask which method their families use. Write up the headings BOILING and CHLORINE and get details of the methods. Let learners argue for and against each method. This will prepare for the Ask Yourself activity.

Activity 46

a) Look at the pictures. Say that the children in the picture are doing some things right and some things wrong. Read all the questions aloud, but don't answer them yet.
b) Learners imagine that they have to draw water for drinking, like the children in the pictures. They have to show how to do it properly. Show the water containers. Make one place in the classroom "home" and put the home water container there, with the lid nearby. Establish another place as the "water source".
c) Ask for a volunteer pair to demonstrate, saying what they are doing and why. As they demonstrate, ask questions to clarify – e.g. *So before you go you will prepare the water container? How? Are you going to do anything else? OK. What next?* Encourage contributions and advice from the class. N.B. You are looking for the points below, but help learners to get there by their own collective efforts.
d) Go back to the pictures. What advice can learners give to Kalwe and Chiko? (e.g. Kalwe should not draw water from the river; Chiko should use a closed container for carrying water and for storing it.)

HOW TO DRAW DRINKING WATER

<u>What to do before you go</u>
1. Wash your hands well.
2. Use a closed container – so that dirty hands can't get in.
3. Make sure the container is clean.

<u>Where to get the water from</u>
4. Get the water from a safe source.

<u>How to collect and carry the water</u>
5. Don't touch it with your hands.

<u>What to do when you get home</u>
6. Sterilize the water by boiling or with chlorine.

How to store the water
7. Cover the water.

How to take the water from the storage container
8. Don't put your hands in the water.

Reading
Give each pair of learners a numbered sentence from the Reading and ask them to prepare to read it aloud. Bring a final pair of volunteers to the front of the class. In order, learners read out the instructions and the volunteers carry them out. Ask learners if they can remember to do all these things.

Ask yourself
Discuss these questions briefly with the whole class. There are no right answers, but the reasons learners give for their choices will show if they have understood. Then get learners to write their individual answers, following the example in the box. Alternatively, summarize learners' answers on a poster entitled SAFE DRINKING WATER, and display the poster.

Remember
The teacher or a learner writes the message on a piece of paper or cardboard, displays it and reads it aloud, asking for examples. The reader should ask the class to call out the eight things they have to do (this will also prepare for the homework). On the opposite side write the title of the lesson. Leave the message on display for the rest of the chapter.

Homework
A Learners tell their parents about the eight things to do when fetching water and ask if this is right. Make it clear that you really want parents' comments.
B *Written work* Emphasize that learners should write what they personally do.
C This homework prepares for the following lesson.

Remedial work (if necessary)
Ask learners to prepare and then to demonstrate the safe way to draw water for drinking. If there is no equipment they can mime it. They can get advice from others if they wish. When they are ready, they demonstrate to the teacher, explaining why they are doing it this way.

Event track (optional) *Safe water*
Learners demonstrate how to sterilize water by boiling or by adding chlorine. They explain why it is important and why these methods work.

LESSON 8: CLEAN SURROUNDINGS

Background Information for teachers

A dirty environment helps to spread diseases. School and home surroundings should be kept clean. This means burying rubbish, especially organic rubbish, using the toilet, slashing grass and sweeping floors and yards.

The reasons for doing these things are not always understood by learners.

- Rubbish produces bad bacteria and attracts flies, mice, rats, which carry bad bacteria.
- Keeping the toilet clean is important so that faeces and urine are not exposed to flies or fingers or drinking water sources.
- Slashing the grass means that mosquitoes cannot hide in it and give us malaria. Sweeping up cleans up many small pieces of food, insects and bacteria.

Again, the school has an important role to play outside the classroom. It should not only maintain clean and tidy premises, but promote a culture of cleanliness and tidiness and make clear the links with health and well-being. This may mean rules, discussions and meetings with parents.

Outcomes

Learners should be able to:

- explain the importance of clean surroundings
- clean the surroundings at home and at school
- decide how to extend their own cleaning tasks.

Time: 30 minutes

Teaching and learning aids

- paper or cardboard for the **Remember** message
- (optional) token prizes or certificates for the learners who are doing the most to keep things clean (see **Note on methodology** at the beginning of this chapter)

Feedback from homework

Ask about parents' reactions to the eight points about drawing water. Realistic comments and criticisms should be noted, approved and discussed.

Ask learners to look at what other learners have written about keeping water safe and clean. Read out any good ideas. Ask them to nominate learners who do a lot. Check the work nominated by learners and award stars and/or praise.

Introduction

a) Ask learners to point out the "surroundings" of the school from the window. What are they? (e.g. ground, grass, buildings, latrines, rubbish pit, plants, school garden, water tank, playing field etc.).

b) Ask *What do we do to keep these clean?* Collect suggestions (bury rubbish, use the toilet, slash the long grass, sweep the floor and the yard).
c) Ask them why these actions matter. If necessary, go back to the picture diagram in Lesson 3.
d) Ask learners to describe any very dirty places around where they live. Discuss if these places are dangerous for our health, and how. (N.B. Some will not be dangerous – e.g. a dead goat near a well is dangerous, but a burnt-out fire is not.)

Activity 47

a) Learners discuss the picture and say what they can see.
b) In pairs learners take the two parts and read what the two learners are saying to each other. If there are some good actors in the class, get them to act out the dialogue.
c) Learners answer the questions that follow (do this quite quickly).

Reading

Ask learners how many ways we have mentioned of keeping our surroundings clean (three? four? five? six?). Check them off together. Then ask them to look at the Reading to see if they are all there. When they find them, they read them out.

Ask yourself

Asking the questions Demonstrate asking yourself these questions and answering them – *e.g. Well, I make sure all my children in my family go to the toilet. I sweep the house but the children look after the rubbish. What about you?* Pause for learners to ask and answer the question mentally.

Answering the questions Learners can write in class, write at home, or share their experiences orally - in pairs, in groups or with the class as a whole. Notice if there is a strong gender element in learners' cleaning practices. Show warm approval of learners who do a lot to keep things clean.

Remember

The teacher or a learner writes the **Remember** message on a piece of paper or cardboard, displays it and reads it aloud, asking for examples. On the opposite side write the title of the lesson. Leave the message on display for the rest of the chapter.

Homework

Go through the homework writing task. Ask learners to look again at their homework for Lesson 1 (their list of cleaning tasks), to think seriously about what else they can do to keep things clean, and choose two more things they can do.

Remedial work (if necessary)

Learners explain what is wrong in the picture in Activity 47, why it is dangerous and how it could be put right. They discuss it and then report to the teacher.

REVISION OF CHAPTER FOUR

At the end of the chapter ask for volunteers to read out all the **Remember** messages to the class. After each message, ask learners to call out the examples (as they have practised in each lesson), and ask them why the message is so important.

Ask learners to look back at all their homework and count the stars they won. See who has the most stars overall. If there is a prize or certificate, award it, with a little ceremony and thanks for "keeping us all healthy".

CHAPTER 5

DIARRHOEA

THIS CHAPTER

Diarrhoea is a symptom, not a disease, but some diseases are characterised by diarrhoea and are called diarrhoeal diseases.

Diarrhoeal diseases are extremely dangerous. Cholera and dysentery can be fatal if not treated properly and quickly. If cholera is left untreated, death can occur rapidly. Dysentery needs to be treated with medicine otherwise it is very dangerous and can kill small children. Common diarrhoea, often caused by bad food, is also a major killer of young children and babies. In all these diseases the body loses water and food rapidly, resulting in dehydration and malnutrition. It is therefore vital to replace the water and food quickly.

There is a surprising amount of ignorance about the causes of diarrhoeal diseases, how to treat them and how to prevent them. Many people do not realise how dangerous they can be. Many believe that they cannot be prevented and do not know that good sanitation and personal hygiene are the best and simplest ways. Some believe there is no treatment. Education therefore has a big role to play in reducing these diseases.

Lesson 1 introduces learners to diarrhoeal diseases and helps them to understand their effect on the body.
Lesson 2 deals with the dangers of diarrhoeal diseases and their social cost.
Lesson 3 looks at the treatment of diarrhoea and the prevention of dehydration.
Lesson 4 deals with the causes of diarrhoea by revising previous lessons on bacteria.
Lesson 5 examines hygiene practices which can prevent diarrhoeal diseases.

Event track You may wish to organize a final event to recycle and publicize the messages of the chapter. This display or performance can be in class, or put on for parents, other classes, or an Open Day. It can be done at any time after the lesson it relates to. Projects for this chapter:

- *Diarrhoea stories* (Lesson 2) is a collection of learners' writing about their experiences.
- *Dangerous diarrhoea* (Lesson 2) Learners make a poster and learn to talk about it.
- *Dealing with diarrhoea* (Lesson 3) dramatises how to deal with diarrhoea in the family.
- *How they got diarrhoea* (Lesson 4) presents a collage about the causes of diarrhoea.
- *Posters* (Lesson 5) allows learners to talk about their own posters.

