



TEACHERS' GUIDE

for

The Health Choices Book

Informed Health Choices

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for
The Health Choices Book

Title: Teachers' Guide for The Health Choices Book: Learning to think carefully about treatments. A health science book for primary school children

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Feedback about how to improve this book is welcome and should be sent to: contact@informedhealthchoices.org.

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This book is dedicated to David Sackett.

David Sackett, who passed away during the development of these resources, was a pioneer in evidence-based medicine. Dave “challenged the medical profession’s long-held reliance on subjective judgment, tradition and authority.”¹ He was a friend, colleague and inspiration to members of the *Informed Health Choices* group.

Dave was an artist at making the complex simple.² Writing about his approach to talks, essays and books, he cited *Cat’s Cradle* by Kurt Vonnegut:

Any scientist who couldn’t explain to an eight-year-old what he was doing was a charlatan.³

We have taken this quote seriously in developing these resources. We cannot think of a better way to honour Dave’s memory than dedicating the book to him – except maybe by testing the effects of the book in a fair comparison, which we are doing.

1. Rennie D. David Sackett obituary. The Guardian, 29 May 2015.
2. Sackett DL. David L Sackett: interview in 2014 and 2015. fhs.mcmaster.ca/ceb/docs/David_L_Sackett_Interview_in_2014_2015.pdf
3. Vonnegut K. *Cat’s Cradle*. New York: Delacorte Press, 1963.

Acknowledgements and contributions

The development and evaluation of the *Informed Health Choices* (IHC) primary school resources was supported in part by the Research Council of Norway (project number 220603/H10) and by each of our host institutions: the Norwegian Institute of Public Health, Oslo, Norway; Makerere University, Kampala, Uganda; Great Lakes University of Kisumu, Kenya; and the University of Rwanda, Kigali, Rwanda.

Many people have contributed to these learning resources and we are very grateful to all of them. Students and teachers at schools in Uganda, Kenya, Rwanda and Norway have given generously of their time and thoughts in testing earlier versions. A network of teachers in Uganda and an international advisory group of health researchers helped guide the development of the the resources from the first months of the project. Colleagues around the world have given us valuable suggestions and support. We thank each and every one of you and apologize that we cannot name all of you.

Matthew Oxman drafted most of the text and revised it with contributions from all of the co-authors. Sarah Rosenbaum illustrated the resources and Miriam Grønli coloured them. Sarah Rosenbaum and Angela Morelli designed the resources. All of the authors as well as Iain Chalmers and many others have contributed to testing and improving these resources.

About this guide

People everywhere are bombarded with claims about what might improve or harm their health. To make well-informed healthcare choices, they must be able to assess the reliability of those claims. We have developed the Informed Health Choices (IHC) primary school resources to help enable them to do this.

These resources include this guide for teachers, a book for children¹ and an exercise book. The book for children includes a comic, exercises and instructions for classroom activities. It is written for children who are 10 years old or older. These resources are the first in a series of learning resources to enable people to assess the reliability of claims and to make well-informed healthcare choices.

We have developed these resources from 2014 to 2016 through a human-centred design approach. This entails involving target users in the design process as co-creators in multiple cycles of prototyping, user testing and piloting. We tested the resources in Uganda, Kenya, Rwanda and Norway. Feedback shows that children and teachers perceive these resources to be useful.

We are evaluating the extent to which this version of the resources actually improves children's abilities to assess claims about treatments. In a fair comparison, we will randomly allocate half of over 100 schools in Uganda to receive the learning resources. We will measure children's ability to assess claims about treatments after they have completed the nine lessons in The Health Choices Book. Then, we will compare their scores to those of children in the schools that do not receive the resources.

More information about these resources and the project can be found on our website: www.informedhealthchoices.org.

Feedback about how to improve these resources is welcome and should be sent to: contact@informedhealthchoices.org.











¹ The Informed Health Choices Group. The Health Choices Book: Learning to think carefully when making choices about treatments. A health science book. Oslo: Norwegian Institute of Public Health; 2016.



Teachers pose at a school where a class of about 100 tested the materials, Uganda, March 2016.

Dear teacher,
congratulations and thank you
for playing a role in
a unique and exciting project!

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SEMESTER PLAN

Before the beginning of the semester,
we suggest that you spend a morning or afternoon to:

- Fill in the dates in this plan.
- Read the children's book.
- Read the introduction in this guide.

Lesson	Page in guide	Preparation	Teaching
1	page 22	20 min Date:	80 min Date:
2	page 54	20 min Date:	80 min Date:
3	page 86	20 min Date:	80 min Date:
4	page 112	20 min Date:	80 min Date:
5	page 142	20 min Date:	80 min Date:
6	page 172	20 min Date:	80 min Date:
7	page 206	20 min Date:	80 min Date:
8	page 244	20 min Date:	80 min Date:
9	page 274	20 min Date:	80 min Date:
10 (Exam)		15 min Date:	90 min Date:



Dr. Daniel Semakula, member of the project team, chats with children, Uganda, January 2016.

INTRODUCTION

INTRODUCTION

What is this project about and why is it important?	page 10
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1. What is this project about and why is it important?

This project is about helping people to make better choices for their health by thinking carefully about treatments.

Give someone a fish and they will have fish for a day. Teach that person to fish and they will have fish for a lifetime. This is a well-known expression. The point is that it is better to teach someone how to do something for themselves than to simply do it for them.

There are many projects that tell people what choices to make about treatments. These projects simply give people the answers. The Informed Health Choices (IHC) project is about how anyone can make the right choices about treatments for themselves by thinking carefully. Thinking carefully about a treatment requires asking questions. This project focuses on what questions to ask and why.

When people say “treatment,” often they mean taking a medicine. However, in this project, a “treatment” is anything you do so your health stays good or gets better. Therefore, taking a medicine, getting an operation, using medical equipment, exercising, eating or drinking something, and avoiding something are all treatments.

There are three types of questions that you should ask about treatments:

- Questions about claims about treatments
- Questions about comparisons of treatments
- Questions about healthcare choices

Questions about claims about treatments

Everyone makes claims about the effects treatments. You hear them everyday and everywhere. Many of these claims are wrong. For example, people used to say that smoking cigarettes has no bad effects on your health. They even said that it has good effects on your health! Even some doctors and health researchers said this!

Many times, people make bad choices about treatments because they have been misled by wrong claims about the effects of those treatments. For example, many people were misled by claims about the effects of cigarettes and chose to smoke them. Many of those people who were misled became sick and died because they smoked cigarettes. By asking questions about such claims, we can avoid being misled by unreliable claims so we can make better choices.

"I'm going to grow a hundred years old!"

... and possibly she may—for the amazing strides of medical science have added years to life expectancy.

It's a fact—a warm, wonderful fact—that this five-year-old child, or your own child, has a life expectancy almost a whole decade longer than was her mother's, and a good 15 to 20 years longer than that of her grandmother. Not only the expectation of a longer life, but of a life by far healthier. Thank your doctor and thousands like him—raising grandkids— that you and yours may enjoy a longer, better life.

According to a recent Nationwide survey:

More Doctors smoke Camels than any other cigarette!

NOT ONE but three independent research organizations conducted this survey. And they asked not just a few thousand, but 111,297, doctors from coast to coast to name the cigarette they themselves preferred to smoke.

Answers came in by the thousands... from general physicians, diagnosticians, surgeons, nose and throat specialists too. The most-named brand was Camel. If you are not now smoking Camels, try them. Let your "T-Zone" tell you first (pg. 87).

CAMELS Cestier Tobaccos

THE "T-ZONE" TEST WILL TELL YOU

The "T-Zone"—T for throat, Z for zone—is your own personal ground for any cigarette. Only your nose and throat can decide which cigarette smokes best for you... how it affects your throat.

Dr. Batty's

For Your Health

ASTHMA CIGARETTES

SINCE 1882

For the temporary relief of paroxysms of asthma

EFFECTIVELY TREATS:

**ASTHMA, HAY FEVER, FOUL BREATH
ALL DISEASES OF THE THROAT,
HEAD COLDS, CANKER SORES
BRONCHIAL IRRITATIONS**

NOT RECOMMENDED FOR CHILDREN UNDER 6.

These are real advertisements that were used to sell cigarettes. Today, advertisements for cigarettes are banned in many countries.

Give your throat a vacation...

Smoke a FRESH cigarette

For the throat, the best remedy is a vacation... a vacation from the irritation of smoke. Camels are the only cigarette that gives you a vacation from the irritation of smoke. Camels are the only cigarette that gives you a vacation from the irritation of smoke. Camels are the only cigarette that gives you a vacation from the irritation of smoke.

CAMELS

Questions about comparisons of treatments

Most treatments have both good and bad effects. Some treatments have effects that we can be very sure about. For example, we can be very sure that sleeping under mosquito nets, which have been sprayed with insecticide, will stop people from getting malaria. We cannot be so sure about the effects of other treatments. For example, we cannot be so sure about the effects of some new medicines, because health researchers have not carefully studied them.

What health researchers find when they study treatments can help us make better choices. Health researchers should carefully study a treatment by comparing it to another treatment or by comparing it to not using the treatment. They should give the treatment to one big group of people and give another treatment or no treatment to another big group of people. Then they should compare what happens to the people in each group.

The people in each group should be similar to the people in the other groups. Otherwise, what the health researchers find can be because of differences between the people, rather than differences between the treatments. Otherwise, the comparison is unfair. If a comparison is unfair, it can mislead us. By asking questions about health researchers' comparisons, we can avoid being misled by unfair comparisons and we can make better choices.

Questions about healthcare choices

When you are choosing whether to use a treatment, you should think carefully about what is most important to you. Most treatments have both good and bad effects, as well as other advantages and disadvantages. For example, some treatments cost very little or no money, which is an advantage. Other treatments cost a lot of money, which is a disadvantage. What is most important to you is not always most important to someone else. By asking questions about healthcare choices, you can make the right choices for you.

2. Why is this important for children?

Parents, doctors and other adults make most choices of treatments for children. For example, most times, children do not and should not choose whether to get an operation. However, children make some choices of treatments. For example, they choose some of what they eat and drink and how they exercise. And children, just like adults, can be misled by wrong claims about treatments.

Teaching children to make good choices is central to all education and especially health education. Children will grow up and eventually make all of their own healthcare choices. It is important for them to be prepared to make those choices. We, who are working on this project, and others have found that children as young as 10-years-old are able to start learning how to ask and answer questions about claims, comparisons and choices.

What the children can learn from these resources is essential to all science, not just health science. It is important for making many different types of choices, not just choices about treatments. Learning from the perspective of health takes advantage of children's natural interest in their own health. People of all ages are very interested in learning about how to take care of their health. We have found that children are also interested in learning about how we can be sure what is good and bad for our health.

Adults should ask doctors and other health professionals for advice about choices of treatments. However, when getting advice from a health professional, it is always good to ask questions about the treatment, whether you are a child or an adult. Doing this will help you and the health professional make a better choice for you.

3. Who made these materials and how were they developed?

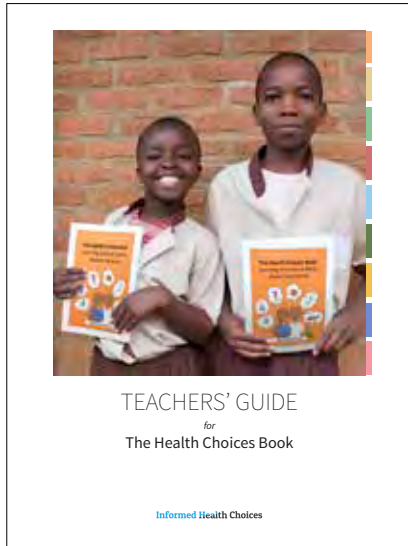
We, who made these materials, are health researchers and designers in Uganda, Kenya, Rwanda, Norway and England. At the start of the project, we met with a network of teachers in Uganda. The teachers advised us on how we could best teach children the lessons outlined in these materials. We had many ideas, which we tried out with children and teachers in Uganda and Norway. After deciding to make the book and guide, we made a first version of the materials for only two lessons. Then, we made two full versions.

We tested each version in two ways. First, we gave the materials to classes and observed the teachers and children use the materials. Second, we interviewed children and teachers about their experiences of using the materials. We did testing like this in Uganda, Kenya, Rwanda and Norway with tens of teachers and hundreds of children. We used what we found from testing to improve the materials. The version of the materials that you are using is the third full version.

4. What are the materials?

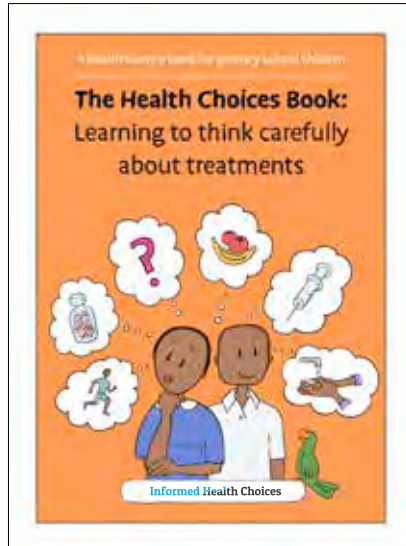
These are the Informed Health Choices school materials.

THE TEACHERS' GUIDE



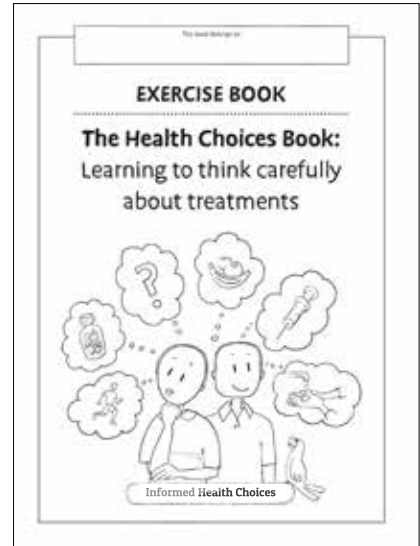
A guide to all of the lessons, for teachers

THE CHILDREN'S BOOK



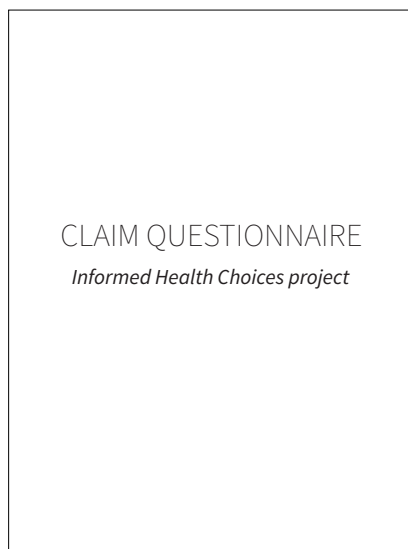
A textbook with a story and instructions for activities, for children

THE CHILDREN'S EXERCISE BOOK

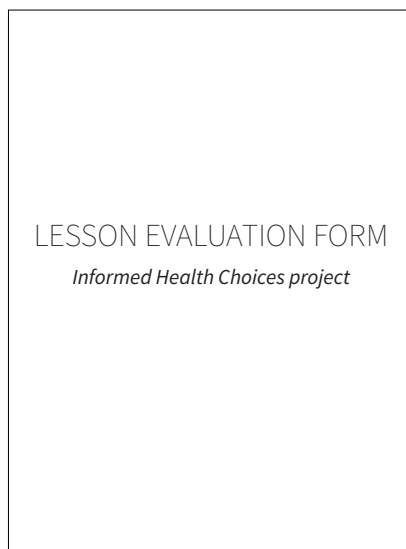


A book of exercises, for children

OTHER MATERIALS



An exam, for children



Lesson evaluation forms for each lesson, for teachers



Cards for the activity in Lesson 7, for teachers

The Teachers' Guide

This guide is for helping you teach nine lessons. In Lesson 10, the children will take an exam. In this guide, for each lesson, there are repeated sections that will help you prepare and teach that lesson:

- **Objectives**
- **Preparation**
- **Lesson**
 - Step 1: Review last lesson
 - Step 2: Read aloud
 - Step 3: Discuss
 - Step 4: Lead activity
 - Step 5: Manage exercises
 - Step 6: Fill in lesson evaluation form
- **Background about lesson for teachers**

All the pages in the children's book are in the guide. In other words, you can see everything that the children can see and more. The guide and book have different page numbers. Each page reference in the guide has the number for the guide, unless it says otherwise. The page number for the guide is always at the very bottom of the page in small text. Below some of the pages in the children's book, there are notes for you written in red. These are for when you are reading those specific pages with your class. We have only put such notes where it was important enough. On most pages, the space at the bottom is empty and you can use it to write your own notes.

In the back of this guide, there is a glossary. The glossary includes some definitions that are not in the story, for example the definition of "mislead." In the children's book, the definitions of words are simplified, so they are easier for the children to understand. In the guide, the glossary includes the simplified definitions for children as well as more detailed definitions for teachers. We have tried to use as few unfamiliar words as possible in the children's book. For example, we do not use "health-care". We have done this to make the lessons easier for the children to understand. "Healthcare" is, however, in both glossaries.

Note that some words have different meanings in health research than what people often mean when they use those words. For example, in health research, "study" means to look at something closely to find out more about it, for example a treatment. Often, outside of health research, when people use "study", they mean to prepare for something, for example an exam.

The children's book

The children's books are meant to be reused, so the children should not write in them.

The story: The main part of the children's book is a story. It shows the children how the lesson objectives fit in their lives. It makes the book more entertaining and memorable. The story is a comic. The drawings are meant to be attractive and make the story easier to read for children who struggle with English or reading.

The story starts in Lesson 2 and ends in Lesson 8. It is divided by the three types of questions about treatments:

- In Lessons 2, 3 and 4, the story covers questions about claims about treatments.
- In Lessons 5, 6 and 7, the story covers questions about comparisons of treatments.
- In Lesson 8, the story covers questions about choices of treatments.
- Lesson 1 is an introduction to the book. Lesson 9 is a review of what is most important to remember from the book.

Lesson 1 is the simplest lesson. It is meant to be simple, so that all the children understand what the lessons are generally about and why they are important. The lessons get more challenging. Lessons 5, 6 and 7 are the most challenging. They are about what health researchers do, which is unfamiliar to many children. However, we know from developing these materials that children are able to learn what they should learn from these lessons.

Some of the examples in the book are not real. One of these examples is in Lessons 6 and 7, when the characters in the story try to find out if drinking juice before running causes more stomach pain compared to drinking water. They find that drinking juice before running causes more stomach pain. This could be right, but health researchers have not actually made fair comparisons that show this. We have used this simple example to make the lesson easier for the children to understand.

The characters: The story is about two children named John and Julie. They are brother and sister. They meet two professors named Professor Connie Compare and Professor Francis Fair. The Professors are health researchers. They are named Compare and Fair to make it easy for children who read the book to remember what health researchers must do for us to be sure about the effects of treatments: compare treatments and be fair when they do so.

Kasuku, a parrot, is another reappearing character. Kasuku represents how people should not think about treatments. Kasuku simply repeats what other people say without asking questions. Kasuku is also meant to make the story more entertaining for the children. Kasuku is not meant to be realistic.

The storyline: The story starts at John and Julie's home. John burns his finger. He chooses to put cow dung on the burn because of something Kasuku and Julie have heard from Julie's friend Sarah. His finger gets infected, so Mama sends Julie and John to the clinic. At the clinic, they meet Professor Fair and Professor Compare who explain the problem with what Sarah said. The Professors agree to teach John and Julie some important lessons, which they do over the following weeks. They meet at different places, use different examples and get help from different people. At the end of the story, in Lesson 8, both John and Julie have ear infections. They use what they have learned to make the right choices for themselves.

Questions and examples: For some lessons, there are also discussion questions in the story, extra examples in the story and extra examples after the story.

The activities: The activities are meant to actively involve all the children. They are meant to clarify and reinforce what the children learn from the story in each lesson. The activities are simple enough for classes of up to 100 children.

The exercises: The exercises are also meant to clarify and reinforce what the children learn from the story in each lesson. They can also help you, the teacher, tell what type of help and how much help each child needs.

The reminder list: For Lesson 9, there is list of what is most important to remember from the book. The list is also included in the back of the exercise book.

The children's exercise book

There is an exercise book that has exercises for each lesson, for each child to complete on their own.

Other materials

For Lesson 10, there is an exam. The exam is for us to find out if children learn from using the materials, but can also be used by you for marking. For each Lesson, there is a lesson evaluation form for you to fill in. Finally, for Lesson 7, there are two sets of cards for the activity.

5. How are the materials best used?

Recommendations

Based on our testing of the resources, we have several recommendations for how you can save time, successfully help the children reach the objectives and make the lessons more enjoyable for you and the children.

Set off time for preparing the lessons.

The recommended amounts of time are in the semester plan on page 7.

Allow children to read in the books on their own time.

This is in addition to reading together as a class during the lessons.

Avoid spending too much time on any example.

There are many examples in the book that children will want to know more about. However, it is not the examples themselves that are most important. What is most important is what the examples are about. For example, in Lesson 2, the example in the story is the claim that cow dung heals burns. That the claim is wrong is not what is most important. Why all such claims are unreliable is what is most important.

Encourage the children to think for themselves.

A lot of time in school, children are told to memorise right answers. For example, in history, they are told to memorise what year that something happened. In these lessons, children are supposed to learn what questions to ask to find out for themselves if a claim is reliable. Also, a lot of time in school, children are taught about what other people do. In these lessons, it is important for children to think about what they themselves have done and will do.

Be aware of when you or a child makes a claim about the effects of a treatment.

Everyone makes unreliable claims about the effects of treatments. Children and adults do this, including teachers, parents, doctors, health researchers and us, the people who made these materials. It is important for you, when teaching these lessons, to recognise when you or a child makes a claim about the effects of a treatment.

It is also important for you to make sure the children are aware of this. This is for the children to understand why what they are learning is important in their day-to-day lives and for them to begin using what they learn. It is best to be very sure about the effects of a treatment if we are choosing whether to use it. Unfortunately, many times, we cannot be so sure what will happen. Still, it is important to know how sure you can be. In other words, it is better to know that you cannot be very sure about the effects, then to think you can be very sure when you really cannot.

For example, if you are choosing whether to get an operation, it is important to know how sure you can be about the effects of that operation. If you are misled to think that you can be very sure that the operation is definitely safe, it could lead to making a bad choice. Likewise, if you are misled to think that the operation is definitely dangerous, it could lead to making a bad choice.

If you know that you cannot be very sure about the effects of the operation, one way or the other, you can at least ask yourself how much the potential good effects would mean to you and how much the potential bad effects would mean to you. You will not be misled and you will be better prepared for whatever happens.

Options and adjustments

Every teacher and every class is different. There are different ways of doing the reading, activities and exercises required by these lessons. You should choose the ways that are best suited for you and your class. However, make sure to focus on the examples in the materials and to complete all the steps of the lessons.