LESSON 1: WHAT IS DIARRHOEA?

Background Information for teachers

Diarrhoea is passing watery faeces or stools many times a day. It is a symptom of diseases such as common diarrhoea, dysentery and cholera, which are therefore known as diarrhoeal diseases. Blood in the faeces is a sign of dysentery. Watery diarrhoea and vomiting are signs of cholera. Cholera often occurs as an epidemic during the rainy season.

Most learners have some personal experience of common diarrhoea. They need to be aware that diarrhoea can mean several diseases and is always potentially dangerous. They should also know which diarrhoeal diseases are common in their area.

Outcomes

Learners should be able to:

- recognize and describe diarrhoea
- recognize that diarrhoea is a symptom of several diseases
- explain/show that diarrhoea means the loss of food and water.

Time: 30 minutes

Teaching and learning aids

- paper or cardboard for the **Remember** message
- an old plastic container or a gourd – draw a face on it to represent a child and make a hole in the bottom so that water can run out (see illustration)
- a jug of water
- a basin or bucket to catch the water

Feedback from homework

Learners read their "new tasks" from Homework A to each other. Go round and check to see if these are clear. Make sure they have chosen things they can really do. Tell them we will talk again about these tasks at the end of the chapter.

Introduction

a) Write up the word *diarrhoea*. Let learners practise saying and spelling it. Establish the meaning by asking *What do you do when you have diarrhoea?* (go to the toilet often) and *What is the problem?* (loose watery stools).
b) Introduce Muke, who is sick. Learners look at the picture and say what is wrong with him (he has diarrhoea).

Activity 48

a) Read out what the two girls say, then discuss the questions.
b) Tell learners that diarrhoea is a sign of several diseases. Get or give the names *common diarrhoea, cholera, dysentery*, and write them on the board. Ask if they have heard of them (give local names if possible). Practise saying the words (N.B. not *chorela*!).

Reading
Ask learners to find the names of the diseases in the Reading and read them out in the right order. Then ask a volunteer to read the whole text aloud. Ask what is the message (Diarrhoea is dangerous!).

Activity 49
This activity shows the loss of water and food with diarrhoea. It will help learners to understand both the danger (Lesson 2) and the treatment (Lesson 3).

a) Show the class a container with a face on it and a hole in the bottom. Tell them it is a child.
b) Say you are going to feed the child. Cover the hole in the bottom with your thumb or a plug and pour in the water. Say *Now the child has eaten and drunk.*
c) Say *But the child has diarrhoea.* Release your thumb and let the water run out. Ask *What happened to the food and water?*
d) Say we must put in more food and water. Let learners play with the container. Tell them they must try to put back the "food and water" as fast as it runs out.

Keep the container or gourd for future lessons.

Ask yourself
Take this opportunity to notice who has had diarrhoea frequently.
Asking the questions Demonstrate asking yourself these questions and answering them. Pause for learners to ask and answer the questions mentally.

Answering the questions Choose ONE way for learners to answer the questions: writing in class, writing at home, pairwork, or class talk. Show that they must choose only one of the answers, A or B.

Remember
The teacher or a learner writes the **Remember** message on a piece of paper or cardboard, displays it and reads it aloud. On the opposite side write the title of the lesson. Leave the message on display for the rest of the chapter.

Homework
A Learners show their parents the experiment with the container.
B Learners gather information about one case of diarrhoeal disease and write about it. N.B. *What happened?* is an open question.
C Learners find out if their families think diarrhoea is dangerous.
N.B. Homework activities B and C are both in preparation for Lesson 2. If this is too much, choose one, or let learners choose.

Remedial work (if necessary)
Show learners how to do the experiment in the lesson (if they have not already done it). They should explain how the container is like a person with diarrhoea.

LESSON 2: WHAT ARE THE EFFECTS?

Background Information for teachers

Diarrhoeal diseases are very dangerous. If they are not treated early enough, they can result in death. Cholera is a very dangerous disease, since people, and especially children, can die within 24 hours due to excessive loss of water. If dehydration is severe, fluids can only be replaced intravenously.

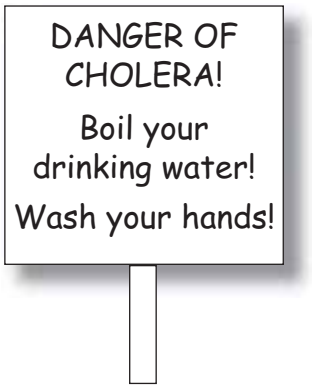
The social costs are also important. If a person dies, the family spends a lot of money on funeral expenses. The government also spends a lot of money when there is an outbreak of cholera. Schools and eating-places may close and the government may stop the sale of some foods in the affected area. All this can affect people's incomes.

In this lesson learners must realize that diarrhoea means danger. They should also begin to be aware of the "cost" of diarrhoeal diseases in terms of time, work and education as well as in money and suffering. They should see this mainly through sharing knowledge of particular cases. The teacher should contribute his/her own experience as much as possible.

Outcomes

Learners should be able to:

- show they know that diarrhoea can be dangerous
- describe some effects of diarrhoeal diseases from their own experience.



Time: 30 minutes

Teaching and learning aids

- paper or cardboard for the **Remember** message

Feedback from homework

Ask learners what they found out about cases of diarrhoeal diseases. Ask them to show each other what they have written in small groups. While they do this, go round to look at their writing. Ask a few learners to report interesting cases to the whole class.

Introduction

Ask what learners can remember of Muke from the previous lesson. Tell them he is still sick.

Activity 50

Ask *Are these diseases dangerous? Can they kill you? What did your family say?* Encourage discussion in order to find out what learners and their families think and know. Praise learners who give evidence from real cases. Go straight on to the Reading.

Reading

a) Read out the passage, leaving gaps for children to call out: *Diarrhoea can be very ....., especially for ..... People can ..... if they are not treated. Their bodies lose ..... When you have diarrhoea you feel ..... and you have to ..... You cannot ..... Other people in the family can .....*

b) Ask comprehension questions: *Is diarrhoea dangerous? Can it kill you? What else does it do?*

Activity 51

Learners look at the questions for the activity and the examples in the speech bubbles. Ask them what happened when a member of the family was sick. Can they tell a real story like the stories in the bubbles? Give stories from your own experience and collect stories from the class. Make a few notes on the board – for example *no work, no fish, no money, no school.*

Ask yourself

These questions are not private, so discuss them with the whole class. When they say *No!* to the first question, ask *Why not?* Expect good reasons. Learners can do the writing individually in class or at home, following the example in the box.

Remember

The teacher or a learner writes the **Remember** messages on a piece of paper or cardboard, displays them and reads them aloud, asking for examples. Point out that *Diarrhoea costs a lot* means it costs time, money, work, health, education. On the opposite side write the title of the lesson. Leave the messages on display for the rest of the chapter.

Homework

A Learners share their feelings about diarrhoea with their families.

B *Written work* In preparation for the next lesson, learners find out how diarrhoea is normally treated by talking to someone with experience. Go through the questions with them to make sure they understand.

C Learners also ask families how diarrhoea should be treated.

Remedial work (if necessary)

Learners should talk to one or two people who have had diarrhoea (as for Homework B) and be ready to tell what happened and how it affected these people's lives.

Event track 1 (optional) *Diarrhoea Stories*

Choose the most interesting stories from Activity 51. Ask learners to write about them. Correct the writing, then ask them to write a fair copy on a big piece of paper, preferably coloured. Cut out the writing in the shape of a speech bubble. Make a poster headed WHAT DIARRHOEA DOES TO US and stick all the speech bubbles on it.

Event track 2 (optional) *Dangerous diarrhoea*

Learners make a poster of the **Remember** messages. Train them to stand by it and give examples from real life.

LESSON 3: WHAT CAN WE DO FOR DIARRHOEA?

Background Information for teachers

What can be done when someone has diarrhoea? Acute cases (when the diarrhoea is very heavy, or with blood, or doesn't stop after two-three days) must be seen by a doctor or health centre. Learners should know this.

They should also know that in all cases of diarrhoea it is important to prevent dehydration, which can lead to death. This means that the food and water lost by the body must be replaced immediately. People with diarrhoea need to eat, and to drink plenty of liquids - at least one glass each time they go to the toilet.

Water, tea, milk and soup are all good, but a special drink can also be made up of clean water, sugar and salt. Many babies' lives have been saved by this "oral rehydration solution" (ORS). Mothers should know how to make this drink and children can also learn to do it.

Outcomes

Learners should be able to

- explain what should be done when a person has diarrhoea
- make a special drink to prevent dehydration in cases of diarrhoea.

Time: 30 minutes

Teaching and Learning Aids

- paper or cardboard for the **Remember** message
- the "gourd baby" or water container from Lesson 1
- a jug of water
- a glass of clean water
- some sugar and salt
- a teaspoon

Feedback from homework

Learners tell the class about the people they talked to and what they did to treat diarrhoea. Ask what families said about how to treat diarrhoea. Write up some frequent advice in speech bubbles, as in the Pupil's Book picture.

Introduction

Look at the picture. Take the role of Muke, or give it to a learner. Give the other roles to individuals or groups and ask them to give the advice in the speech bubbles to "Muke". Ask *What is Muke going to do? Which advice will he follow?*

Activity 52

a) Say we have a lot of ideas about what to do. Some of it is good and some of it is not so good. Which advice is good advice? Get some suggestions.
b) Bring out the gourd or container from Lesson 1. Ask if learners remember what happens when you have diarrhoea. Demonstrate pouring in the water as the water pours out. Get learners to tell you that we have to put back the lost water and food – and quickly.
c) Look again at the advice on the board and in the book. Which advice is good? Who suggests putting back the food and water? (All the advice to eat and drink is good; it's also best to go to the clinic or health centre if the diarrhoea is severe.)

Reading

a) Ask learners to check from the pictures in the Reading that Muke is doing the right thing for his diarrhoea (he is!).
b) Write up these words on the board and ask learners to read them:
Set 1 clinic, doctor, disease, medicine
Set 2 eat, drink, soup, *munkoyo*, tea
c) Show that the Reading is in two paragraphs. Ask which paragraph has the first set of words? Which paragraph has the second set? Which paragraph is about eating and drinking? Which paragraph is about medicine?
d) In pairs, pupils choose one paragraph each to read to each other.

Activity 53

Learners read the instructions in pairs. Ask what is needed to make the special drink. When they tell you, produce the necessary items. Ask them how to make the drink and follow their instructions. Then let one or two learners make the drink in the same way, with the class giving instructions.

Ask yourself

This revises the advice in Activity 52. Get suggestions from the whole class. To follow up, learners can write their individual answers in class or at home, following the example in the box, or the teacher can summarize learners' answers on a poster entitled ADVICE ABOUT DIARRHOEA, and display the poster.

Remember – a "take-home message"

The teacher or a learner writes the **Remember** message on a piece of paper or cardboard, displays it and reads it aloud, asking for examples. On the opposite side write the title of the lesson. Leave the message on display for the rest of the chapter.

Draw learners' attention to the label on the message and say this is an important message which should be taken home. Learners should copy the message, pin it up at home and explain it to their families. They may do this in English or in the local language, using the list of Remember messages at the end of the Pupil's Book. Discuss how they can do this. To make it more decorative they can make a special border.

Homework

A This homework reinforces the knowledge of the special drink.

B The written homework revises the reasons for the treatment. Read it through with the learners to make sure they understand what they have to do.

C Discuss briefly with learners what they think are the causes of diarrhoea. (They should have some ideas from the hygiene lessons in Chapter 4.) Tell them to ask their families what they think the causes are.

Remedial work (if necessary)

Ask learners to read the advice in the speech bubbles at the beginning of the lesson. They should find out which advice is right (from friends or families) and be ready to explain why it is good.

OR Ask learners to get help to make the special drink for diarrhoea (Activity 53) and to explain how they did it.

Event track (optional) *Dealing with diarrhoea*

Present a sketch of a case of diarrhoea. The characters are a child, a parent and some neighbours. The girl and her father could also be a boy and his mother.

Scene 1: First things first The girl tells her father that she is not feeling well: she has diarrhoea. The father tells her to keep going to the toilet, and to wash hands often. He gives her a drink of *munkoyo* and tells her to have another drink whenever she goes to the toilet. Then he questions her about what she did, ate and drank yesterday. They finally decide that she probably got the disease from eating some food at the neighbour's, where the baby is sick.

Scene 2: Precautions The daughter brings food to her father. He is about to eat, then he thinks again. He is worried that there will be bad bacteria in the food. The daughter assures him she has washed her hands, but in the end he decides not to eat it. He tells her to eat it instead. He also tells her not to feed the baby.

Scene 3: Advice Some neighbours visit and give advice, both good and bad. The father answers each neighbour by explaining what he is doing and why: she isn't very ill, so he's not taking her to the clinic; he thinks she got it from the baby next door, and the baby is now better, so it's probably not a serious disease; she is losing water and food, so he is making sure she eats and drinks; her friend is coming to tell her what they have learned at school. He thanks each neighbour and sends them away.

LESSON 4: HOW DO WE GET DIARRHOEA?

Background Information for teachers

Diarrhoeal diseases are usually caused by bacteria/germs, which get into the body through the mouth. They are eaten or drunk or carried to the mouth. This happens through dirty hands, flies, dirty food and dirty water.

It is important to find out what learners and their families already believe, as many people do not realize that diarrhoea has specific causes. Learners and parents need to realize that a single action can lead to infection and that it is often possible to guess the source – some particular thing that a child ate, drank or touched. When children get diarrhoea, parents should check to find out where they have been and what they have been eating and drinking.

This lesson revises Lessons 2 and 3 on bacteria and disease in Chapter Four.

Outcomes

Learners should be able to:

- explain the causes of diarrhoeal diseases
- speculate about the immediate cause of an infection.

Time: 30 minutes

Teaching and learning aids

- paper or cardboard for the **Remember** message
- samples of uncovered cooked food
- water in a cup

Feedback from homework

Ask if learners showed their families how to make the special drink.
Learners read their written dialogues in pairs, each taking a part. As they do this go round to check their writing. Let learners read out some good answers.

Introduction

Look through the pictures which tell the story of Muke from Lessons 1 to 3. Ask children to tell the story from the pictures and captions.

Activity 54

Read out the question *But how did Muke get diarrhoea?*

a) Explain that some of the pictures show how Muke could have got diarrhoea, but some of them are not possible causes. In small groups learners look at the pictures one by one and decide which are the possible causes (see below). Encourage them to add extra ideas (Box 6).
b) Learners report their conclusions and their reasons. This will give a good idea of how they think. If necessary, look back at the diagram in Chapter 4, Lesson 3, showing how diseases are spread.

N.B. The pictures in this activity are a sort of test. Three of them are POSSIBLE causes of diarrhoea but two of them are NOT possible causes.

Possible causes:
- drinking water (if the water is dirty)
- eating food (if the food is contaminated)
- biting a finger (if it has touched something dirty)

NOT possible causes
- walking in the rain
- digging the ground

Reading A
The Reading repeats the message of Activity 54. The teacher should read it aloud, pausing before the underlined words so that the class can call them out. E.g. Teacher: *Diarrhoeal diseases are caused by - ?*
Class: *BACTERIA!!*
If there is time, learners can read the text in the same way in groups of four. One learner in each group takes the teacher's role, the others shut their books and respond from memory.

Reading B
Ask small groups to read ONE story each together. Make sure there is one good reader in each group. Go round helping the groups. Groups report back to class explaining what is happening in the pictures.

Ask yourself
Demonstrate asking and answering these questions for yourself. Make it clear that you can't be sure of the cause, but you can have a good guess. N.B. Even if you can't remember how you got diarrhoea, pretend you can! Learners need to realize it is possible to find the particular source of the disease. A realistic example from the teacher will be very convincing.

Pause for learners to ask and answer the questions mentally. Learners' ideas about their experiences are best shared right away, so follow this up with pairwork or class talk, and if possible put up some of the most interesting stories on a poster entitled HOW WE GOT DIARRHOEA. Learners can write individual answers at home, following the example in the box.

Remember
The teacher or a learner writes the **Remember** message on a piece of paper or cardboard, displays it and reads it aloud, asking for examples. On the opposite side write the title of the lesson. Leave the message on display for the rest of the chapter.

Use this activity to get learners to revise what to do to keep food clean – wash hands, boil water, cover food etc. This will be covered again in Lesson 5.

Homework
A Learners read one of the four stories from Reading B to family members.
B Learners make up their own story. Explain that they should use a different name and find a slightly different cause.
C Learners ask families how to prevent diarrhoeal diseases, in preparation for Lesson 5.

Remedial work (if necessary)
Remind learners that diarrhoea is caused by bacteria. Ask them to look at the five pictures in Activity 54. Which ones could not have caused diarrhoea? Which ones could have caused diarrhoea? How? Learners discuss the answer, then explain to the teacher.

Event track (optional) *How they got diarrhoea*
Collect the best "diarrhoea stories" from Homework B, and get the class's best artists to illustrate them. Both should sign their work. Make a collage of the stories and the pictures, headed HOW THEY GOT DIARRHOEA, and display it.

LESSON 5: HOW CAN WE PREVENT DIARRHOEAL DISEASES?