Reading

When reading the book as a class, feel free to stop when you think it is necessary to explain something, for example a word. Sometimes, it is helpful to translate something in the book.

There are several ways of reading in class, including:

- For each character, one child reads what the character says (role playing)
- One child at a time reads to the rest of the class
- The whole class reads together
- You read to the class

You can also vary between these ways.

In this guide, there are few instructions for using the blackboard, but that does not mean you should not use it. For example, you can write keywords on the board.

Exercises and activities

If you prefer, you can have the children do the exercises before you do the activity as a class, finish the exercises as homework or do the exercises together in groups.

There are different ways of marking the exercises:

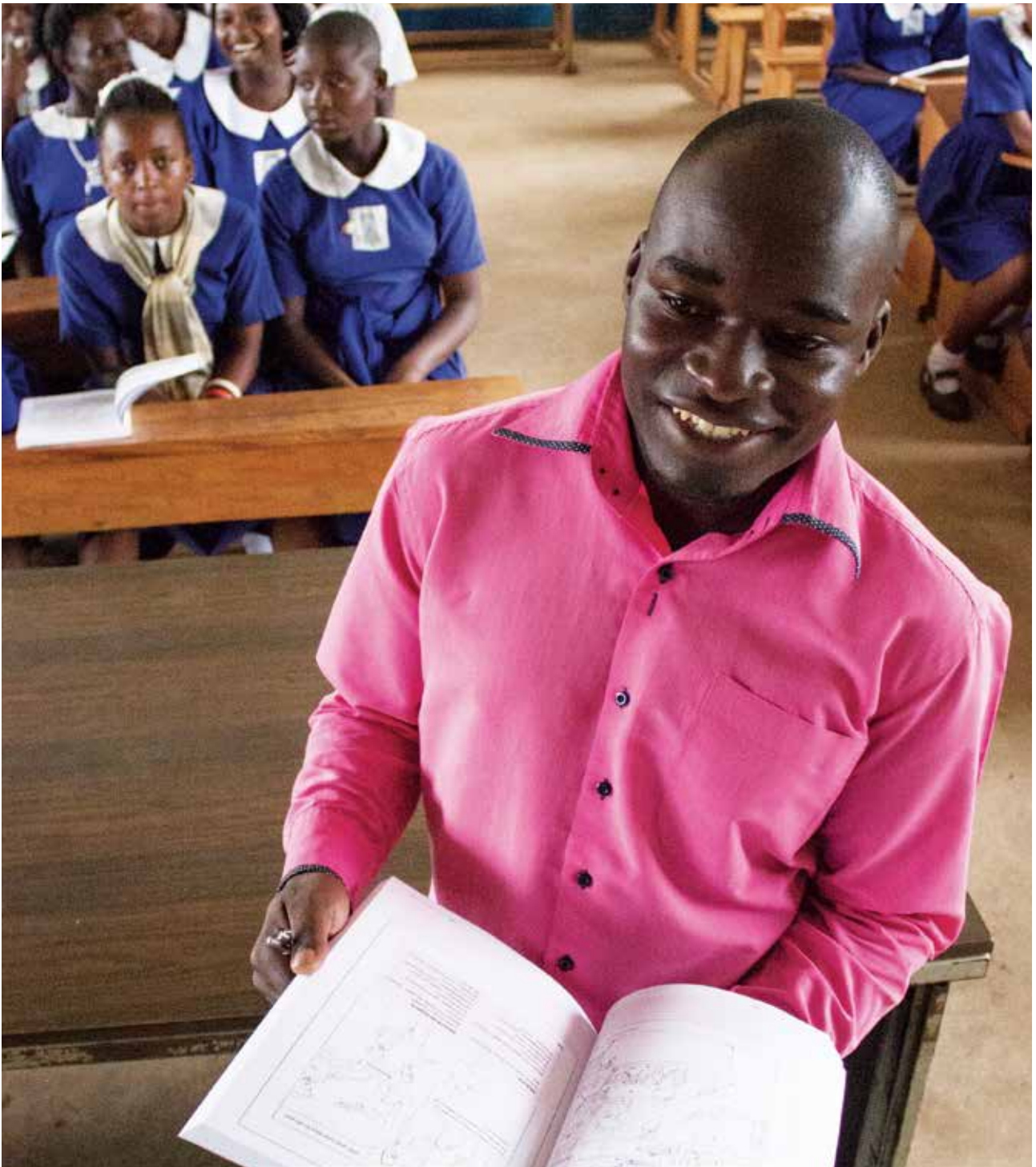
- You mark the answers during the lesson
- You mark the answers after the lesson
- You write the right answers on the board and the children mark their own answers
- You write the right answers on the board and the children swap books and mark each other's answers
- You give the right answers to a group of children who mark all of the books

Just make sure that you explain the right answers to the children.



Children at an international school test the third version of the materials, Norway, October 2015.

We are thankful for you taking part in this project. We welcome any questions or suggestions. And we hope you and the children enjoy and learn from using the materials!



A teacher uses the second full version of this guide, Uganda, January 2016.

LESSON 1

Health, treatments and effects of treatments

LESSON 1

Health, treatments and effects of treatments

Everything you need to prepare and teach this lesson

Objectives	page 25
Preparation	page 25
Lesson	page 26
Step 1: Review last lesson	page 27
Step 2: Read aloud	page 28
Step 3: Discuss	page 46
Step 4: Lead activity	page 48
Step 5: Manage exercises	page 50
Step 6: Fill in lesson evaluation form	page 52
Background about lesson for teachers	page 53

Objectives

What the children should learn in this lesson:

- What “health” is
- What a “treatment” is
- What an “effect of a treatment” is
- What a “health researcher” is
- What this book is about

Preparation (20 minutes)

This is what you should do before the lesson.

Read ahead

- Read pages for this lesson in the children's book
- Read pages for this lesson in the guide

Gather materials

Make sure you have:

- This guide
- The lesson evaluation form
- Some rubbers

Make sure each child has:

- A copy of the children's book
- Their exercise book
- A pencil or pen

Lesson (80 minutes)

This is a suggested plan for teaching the lesson.

TEACHERS	CHILDREN	TIME
STEP 1 Review last lesson		-
STEP 2 Read aloud		35 min
<ul style="list-style-type: none"> Lead reading aloud starting on page 28 in this guide. <p><i>For different ways of reading see page 19 in this guide.</i></p>	<ul style="list-style-type: none"> Open to page 4 in their books and read aloud as instructed. 	
BREAK		5 min
STEP 3 Discuss		10 min
<ul style="list-style-type: none"> Discuss the story by asking the questions on page 46 in this guide. If necessary, give extra examples on page 47 in this guide. 	<ul style="list-style-type: none"> Answer the questions as instructed. 	
STEP 4 Lead activity		15 min
<ul style="list-style-type: none"> Lead the activity starting on page 48 in this guide. 	<ul style="list-style-type: none"> Open to page 22 in their books and do activity as instructed. 	
STEP 5 Manage exercises		10 min
<ul style="list-style-type: none"> Manage the exercises starting on page 50 in this guide. Help children as they complete exercises and lead marking of exercises. <p><i>For different ways of marking see page 20 in this guide.</i></p>	<ul style="list-style-type: none"> Open to page 24 in their exercise books and complete exercises. 	
STEP 6 Fill in evaluation form		5 min
<ul style="list-style-type: none"> Fill in the lesson evaluation form. 		

There is no lesson to review.

Introduction

1

Health, treatments and effects of treatments

What you will learn in this lesson:

1. What “health” is
2. What a “treatment” is
3. What an “effect of a treatment” is
4. What a “health researcher” is
5. What this book is about

Keywords for this lesson:

- Your **HEALTH** is how well your body and mind are.
- A **TREATMENT** is something you do for your health.
- An **EFFECT** of a treatment is something that a treatment makes happen.
- A **HEALTH RESEARCHER** is someone who carefully studies health to find out more about health.

Health

Your health is important.

Your **health** is how well your body and mind are. If you are free from sicknesses and injuries, your health is good. If you are sick or injured, your health is bad.

When your health is good, there is much more that you can do. For example, you can play, learn and sleep well.



Discussion:

What are some sicknesses and injuries that you have had?

Treatments

A **treatment** is something you do for your health.

When people say “treatment,” most times they are talking about taking a medicine. However, in this book, a “treatment” is anything you do so your health stays good or gets better. There are many different types of treatments.



Using a medicine is a type of treatment.

For example, taking a tablet, getting an injection and using a cream are treatments.



Getting an operation is a type of treatment.

For example, removing a rotten tooth is a treatment.



Using equipment is a type of treatment.

For example, using crutches, a bandage and a toothbrush are treatments.

Exercising is a type of treatment. For example, running, playing basketball and dancing are treatments.



Eating or drinking something is a type of treatment. For example, eating a fruit or vegetable and drinking water are treatments.



Sometimes, we avoid something for our health. Therefore, *avoiding something* is a type of treatment. In other words, not doing something is a type of treatment. For example, not drinking milk is a treatment. Some people do not drink milk because they are allergic to milk. When someone is allergic to something, that something makes them sick. It does not make everyone sick.



Discussion:

What are some treatments that you have used?

Effects of treatments

An **effect** of a treatment is something that a treatment makes happen.



A good effect is what happens when a treatment makes your health stay good or get better. Examples of good effects are reducing pain, curing a sickness and getting more energy.



A bad effect is what happens when a treatment makes your health worse. Examples of bad effects are causing pain or sickness and reducing energy.

Most treatments have both good and bad effects on your health. For example, playing football has good and bad effects.

Playing football is a treatment that gives you more strength and energy. These are good effects.

However, sometimes, you get injuries from playing football as well. This is a bad effect.



Another example of treatments that have good and bad effects is drinking water. Without drinking enough clean water, you will not survive. However, drinking dirty water or drinking too much water will make you sick.

Discussion:

What are some other treatments that have both good and bad effects?
What are the good and bad effects of those treatments?

It is difficult to understand exactly how our bodies and minds work. They have many parts that do many different things.

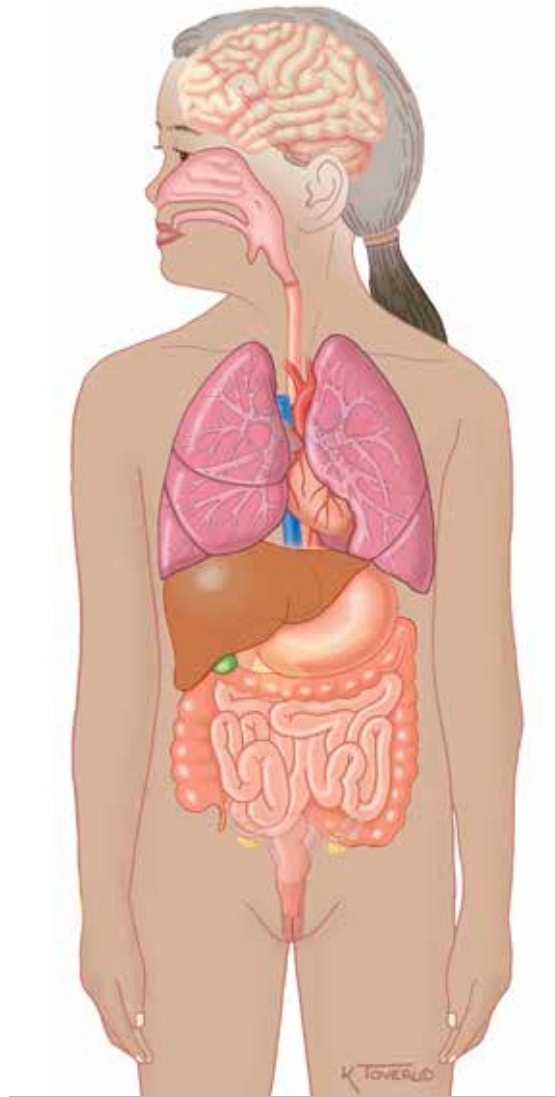


ILLUSTRATION: KARI C. TOYERUD CMI

10 Lesson 1: Health, treatments and effects of treatments

Instructions and notes for teachers

Many treatments have a good effect on one part of the body, but a bad effect on another part of the body.

For example, some tablets make head pain go away faster, but those tablets give you stomach sickness as well.



Every person has a different body and mind, so many times the same treatment has different effects on different people.

For example, some people see better when they wear glasses. Other people see worse if they wear glasses.



Very few treatments have the same effects almost every time.

For example, some medicines will make pain go away faster sometimes, but not every time.

Because of all this, we cannot be completely sure what the effects of most treatments will be when we use them. This is very important to understand.

What this book is about

There are effects of treatments that we can be very sure about.



For example, we can be very sure that sleeping in a mosquito net will stop people from getting malaria.



We can be very sure that washing hands will stop people from getting stomach sickness.



And we can be very sure that smoking cigarettes will kill people.

We cannot be sure about the effects of other treatments.

For example, we cannot be sure about the effects of many new medicines.

Most times, very few people will have used a new medicine because it is so new. The medicine can have different effects on other people than it did on the few people who have used it.

And it can take many years for some effects of the medicine to happen.



 Instructions and notes for teachers

Example: There are some medicines that have effects on the child when a pregnant woman takes them. Some of these effects do not happen until years after the child is born.

This book is about how to think carefully about treatments, so you can make better choices.

This book will teach you how to think carefully about treatments by asking **three types of questions**.

First, you will learn about the questions you should ask when someone says something about a treatment.

Sometimes, you make bad choices of treatments because you have been misled by something that someone said.

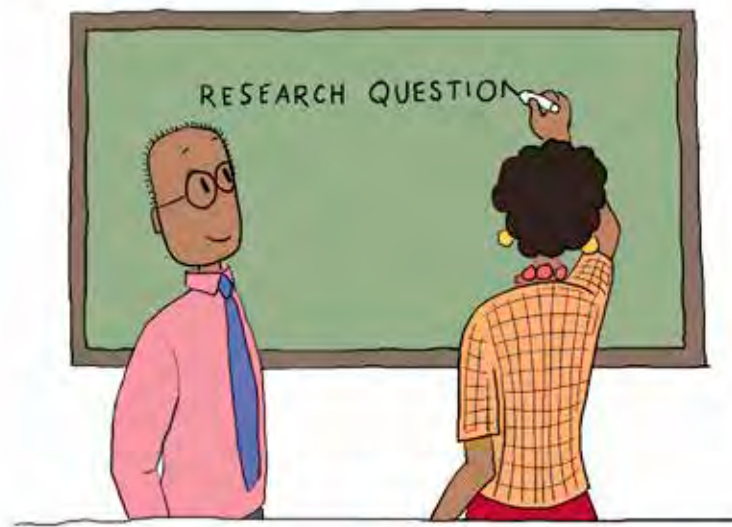
For example, some people used to say that smoking cigarettes has no bad effects. Some people even said that smoking cigarettes has good effects. Even some doctors said this! Many people were misled and died from smoking.



Explanation: The picture is a real advertisement that was used to sell cigarettes.

Second, you will learn about the questions that health researchers ask to find out more about the effects of treatments.

A **health researcher** is someone who carefully studies health to find out more about health. What health researchers find can help us make better choices of treatments.



Third, you will learn about the questions that you should ask when you are choosing whether to use a treatment.

Thinking carefully about treatments by asking questions will help you make better choices of treatments.

Making better choices of treatments is good for your health.



Adults, especially parents and doctors, make most choices for children.

This book will prepare you for making more choices of treatments as you grow older.

Both children and adults should get advice from doctors before making important choices of treatments.

However, even if your doctor is advising you, you should ask the questions that you will learn about in this book.

Asking the questions will help you and your doctor together make better choices for you.



What is in this book

In this book there is activity instructions and exercises for each lesson.

The activities are for you to do with your classmates, led by your teacher.

The exercises are for you to do on your own.

At the end of the book there is a glossary. The glossary is a list of important words in this book with the meanings of those words. If you do not understand the meaning of a word when reading the book, check the glossary.

Finally, there is a story in this book about two children named John and Julie.



The story is a cartoon. A cartoon is a story with words and pictures put together.

Most of the words are in speech bubbles and thought bubbles.

A speech bubble tells or shows you what someone is saying.



A thought bubble tells or shows you what someone is thinking.



This first lesson is an introduction to the book. The last lesson is a review of what is most important to remember from this book.

In Lessons 2, 3 and 4, John and Julie learn that when someone says something wrong about a treatment, it can mislead you.

In Lessons 5, 6 and 7, John and Julie learn about how health researchers should study treatments to find out more about their effects.

In Lesson 8, John and Julie learn how to make choices using everything they have learned.

We hope you enjoy the book
and learn a lot from the lessons!

These are questions and answers for reviewing what you read aloud, with the children.

1. What is this book about?

This book is about how to think carefully about treatments.

2. Why is it important for you to learn what this book is about?

Your health is important.

Thinking carefully about treatments by asking questions will help you make better choices for your health.

There are no extra examples for you to give the children in this lesson.

ACTIVITY



Instructions

Objective: Tell the difference between good and bad effects of the same treatment.

Children sitting at the same bench are a team.

The teacher has a list of effects of treatments.

The list is at the bottom of the next page in this guide.

Step 1: The teacher reads one of the effects from the list.

Step 2: Teams discuss whether the effect is good or bad.

Step 3: The teacher asks all teams whether they think the effect is good.

Step 4: Teams that think the effect is good stand up.

Step 5: All teams sit down.

Step 6: The teacher asks all teams whether they think the effect is bad.

Step 7: Teams that think the effect is bad stand up.

Step 8: All teams sit down.

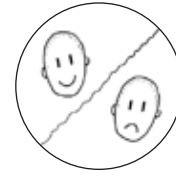
Step 9: The teacher asks the children to explain why they think the effect is good or bad.

Step 10: Repeat.

There is an example on the next page. →



ACTIVITY



Example

Teacher: “An effect of swimming is ‘stronger muscles.’”

Teams discuss.

Teacher: “Who thinks ‘stronger muscles’ is a good effect?”

Teams that think so stand up.

Teacher: “Now, who thinks ‘stronger muscles’ is a bad effect?”

Teams that think so stand up.

Teacher: “‘Stronger muscles’ is a good effect! Why is it a good effect?”

Child: “If you have stronger muscles, you can do more! For example, you can carry more books or water!”

Teacher: “Very good!”

Treatment: Swimming

Possible effects: Drowning (BAD effect)

Giving you more energy (GOOD effect)

Making your skin dry (BAD effect)

Getting an infection (BAD effect)

Treatment: Removing a rotten tooth

Possible effects: Causing pain during the removal (BAD effect)

Reducing pain after the removal (GOOD effect)

Getting an infection (BAD effect)

EXERCISE 1

Write what the words mean. Remember that the meanings of the words are in the back of the book.



EXAMPLE: What is a “cartoon”?

A cartoon is a story with words and pictures put together.

1. What is your “health”?

Your health is how well your body and mind are.

2. What is a “treatment”?

A treatment is something you do for your health.

3. What is an “effect” of a treatment?

An effect of a treatment is something that a treatment makes happen.

24 Lesson 1: Health, treatments and effects of treatments

 Instructions and notes for teachers

Each child should write their answers in their exercise book.

EXERCISE 2

Tick whether each point is true or false.

EXAMPLES:

Your health is important.

True False

Your health is not important.

True False

1. Most treatments have both good and bad effects.

True False

2. This book tells you what treatments to use.

True False

3. Drinking juice is a treatment.

True False

4. Not drinking juice is a treatment.

True False

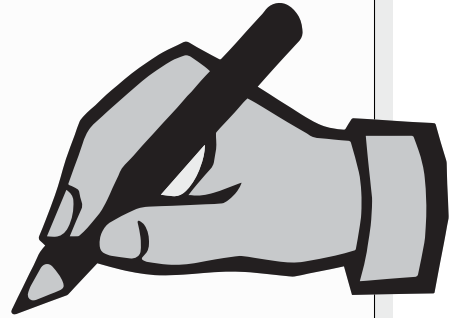
5. We can be completely sure about the effects of most treatments.

True False

STEP 6

Fill in evaluation form

Fill in the separate lesson evaluation form.



LESSON EVALUATION FORM

Informed Health Choices project



Background about lesson for teachers

The background about this lesson is covered in the introduction to the guide.



Children pose with the first version of the book, Uganda, October 2014.

LESSON 2

**Claims based on someone's personal
experience using a treatment**

LESSON 2

Claims based on someone’s personal experience using a treatment

Everything you need to prepare and teach this lesson

Objectives	page 57
Preparation	page 57
Lesson	page 58
Step 1: Review last lesson	page 59
Step 2: Read aloud	page 60
Step 3: Discuss	page 74
Step 4: Lead activity	page 76
Step 5: Manage exercises	page 80
Step 6: Fill in lesson evaluation form	page 84
Background about lesson for teachers	page 85

Objectives

What the children should learn in this lesson:

- What a “claim” is
- What the “basis” for a claim is
- What an “unreliable” claim” is
- Why it is important to ask what the basis is for a claim about the effects of a treatment
- Why someone’s personal experience using a treatment is a bad basis for claims about the effects of the treatment

Preparation (20 minutes)

This is what you should do before the lesson.

Read ahead

- Read pages for this lesson in the children's book
- Read pages for this lesson in the guide

Gather materials

Make sure you have:

- This guide
- The lesson evaluation form
- Some rubbers

Make sure each child has:

- A copy of the children’s book
- Their exercise book
- A pencil or pen

Summary of story: John and Julie are boiling water at home. Kasuku surprises John, so he knocks over the water and burns his finger. Kasuku shouts, “Cow dung heals burns!” This reminds Julie of when Sarah made the same claim. The basis for Sarah’s claim was her personal experience putting cow dung on a burn and the burn healing. Julie tells John to put cow dung on his burn, which he does. By the next day, John’s finger is infected. Mama sends John and Julie to the clinic, where they meet Professor Connie Compare and Professor Francis Fair. The Professors explain why Sarah’s personal experience was a bad basis for her claim.

Lesson (80 minutes)

This is a suggested plan for teaching the lesson.

TEACHERS	CHILDREN	TIME
STEP 1 Review last lesson		10 min
<ul style="list-style-type: none"> Review the last lesson by asking the questions on page 59 in this guide. 	<ul style="list-style-type: none"> Answer the questions as instructed. 	
STEP 2 Read aloud		25 min
<ul style="list-style-type: none"> Lead reading aloud starting on page 60 in this guide. <p><i>For different ways of reading see page 19 in this guide.</i></p>	<ul style="list-style-type: none"> Open to page 28 in their books and read aloud as instructed. 	
BREAK		5 min
STEP 3 Discuss		10 min
<ul style="list-style-type: none"> Discuss the story by asking the questions on page 74 in this guide. If necessary, give extra examples on page 75 in this guide. 	<ul style="list-style-type: none"> Answer the questions as instructed. 	
STEP 4 Lead activity		15 min
<ul style="list-style-type: none"> Lead the activity starting on page 76 in this guide. 	<ul style="list-style-type: none"> Open to page 42 in their books and do activity as instructed. 	
STEP 5 Manage exercises		10 min
<ul style="list-style-type: none"> Manage the exercises starting on page 80 in this guide. Help children as they complete exercises and lead marking of exercises. <p><i>For different ways of marking see page 20 in this guide.</i></p>	<ul style="list-style-type: none"> Open to page 44 in their exercise books and complete exercises. 	
STEP 6 Fill in evaluation form		5 min
<ul style="list-style-type: none"> Fill in the lesson evaluation form. 		

These are questions and answers for reviewing the previous lesson, with the children.

1. What is this book about?

This book is about how to think carefully about treatments.

2. Why is it important for you to learn what this book is about?

Your health is important.

Thinking carefully about treatments by asking questions will help you make better choices for your health.

*John and Julie learn about
BAD BASES for CLAIMS about treatments*

2

Claims based on someone's personal experience using a treatment

What you will learn in this lesson:

1. What a “claim” is
2. What the “basis” for a claim is
3. What an “unreliable” claim” is
4. Why it is important to ask what the basis is for a claim about the effects of a treatment
5. Why someone's personal experience using a treatment is a bad basis for claims about the effects of the treatment

Keywords for this lesson:

- A **CLAIM** is something that someone says that can be right or wrong.
- The **BASIS** *for a claim* is the support, foundation or reason for the claim.
- An **UNRELIABLE** *claim* is a claim with a bad basis.
- A **PERSONAL EXPERIENCE** *using a treatment* is something that happened to someone after using a treatment.

People in this lesson



JOHN and JULIE

John and Julie are brother and sister.



MAMA

Mama is John and Julie's mother.



KASUKU

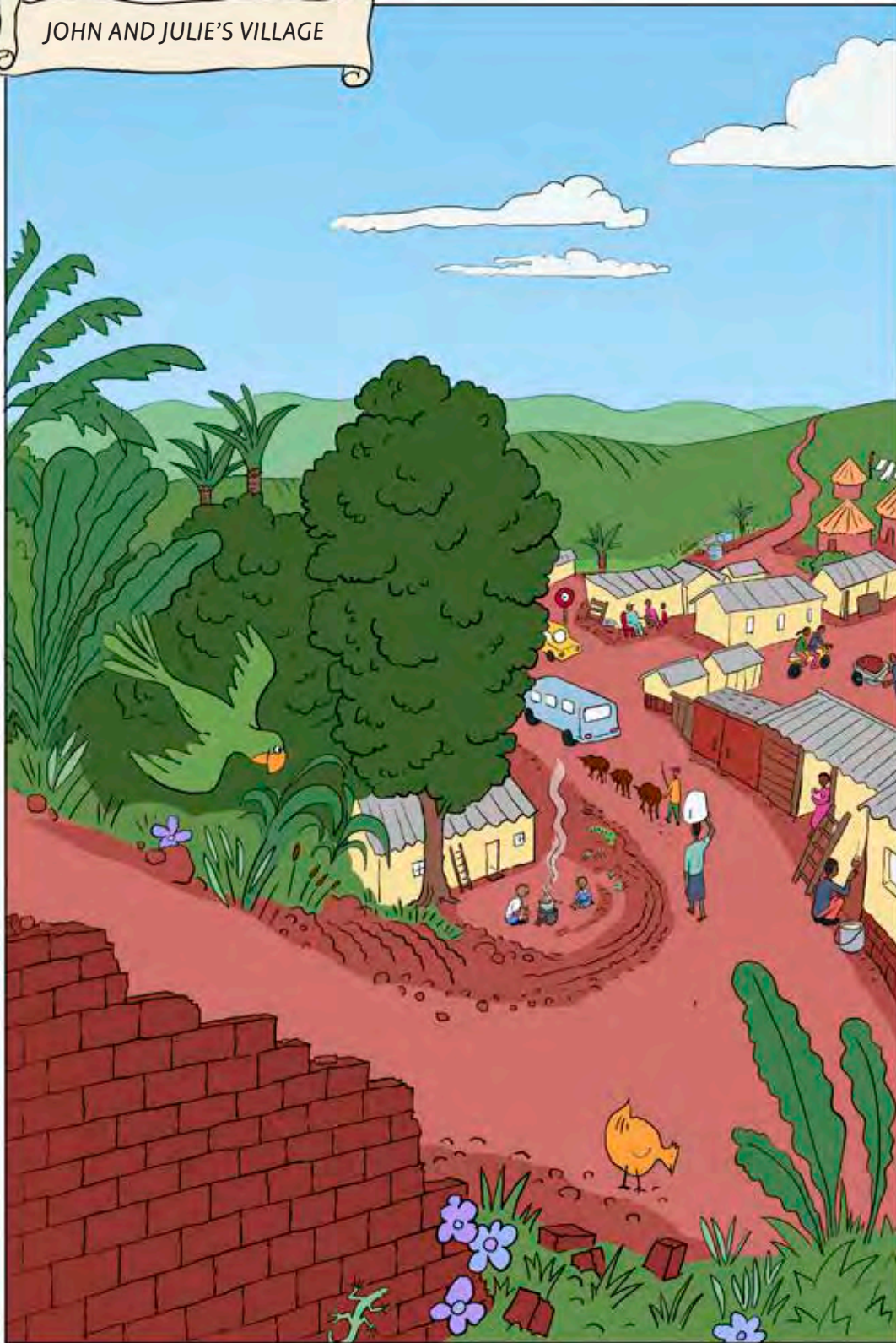
Kasuku is a troublemaker who repeats things people say without thinking carefully.



PROFESSOR CONNIE COMPARE and PROFESSOR FRANCIS FAIR

Professor Compare and Professor Fair are teachers and health researchers at the university. They are also doctors at the clinic.

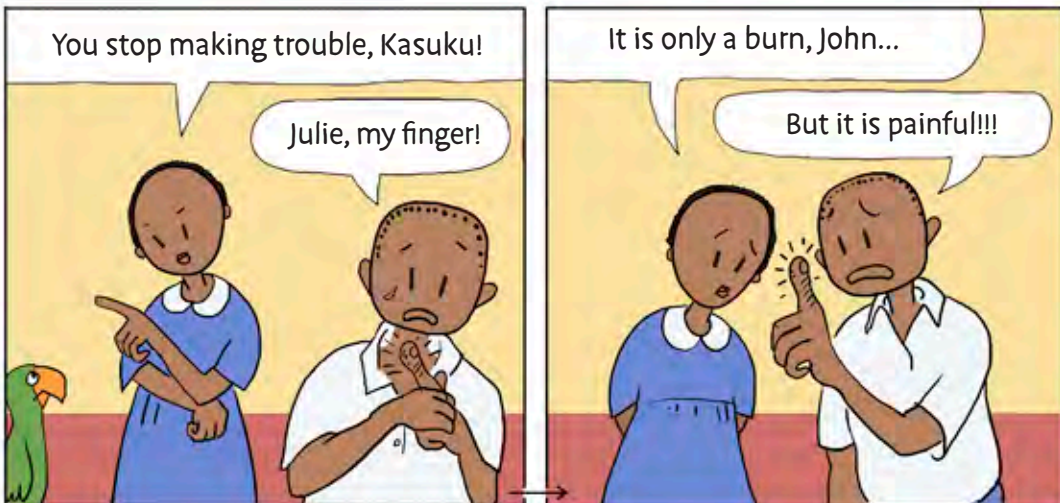
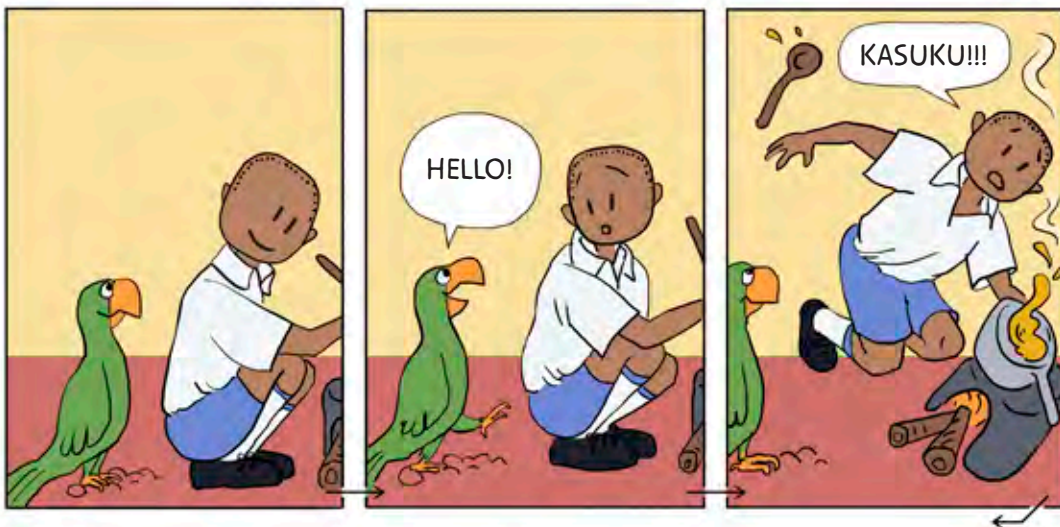
JOHN AND JULIE'S VILLAGE



30 Lesson 2: Claims based on someone's personal experience using a treatment

 Instructions and notes for teachers

Instruction: Whenever there is a box in the cartoon with little or no writing, like this one and the first four boxes on the next page, stop and ask the children in your class to explain what is happening.



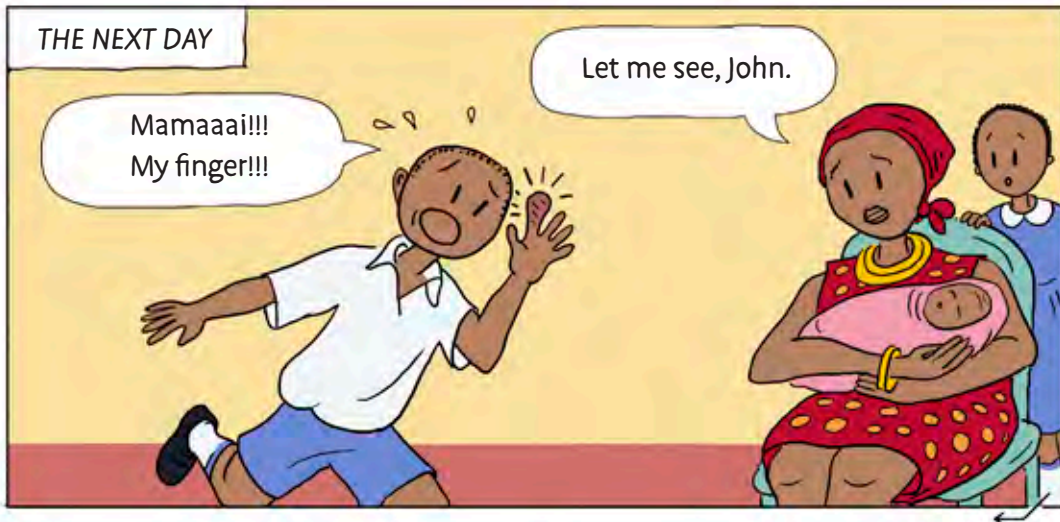
Lesson 2: Claims based on someone's personal experience using a treatment

Instructions and notes for teachers



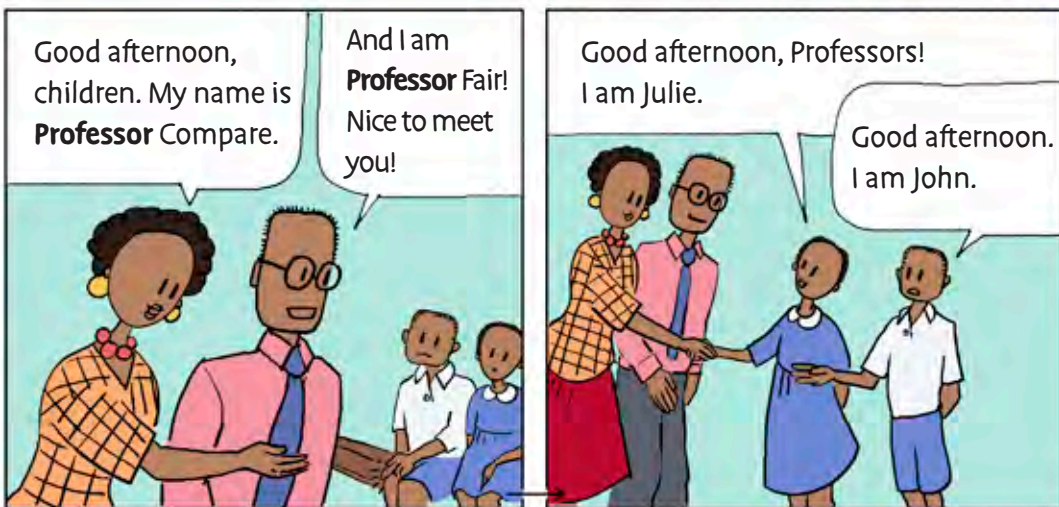
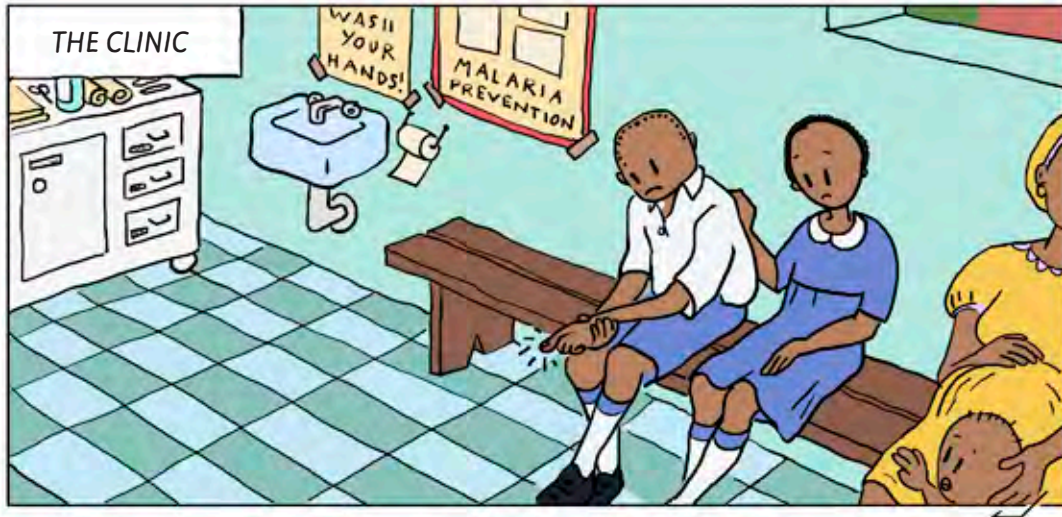
32 Lesson 2: Claims based on someone's personal experience using a treatment

Instructions and notes for teachers



An **INFECTION**
is a disease caused by germs.

IN LUGANDA: "Obulwadde"
IN KISWAHILI: "Ambukizo"



A **PROFESSOR**

is a teacher or a researcher at a university.

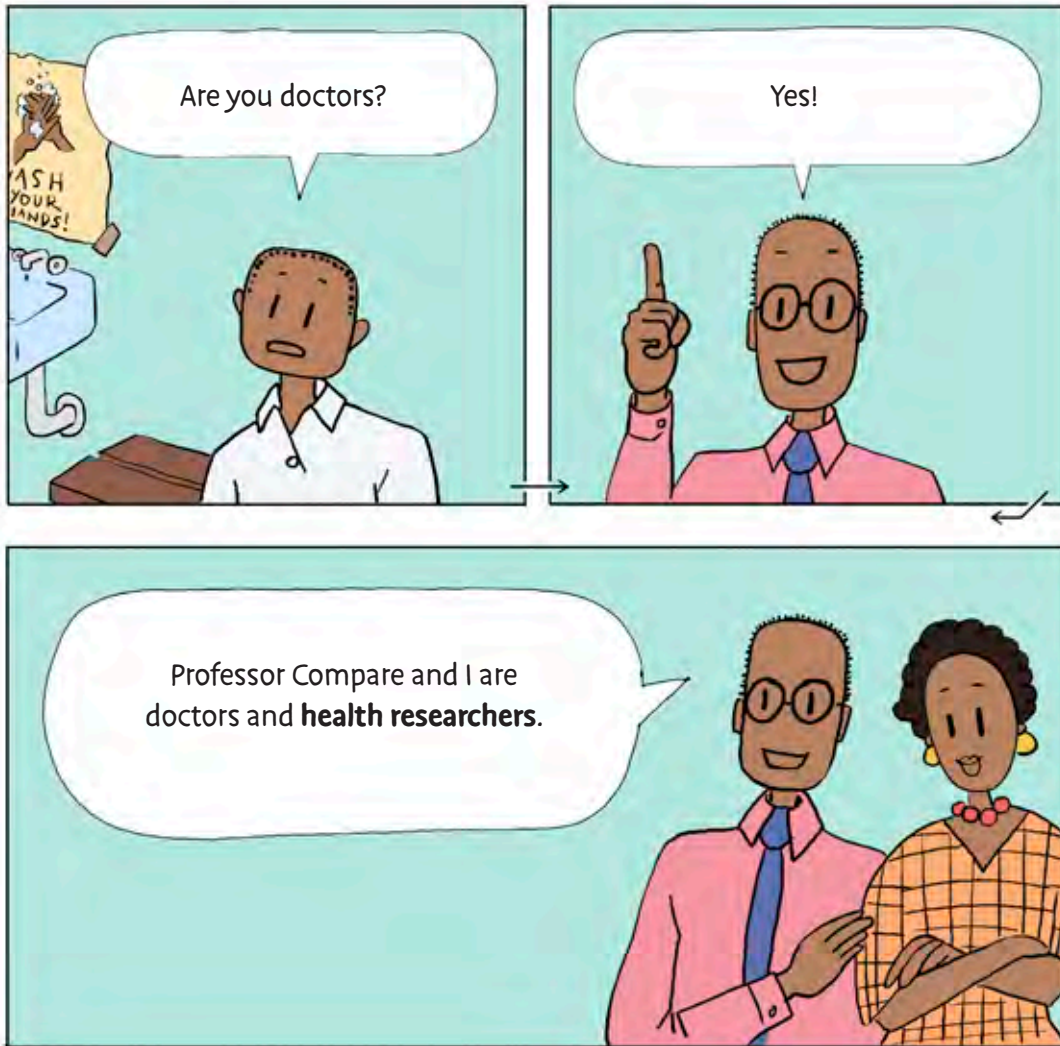
IN LUGANDA: “Omukenkufu” oba “Pulofesa”

IN KISWAHILI: “Profesa”



Lesson 2: Claims based on someone's personal experience using a treatment

Instructions and notes for teachers

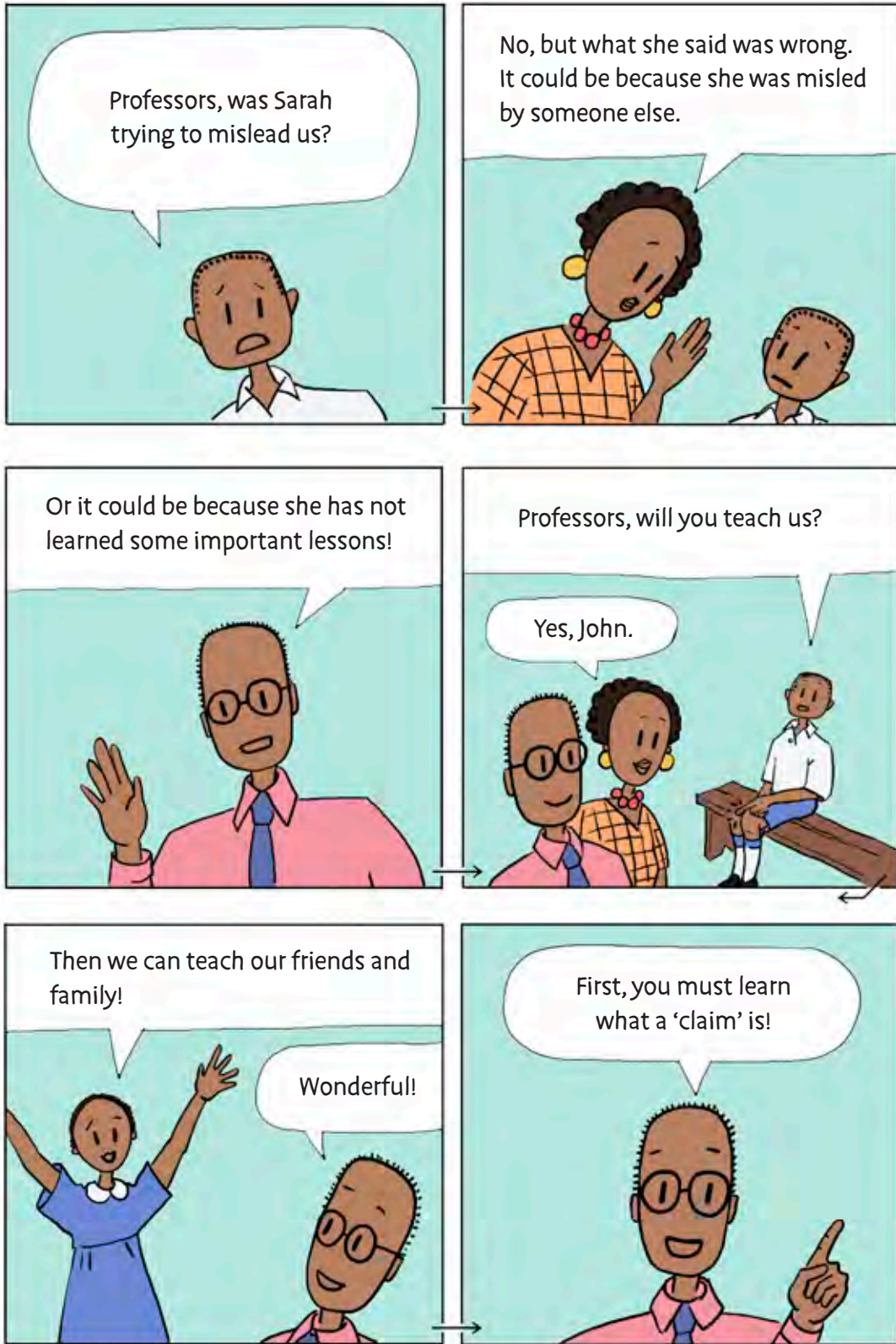


A **HEALTH RESEARCHER**

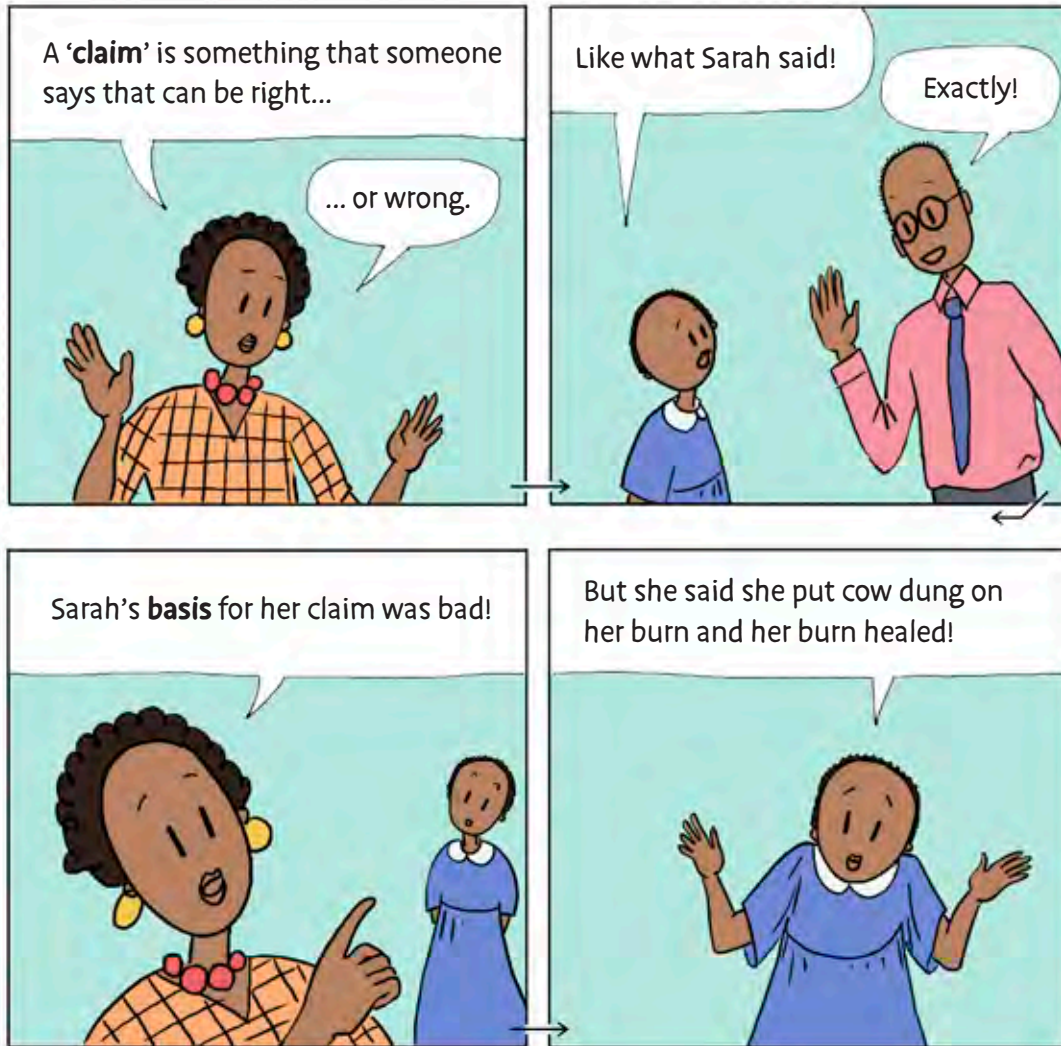
is someone who carefully studies health to find out more about health.