Background Information for teachers

Preventing diarrhoeal diseases is mainly a matter of general hygiene. Bacteria get into our bodies through dirty food or water or dirty hands. We must therefore keep bacteria/germs away from food and drink, and keep dirty fingers out of the mouth. This can be done by washing hands after going to the latrine/toilet, covering all food, boiling or chlorinating water, washing hands before carrying water, covering water in the home, carrying water in clean containers, washing dishes in clean water, reheating cooked food to boiling point and eating food when it is still hot.

Learners need to learn that they must always keep their bodies and surroundings clean. This can help to prevent many diseases in the family, school, home and community.

This lesson is mainly a revision of Chapter 4. It also allows learners to look back on the "new tasks" they decided to undertake at the end of Chapter 4.

Outcomes
Learners should be able to:

- take measures to prevent diarrhoeal diseases
- explain how these measures prevent disease.

Time: 30 minutes

Teaching and learning aids

- paper or cardboard for the **Remember** message

Feedback from homework
Ask learners what their families thought of the "diarrhoea stories". Let groups of three read their own "diarrhoea stories" to each other. Go round listening and checking. Pick out two or three stories which can be read to the whole class.

Introduction

a) Repeat Reading A from the previous lesson, getting learners to call out the missing words as before.
b) Recall the children who had diarrhoea. Learners identify them and recall their stories from their pictures.
c) Say: *We don't want diarrhoea, do we? How can we prevent it?*

Activity 55

a) Learners say what is happening in the pictures. Which of the pictures are about cleaning hands? food? water? surroundings?
b) Get learners to tell you how these actions prevent disease.

Reading

Read the passage aloud. Divide the class into seven groups and give one subject from the Reading to each. Groups prepare to give further details on their subject, e.g.

- Washing hands – How? When? How often?
- Washing fruits and vegetables – What fruits and vegetables? With what?
- Keeping food clean – What food? How? Why?
- Cleaning the toilet – How? With what? How often?
- Boiling/chlorinating water – How long? How much chlorine?
- Keeping water clean – How? Where? When?
- Keeping the house and surroundings clean – What? How?

Groups report back, explaining and demonstrating. The class can call out anything a group has missed.

Activity 56

Suggest making a poster and look at the example. Learners should choose one of the topics from the Reading. In groups, learners plan the poster on a whole page from an exercise book. Go round to help and advise. They will not have time to finish in the lesson, so this is continued for homework.

N.B. Making a good poster is difficult: here, the process is more important than the product! The purpose of this task is just to get learners to state one of the hygiene messages strongly, and to see that it is a social message.

Ask yourself

Asking the questions Remind learners of the "new tasks" they looked at in Lesson 1 (the homework from Chapter 4). Are they doing more now to keep things clean? What? Pause for learners to ask and answer the questions mentally. Show warm approval of learners who have improved their cleaning practices, or intend to.

Answering the questions Learners can write in class, write at home, or share their experiences orally in class - in pairs, in groups or with the class as a whole. Point out the alternative answers – they have to choose one.

N.B. Encourage honesty, and don't expect enormous progress. If there is any change, you should be very happy!

Remember – a "take-home message"
The teacher or a learner writes the Remember message on a piece of paper or cardboard, displays it and reads it aloud, asking for examples. On the opposite side write the title of the lesson. Leave the message on display for the rest of the chapter.

Draw learners' attention to the label on the message and say this is an important message which should be taken home. Learners should copy the message, pin it up at home and explain it to their families. They may do this in English or in the local language, using the list of **Remember** messages at the end of the Pupil's Book. Discuss how they can do this.[17] To make it more decorative they can make a special border.

Homework
A Learners finish their posters and explain them to their families.
B Learners reinforce the lesson by asking families if diarrhoea can really be prevented.

Remedial work (if necessary)
Learners look at the pictures in Activity 55 and discuss how the actions in each picture prevent diarrhoea.

Event track (optional) *Posters*
Collect the best posters from the lesson. Train their authors to stand by them, read them aloud and explain them.

REVISION OF CHAPTER FIVE

At the end of the chapter ask for volunteers to read out all the **Remember** messages to the class. After each message, ask learners to call out the examples (as they have practised in each lesson), and ask them why the message is so important.

[17] Learners should be able to take the Pupil's Book home and copy the message for homework. If they cannot do this, teachers can ask them to copy the message into their exercise books and then re-copy it at home. Alternatively, teachers can provide paper for the class to copy it direct.

CHAPTER 6

MALARIA

THIS CHAPTER

Malaria is one of the main causes of infant mortality in Zambia. It is endemic in most areas, and has serious long-term effects on the economy, children's education, family life and general health.

Public awareness about malaria needs to be raised. Many people believe that malaria is a fact of life and do not know that it can be eradicated. Many do not realize that all personal action against malaria also has a social effect; every person who does not have malaria is protecting other people from it.

At this age, learners can become aware of public as well as private measures against malaria. In most areas there is a public health service worker who is responsible for anti-malaria measures. If possible, involve him or her in this series of lessons, especially lesson 5.

The lessons here raise, discuss and answer a number of questions about malaria, its symptoms, effects, causes, treatment and prevention.

Lesson 1 raises the main questions in learners' minds and explores what they already know and think.
Lesson 2 looks at the symptoms.
Lesson 3 discusses how serious malaria is and how to treat it.
Lesson 4 deals with the causes: the malaria parasite and the anopheles mosquito.
Lesson 5 looks at personal and public forms of prevention.

Event track You may wish to organize a final event to recycle and publicize the messages of the chapter. This display or performance can be in class, or put on for parents, other classes, or an Open Day. It can be done at any time after the lesson it relates to. Projects for this chapter:

- *Treating malaria* (Lesson 3) A sketch in which people give advice on treating malaria.
- *Madam Mosquito* (Lesson 4) dramatises how mosquitoes carry malaria.
- *Six questions* (Lesson 5) presents, discusses and answers six questions about malaria.
- *Stopping malaria* (Lesson 5) Learners demonstrate methods of preventing malaria.

LESSON 1: QUESTIONS ABOUT MALARIA

Background information for teachers

This lesson introduces the main questions about malaria, allows teachers to get some idea of what learners know and think and what their experience is, and aims to raise questions in learners' minds. The six questions form the framework for the whole chapter.

Outcome

Learners should be able to:

- say what they do not know about malaria.

Time: 30 minutes

Teaching and learning aids

- paper or cardboard for the **Remember** message
- a picture of a mosquito (a rough drawing will do)
- six large pieces of paper/cardboard numbered 1-6, each with one of the questions from the Reading written on it in big letters

Introduction

Ask who in the class has had malaria. Do they know others who have had it? Young children? Babies? Old people?

Activity 57

Ask learners to tell you everything they know about malaria. Sum up what they say. If they run out of ideas, ask them the questions in the Reading, but don't look at the Reading yet.

Reading

N.B. This activity aims to raise the questions rather than give the answers.

Say there are six big questions about malaria.

a) Learners look at the six questions in their books. Read them out (in any order) and ask the class to find the question and say the number.
b) Divide the class into groups and give each group a piece of paper with a number 1 to 6 and one of the six questions about malaria.
c) Each group discusses the question on their paper for a few minutes.
d) Groups report back. Let the class comment. Tell learners that everything they say is interesting and they will find out more in the next lessons.
e) Pin up the six questions on the wall. They should remain on display for the rest of the chapter.

Ask yourself

Tell learners they have to think what they personally want to know about malaria. They can choose one or two questions from the six in the Reading. Give examples - e.g. *I would like to know what to do if someone has malaria – I would*

like to know how to prevent malaria. They should write their chosen question(s) in their books, in class or at home. Check what they write, in this lesson or the next, to see which questions interest the class most.

Remember
The "message" is a reminder of the main questions. The teacher or a learner writes the **Remember** message on a piece of paper or cardboard, displays it and reads it aloud, asking for "examples", i.e. the six questions that have been discussed. On the opposite side write the title of the lesson. Put the message on display over the six questions, which should already be on display.

Homework
A Learners ask their families one of the questions discussed in class.
B Learners find out who in the family has had malaria, how often and how badly, and record their findings. Go through the instructions with them, illustrating from your own family, so that they know what to do.

Remedial work (if necessary)
Learners read the six questions about malaria in the Reading, or find someone to read them to them. They choose two questions that interest them and explain why.

LESSON 2: HOW DO YOU KNOW IT'S MALARIA?

Background Information for teachers

A person suffering from malaria has attacks of chills and fever every day, or every second or third day. These attacks last for a few hours and are followed by sweating. It is these chills and fever (like flu but without a cold) that distinguish malaria from other diseases. In many cases, malaria is also accompanied by a headache. In severe cases there may be vomiting and diarrhoea.

Learners probably have some experience of malaria but they may confuse it with other diseases which involve a fever.

Outcome
Learners should be able to:
- recognize signs of malaria and distinguish it from other diseases.

Time: 30 minutes

Teaching and learning aids
- paper or cardboard for the **Remember** message
- straw man/toy figure

Feedback from homework
a) Look at the six questions from the first lesson. Ask what parents said about them. This will extend your picture of the community's beliefs.

b) Learners report on the findings of their written work. This should show that a very large number of people have malaria. Lead learners to the conclusion that it must be a very serious disease.

Introduction

a) Ask *How do you know it was malaria? Are you sure?* Write up the heading *Symptoms* and remind learners that it means signs. Get learners to describe the symptoms and write them up. Include *fever, sweat, shiver.* Discuss any symptoms which DON'T sound like malaria.
b) Briefly practise meaning and pronunciation of *fever, sweat, shiver* (say them and act them yourself, or ask learners to do it).

Activity 58

a) Learners read the dialogue in pairs, taking the parts, with the teacher's help.
b) Bring two learners to the front of the class to act the dialogue.
c) Learners discuss whether Chilo has malaria (the high fever probably means that she does).

Reading

The reading is a follow-up to the discussion. Call out the "symptom words" in any order (*shiver, hot, sweat, pain, vomit, cold, diarrhoea, fever, headache*) while learners find them in the text. Learners read the passage to each other in pairs, or call on a volunteer to read it.

Activity 59

This activity prepares for the written homework.
If you have had malaria, tell the class about it (if not, tell about a friend). Describe the symptoms, how long it lasted, if you ate and drank, if you took medicine and any other interesting details of social and family effects.

Ask learners if they can remember what it was like when they or a family member had malaria. If it seems they have a lot to say, get them to describe it to each other in small groups and go round to listen. If not, call on the few who are ready to speak about it. Praise interesting details.

Ask yourself

There is nothing very personal about this question – it focuses on the key signs of malaria. Learners can discuss their answers in pairs and decide what questions to ask. Learners may write their questions in class or at home, following the example in the box. Review what they have written in the following lesson.

Remember

This message is also a reminder of the key sign of malaria. The teacher or a learner writes the message on a piece of paper or cardboard, displays it and reads it aloud, asking for symptoms.
Ask learners to look at the six questions again. Which question does the message answer? (Question 1) Hang up the message next to or under the question. Leave the message on display for the rest of the chapter, with the questions.

Homework
Both these pieces of homework prepare for the next lesson.
A Learners extend their knowledge of the symptoms and effects of malaria by asking people at home.
B Learners write the story of someone who had malaria. There has been a lot of preparation for this, but it is a piece of free writing. Check that learners know what they have to do.
C Learners prepare for the next lesson by finding out how to treat malaria.

Remedial work (if necessary)
Ask students to find out the symptoms of malaria. They can use the Reading, ask classmates or talk to families. They should then tell their friends what malaria is like.

LESSON 3: WHAT TO DO ABOUT MALARIA

Background Information for teachers

This lesson establishes the danger of malaria and the need for immediate action.
There are different types of malaria. The type of malaria prevalent in Zambia is *plasmodium falciparum*. It is the most dangerous type as it attacks the brain. People who do not get treated quickly may fall into a coma and suffer permanent brain damage. This is one reason why prevention is better than cure. However, learners need to know what should be done when a person has malaria: keep the person warm, give plenty of liquids, reduce the temperature with cool sponges and go to the health centre. It is important to get treated as soon as you suspect malaria. Learners should also realize that medicines sold in the market may be useless, or even harmful.

Outcomes
Learners should be able to:
- show they know that malaria is dangerous
- explain what to do in cases of malaria.

Time: 30 minutes

Teaching and learning aids:
- paper or cardboard for the **Remember** message

Feedback from homework
Learners talk about family members who have had malaria. If they have done the written homework, they read each other's stories about people who had malaria. Go round and look at what they have said. Pick out one or two stories to read to the whole class.

Introduction
Indicate the six questions from Lesson 1, which should be on display, and ask which question we have answered. Put a big tick on Question 1.

Activity 60

a) Learners answer the questions in the activity. The answers should follow naturally from learners' own stories in the homework feedback.
b) When learners agree that malaria is dangerous, ask *So what should we do if someone has malaria?*

Activity 61
Tell the learners you will read out the advice in the speech bubbles (in any order). They first have to find the piece you have read, and then say if the advice is good or bad. Some comments are given below for the teacher's reference. Reinforce the advice if possible from your own experience and from the experiences the learners have described. At the end learners should sum up the good advice, point by point.

Advice	Good/bad advice	Comments
Leave her alone She will get over it	Bad	She may not get over it. And the longer she has malaria, the more people will catch it.
Keep her cool	Good	If she has a high temperature, she needs to be kept cool. Sponge her with water.
Do not let her eat or drink too much	Bad	She should definitely drink, and eat a little if she can.
Give her lots of water to drink	Good	Liquids are good for fever. But make sure it's boiled water.
Take her to the health centre Get medicine from the clinic	Good	Malaria can be treated. But go to the clinic within 24 hours of suspecting malaria.
There isn't any good medicine for malaria.	Bad	It's simply not true.
Get her some medicine from the market	Bad	Medicine in the market could be out of date or adulterated. It could be useless, and it could even do a lot of harm.

Reading
Ask learners to find if the advice in the speech bubbles is also in the Reading. Then ask a volunteer to read the passage aloud.

Ask yourself
This activity reinforces the main message but in terms of action priorities. Learners discuss the question in small groups and decide how to answer. They can record their answers in writing (in class or at home), following the example in the box, or can report back to the class. If you choose class talk, you may like

to summarize learners' answers on a poster entitled MALARIA: WHAT TO DO, and display the poster.

Remember – a "take-home message"
The teacher or a learner writes the message on a piece of paper or cardboard, displays it and reads it aloud, asking for examples. On the opposite side write the title of the lesson.

Ask the class which of the six big questions we have answered today (2 and 3). Hang up the **Remember** messages next to or under these two questions and leave them on display.

Draw learners' attention to the label on the message and say this is an important message which should be taken home. Learners should copy the message, pin it up at home and explain it to their families. They may do this in English or in the local language, using the list of **Remember** messages at the end of the Pupil's Book. Discuss how they can do this. To make it more decorative they can make a special border like the one at the end of their book.

Homework
The homework brings the ideas back to reality. It is important for learners to link their learning to what they know outside the school.

A, B Learners find out how people actually treat malaria, and write about it.
C In preparation for the next lesson, learners ask their families about what causes malaria.

Remedial work (if necessary)
Learners ask families and classmates what to do if you have malaria. They should get the answer from the Reading and then report to the teacher.

Event track (optional) *Treating malaria*
Follow up by doing a sketch based on the illustration in the lesson. A child is sick in bed and a group of neighbours, friends and relations are all giving contradictory advice. Then comes the child's parent or guardian, who gives the correct information and takes the child off to the health centre.

LESSON 4: HOW DO PEOPLE GET MALARIA?

Background Information for teachers

Malaria is actually caused by the malaria parasite, which is carried by the female anopheles mosquito (other mosquitoes do not carry malaria). This was discovered by Ronald Ross more than a hundred years ago.

The anopheles mosquito needs a "blood meal" in order to lay its eggs. It bites a malaria victim and picks up the parasite in the blood. It then bites a healthy person and transfers the parasite. So three things are needed for malaria to spread: people who already have

malaria, the right kind of mosquito, and unprotected victims.

Learners should understand this process so that they recognize the danger of mosquitoes. Later, in Grade 6, they can learn more about the breeding habits of the mosquito so that they can understand and promote eradication programmes.

Outcomes

Learners should be able to:

- identify the cause of malaria
- explain the danger of mosquitoes.

Time: 30 minutes

Teaching and learning aids

- paper or cardboard for the **Remember** message
- two stick figures of people (made of clay, wood, paper or straw)
- something to represent a mosquito (bit of wire or grass)
- something to represent a mosquito net (very small)

Feedback from homework

Ask learners how people dealt with malaria in their families. Ask them to read out written answers if they have done them. This will help you to see how families regard the problem.

Introduction

a) Refer to the six questions from Lesson 1, which should be on display. Ask which ones we answered last time (2 and 3), and put a big tick on them. Say that today we will find out what causes malaria (Question 4).
b) Ask what families said about the causes. Some may say the cause is rain, but some will certainly mention mosquitoes, so build on this.

Activity 62

a) Explain that it is certain that mosquitoes give you malaria.
b) Use the questions to get learners to tell you what they know about mosquitoes (they need to learn to know the insect). Get local answers to the questions Where do you see it and hear it? Where does it live?
c) Ask learners to explain the picture. What is the connection between the mosquito, the water, the water barrel and the old tin can? (Mosquitoes need stagnant water to lay their eggs in.)

Activity 63

a) Make one stick figure lie down at one side of the room and say he is sick with malaria. Put the other figure upright at the other side and say he is well. In the middle is a hungry mosquito (produce the artificial mosquito and hold it out). Ask if anyone can show how mosquitoes carry malaria. Volunteers come and demonstrate, explaining what they think is happening.
b) Get learners to sum up the story stage by stage until they have got it right: The mosquito bites the sick boy and picks up the malaria in the blood. Then it flies to the healthy boy. It bites him and gives him the malaria.

c) Learners look at the diagram in the book and explain it to each other in pairs. Go round to check they have understood.