IN LUGANDA: “Abasawo abakugu abanoonyereza kuby’obulamu”

IN KISWAHILI: “Mdadisi wa afya”



Lesson 2: Claims based on someone's personal experience using a treatment

**A CLAIM**

is something that someone says that can be right or wrong.

IN LUGANDA: "Ekintu ekyogerwayogerwa"

IN KISWAHILI: "Madai"

The BASIS for a claim

is the support, foundation or reason for the claim.

IN LUGANDA: "Ensonga esinziirwako ekyogerwayogerwa"

IN KISWAHILI: "Uasili"



Yes, but that is a bad basis for her claim.

It was only a personal experience!

Julie, what would have happened if Sarah had not put cow dung on her burn?

I am not sure...

Is it possible her burn would have healed without the cow dung?

Yes!

So, someone's **personal experience** using a treatment is a bad basis for a claim about the effects...

We cannot be sure what would have happened if they had not used the treatment!

Lesson 2: Claims based on someone's personal experience using a treatment

39

Instructions and notes for teachers

Explanation: A personal experience is a good basis for a claim about something that almost always happens. For example, the personal experience of burning your finger when touching a hot pot is a good basis for the claim that touching a hot pot will burn your finger.

If the basis for a claim is bad, then the claim is **unreliable**. There are other bad bases for claims about treatments.



When you hear a claim, you must always ask: What is the basis for the claim? And, is it a good or a bad basis?



If you hear any other claims about treatments, write them down...



We will use them to teach you, next week! We will come visit your school.

An **UNRELIABLE claim** is a claim with a bad basis.

IN LUGANDA: “Ekyogerwayogera ku kintu nga tekyesigika”

IN KISWAHILI: “Kutokuwa na uhakika”

A **PERSONAL EXPERIENCE** using a treatment is something that happened to someone after using a treatment.

IN LUGANDA: “Ekintu ky’oyiseemu nga omuntu ssekinnoomu mukufuna obujjanjabi”

IN KISWAHILI: “Ujuzi”

EXTRA EXAMPLES

These are extra examples of what you learned in the chapter.

Extra examples of why someone’s personal experience of using a treatment is a bad basis for a claim about the effects of the treatment.

Extra example 1:

Raymond’s claim: “I had the flu. I drank a glass of juice. The next, day my flu was gone! Therefore, drinking juice cures the flu!”

Treatment: Drinking juice

Effect: Curing the flu

Basis for claim: Raymond’s experience of his flu going away after drinking juice.

Explanation: Raymond’s basis is bad, so his claim is unreliable. It is possible that his flu would have gone away without the juice.

Example 2:

Moreen’s claim: “I bought some new shoes, last week. I wore the new shoes when I played netball, yesterday. I ran faster than all the other girls! The new shoes made me run faster!”

Treatment: Wearing new shoes

Effect: Running faster

Basis for claim: Moreen’s experience of running faster than the other girls when wearing the new shoes

Explanation: Moreen’s basis for her claim is bad, so her claim is unreliable. It is possible that she would have run faster than the other girls without the new shoes. For example, it is possible that the other girls were tired or that the fastest girls were not playing.

These are questions and answers for reviewing what you read aloud, with the children.

1. What was Sarah's claim?

Cow dung heals burns.

2. What was Sarah's basis for her claim?

Her personal experience putting cow dung on her burn.

3. Why was her claim unreliable?

The basis for her claim was bad. It is possible that her burn would have gone away without putting the cow dung on it.

Extra examples to give children, if necessary

These are extra examples to help explain what the children should have learned from the story. Only use these examples if you think it is necessary.

Why someone's personal experience using a treatment is a bad basis for a claim about the effects of the treatment:

Claim: "My friend says drinking tea reduces head pain because he drank some tea and now his head pain has gone away!"

Treatment: Drinking tea

Effect: Less head pain

Basis: The friend's personal experience after drinking tea

Explanation: The friend's personal experience is a bad basis for the claim. It is possible his head would have felt better whether he drank the tea or not. The claim is unreliable.

Claim: "My sister says taking this tablet makes a fever go away because she took one and her fever went away!"

Treatment: Taking the tablet

Effect: Reduced fever

Basis: The sister's personal experience taking the tablet

Explanation: The sister's personal experience is a bad basis for the claim. It is possible her fever would have gone away whether she took the tablet or not. The claim is unreliable.

ACTIVITY



Instructions

Objective: Recognise when someone is making a claim about the effects of a treatment.

The teacher has a story.

Step 1: The teacher begins to read the story.

The story is in this guide on the pages after the example. Make sure to read slow enough that the children have time for the next step.

Step 2: Whenever someone in the story makes a claim about the effects of a treatment, children must stand up and shout, “Claim!”

If there is such a claim in the story, but no child notices, stop and explain why it is a claim about the effects of a treatment.

Step 3: The teacher asks the children to explain why they think the person in the story was making a claim about the effects of a treatment.

Tell the children to raise their hands to answer. However, also ask children who do not raise their hands to answer. It is important to involve the whole class.

Step 4: The teacher continues reading the story.

There is an example on the next page. →

ACTIVITY

**Example:**

Teacher: "John and Julie are playing football with friends... John falls and cuts his leg on a rock... Arthur, one of John and Julie's friends, tells John that putting some mud on the cut will make it heal faster..."

Children: "CLAIM!"

Teacher: "You are right! Now, why was this a claim about the effects of a treatment?"

Child: "Because putting mud on a cut is a treatment! And healing a cut is an effect!"

Teacher: "Exactly! Well done!"

Story for the activity

John has a sore throat... It is not so serious, but it disturbs him a little when he swallows food... Mama has sent John and Julie to buy a treatment... Along the road, they see a big advertisement for a new energy drink called Power Juice... On the billboard it says: *“Power Juice makes you stronger!”*

CLAIM! This is a claim about the effects of a treatment. The treatment is drinking Power Juice and the effect is making you stronger.

Julie says to John, “I drank Power Juice once, but I did not feel stronger. So Power Juice does not make you stronger!”

CLAIM! This is a claim about the effects of a treatment. The treatment is drinking Power Juice and the effect is not making you stronger (no effect).

However, Julie says, “It did taste good...” John and Julie stop at the local shop... The shopkeeper, Mr. Semakula, is there... “Good afternoon John and Julie,” says Mr. Semakula... “Good afternoon Mr. Semakula,” reply John and Julie... John says he heard that eating oranges cures a sore throat...

CLAIM! This is a claim about the effects of a treatment. The treatment is eating oranges and the effect is curing sore throats.

Mr. Semakula says that this is not true...

CLAIM! This is a claim about the effects of a treatment. The treatment is eating oranges and the effect is not curing sore throats (no effect).

Mr. Semakula says John should buy some tea instead... He says drinking the tea will cure his sore throat...

CLAIM! This is a claim about the effects of a treatment. The treatment is drinking tea and the effect is curing sore throats.

John and Julie are not sure what to do... They thank Mr. Semakula, but decide to go to the pharmacy to buy some medicine... At the pharmacy, Ms. Namutebi is working... John and Julie greet Ms. Namutebi and ask her what medicine John should use for his throat... Ms. Namutebi says there are different medicines that John could use... “This cough syrup will cure your sore throat,” she says...

CLAIM! This is a claim about the effects of a treatment. The treatment is drinking the cough syrup and the effect is a curing sore throats.

Or you can take one of these tablets... The tablet will make the pain go away while you wait for your throat to get better...

CLAIM! This is a claim about the effects of a treatment. The treatment is taking the tablet and the effect is making the pain go away.

However, Ms. Namutebi says that, sometimes, the tablets give you stomach pain...

CLAIM! This is a claim about the effects of a treatment. The treatment is taking the tablet and the effect is causing stomach pain.

John and Julie buy some tablets... When they get home, John takes one of the tablets... Mama tells John to go rest... She says resting always makes you feel better...

CLAIM! This is a claim about the effects of a treatment. The treatment is resting and the effect is making you feel better.

John lies down to rest... Suddenly, Kasuku appears in the window and starts shouting, "ORANGES CURE A SORE THROAT!"

CLAIM! This is a claim about the effects of a treatment. The treatment is eating oranges and the effect is curing sore throats.

The end.

About the example in this activity: Most times, a sore throat will go away on its own. However, if a child has a high fever in addition to the sore throat or if the child does not want to eat or drink because it is too painful, they should be taken to see a doctor or nurse. If the child is struggling to breathe or swallow, is drooling a lot or has a stiff or swollen neck, the child should be taken to a hospital or clinic. For reducing pain from less serious sore throats, like the one John has in the story, drinking warm tea, soup or a cold drink can help. The child must drink enough water, even if the child feels some pain when drinking. Painkillers (tablets that reduce pain), such as Panadol, can help, but the child should not get aspirin.

EXERCISE 1

Write what the words mean. Remember that the meanings of the words are in the back of the book.

EXAMPLE: What is your “health”?

Your health is how well your body and mind are.

1. What is a “claim”?

A claim is something that someone says that can be right or wrong.

2. What is the “basis for a claim”?

The basis for a claim is the support, foundation or reason for the claim.

3. What is an “unreliable” claim?

An unreliable claim is a claim with a bad basis.

4. What is a “personal experience” of using a treatment?

A personal experience using a treatment is something that happened to someone after using a treatment.

EXERCISE 2

Write which is the experience and which is the claim.

Example:

Sarah put cow dung on a burn and the burn went away. Therefore, she claims cow dung heals burns.

Sarah's experience:

Putting cow dung on her burn and the burn going away.

Sarah's claim:

Cow dung heals burn.

1. Andy says eating apples will make your teeth fall out because he once ate an apple and one of his teeth fell out.

Andy's experience:

Eating an apple and his tooth falling out.

Andy's claim:

Eating apples will make your teeth fall out.

EXERCISE 2

2. One time, when Daniel had a fever, he took a warm bath. After only one hour, his fever was almost all gone. Now, Daniel says taking a warm bath will cure a fever.

Daniel's experience:

Taking a warm bath and his fever almost being gone after an hour.

Daniel's claim:

Taking a warm bath will cure a fever.

3. Last night, Christine slept for 12 hours! Today, she ran a race and came in first place! Because of this, Christine told the other runners that sleeping for a long time will make you run faster.

Christine's experience:

Sleeping for 12 hours and winning the race.

Christine's claim:

Sleeping for a long time will make you run faster.

EXERCISE 3

In the back of the exercise book there are pages for collecting claims like John and Julie do in the story.

Whenever you hear a claim about the effects of a treatment at school, at home or anywhere else, fill in the claim there.

In Lesson 9, you will answer whether you think the claims are reliable.

Tell the children to open to page 46 in their exercise books. Instruct them to only fill in the first three lines for each claim that they collect, until Lesson 9. For example:

Claim: Drinking juice cures the flu

Treatment: Drinking juice

Effect: Curing the flu

In Lesson 9, they will fill in the bases for the claims and tick boxes to show whether they think each claim is reliable or that they are not sure.

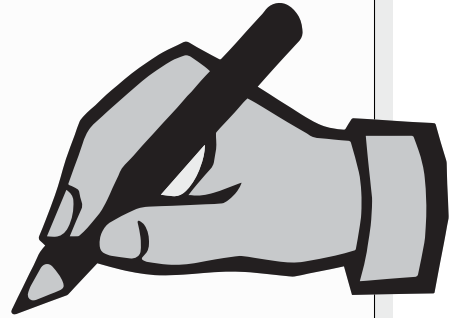
The objective of the exercise is for the children to recognise that they hear many claims about the effects of treatments, and many of those claims are unreliable.



STEP 6

Fill in evaluation form

Fill in the separate lesson evaluation form.



LESSON EVALUATION FORM

Informed Health Choices project

Background about lesson for teachers

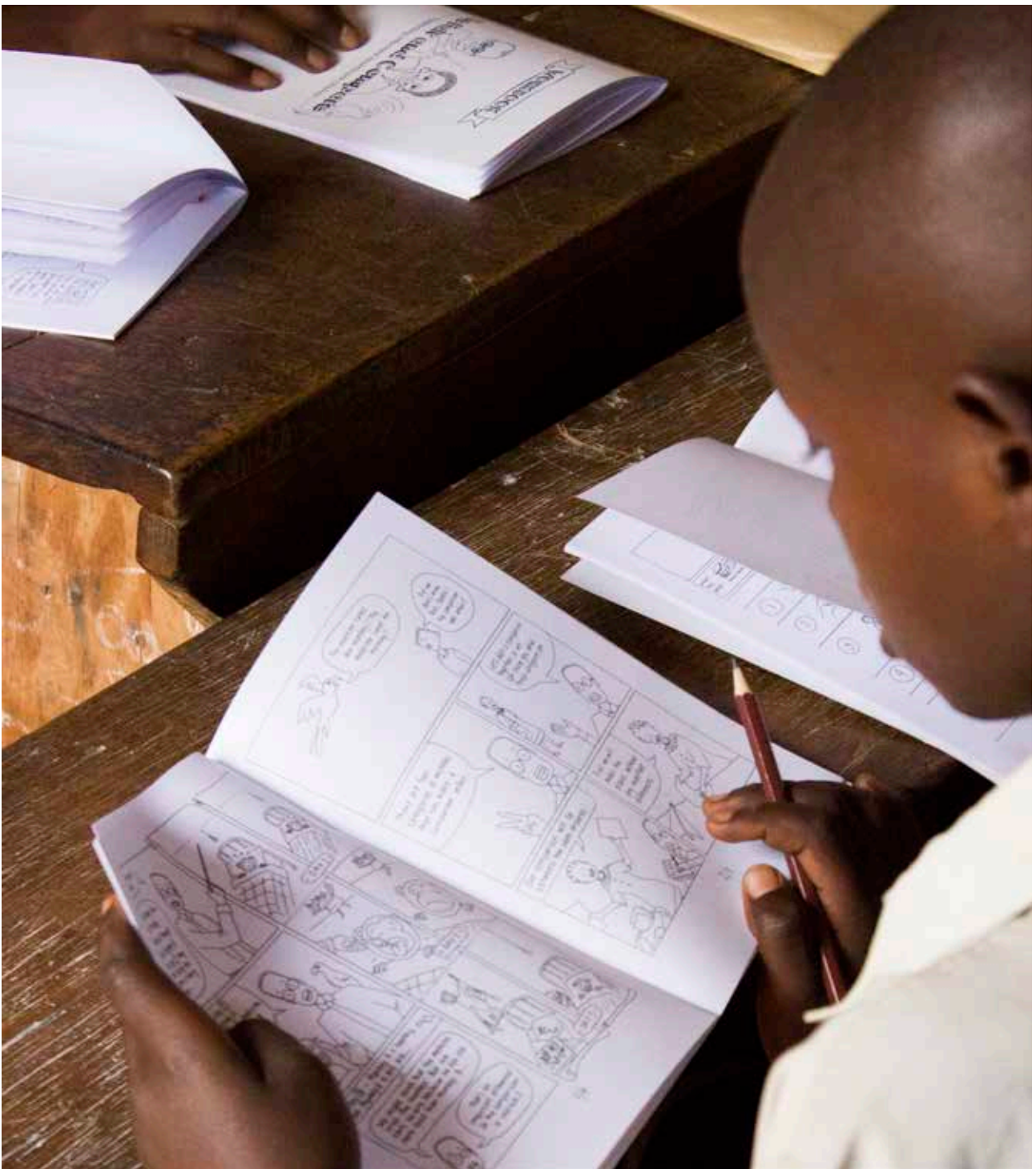
A “claim” can mean different things. In this book, it only means one thing: something that someone says that can be right or wrong. Everyone makes claims like this. Most times, when we claim something, we make the claim as if it is completely reliable. In other words, we say something as if it were a fact, when it really is a claim. Many claims are unreliable, so it is important to recognise when someone is making a claim. If you believe an unreliable claim about the effects of a treatment, you could make a bad choice about that treatment.

To avoid being misled by unreliable claims, we must always ask: What is the basis for the claim? A “basis” can mean different things, but in this book it means why someone says or does something. There are many different bases for claiming something. Whether a claim is reliable depends on the basis. Health researchers sometimes say the “evidence” supporting a claim, rather than “basis” for the claim.

Researchers ask questions and look for answers to find out more about the world. There are many different types of researchers who do many types of research. Health researchers look for answers to questions about health. There are many different types of health research as well, but this book is about one type: asking questions and looking for answers about the effects of treatments.

Someone’s personal experience is one of the most common bases for claims about the effects of treatments. Many types of personal experiences are important enough that we should learn something from them. For example, most treatments have small effects, but a few have big, obvious effects. For many people, wearing glasses has a big, obvious effect on how well they see. Their experience wearing glasses is enough to know that they should wear glasses.

Most treatments do not have big effects. Therefore, most times, someone’s personal experience using a treatment is a bad basis for a claim about the effects. Researchers sometimes say “anecdotal evidence” or a “case study,” rather than “personal experience.” An “anecdote” is a short story about something real. An anecdote is a bad basis for a claim about the effects of a treatment, even if the anecdote is true. For example, during an outbreak of bird flu (avian influenza), some people infected with bird flu were given a drug called Tamiflu. It is true that some of those people got better. However, those true anecdotes are bad bases for the claim that Tamiflu cures bird flu. It is possible those people would have got better without the medicine.



A child reads the first version of the book, Uganda, October 2014.

LESSON 3

Other bad bases for claims about treatments (PART 1)

LESSON 3

Other bad bases for claims about treatments (PART 1)

Everything you need to prepare and teach this lesson

Objectives	page 89
Preparation	page 89
Lesson	page 90
Step 1: Review last lesson	page 91
Step 2: Read aloud	page 92
Step 3: Discuss	page 101
Step 4: Lead activity	page 103
Step 5: Manage exercises	page 108
Step 6: Fill in lesson evaluation form	page 110
Background about lesson for teachers	page 111

Objectives

What the children should learn in this lesson:

- Why these are bad bases for claims about the effects of a treatment
 1. How long the treatment has been used or how many people have used it
 2. How much money the treatment costs or how new it is

Preparation (30 minutes)

This is what you should do before the lesson.

Read ahead

- Read pages for this lesson in the children's book
- Read pages for this lesson in the guide

Gather materials

Make sure you have:

- This guide
- The lesson evaluation form
- Some rubbers

Make sure each child has:

- A copy of the children's book
- Their exercise book
- A pencil or pen

Summary of story: Professor Compare and Professor Fair visit John and Julie at their primary school. John and Julie have collected claims from their friends. The Professors choose two of those claims to use as examples. The examples are for explaining two more bad bases for claims about the effects of treatments. First, the Professors use Ruth's claim as an example. Ruth's claim is about an herb. Second, the Professor's use Ahmed's claim as an example. Ahmed's claim is about his new glasses.

Lesson (80 minutes)

This is a suggested plan for teaching the lesson.

TEACHERS	CHILDREN	TIME
STEP 1 Review last lesson		10 min
<ul style="list-style-type: none"> Review the last lesson by asking the questions on page 91 in this guide. 	<ul style="list-style-type: none"> Answer the questions as instructed. 	
STEP 2 Read aloud		25 min
<ul style="list-style-type: none"> Lead reading aloud starting on page 92 in this guide. <p><i>For different ways of reading see page 19 in this guide.</i></p>	<ul style="list-style-type: none"> Open to page 48 in their books and read aloud as instructed. 	
BREAK		5 min
STEP 3 Discuss		10 min
<ul style="list-style-type: none"> Discuss the story by asking the questions on page 101 in this guide. If necessary, give extra examples on page 102 in this guide. 	<ul style="list-style-type: none"> Answer the questions as instructed. 	
STEP 4 Lead activity		15 min
<ul style="list-style-type: none"> Lead the activity starting on page 103 in this guide. 	<ul style="list-style-type: none"> Open to page 57 in their books and do activity as instructed. 	
STEP 5 Manage exercises		10 min
<ul style="list-style-type: none"> Manage the exercises starting on page 108 in this guide. Help children as they complete exercises and lead marking of exercises. <p><i>For different ways of marking see page 20 in this guide.</i></p>	<ul style="list-style-type: none"> Open to page 60 in their exercise books and complete exercises. 	
STEP 6 Fill in evaluation form		5 min
<ul style="list-style-type: none"> Fill in the lesson evaluation form. 		

These are questions and answers for reviewing the previous lesson, with the children.

1. What was Sarah's claim?

Cow dung heals burns.

2. What was Sarah's basis for her claim?

Her personal experience putting cow dung on her burn.

3. Why was her claim unreliable?

The basis for her claim was bad. It is possible that her burn would have gone away without putting the cow dung on it.

*John and Julie learn about
BAD BASES for CLAIMS about treatments*

3

Other bad bases for claims about treatments (Part 1)

What you will learn in this lesson:

Why these are bad bases for claims about the effects of a treatment:

1. How long the treatment has been used or how many people have used it
2. How much money the treatment costs or how new it is

48 Lesson 3: Other bad bases for claims about treatments (Part 1)

 *Instructions and notes for teachers*

People in this lesson



PROFFESOR COMPARE



PROFFESOR FAIR



JOHN



JULIE



RUTH

*Ruth is one of
John and Julie's friends*

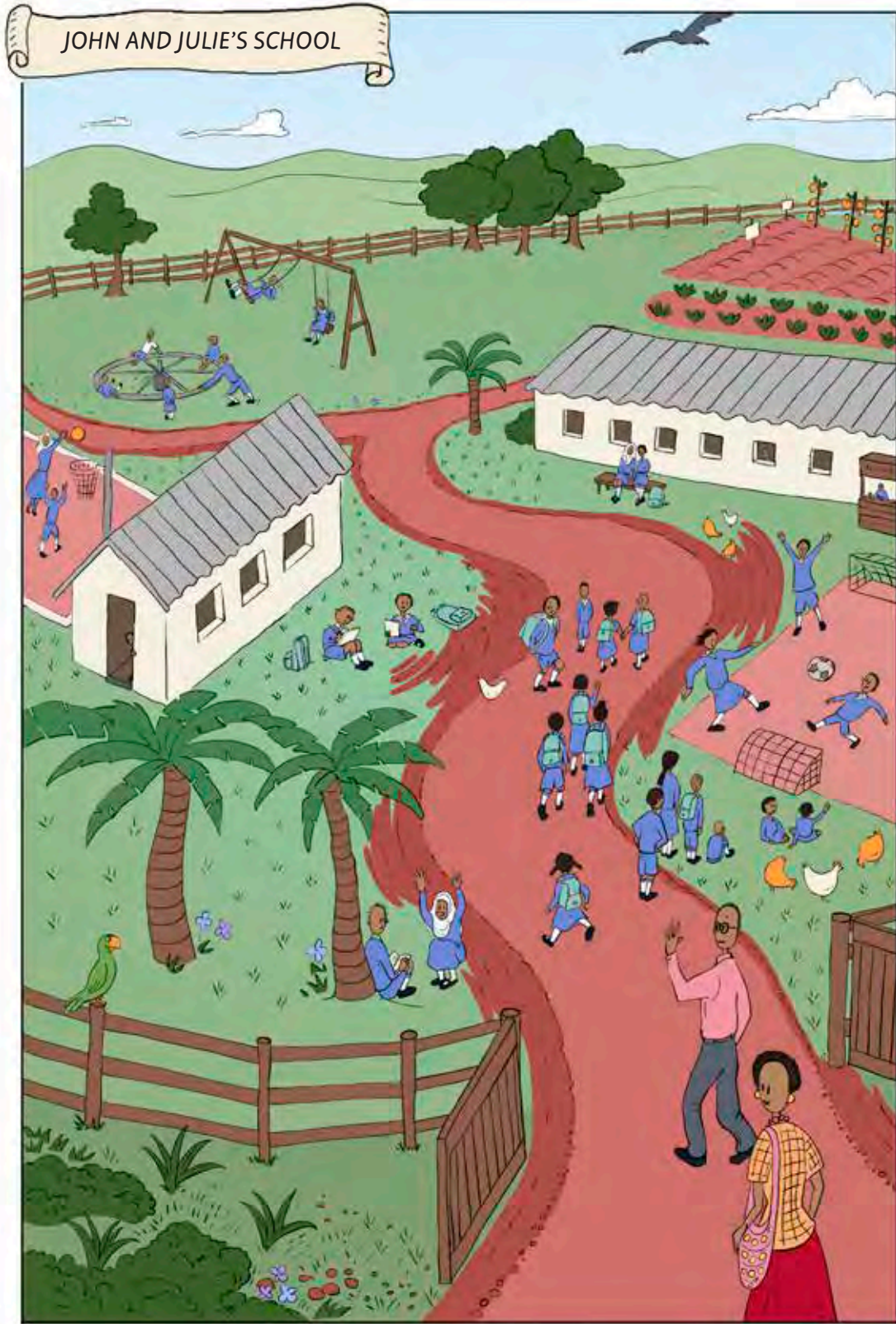


AHMED

*Ahmed is one of
John and Julie's friends.*

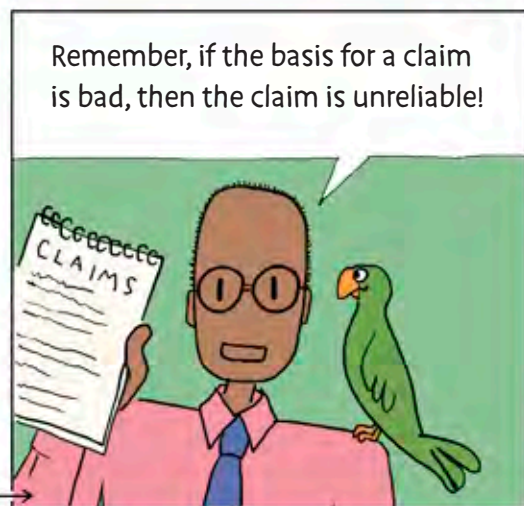
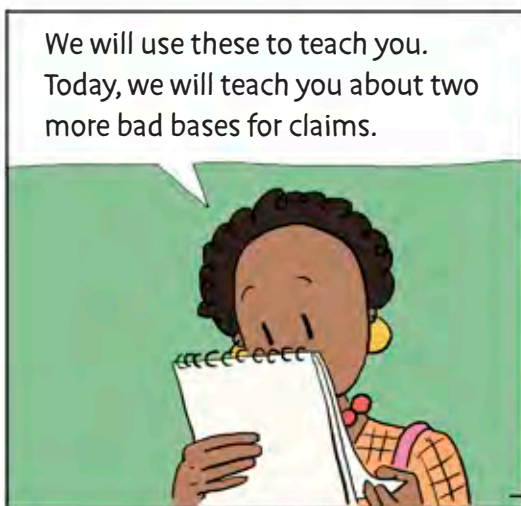


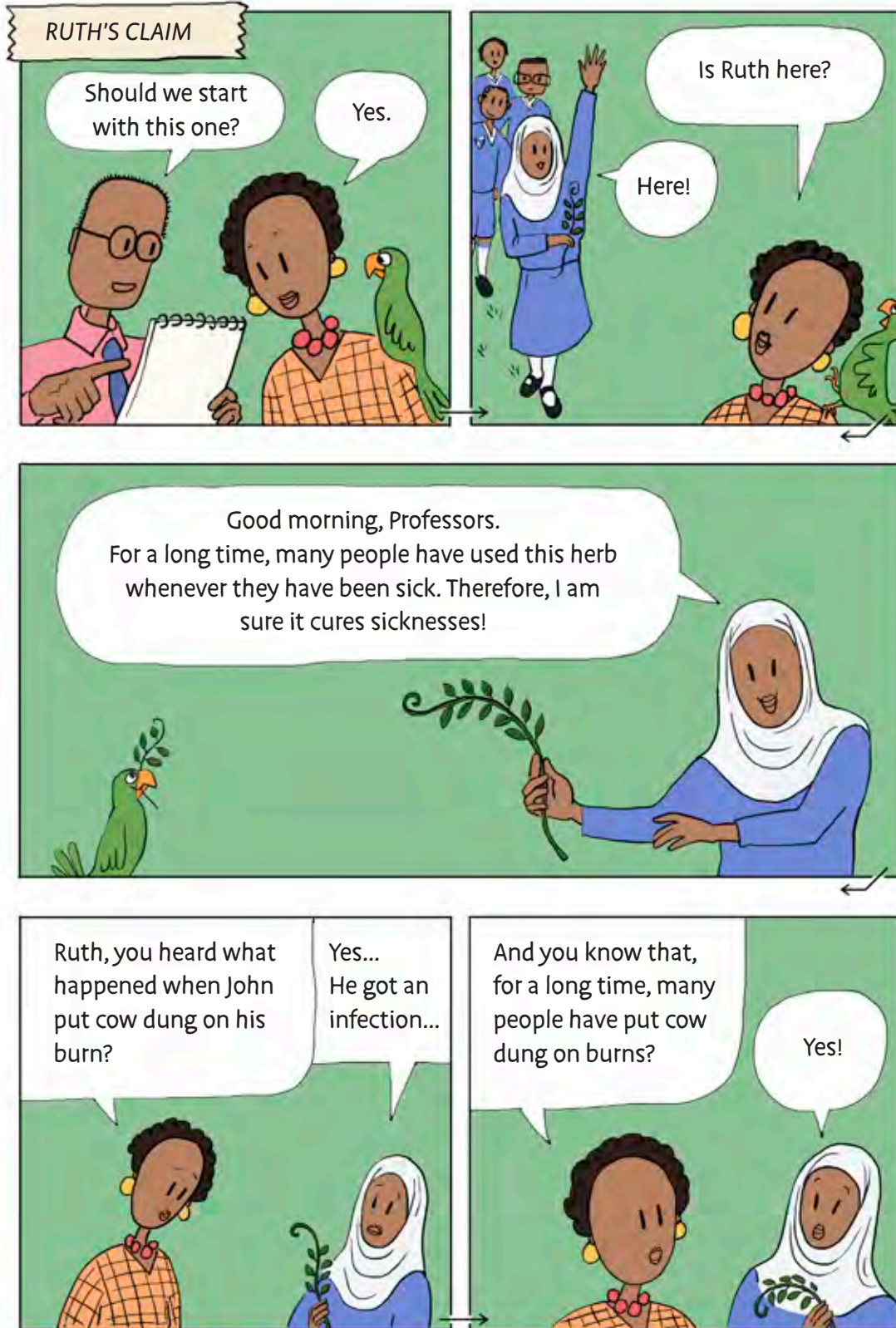
Instructions and notes for teachers



50 Lesson 3: Other bad bases for claims about treatments (Part 1)

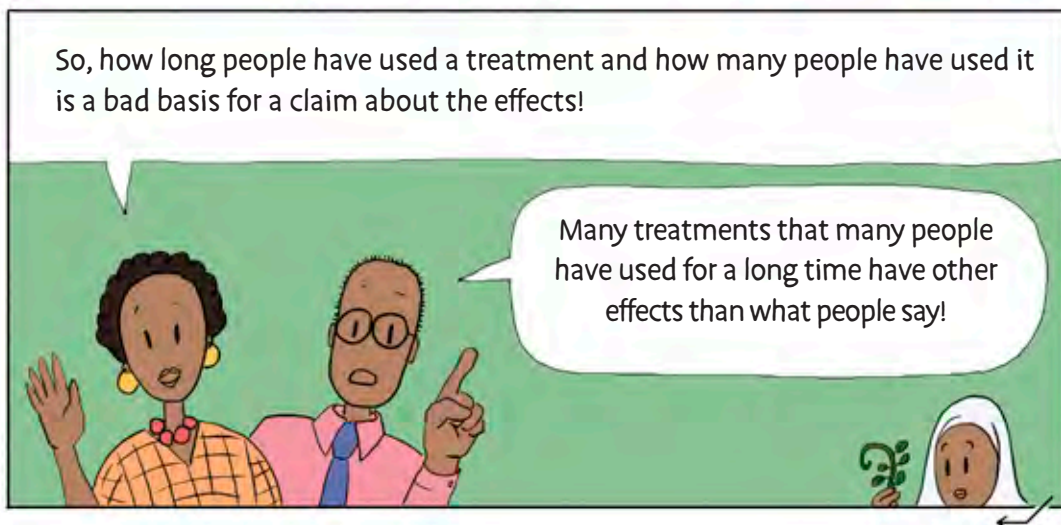
Instructions and notes for teachers





52 Lesson 3: Other bad bases for claims about treatments (Part 1)

Instructions and notes for teachers

**Extra example**

Ronald's claim: "Drinking fish oil keeps you healthy! I am sure because lots of people, for many years, have drunk fish oil to stay healthy!"

Treatment: Drinking fish oil

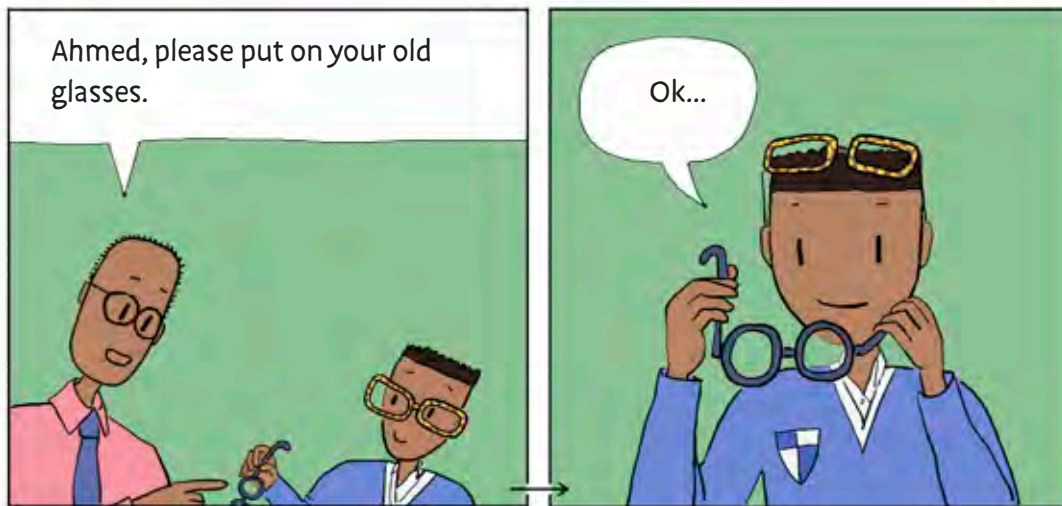
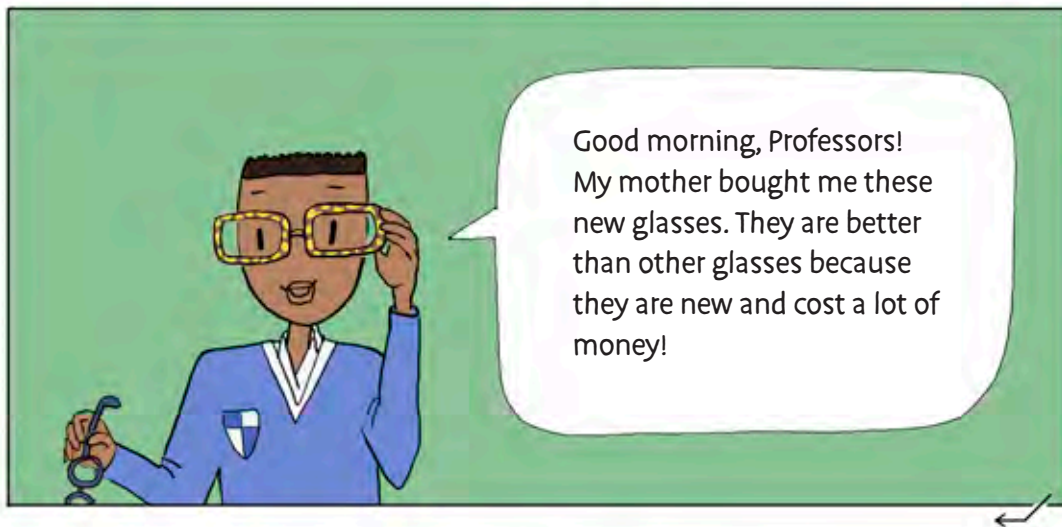
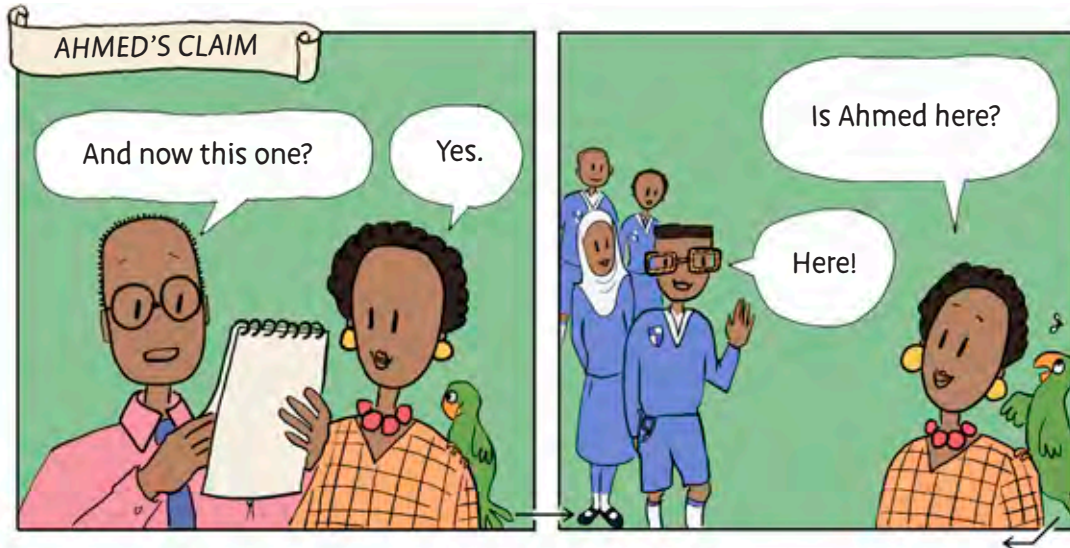
Effect: Having better health

Basis for Ronald's claim: How long people have used fish oil and how many people have used it

Explanation: Ronald's basis for his claim is bad, so his claim is unreliable. It is possible that fish oil does not make your health better, even though many people have used it for many years.

Instructions and notes for teachers

Background: Health researchers have found that some herbs have good effects. For example, cream of hot pepper reduces back pain. However, they have found that other herbs have little or no good effects, and some have bad effects. For example, chewing betel nut causes cancer in the mouth. There are many herbs that they have not studied carefully.



**Extra example**

Harriet's claim: "Super Soap stops more infections than other soaps because it is new and costs a lot of money!"

Treatment: Using Super Soap

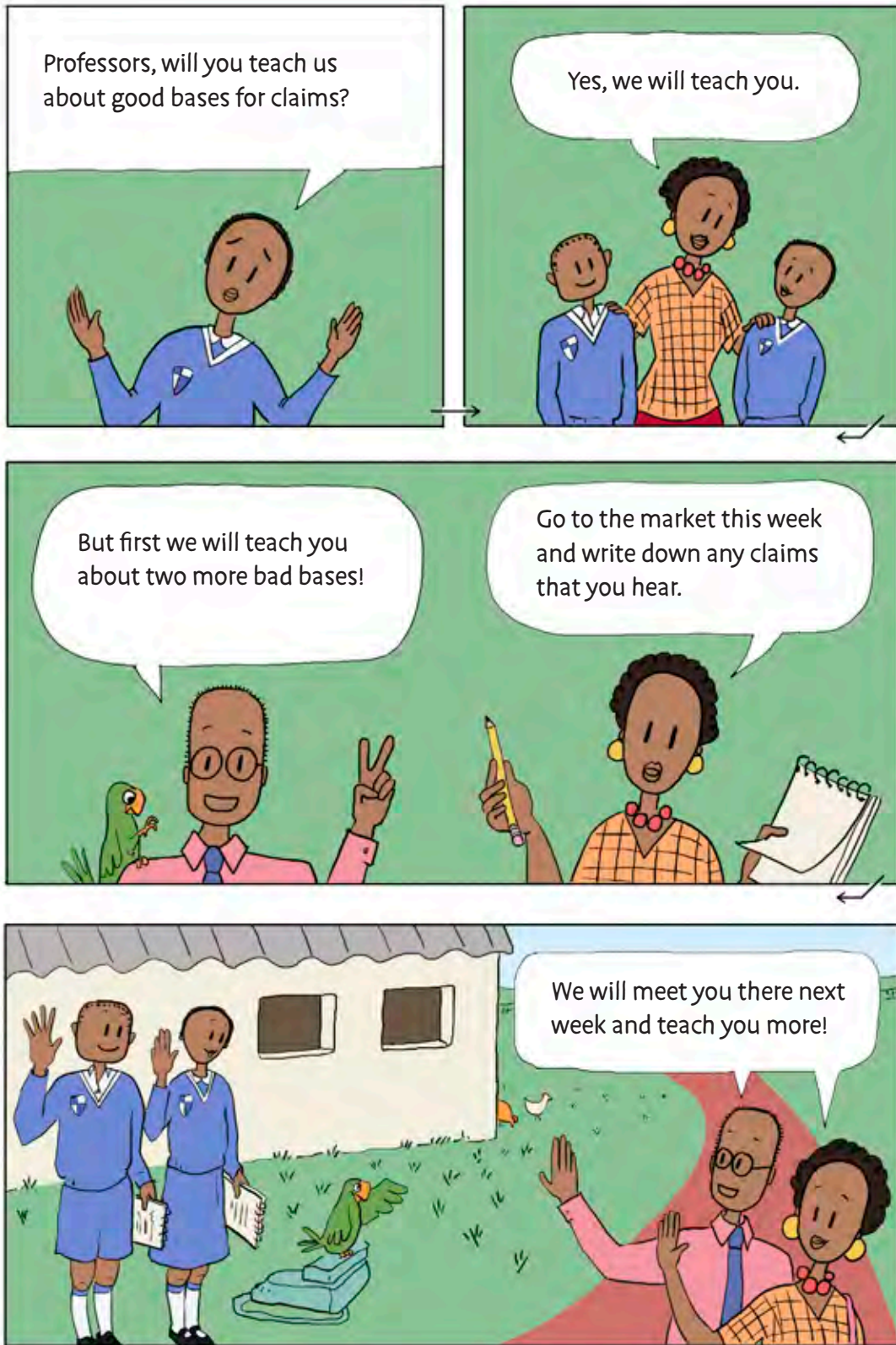
Effect: Fewer infections

Basis for Harriet's claim: How new Super Soap is and how much money it costs

Explanation: Harriet's basis for her claim is bad, so her claim is unreliable. It is possible that the older soap is as good or better than Super Soap.