Reading

The Reading contains new information. Prepare by asking two questions:

Mosquitoes carry malaria. But what actually causes malaria? (a parasite)
Which kind of mosquito carries malaria? (anopheles)

Get a few suggestions, then give the answers. Ask them to find the words *parasite* and *anopheles* in the text. Then read the text aloud.

N.B. A parasite is a living thing which lives on or in other living things. Learners may know the example of intestinal worms. Anopheles is pronounced AN-OFF-EE-LEES.

Review

If there is time, check learners' understanding by going back to the demonstration figures and asking questions. Hold up the toy "mosquito" and remind them of the "story" (the mosquito needs a meal, it bites the sick boy etc.). Then ask:

Q. What is the story if there is no one sick with malaria?
(A: The mosquito would bite us just the same, but no one would get sick.)
Q. What is the story if this is a different kind of mosquito?
(A. The mosquito would bite us just the same, but no one would get sick.)
Q. What is the story if there are no mosquitoes?
(A. The sick person would stay sick, but no-one else would get sick.)
Q. What is the story if the sick boy and the healthy boy are in the same house, but there are no mosquitoes?
(A. The healthy boy does not get sick.)
Q. What is the story if the healthy child is under a mosquito net?
(A. The healthy child does not get sick.)
Q. What is the story if the sick boy is under a mosquito net?
(A. The healthy child would probably not get malaria.)
Q. What is the story if there is a hole in the mosquito net?
(A. The mosquito can bite the healthy child and make him sick.)
Q. Where is the malaria parasite? What does it do?
(A. It's in the blood of the two sick boys. It grows in their blood.)
Q. Can you see it?
(A. No, it's tiny. It's invisible.)
Q. What kind of mosquito carries malaria?
(A. Anopheles.)

Ask yourself

Learners should be afraid of mosquitoes! Demonstrate asking and answering these questions for yourself. Make it clear that the teacher (who is afraid of nothing) is still afraid of mosquitoes! Pause for learners to ask and answer the questions mentally.

Learners can give their answers in writing (in class or at home), pairwork, or class talk. Make sure they understand that they have to choose between the alternative answers in the box (A or B). Make an opportunity to check what learners have written.

Remember
Ask a learner to copy the **Remember** message, read it out and explain how malaria is carried. Ask learners to look at the six questions again. Which question does the message answer? (4). Hang up the message next to or under Question 4. Keep the message on display for the rest of the chapter.

Homework
A Learners act out the story of the mosquito at home OR explain the diagram in the learners' book to their families.
B In preparation for the next lesson, learners collect information on ways of preventing malaria, and write them down.

Remedial work (if necessary)
Ask learners to look at the pictures in the lesson and find out (from family and friends, or from the Reading) how mosquitoes transmit malaria. They should be able to demonstrate to the teacher using a toy mosquito (a bit of wire or grass).

Event track (optional) *Madam Mosquito*
Act out the story of the mosquito from Activity 63. The players are a sick child, a healthy child, a healthy child under a bed net, a malaria parasite and a mosquito (whining) carrying the parasite from one to the other. The players should say what they are, how they feel, what they are doing, as they do it. Enrich the story with dialogue (e.g. the mosquito sniffs around to find another child to bite; the child with the bed net is happy to see the frustrated mosquito).

LESSON 5: PREVENTING MALARIA

Background Information for teachers

The best ways of preventing malaria are to destroy mosquitoes or to avoid their bites. There are many ways of doing this – using insecticides, killing larval mosquitoes by oiling or poisoning ponds, draining swamps or ponds or planting suitable small fish in them, removing stagnant water near to houses, screening doors and windows, using mosquito coils, wearing suitable clothing and using mosquito repellents. In Zambia, two of the most widespread methods are slashing long grass near to houses so that mosquitoes cannot shelter in it, and using bed nets, preferably treated with insecticide.

At this age learners should know some ways to protect themselves against mosquito bites and also begin to be aware of community action against malaria. In particular, they should have an idea of how these actions prevent malaria and which ways are effective and economical.

Outcomes
Learners should be able to:
- explain how malaria can be prevented
- explain how these methods work
- take measures to prevent malaria.

Time: 30 minutes

Teaching and learning aids
- paper or cardboard for the **Remember** message

Introduction
Display the six questions from Lesson 1 and ask which one we answered in the last lesson. Put a big tick on question 4. Ask learners to read out the questions which are left (5 and 6).

Feedback from homework
a) Ask what families said about how mosquitoes carry malaria.
b) Brainstorm with learners how we can avoid malaria. Write a few ideas on the board. If learners have done the written homework, ask them to read out what their families said.

Activity 64
Learners say what is happening in each picture, and how these actions prevent malaria.

Reading
a) Learners check the Reading to see if they can find their own ideas in the list, and any new ones. If there are new ideas, learners explain how these prevent malaria.
b) (Optional) Learners close books. Say there are ten ways in the Reading. Can they remember them all?
c) Read again to check.

Activity 65
Explain that there are four ways of stopping mosquito bites:
- killing the mosquitoes (e.g. spraying, swatting)
- stopping the mosquitoes breeding (being born) (e.g. slashing grass, treating ponds)
- keeping mosquitoes away (e.g. smoke, window screens, body lotion)
- stopping mosquitoes biting us (e.g. bednets, long clothes)

Learners suggest examples of each way.

Activity 66
Discuss the questions. Do this quite quickly. Learners begin to evaluate different methods; this also prepares for the written homework.

Ask yourself
Discuss with the class all the things learners can do on their own to prevent malaria – e.g. close windows at night, put up screens, fix holes in mosquito nets, fill in holes in the rainy season, bury rubbish which collects water etc. Say what you yourself do, and what else you could do, then ask learners to ask themselves the same questions and answer them mentally. They can record their personal answers in writing (in class or at home), or report back to the class.

Remember – a "take-home message"
The teacher or a learner writes the **Remember** message on a piece of paper or cardboard, displays it and reads it aloud, asking for examples of how we can "beat the mosquito". On the opposite side write the title of the lesson.

Draw learners' attention to the label on the message and say this is an important message which should be taken home. Learners should copy the message, pin it up at home and explain it to their families. They may do this in English or in the local language, using the list of messages at the end of the Pupil's Book. Discuss how they can do this.

Ask learners which question we have answered in this lesson (5). Put a big tick on the question and hang up the message next to it.

Discuss the last question (6). Tell learners that it IS possible to reduce malaria and over a longer period to get rid of it. In many parts of the world it was part of life, but has been stamped out so completely that now nobody expects to have malaria. Countries have to work together to get rid of malaria.

Homework
A The homework reinforces the Ask Yourself activity.
B Learners research the costs of malaria prevention.

Remedial work (if necessary)
Learners should find out five ways to avoid mosquito bites (from the pictures, from the Reading, from their family and friends), and tell the teacher.

Event track 1 (optional) *Six questions*
Learners use the six questions to present their own lesson. Six pairs of learners hold up the questions and read them out one by one. They ask the audience for an answer to the first question. Then they hold up the correct answer (the **Remember** message) and go on to the next. As each question is answered they put it down. At the end they pick up all the questions, read them out and chorus a short answer for each one.

Event track 2 (optional) *Stopping malaria*
Learners hold a "Malaria Prevention Fair". Small groups of learners take one method of prevention each and set up a stall. They have to show or demonstrate their method (e.g. empty a rusty can full of water and bury it, wear long clothes, burn mosquito coils). They should tell visitors the cost of the method (in money or work), how the method works and the advantages and disadvantages.

REVISION OF CHAPTER SIX

At the end of the chapter ask for volunteers to read out all the **Remember** messages to the class. After each message, ask learners to call out the examples (as they have practised in each lesson), and ask them why the message is so important.

You can also use the six questions to revise Chapter Six. A learner holds up each one and asks the class to answer and explain their answer.

APPENDICES

APPENDIX 1

ASSESSING LEARNING

Focus group discussions on FOOD AND DIET

Pre-assessment
To find out what children know, think and do, have a focus group discussion before you start the lessons on food and diet (Chapters 1 to 3). Use the questions in the Focus Group Discussion Sheet (Appendix 1A) to guide the discussion. Note down what learners say so you can compare it with what they say after they have done the lessons.

Post-assessment
After doing Chapters 1 to 3, hold another focus group and ask exactly the same questions. Note down the answers again, then compare them with the answers in the first discussion. You are hoping to see an improvement. Criteria for evaluating the answers are given in the Checklist for Comparing Responses.

Focus group discussions on HYGIENE AND HEALTH

Pre-assessment
To find out what learners know, think and do, have a focus group discussion before you start the lessons on hygiene and health (Chapters 4 to 6). Use the questions in the Focus Group Discussion Sheet (Appendix 1B) to guide the discussion. Note down what learners say so you can compare it with what they say after they have done the lessons.