 *Instructions and notes for teachers*

Background: Many people use glasses to see better. Some of them struggle to see what is close to them without glasses. They are farsighted. Others struggle to see what is far away. They are nearsighted. For glasses to help someone see better, the glass must be adjusted for how farsighted or nearsighted the person is. Whether they are new or cost a lot of money is not important for the effect.



56 Lesson 3: Other bad bases for claims about treatments (Part 1)

Instructions and notes for teachers

These are questions and answers for reviewing what you read aloud, with the children.

1. What was Ruth's claim?

Ruth's claim was that her herb cures sicknesses.

2. Why was Ruth's claim unreliable?

The basis for Ruth's claim was that many people had used the herb for a long time. How many people have used a treatment or how long they have used it are bad bases for claims about the effects of the treatment. There are many treatments that many people have used for a long time that have other effects than what people thought – for example, putting cow dung on a burn.

3. What was Ahmed's claim?

Ahmed's claim was that his glasses were better than other glasses.

4. Why was Ahmed's claim unreliable?

The basis for Ahmed's claim was that his glasses were newer and cost more money than other glasses. How new a treatment is or how much it costs are bad bases for claims about the effects of the treatment. Old treatments that cost little money can be as good or even better than new treatments. Ahmed saw as well with his old glasses as with his new ones.

Extra examples to give children, if necessary

These are extra examples to help explain what the children should have learned from the story. Only use these examples if you think it is necessary.

Why how long a treatment has been used or how many people have used it are bad bases for claims about the effects of the treatment:

Claim: “There is a witch in my grandmother’s village who cures sicknesses! I know because many people have gone to this witch when they are sick!”

Treatment: Using witchcraft

Effect: Curing sicknesses

Basis: How many people have gone to the witch when they are sick

Explanation: How many people have gone to the witch is a bad basis for the claim. It is possible that the witchcraft has no effect or that it has bad effects. The claim is unreliable.

Why how much money a treatment costs or how new it is are bad bases for claims about the effects of the treatment:

Claim: “This creme costs a lot of money! If you use it, your skin will be smoother than if you use other creams!”

Treatment: Using the cream

Effect: Having smoother skin

Basis: How much the cream costs

Explanation: The cost of the cream is a bad basis for the claim. It is possible that other creams that cost less money are as good or better. The claim is unreliable.

ACTIVITY



Instructions



Objective: Explain the bases of different claims.

Write the bases that children have learned about on the blackboard.

Children sitting at the same bench are a team.

The list of claims is in this guide on the page after the example.

The teacher has a list of claims about the effects of treatments.

Step 1: The teacher reads one of the claims about the effects of a treatment.

Step 2: Teams discuss what they think was the basis for the claim.

Step 3: The teacher asks which teams think that someone's personal experience was the basis for the claim.

Step 4: Teams stand up if they think someone's personal experience was the basis for the claim.

Step 5: All teams sit down.

Step 6: The teacher asks which teams think that how long the treatment has been used or how many people have used it was the basis for the claim.

More instructions →

 Instructions and notes for teachers

Blackboard: • Someone's personal experience using the treatment

• How long the treatment has been used or how many people have used it

• How much money the treatment costs or how new it is

ACTIVITY



Step 7: Teams stand up if they think how long the treatment has been used or how many people have used it was the basis for the claim.

Step 8: All teams sit down.

Step 9: The teacher asks which teams think that how much money the treatment costs or how new it is was the basis for the claim.

Step 10: Teams stand up if they think how much money the treatment costs or how new it is was the basis for the claim.

Step 11: All teams sit down.



Step 12: The teacher asks the children to explain their answers.

Step 13: Children raise their hands to explain their answers.

There is an example on the next page. →

ACTIVITY

**Example:**

Teacher: “George’s father always buys water at the store. George says drinking the water from the store is better than drinking other water because it costs a lot of money.”

Teams discuss.

Teacher: “Who thinks someone’s personal experience was the basis for George’s claim?”

Teams that think so stand up.

Teacher: “Who thinks how long the treatment has been used or how many people used it was the basis for George’s claim?”

Teams that think so stand up.

Teacher: “And who thinks how much money the treatment costs or how new the treatment is was the basis for George’s claim?”

Teams that think so stand up.

Teacher: “Please explain your answers.”

Child: “The basis was how much money the treatment cost! George said the water costs a lot of money!”

Teacher: “Right! It is a bad basis for the claim! This means the claim is unreliable! It is possible that the water from the store costs more money without being better than other clean water!”

List of claims for the activity

Rashida's claim: "When I was learning how to bicycle, I borrowed my friend's helmet. After, I had lice! Wearing a helmet gives you lice!"

Treatment: Wearing a helmet

Effect: Getting lice

Basis: Rashida's personal experience of wearing the helmet

Explanation: The claim is unreliable. There are no lice in most helmets.

Anthony's claim: "These are a new type of plaster! They make wounds heal faster than other plasters that they sell at the shop!"

Treatment: Wearing one of the new plasters

Effect: Making a wound heal faster

Basis: How new the plasters are

Explanation: The claim is unreliable. It is possible that wounds heal as fast or faster if you wear the old plasters. It is also possible that neither wearing the new or the old plasters makes a wound heal any faster.

Olivia's claim: "Everyone knows that eating carrots will make you see better at night!"

Treatment: Eating carrots

Effect: Seeing better at night

Basis: How many people have used carrots to see better at night

Explanation: The claim is unreliable. It is possible that eating carrots has no effect on how well you see at night.

Rhoda's claim: "Whenever I have a fever, I eat some garlic to get better. People have done this for a long time, so it is a good treatment!"

Treatment: Eating garlic

Effect: Curing a fever

Basis: How long people have eaten garlic for curing fevers

Explanation: The claim is unreliable. It is possible that eating garlic has no effect on fevers.

Eric's claim: "These football shoes cost a lot of money! They are worth the cost because they will make me kick harder!"

Treatment: Wearing the football shoes

Effect: Kicking harder

Basis: How much the football shoes cost

Explanation: The claim is unreliable. It is possible that Eric kicks as hard or harder when wearing his old shoes.

Arnold's claim: "I had the flu, but slept for an hour during the day and later it was gone! It must be that sleeping during the day cures flu!"

Treatment: Sleeping for an hour during the day

Effect: Curing the flu

Basis: Arnold's personal experience

Explanation: It is possible that Arnold's flu would have gone away even if he had not slept for that hour during the day.



STEP 5

Manage exercises

EXERCISE 1

Tick whether each point is true or false.

Example:

Someone's personal experience using a treatment is a good basis for a claim about the effects of the treatment.

True False

1. When people have the same claim for a long time, it is almost always right.

True False

2. When people have made the same claim for many years, it is sometimes right and sometimes wrong.

True False

3. If thousands of people make the same claim, they are right.

True False

4. The more money that a treatment costs, the better it is.

True False

5. Newer treatments are sometimes worse than older treatments.

True False

60 Lesson 3: Other bad bases for claims about treatments (Part 1)

 Instructions and notes for teachers

Instruction: Remind children to collect claims in the back of their exercise books.

EXERCISE 2

Write why the claims are unreliable.

Example:

Sarah put cow dung on a burn and the burn went away. Therefore, she claims cow dung heals burns.

The claim is unreliable because:

It is only based on Sarah's personal experience. It is possible that Sarah's burn
would have gone away without her putting cow dung on it.

1. One time, when Michael had a fever, he took a cold bath. After only one hour, his fever was almost all gone. Now Michael says taking a cold bath cures a fever.

The claim is unreliable because:

The claim is based on Michael's personal experience of taking a warm bath
when he had a fever. It is possible that his fever would have gone away as
fast without the bath.

2. There are different types of coffee at the shop. Mercy buys the one that costs the most money. She says it is better for your health because it costs more money.

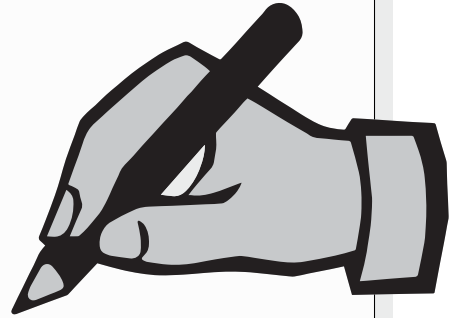
The claim is unreliable because:

The claim is based on how much money the coffee costs. It is possible that
other coffee is as good for your health or better, even though it does not
cost as much money.

STEP 6

Fill in evaluation form

Fill in the separate lesson evaluation form.



LESSON EVALUATION FORM

Informed Health Choices project

Background about lesson for teachers

Many times, common and traditional treatments have other effects than what people have thought. For example, hundreds of years ago, in the Middle Ages, it was a common belief that bleeding people (puncturing their skin and letting blood out) would cure sicknesses. Today, we can be sure that this treatment has other effects than what people thought. It even killed people. Therefore, how many people have used a treatment or how long they have used it is a bad basis for claims about the effects of the treatment.

How new a treatment is or how much it costs is also a bad basis for claims about the effects. Many times, treatments that are newer and cost more money than others have the same or worse effects. For example, some toothpastes are newer and cost more money than others, but most toothpastes have the same effects because they are made of mostly the same ingredients. Also, some bad effects are not noticeable until a long time after using a treatment. Therefore, we cannot be sure about the bad effects of new treatments. For example, there was a medicine called Vioxx that was used for pain by millions of people. The company that made Vioxx promoted it widely in advertisements. However, health researchers eventually found that the medicine caused heart attacks and strokes.



Teachers pose at a school where a class of about 100 tested the materials, Uganda, March 2016.

LESSON 4

Other bad bases for claims about treatments (PART 2)

LESSON 4

Other bad bases for claims about treatments (PART 2)

Everything you need to prepare and teach this lesson

Objectives	page 115
Preparation	page 115
Lesson	page 116
Step 1: Review last lesson	page 117
Step 2: Read aloud	page 118
Step 3: Discuss	page 129
Step 4: Lead activity	page 131
Step 5: Manage exercises	page 136
Step 6: Fill in lesson evaluation form	page 139
Background about lesson for teachers	page 140

Objectives

What the children should learn in this lesson:

- Why these are bad bases for claims about the effects of a treatment
 1. That someone selling the treatment said something about it
 2. That an expert said something about the treatment

Preparation (20 minutes)

This is what you should do before the lesson.

Read ahead

- Read pages for this lesson in the children's book
- Read pages for this lesson in the guide

Gather materials

Make sure you have:

- This guide
- The lesson evaluation form
- Some rubbers

Make sure each child has:

- A copy of the children's book
- Their exercise book
- A pencil or pen

Summary of story: John and Julie meet Professor Compare and Professor Fair at the market. John and Julie have collected claims from people there. The Professors choose three of the claims to use as examples to explain two more bad bases for claims about the effects of treatments. First, the Professors use Mr. Mwaka and Ms. Nantaba's claims as examples. Mr. Mwaka's claim is about bananas and Ms. Nantaba's claim is about mangoes. Second, the Professors use Ms. Namuli's claim as an example. Ms. Namuli's claim is about a small electric machine.

Lesson (80 minutes)

This is a suggested plan for teaching the lesson.

TEACHERS	CHILDREN	TIME
STEP 1 Review last lesson		10 min
<ul style="list-style-type: none"> Review the last lesson by asking the questions on page 117 in this guide. 	<ul style="list-style-type: none"> Answer the questions as instructed. 	
STEP 2 Read aloud		25 min
<ul style="list-style-type: none"> Lead reading aloud starting on page 118 in this guide. <p><i>For different ways of reading see page 19 in this guide.</i></p>	<ul style="list-style-type: none"> Open to page 62 in their books and read aloud as instructed. 	
BREAK		5 min
STEP 3 Discuss		10 min
<ul style="list-style-type: none"> Discuss the story by asking the questions on page 129 in this guide. If necessary, give extra examples on page 130 in this guide. 	<ul style="list-style-type: none"> Answer the questions as instructed. 	
STEP 4 Lead activity		15 min
<ul style="list-style-type: none"> Lead the activity starting on page 131 in this guide. 	<ul style="list-style-type: none"> Open to page 73 in their books and do activity as instructed. 	
STEP 5 Manage exercises		10 min
<ul style="list-style-type: none"> Manage the exercises starting on page 136 in this guide. Help children as they complete exercises and lead marking of exercises. <p><i>For different ways of marking see page 20 in this guide.</i></p>	<ul style="list-style-type: none"> Open to page 76 in their exercise books and complete exercises. 	
STEP 6 Fill in evaluation form		5 min
<ul style="list-style-type: none"> Fill in the lesson evaluation form. 		

These are questions and answers for reviewing the previous lesson, with the children.

1. What was Ruth's claim?

Ruth's claim was that her herb cures sicknesses.

2. Why was Ruth's claim unreliable?

The basis for Ruth's claim was that many people had used the herb for a long time. How many people have used a treatment or how long they have used it are bad bases for claims about the effects of the treatment. There are many treatments that many people have used for a long time that have other effects than what people thought – for example, putting cow dung on a burn.

3. What was Ahmed's claim?

Ahmed's claim was that his glasses were better than other glasses.

4. Why was Ahmed's claim unreliable?

The basis for Ahmed's claim was that his glasses were newer and cost more money than other glasses. How new a treatment is or how much it costs are bad bases for claims about the effects of the treatment. Old treatments that cost little money can be as good or even better than new treatments. Ahmed saw as well with his old glasses as with his new ones.

*John and Julie learn about
BAD BASES for CLAIMS about treatments*

4

Other bad bases for claims about treatments (Part 2)

What you will learn in this lesson:

Why these are bad bases for claims about the effects of a treatment:

1. That someone selling the treatment said something about it
2. That an expert said something about the treatment

Keyword for this lesson:

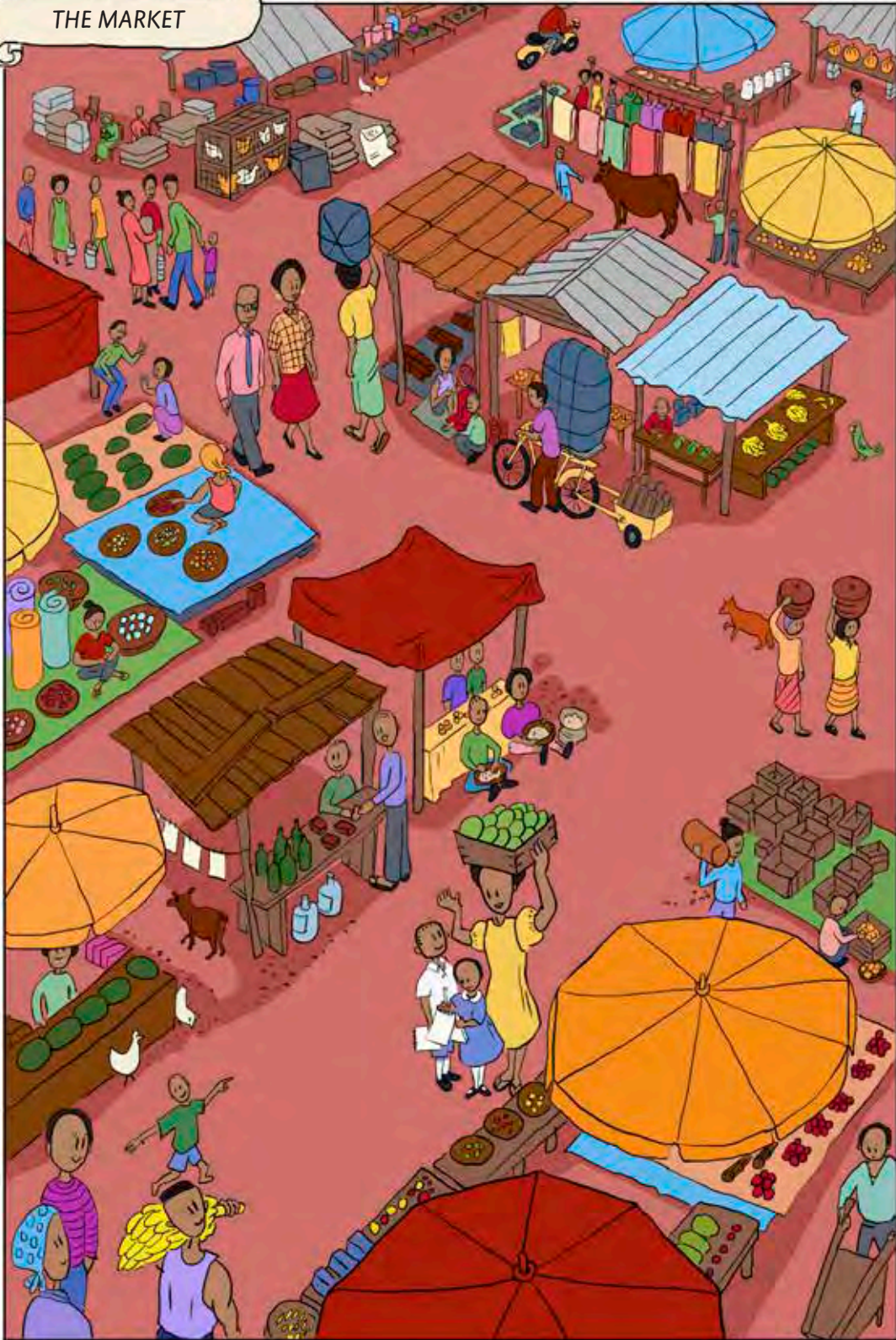
- An **EXPERT** is someone who knows a lot about something.

People in this lesson

**PROFESSOR COMPARE****PROFESSOR FAIR****JOHN****JULIE****MR. MWAKA****MS. NANTABA****MS. NAMULI**

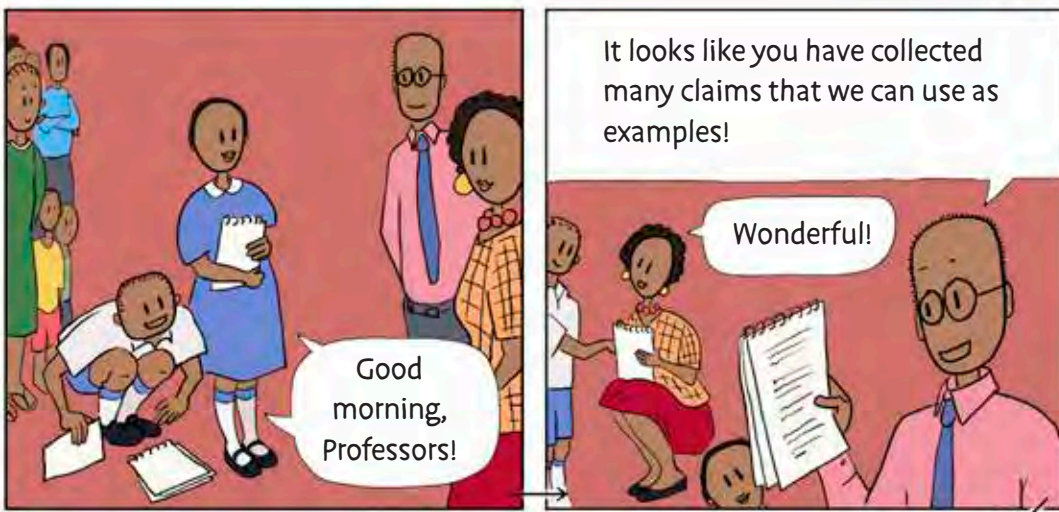
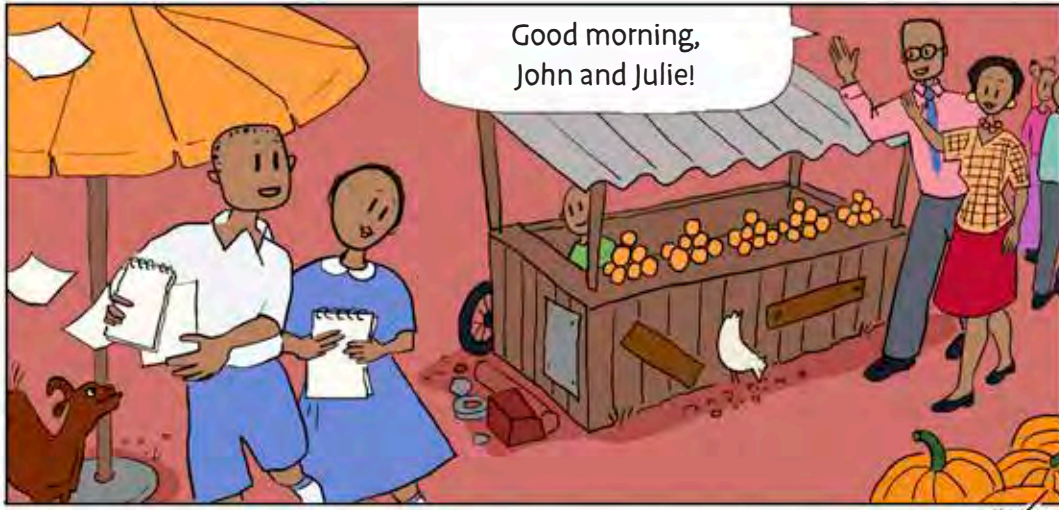
These are some friendly people that John and Julie met at the market.
They have all bought different treatments.