Post-assessment
After doing Chapters 4 to 6, hold another focus group discussion and ask exactly the same questions. Note down the answers again, then compare them with the answers in the first discussion. You are hoping to see an improvement. Criteria for evaluating the answers are given in the Checklist for Comparing Responses.

APPENDIX 1A: FOCUS GROUP DISCUSSION ON FOOD AND NUTRITION

Chapter	Question	Notes on learners' responses
Warm-up General	We're going to talk about what you eat and what food is good for you. 1. What do you think is good food? Why?	
1.1	2. Tell me about .... *(Mention several common foods, one by one)* *(For each food mentioned)* Where does it come from? How do we get it?	
1.2	3. What foods does your family buy? 4. *(For each food mentioned)* Why do they buy this food?	
1.2	5. Tell me about...*(5/6 bought foods, one by one)*. *(For each food)* Where do you buy it? 6. What does it cost? 7. How do you know it's good quality when you buy it?	
1.3	8. Can we eat all foods throughout the year? Can you give some examples? 9. Why / Why not?	
1.3	10. How can we have good foods throughout the year?	
1.4	11. What kinds of foods are there? For example, what kind of food is a mango? cassava? pumpkin leaves? eggs? groundnuts? (*Name several other common foods*)	
1.5	12. What kinds of food are there in a good meal, apart from *nshima*?	
2.1	13. How much energy do you need for playing? A lot? Quite a lot? A little? None? 14. And for studying? And for sleeping?	
2.2	15. What foods give a lot of energy? 16. What foods give the most energy?	

2.3	17. How often should you eat in the day? 18. Why?	
2.3	19. Do you usually eat before coming to school? 20. Do you usually bring food to school?	
2.4	21. What foods are especially good for helping us to grow?	
2.4	22. How often do you eat fish, meat or chicken? (every day? once a week?) 23. How often do you eat groundnuts or beans? (every day? once a week?)	
2.5	24. What foods are especially good for keeping us healthy?	
2.6	25. How many fruits and vegetables do you eat each day? (1? 2? more?) How many should you eat in a day?	
2.7	26. Do you know any foods especially good for the blood, eyes, skin, hair, nails?	
3.1	27. What is a good meal? Describe one and say why it is good.	
3.2	28. In your family, who needs a lot of food for growing? Why? 29. In your family, who needs a lot of food for energy and strength? Why?	
3.3	30. Do you think you have a good diet? (i.e. do you think you usually eat well?). Why do you think that? 31. What should you eat more often?	
3.4	32. What food should you give to someone who is always sick?	

FOOD AND DIET: CHECKLIST FOR COMPARING RESPONSES OF FIRST AND SECOND DISCUSSIONS

Chapter	Question	Learners should...
General	1. What do you think is good food? Why?	...give several examples, with good nutritional reasons (e.g. *it gives energy, it is good for growing*). There may be other good answers (e.g. *it tastes good, it fills you up),* but they are not sufficient.
1.1	2. Tell me about ....*(several common foods)*. Where does it come from? How do we get it?	...be able to say where many common foods come from (e.g. fields, lake, shop), how they are acquired (e.g. grown, caught, bought, gathered) and processed (e.g. dried, ground).
1.2	3. What foods does your family buy? 4. Why do they buy this food?	...name several foods bought by households; for each one, explain why it is necessary to buy the food.
1.2	5. Tell me about...*(5/6 bought foods)*. Where do you buy it? 6. What does it cost? 7. How do you know it's good quality when you buy it?	...say where each food is bought and roughly how much it costs per kilo/litre; say how to recognize good quality in each food, giving details (e.g. *fish have bright eyes, fresh vegetables are firm*).
1.3	8. Can we eat all foods throughout the year? 9. Why/Why not?	...give several examples of seasonal foods; say why they are not always available.
1.3	10. How can we have good foods throughout the year?	...give several ways (with specific examples) of having good food all the year (e.g. drying, conserving, growing special foods etc.).
1.4	11. What kinds of foods are there? For example, what kind of food is a mango? cassava? pumpkin leaves? eggs? groundnuts?	...correctly identify the food groups of common foods – cereals, roots, vegetables, fruits, animal foods, legumes, oils and fats, flavourings.
1.5	12. What kinds of food are there in a good meal, apart from *nshima*?	...say that a good meal should contain (as well as the staple) some animal food or legumes, some vegetables, some fat/oil, some flavourings/seasonings, and fruit to follow.
2.1	13. How much energy do you need for playing? 14. And for studying? And for sleeping?	...show they know that energy is needed for all activities, that different activities require different amounts of energy, and that studying requires quite a lot.

2.2	15. What foods give a lot of energy? 16. What foods give the most energy?	...give at least five or six examples of high-energy foods; mention foods with fats/oils/sugars as giving the highest amount.
2.3	17. How often should you eat in the day? 18. Why?	...show they know that they should eat several times in a day in order to keep up their energy.
2.3	19. Do you usually eat before coming to school? 20. Do you usually bring food to school?	...if possible, eat before coming to school and bring food to school.
2.4	21. What foods are especially good for helping us to grow?	....give several examples of high-protein foods, including animal foods and vegetable proteins such as peas, beans and groundnuts.
2.4	22. How often do you eat fish or meat or chicken? 23. How often do you eat groundnuts or beans?	...if possible, eat a high-protein food, animal or vegetable, at least once a day.
2.5	24. What foods are especially good for keeping us healthy?	...name all sorts of foods, including a lot of fruit and vegetables; show awareness that specific foods (e.g. liver, *kapenta*, guava, dark green leaves) are particularly "healthy".
2.6	25. How many fruits and vegetables do you eat each day? How many should you eat in a day?	....eat two or three different fruits and vegetables every day, or at least more than before, and know that this is important.
2.7	26. Do you know any foods especially good for the blood, eyes, skin, hair, nails?	...name some foods rich in iron or vitamin A (e.g. dark green leaves, liver, red and orange fruits and vegetables).
3.1	27. What is a good meal? Describe one and say why it is good.	...show through concrete examples an understanding that a meal should provide energy, growth and health, represented by a variety of foods.
3.2	28. In your family, who needs a lot of food for growing? Why? 29. In your family, who needs a lot of food for energy and strength? Why?	...show they recognize that different members of the family, at different times, have different food needs – e.g. children and pregnant women need food for growth, while physical labour requires a lot of high-energy food.

3.3	30. Do you think you have a good diet? (i.e. do you think you usually eat well?) Why do you think that? 31. What should you eat more often?	... show an awareness of what makes their diet good and how it could improve (e.g. with more fruit and vegetables and high-protein foods, more frequent meals, and variety through the year).
3.4	32. What food should you give to someone who is always sick?	...mention all components of a good diet and also some ways of making food palatable (e.g. mashing, flavouring, feeding in small quantities, giving nutritious drinks).

APPENDIX 1B: FOCUS GROUP DISCUSSION ON HEALTH AND HYGIENE

Chapter	Question	Notes on learners' responses
Warm-up General	We're going to talk about hygiene and health – being clean and being healthy. 1. Being clean and being well or healthy: are they connected?	
Hygiene		
4.1	2. What do people do to keep things clean? What do they do to keep themselves clean?	
4.1	3. What do you do yourself to keep things clean at home? And at school?	
4.2	4. Do you know anything about bacteria/germs? What do you know?	
4.3	5. Why is it important to keep things clean? 6. Can dirt make people sick? How? 7. Can dirt get into food and water? How?	
4.3	8. How can we prevent diseases?	
4.4	9. When should you wash your hands? 10. Why should you wash your hands? 11. How should you wash your hands? Why?	
4.5	12. What do we do to keep food clean? Give some examples. 13. *(Take the examples one by one.)* Why do we do these things?	

4.6	14. Where does your water at home come from? 15. Do you think this water is safe to drink? 16. Why do you think that?	
4.7	17. How do we make water safe to drink? 18. Can you explain exactly how to do it? 19. What is the best way, do you think? Why?	
4.7	20. Do you draw water for the house? (If *Yes*) How do you keep the water clean?	
4.8	21. What does it mean if your "surroundings" are dirty? Can you give some examples? 22. Why are these things important?	

Diarrhoea (explain the word if necessary)

5.1	23. Have you had diarrhoea? What happens when you have it? (i.e. what are the signs/symptoms?)	
5.1	24. If you have diarrhoea, what diseases could you have?	
5.2	25. Is diarrhoea dangerous? Why?/Why not?	
5.3	26. What should you do if you have diarrhoea? How should you treat it?	
5.4	27. How do people get diarrhoea?	
5.5	28. How can we prevent diarrhoea?	

Malaria

6.1/6.2	29. Have you had malaria? And your family? How do you know if you have malaria? What are the signs/symptoms?	
6.3	30. Is malaria dangerous? Why?/Why not?	
6.3	31. What should you do if you have malaria?	
6.4	32. How do people get malaria? What causes it?	
6.5	33. How can we prevent malaria?	
6.5	34. Can we get rid of malaria completely?	

HEALTH AND HYGIENE: CHECKLIST FOR COMPARING RESPONSES OF FIRST AND SECOND DISCUSSIONS

Chapter	Question	Children should...
General	1. Being clean and being well or healthy: are they connected?	...make some connection between health and hygiene (e.g. dirt is dangerous).
Hygiene		
4.1	2. What do people do to keep things clean? What do they do to keep themselves clean?	...mention many cleaning activities, e.g. washing themselves, washing hands, keeping food clean, boiling and covering water, cleaning the house, burying rubbish, going to the toilet.
4.1	3. What do you do yourself to keep things clean at home? And at school?	...show that they themselves are actively involved in keeping things clean both at home and at school.
4.2	4. Do you know anything about bacteria/germs? What do you know?	...give extensive information about bacteria, e.g. they are invisible living things; can cause disease; like warmth and water; can be killed by antiseptics, disinfectants and boiling; can be carried by water, hands and insects etc.
4.3	5. Why is it important to keep things clean? 6. Can dirt make people sick? How? 7. Can dirt get into food and water? How?	...show that they understand that bacteria (or "dirt") can cause diseases and that they can be carried by flies, hands, air and water.
4.3	8. How can we prevent diseases?	...suggest any kind of hygiene action (washing hands, keeping food clean, keeping surroundings clean etc.) as a way of preventing disease.
4.4	9. When should you wash your hands?	...give a good list of occasions – e.g. *before* eating, preparing food, carrying water, feeding babies; *after* going to the toilet, touching dirty things, cleaning babies, eating.
	10. Why should you wash your hands?	...explain that hands are the main carriers of dangerous bacteria/dirt.
	11. How should you wash your hands? Why?	...explain or demonstrate that hands must be washed with clean running water and soap, cleaning under nails and between fingers.

4.5	12. What do we do to keep food clean? Give some examples.	...mention many actions, giving real examples (e.g. washing plates, washing hands before preparing food, washing vegetables and fruit, covering food, wrapping it, boiling it, reheating it to boiling point).
	13. Why do we do these things?	...show understanding that food can be contaminated by air, hands, flies, dirty water.
4.6	14. Where does your water at home come from? 15. Do you think this water is safe to drink? 16. Why do you think that?	...be able to describe their water source; ...give an idea of whether it is safe and clean; ...give some evidence for this opinion.
4.7	17. How do we make water safe to drink? 18. Can you explain exactly how to do it? 19. What is the best way, do you think?	...say how to treat water with chlorine or by boiling; ...give some details of methods; ...give good reasons (e.g. cost in money or time).
4.7	20. Do you draw water? (If *Yes*) How do you keep the water clean?	...talk about precautions with drawing and storing water – clean containers, clean hands, not touching water, covering stored water; explain why these actions are important.
4.8	21. What does it mean if your "surroundings" are dirty? Can you give some examples? 22. Why are these things important?	...mention rubbish, faeces, possibly long grass; ...explain that rubbish attracts rats and flies and breeds bad bacteria.

Diarrhoea

5.1	23. Have you had diarrhoea? What happens when you have diarrhoea?	...describe the symptoms of diarrhoea.
5.1	24. If you have diarrhoea, what diseases could you have?	... name more than one diarrhoeal disease (e.g. common diarrhoea, cholera, dysentery).
5.2	25. Is diarrhoea dangerous? Why?/Why not?	... show understanding that diarrhoea is always potentially dangerous and can kill; say that one big danger is loss of fluid.

5.3	26. What should you do if you have diarrhoea? How should you treat it?	... say that anyone with diarrhoea needs to drink a lot of water, drinks, ORS; if diarrhoea is severe they should go to the clinic and get medicine.
5.4	27. How do people get diarrhoea?	...explain that diarrhoea is caused by bacteria which are carried to food/water/mouth by hands/flies/water/food.
5.5	28. How can we prevent diarrhoea?	...say that the best way to prevent diarrhoea is to keep things clean (bodies, food, water, surroundings), giving specific examples.

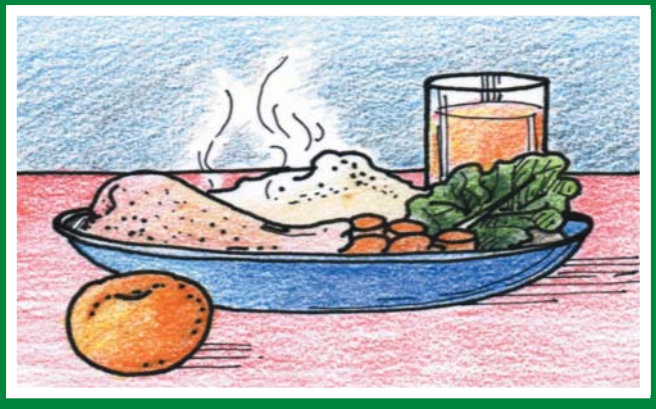
Malaria

6.1/6.2	29. Have you had malaria? And your family? How do you know if you have malaria? What are the signs/symptoms?	...describe the main symptoms, especially high fever (feeling hot), sweating and shivering, possibly diarrhoea and vomiting.
6.3	30. Is malaria dangerous? Why?/Why not?	...know that malaria can kill, especially little children, and that it has a high social cost in lost work, education, money.
6.3	31. What should you do if you have malaria?	...say that you should go to the clinic, drink a lot of liquid and keep cool.
6.4	32. How do people get malaria? What causes it?	...say that it is caused by a parasite which is carried by a mosquito from sick people to healthy people; know that this is the *only* way people can get malaria.
6.5	33. How can we prevent malaria?	...suggest several (valid) ways of preventing mosquito bites.
6.5	34. Can we get rid of malaria completely?	...know that it is possible and has been done in many places.

APPENDIX 2

REMEMBER MESSAGES "Take-home messages" are in bold type.

LESSON	
1.1	FOOD COMES FROM MANY PLACES
1.2	BUY FRESH FOOD. BUY SAFE FOOD. PAY THE RIGHT PRICE.
1.3	**WE NEED GOOD FOOD ALL THE YEAR**
1.4	WE MUST EAT ALL KINDS OF FOOD
1.5	**GOOD MEALS HAVE ALL KINDS OF FOOD**
2.1	SOME FOODS GIVE US LOTS OF ENERGY
2.2	EAT FOR ENERGY!
2.3	**EAT BEFORE YOU COME TO SCHOOL** **BRING FOOD TO SCHOOL TO EAT**
2.4	SOME FOODS HELP YOU TO GROW A LOT
2.5	EAT FOODS THAT KEEP YOU HEALTHY
2.6	**EAT MANY FRUITS AND VEGETABLES EVERY DAY** **EAT FRUIT AFTER MEALS**
2.7	EAT SPECIAL FOODS EVERY DAY
2.8	EVERY FOOD GIVES US DIFFERENT THINGS
3.1	**MEALS SHOULD BE WELL-BALANCED** **THEY SHOULD HAVE SOMETHING OF EVERYTHING**
3.2	SOME PEOPLE NEED EXTRA FOOD FOR ENERGY SOME PEOPLE NEED EXTRA FOOD FOR GROWTH AND HEALTH
3.3	**EAT WELL! HAVE A GOOD DIET!**
3.4	**SICK PEOPLE NEED A VERY GOOD DIET**
4.1	BEING CLEAN IS BEING HEALTHY
4.2	BACTERIA CAN KILL YOU
4.3	**DIRT SPREADS DISEASE**
4.4	**WASH YOUR HANDS PROPERLY** **WASH YOUR HANDS OFTEN**
4.5	**KEEP FOOD CLEAN!**
4.6	**KEEP WATER CLEAN!**
4.7	DRAW WATER CAREFULLY!
4.8	KEEP YOUR SURROUNDINGS CLEAN
5.1	DIARRHOEA MAKES YOUR BODY LOSE FOOD AND WATER
5.2	DIARRHOEA MEANS DANGER. DIARRHOEA COSTS A LOT.
5.3	**FOR DIARRHOEA, DRINK A LOT**
5.4	AVOID DIRTY FOOD AND WATER
5.5	**PREVENT DIARRHOEA! KEEP THINGS CLEAN!**
6.1	THERE ARE MANY THINGS TO KNOW ABOUT MALARIA
6.2	MALARIA MEANS FEVER
6.3	**MALARIA IS DANGEROUS** **GO TO THE CLINIC IMMEDIATELY**
6.4	MOSQUITOES CARRY MALARIA
6.5	**KILL MOSQUITOES. MOSQUITOES KILL**



NUTRITION EDUCATION
Teacher's Book Grade 4

2007