THE MARKET

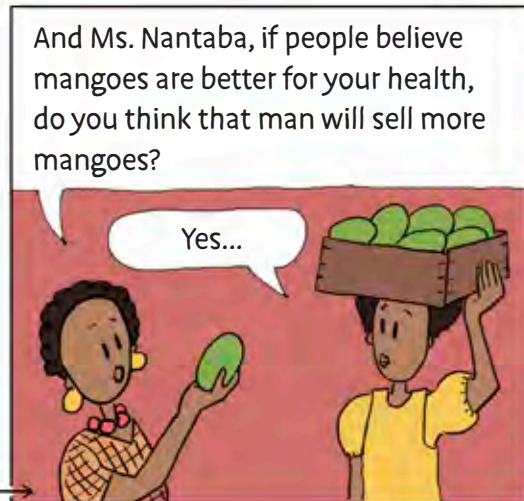
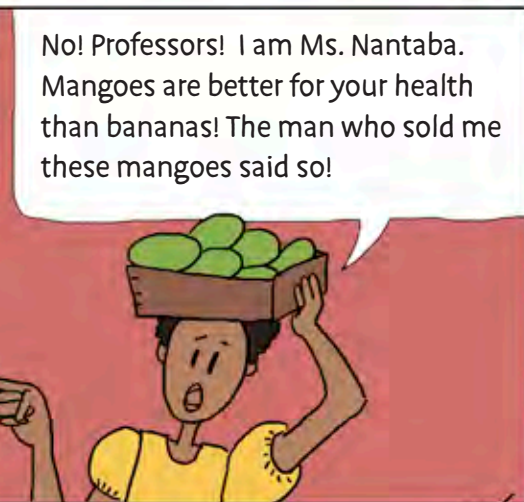


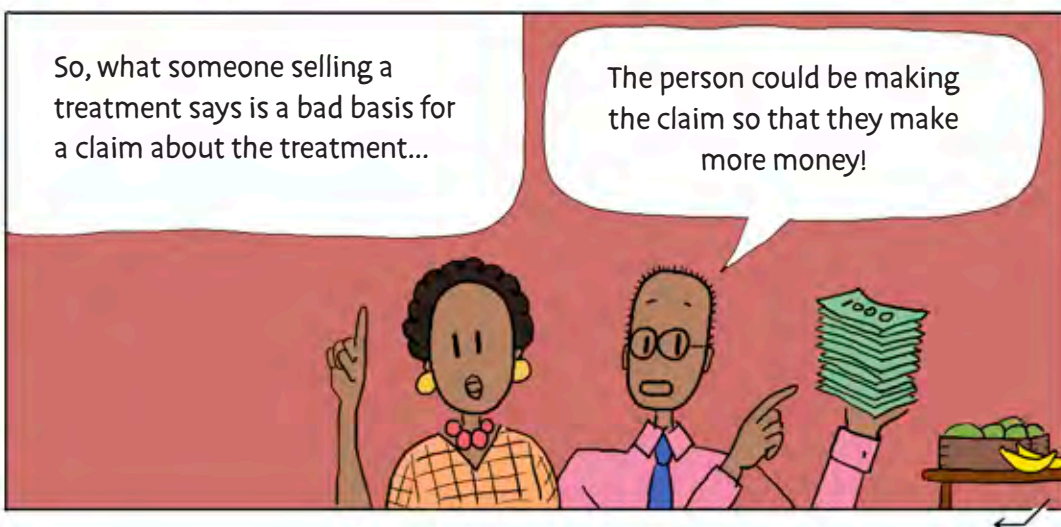
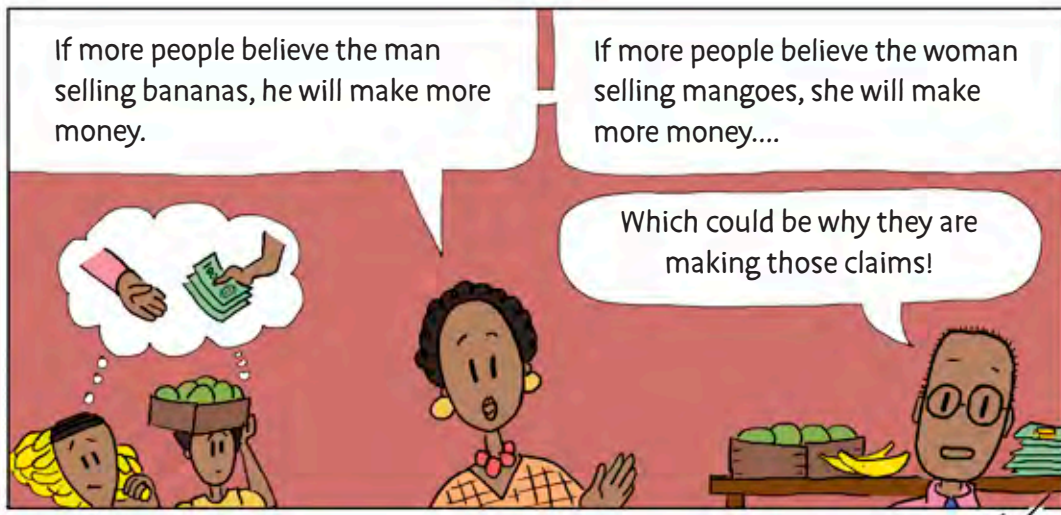
64 Lesson 4: Other bad bases for claims about treatments (Part 2)

Instructions and notes for teachers



MR. MWAKA'S AND MS. NANTABA'S CLAIMS



**Extra example**

Ms. Acheng's claim: "This snake oil will cure any sickness because somebody who sells the oil said so on the radio!"

Treatment: Using the snake oil

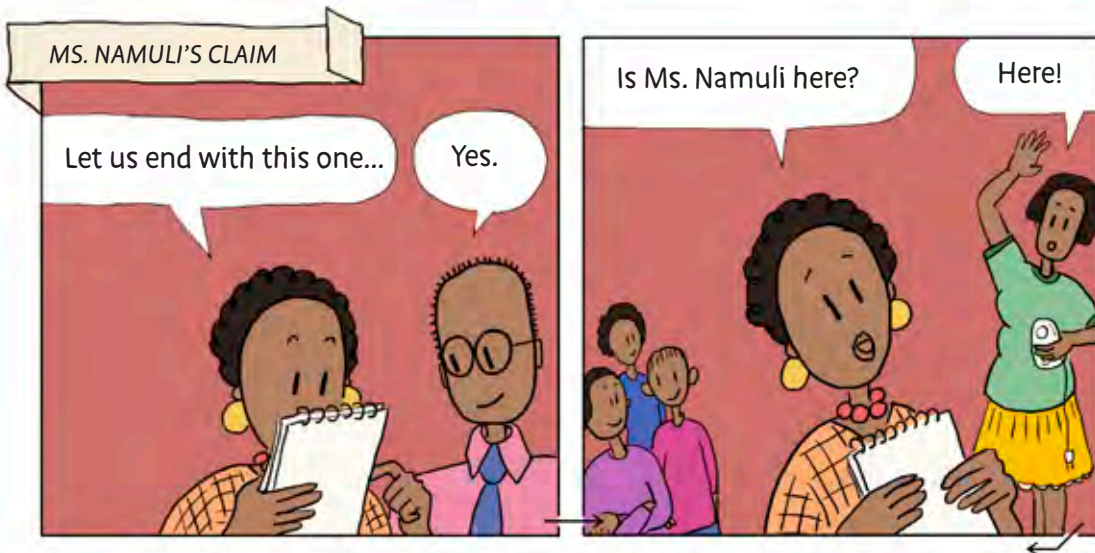
Effect: Curing sicknesses

Basis: What the person selling the snake oil said on the radio

Explanation: Ms. Acheng's basis for her claim is bad, so her claim is unreliable. It is possible the person who is selling the snake oil says it cures any sickness because that person will make more money if people believe the claim.

Instructions and notes for teachers

Background: Bananas contain potassium (a nutrient) and fiber. Both can be good for your health. They also contain vitamin B6 and vitamin A, which your body needs. Mangoes contain fiber and vitamin A, as well as vitamin C and other important vitamins. In other words, eating bananas and eating mangoes are good for your health in different ways.



Good morning, Professors! This small electric machine makes a sound so mosquitoes go away! It stops you from getting malaria! I am sure because an **expert** told me! This expert knows a lot about mosquitoes!

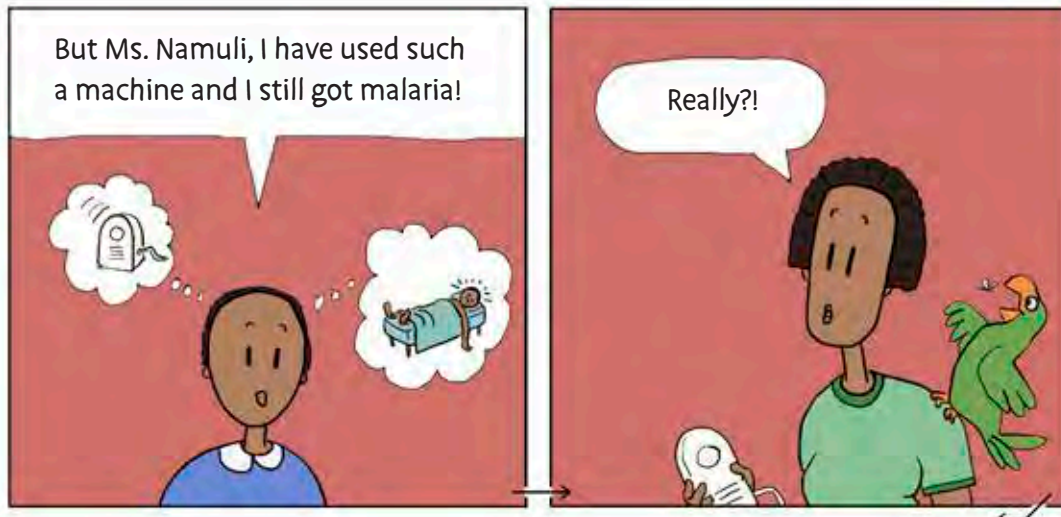


An **EXPERT**

is someone who knows a lot about something.

IN LUGANDA: “Kakensa” oba “Kafulu”

IN KISWAHILI: “Mtaalam”

**Extra example**

Mr. Opio's claim: "If you drink this herbal tea, it will make muscle pain go away! An herbalist told me so! The herbalist said many people take the tea for muscle pain!"

Treatment: Drinking the herbal tea

Effect: Reducing muscle pain

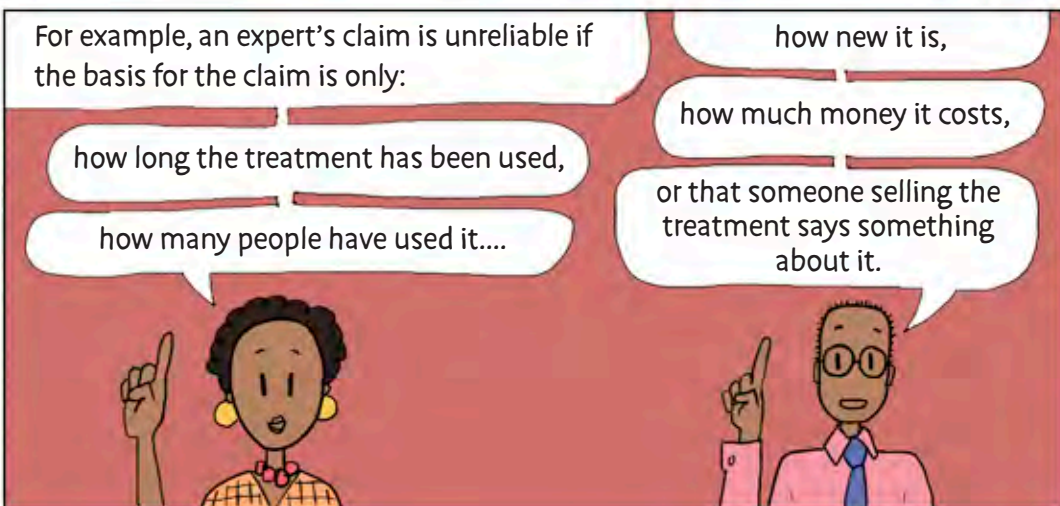
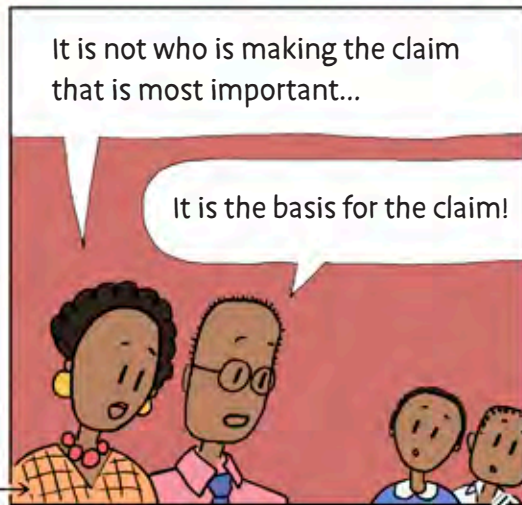
Basis for Mr. Opio's claim: What an expert said about the tea

Explanation: Mr. Opio's basis for his claim is bad, so his claim is unreliable.

It is only based on what the herbalist said and it is possible that the herbalist is wrong. The herbalist's claim is only based on how many people have used the treatment, which is a bad basis.

Instructions and notes for teachers

Background: Health researchers have carefully studied machines like this and found that they do not keep mosquitoes away and, therefore, do not stop you from getting malaria.



70 Lesson 4: Other bad bases for claims about treatments (Part 2)

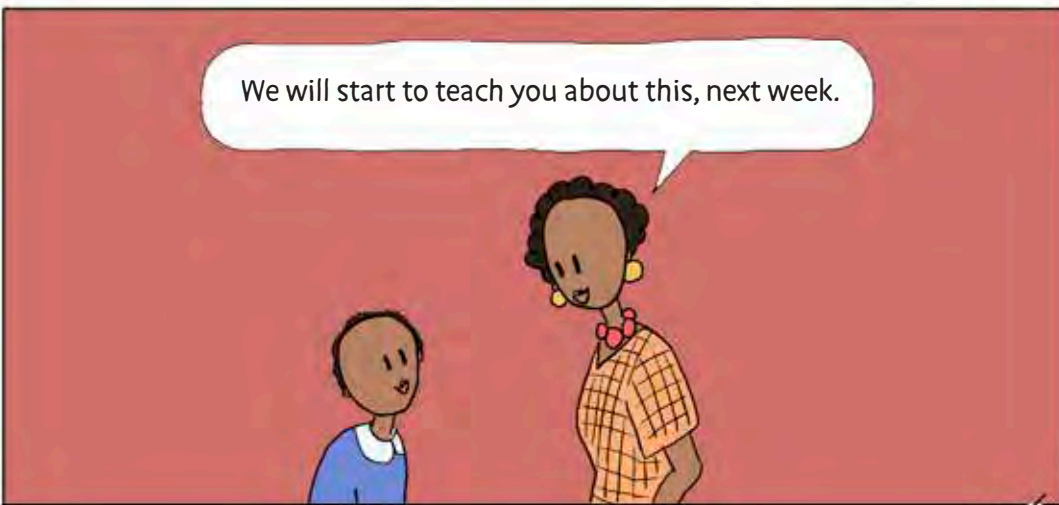
Instructions and notes for teachers

Explanation: Experts' claims are reliable when they are based on fair comparisons with many people, as the children will learn in the next part of the book.

But Professors, what is a good basis for a claim about a treatment?!
When are claims reliable?!



We will start to teach you about this, next week.



Come visit our office at the university!





72 Lesson 4: Other bad bases for claims about treatments (Part 2)

Instructions and notes for teachers

These are questions and answers for reviewing what you read aloud, with the children.

1. What was Mr. Mwaka's claim?

Bananas are better for your health than mangoes.

2. What was Ms. Nantaba's claim?

Mangoes are better for your health than bananas.

3. Why were Mr. Mwaka's and Ms. Nantaba's claims unreliable?

The basis for their claims was the people selling the fruits saying something about them. The person selling the treatment will make more money if people believe the treatment has good effects. This could be why that person claims that the treatment has good effects, whether it really does or not.

4. What was Ms. Namuli's claim?

Ms. Namuli claimed that her small electric machine stops people from getting malaria.

5. Why was Ms. Namuli's claim unreliable?

The basis for Ms. Namuli's claim was what an expert had said. This is a bad basis for the claim. For example, if an expert's claim about the effects is based on a personal experience using the treatment, the expert's claim is unreliable and is a bad basis for someone else's claim about the effects.

Extra examples to give children, if necessary

These are extra examples to help explain what the children should have learned from the story. Only use these examples if you think it is necessary.

Why what someone selling a treatment says about it is a bad basis for claims about the effects of the treatment.

Claim: “This soap will make your skin smoother! Ther person who sold me it said so!”

Treatment: Using the soap

Effect: Getting smoother skin

Basis: What the person selling the soap said about it

Explanation: What the person selling the soap said about it is a bad basis for the claim. It is possible that the person is saying it to make more money. The claim is unreliable.

Why what an expert says about a treatment is a bad basis for claims about the effects of the treatment.

Claim: “An herbalist told me that this tea will get rid of my muscle pain. It must be right because the herbalist is an expert on teas! The herbalist said she is sure because people have taken the tea for muscle pain for many years.”

Treatment: Drinking the herbal tea

Effect: Getting rid of muscle pain

Basis: What the herbalist said

Explanation: What the herbalist said is a bad basis for the claim. It was only based on how long people have taken the tea for muscle pain. It is possible that the tea has no effect on muscle pain. And it is possible that the tea has bad effects. The claim is unreliable.

ACTIVITY



Instructions



Objective: Explain the bases of different claims.

Write the bases that children have learned about on the blackboard.

This activity is the same as in Lesson 3, except teams must choose between 5 bases for claims about the effects of treatments.

Children sitting at the same bench are a team.

The teacher has a list of claims about the effects of treatments.

The list of claims starts on the page after the example.

Step 1: The teacher reads one of the claims about the effects of a treatment.

Step 2: Teams discuss what they think was the basis for the claim.

Step 3: The teacher asks the teams what they think was the basis for the claim.

Step 4: Teams stand up to give their answer, then sit back down, like in the activity for Lesson 3.

Step 5: Children raise their hands to explain their answers.

It is important to involve the whole class.

There is an example on the next page. →

Instructions and notes for teachers

Blackboard: • Someone's personal experience using the treatment

• How long the treatment has been used or how many people have used it

• How much money the treatment costs or how new the treatment is

• That someone selling the treatment says something about it

• That an expert says something about the treatment

ACTIVITY

**Example:**

Teacher: “Margaret’s football coach knows a lot about football and exercising. Margaret says stretching for half an hour after playing sports will stop you from getting injured. She says it is so because her coach said so.”

Teams discuss.

Teacher: “Who thinks someone’s personal experience was the basis for Margaret’s claim?”

Teams that think so stand up.

Teacher: “Who thinks how long the treatment has been used or how many people used it was the basis for Margaret’s claim?”

Teams that think so stand up.

Teacher: “Who thinks how much money the treatment costs or how new the treatment is was the basis for Margaret’s claim?”

Teams that think so stand up.

Teacher: “Who thinks that someone selling the treatment saying something about it was the basis for Margaret’s claim?”

Teams that think so stand up.

Teacher: “Who thinks that an expert saying something about the treatment was the basis for Margaret’s claim?”

Example continued →

ACTIVITY



Teams that think so stand up.

Teacher: "Please explain your answers."

Child: "The basis was an expert saying something about the treatment! Margaret said her claim was right because of what her coach said and her coach is an expert!"

Teacher: "Right! This means Margaret's claim is unreliable! It is possible that her coach was wrong!"

List of claims for the activity

Alexander's claim: "Eating more meat will make you stronger and smarter! I heard it from a butcher!"

Treatment: Eating more meat

Effect: Becoming stronger and smarter

Basis: What the butcher said to Alexander

Explanation: The claim is unreliable. It is possible that the butcher says this to sell more meat and make more money.

Cate's claim: "When you have head pain, you should put a towel in cold water, then put the towel on your head! It will reduce the pain! Many people do this!"

Treatment: Putting the towel in cold water than on your head

Effect: Getting rid of head pain

Basis: How many people have used the treatment

Explanation: The claim is unreliable. It is possible that putting the towel in cold water and then on your head has no effect on head pain.

Patrick's claim: "Eating chocolate gets rid of head pain! I know because I tried eating chocolate when I had head pain and the pain went away very fast!"

Treatment: Eating chocolate

Effect: Getting rid of head pain

Basis: Patrick's experience eating chocolate

Explanation: The claim is unreliable. It is possible that Patrick's head pain would have gone away as fast without him eating the chocolate.

Agnes's claim: "Chewing tea leaves will get rid of stomach pain! An herbalist told me and the herbalist is an expert on this type of treatment! The herbalist said that, for a long time, people have chewed tea leaves for stomach pain!"

Treatment: Chewing tea leaves

Effect: Reducing stomach pain

Basis: What the herbalist said about chewing tea leaves

Explanation: The claim is unreliable. The herbalist's claim is based on how long people have chewed tea leaves for stomach pain. It could be that chewing tea leaves has no effect on stomach pain even though people have done it for a long time.

Ali's claim: "This milk will make you stronger than other milk! It costs a lot of money!"

Treatment: Drinking the milk

Effect: Getting stronger

Basis: How much money the milk costs

Explanation: The claim is unreliable. It is possible that drinking other milk makes you as strong or stronger.



STEP 5

Manage exercises

EXERCISE 1

Tick whether each point is true or false.

Example:

The newer a treatment is, the better it is.

True False

1. New treatments are sometimes worse than old treatments.

True False

2. Not all experts make reliable claims.

True False

3. If an expert makes a claim based on a personal experience, the claim is unreliable.

True False

4. The basis for the claim is more important than who is making the claim.

True False

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Lesson 4: Other bad bases for claims about treatments (Part 2)

 Instructions and notes for teachers

Instruction: Remind children to collect claims in the back of their exercise books.

EXERCISE 2

Write why the claims are unreliable.

Example:

Alice eats potatoes everyday. She says it makes her stronger because many people have told her so.

The claim is unreliable because:

The basis is how many people have said that eating potatoes everyday

makes you stronger. This is a bad basis for the claim.

1. Christopher has bought some candles. He says that if you use the candles, you will not get malaria. He says it is right because people who sell the candles say so.

The claim is unreliable because:

The basis is that people selling the treatment said something about it. This

is a bad basis for the claim.



EXERCISE 2

2. Josephine says that eating soup will make the flu go away. She says it is true because a cook told her so. The cook knows a lot about foods.

The claim is unreliable because:

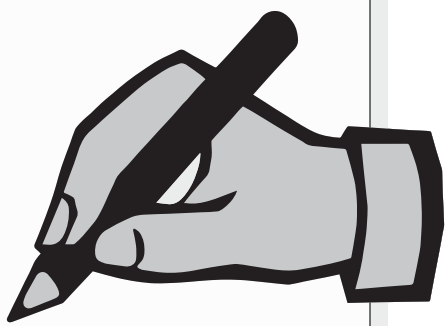
The basis is that an expert said something about the treatment. This is a bad basis for the claim.

3. Rehema heard a fisherman say that eating boiled fish is better for your health than eating grilled fish. Rehema says the fisherman is right because he knows so much about fish.

The claim is unreliable because:

The basis is that an expert said something about the treatment. This is a bad basis for the claim.

Fill in the separate lesson evaluation form.



LESSON EVALUATION FORM

Informed Healthcare Choices project

Background about lesson for teachers

People selling treatments make lots of claims about the effects. You must always ask whether the bases for those claims are good or bad. It is easy to be misled because you think that if a treatment is being sold and many people are paying for it, it must have been thoroughly tested. Claims about such treatments can seem like descriptions of the product, when they really are claims like any other.

People who sell treatments have several interests. By interest, we mean something that would be good for them. They have an interest in the treatments they sell helping their customers. However, they also have an interest in making money. These two interests compete. This is called a conflict of interest. Sometimes, when someone selling a treatment has a conflict of interest, they make unreliable claims about the effects because of that conflict.

Experts also sometimes make unreliable claims. For example, doctors and other experts have said resting in bed for a long time is good for many different illnesses, including heart attacks and back pain. Other experts disagreed. Health researchers found that the good effects of this treatment are not so good. They even found that the treatment had no good effects at all in some cases. Further, they found that resting too long can have bad effects. Many times, experts will disagree about the effects of a treatment. All of them are experts, but not all of them can be right.



Children read aloud together, Uganda, January 2016.

LESSON 5

Comparisons of treatments

LESSON 5

Comparisons of treatments

Everything you need to prepare and teach this lesson

Objectives	page 145
Preparation	page 145
Lesson	page 146
Step 1: Review last lesson	page 147
Step 2: Read aloud	page 148
Step 3: Discuss	page 161
Step 4: Lead activity	page 163
Step 5: Manage exercises	page 166
Step 6: Fill in lesson evaluation form	page 170
Background about lesson for teachers	page 171

Objectives

What the children should learn in this lesson:

- Why health researchers must compare a treatment to another treatment or no treatment

Preparation (20 minutes)

This is what you should do before the lesson.

Read ahead

- Read pages for this lesson in the children's book
- Read pages for this lesson in the guide

Gather materials

Make sure you have:

- This guide
- The lesson evaluation form
- Some rubbers

Make sure each child has:

- A copy of the children's book
- Their exercise book
- A pencil or pen

Summary of story: John and Julie visit the Professors' office at the university. The Professors begin teaching John and Julie about reliable claims, which are based on health research. The Professors begin explaining what health researchers must do to find out more about the effects of a treatment. First, they must turn a claim about the treatment into a question. Second, they must compare the treatment to another treatment or to no treatment. That means they must give one treatment to one group of people and another treatment or no treatment to a different group of people. Third, they must measure what happened and compare what happened in the different groups.

Lesson (80 minutes)

This is a suggested plan for teaching the lesson.

TEACHERS	CHILDREN	TIME
STEP 1 Review last lesson		10 min
<ul style="list-style-type: none"> Review the last lesson by asking the questions on page 147 in this guide. 	<ul style="list-style-type: none"> Answer the questions as instructed. 	
STEP 2 Read aloud		25 min
<ul style="list-style-type: none"> Lead reading aloud starting on page 148 in this guide. <p><i>For different ways of reading see page 19 in this guide.</i></p>	<ul style="list-style-type: none"> Open to page 80 in their books and read aloud as instructed. 	
BREAK		5 min
STEP 3 Discuss		10 min
<ul style="list-style-type: none"> Discuss the story by asking the questions on page 161 in this guide. 	<ul style="list-style-type: none"> Answer the questions as instructed. 	
STEP 4 Lead activity		15 min
<ul style="list-style-type: none"> Lead the activity starting on page 163 in this guide. 	<ul style="list-style-type: none"> Open to page 93 in their books and do activity as instructed. 	
STEP 5 Manage exercises		10 min
<ul style="list-style-type: none"> Manage the exercises starting on page 166 in this guide. Help children as they complete exercises and lead marking of exercises. <p><i>For different ways of marking see page 20 in this guide.</i></p>	<ul style="list-style-type: none"> Open to page 96 in their exercise books and complete exercises. 	
STEP 6 Fill in evaluation form		5 min
<ul style="list-style-type: none"> Fill in the lesson evaluation form. 		

These are questions and answers for reviewing the previous lesson, with the children.

1. What was Mr. Mwaka's claim?

Bananas are better for your health than mangoes.

2. What was Ms. Nantaba's claim?

Mangoes are better for your health than bananas.

3. Why were Mr. Mwaka's and Ms. Nantaba's claims unreliable?

The basis for their claims was the people selling the fruits saying something about them. The person selling the treatment will make more money if people believe the treatment has good effects. This could be why that person claims that the treatment has good effects, whether it really does or not.

4. What was Ms. Namuli's claim?

Ms. Namuli claimed that her small electric machine stops people from getting malaria.

5. Why was Ms. Namuli's claim unreliable?

The basis for Ms. Namuli's claim was what an expert had said. This is a bad basis for the claim. For example, if an expert's claim about the effects is based on a personal experience using the treatment, the expert's claim is unreliable and is a bad basis for someone else's claim about the effects.

*John and Julie learn about
COMPARISONS of treatments*

5

Comparisons of treatments

What you will learn in this lesson:

1. Why health researchers must compare a treatment to another treatment or no treatment

Keyword for this lesson:

- A **RELIABLE** claim is a claim with a good basis.
- To **COMPARE** *treatments* is to look at the differences between two or more treatments.
- A **RESEARCH QUESTION** is a question that researchers try to answer.

People in this lesson



PROFESSOR COMPARE



PROFESSOR FAIR



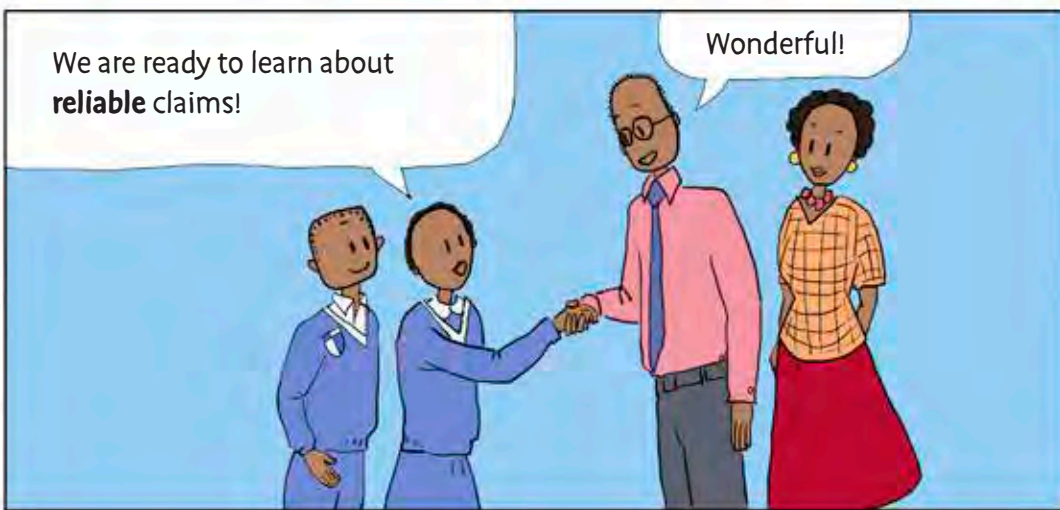
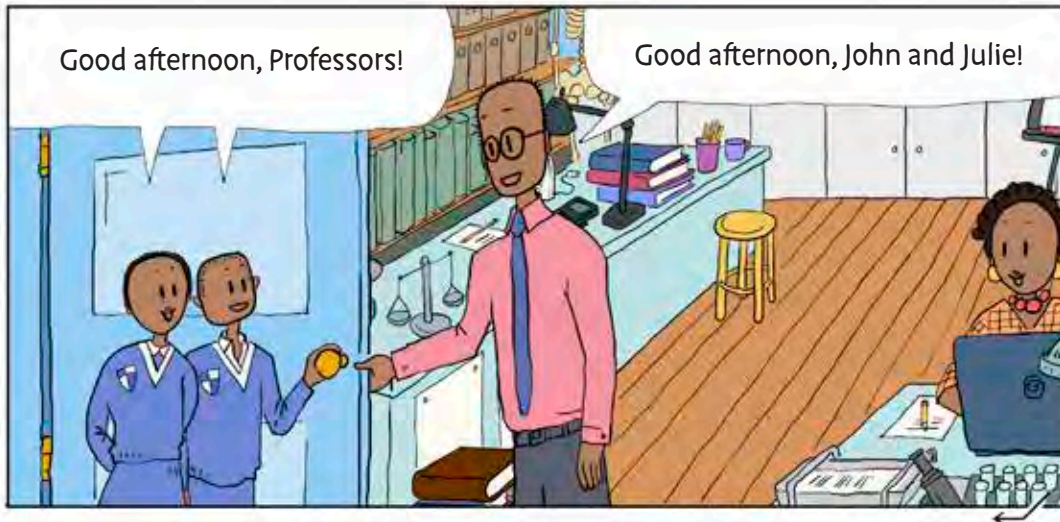
JOHN



JULIE

Instructions and notes for teachers

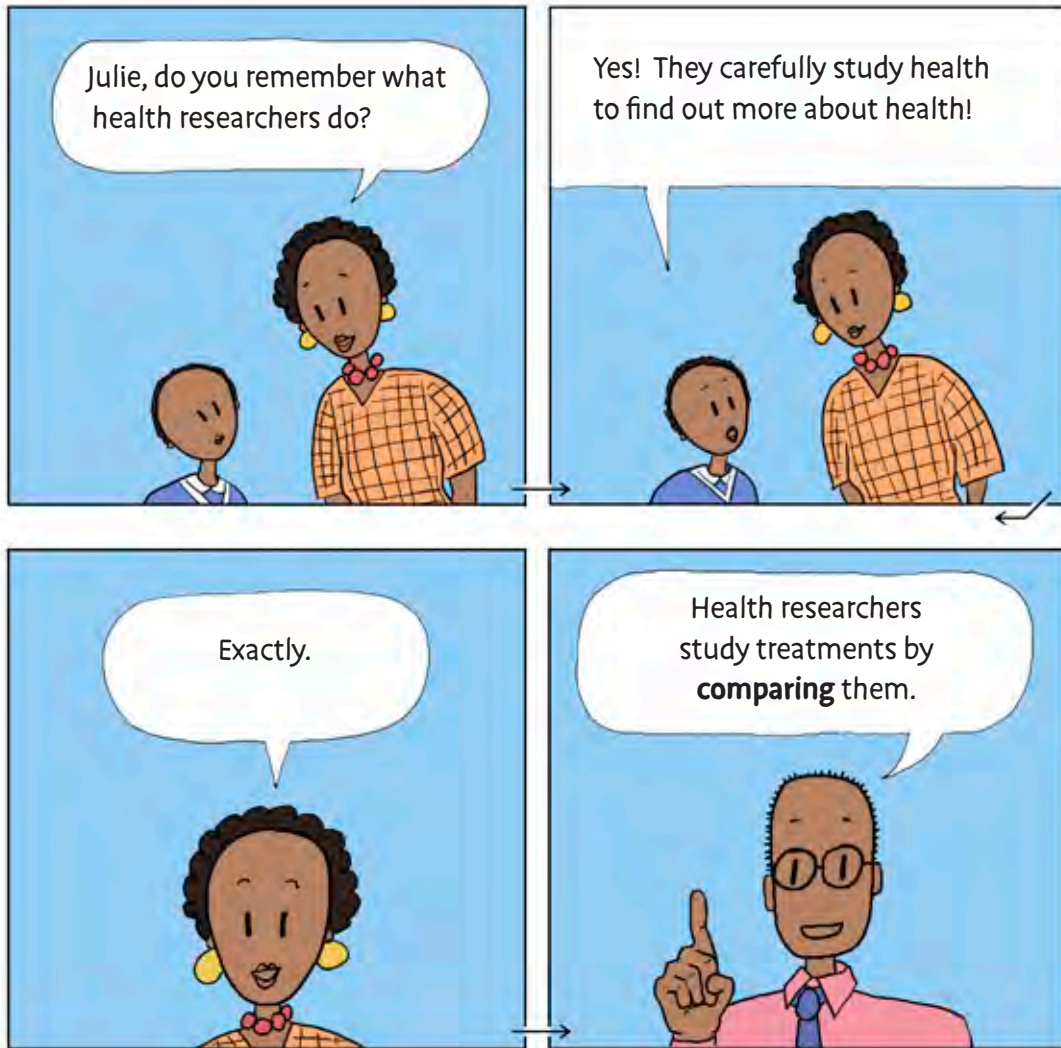




A **RELIABLE** *claim*
is a claim with a good basis.

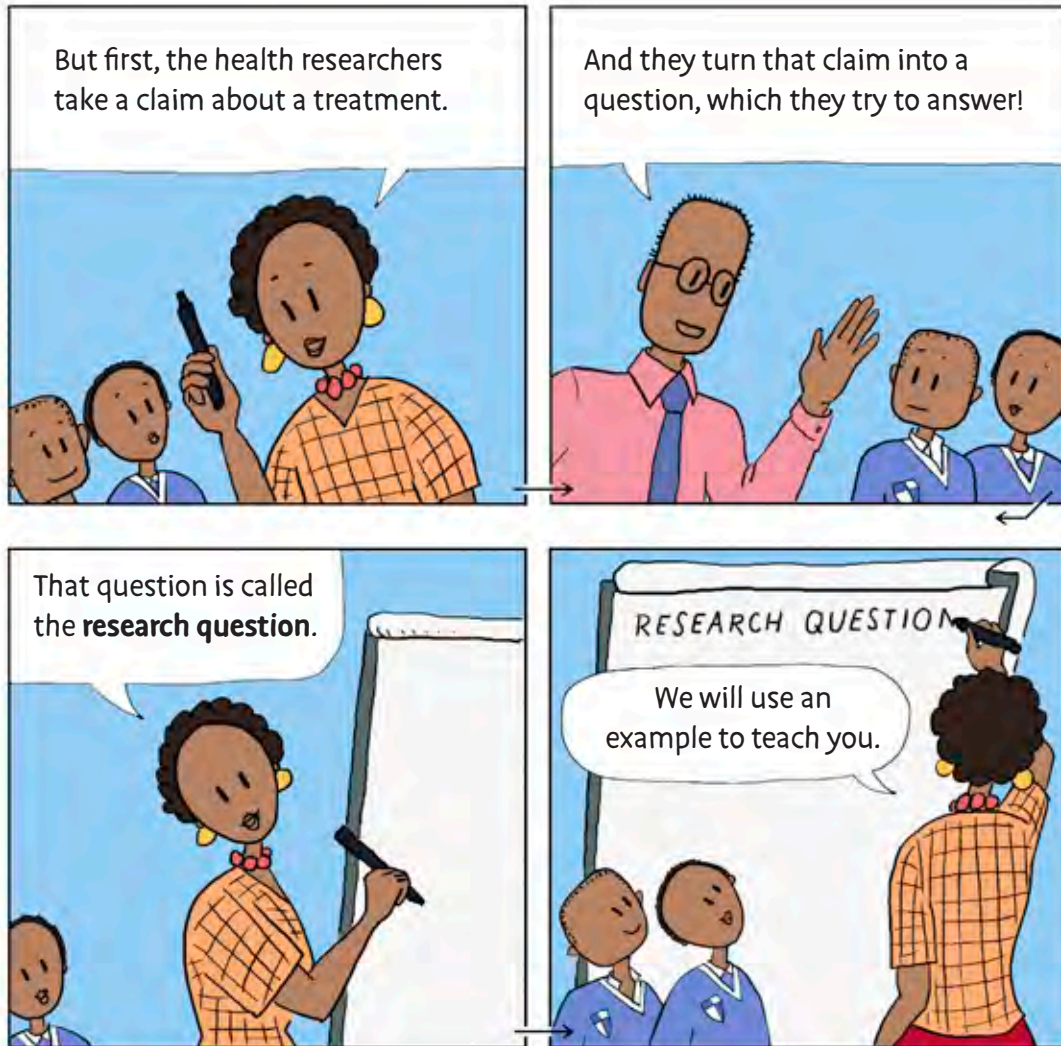
IN LUGANDA: “Ekyogerwayogerwa ekyesigika”

IN KISWAHILI: “Ya maana”



To **COMPARE** treatments is to look at the differences between two or more treatments.

IN LUGANDA: "Okugeraageranya obujjanjabi obumu n'obulala"
IN KISWAHILI: "Kulinganisha"



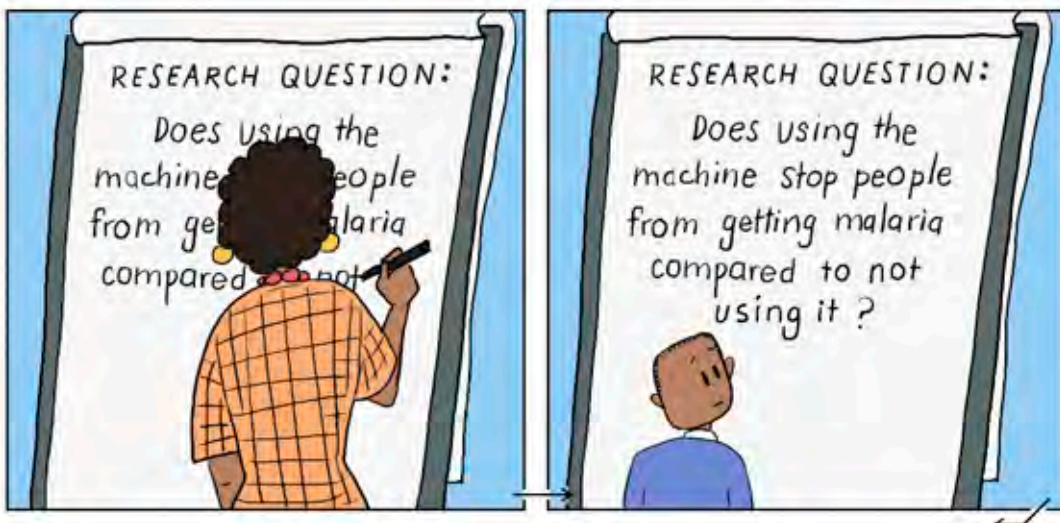
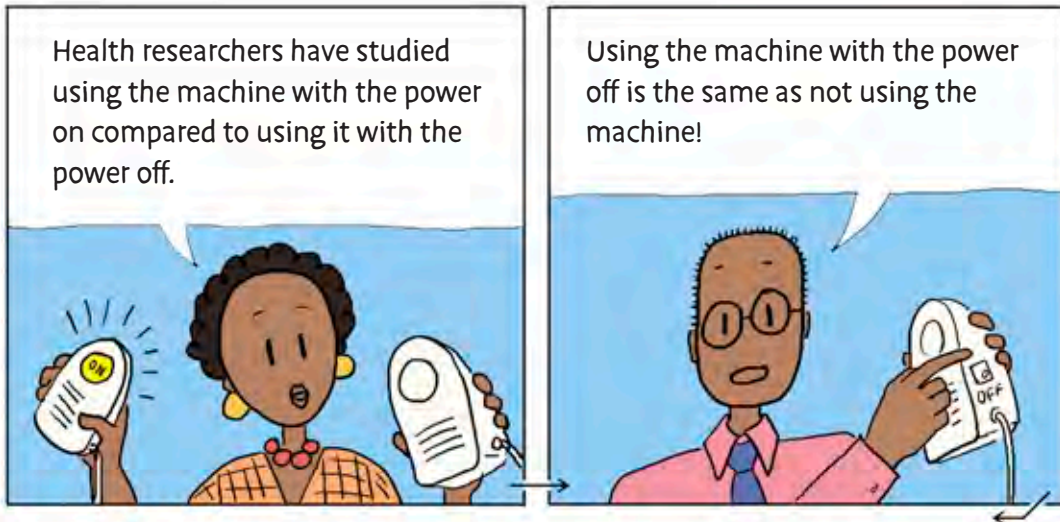
A **RESEARCH QUESTION**

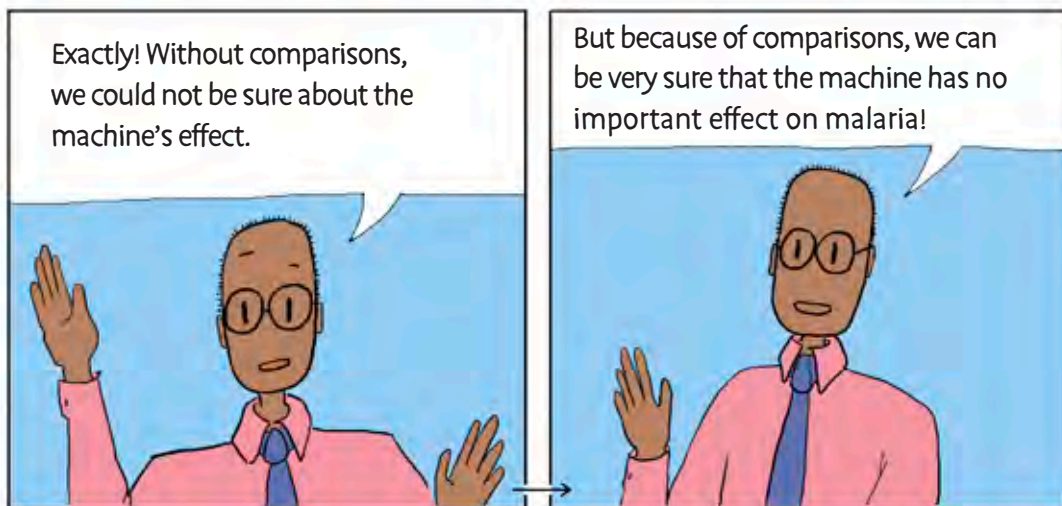
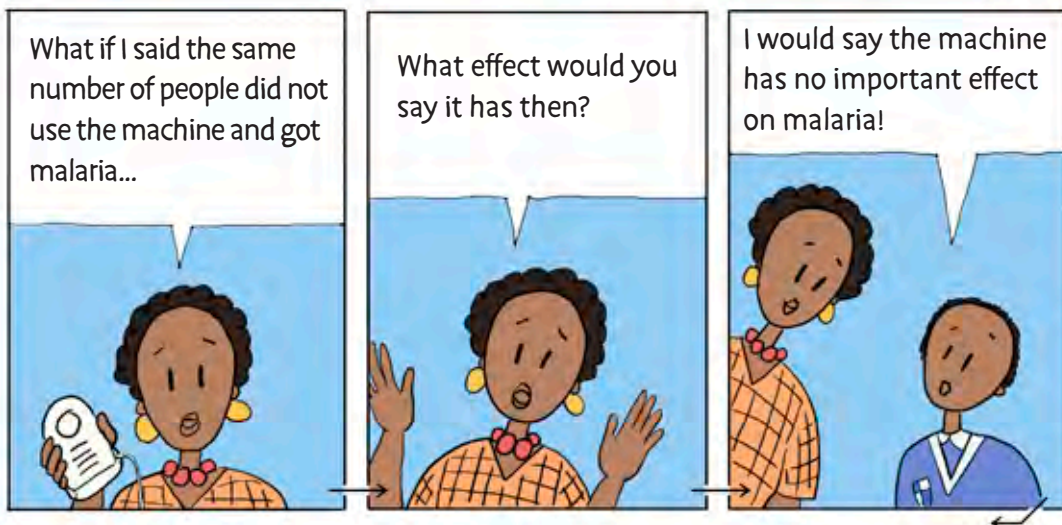
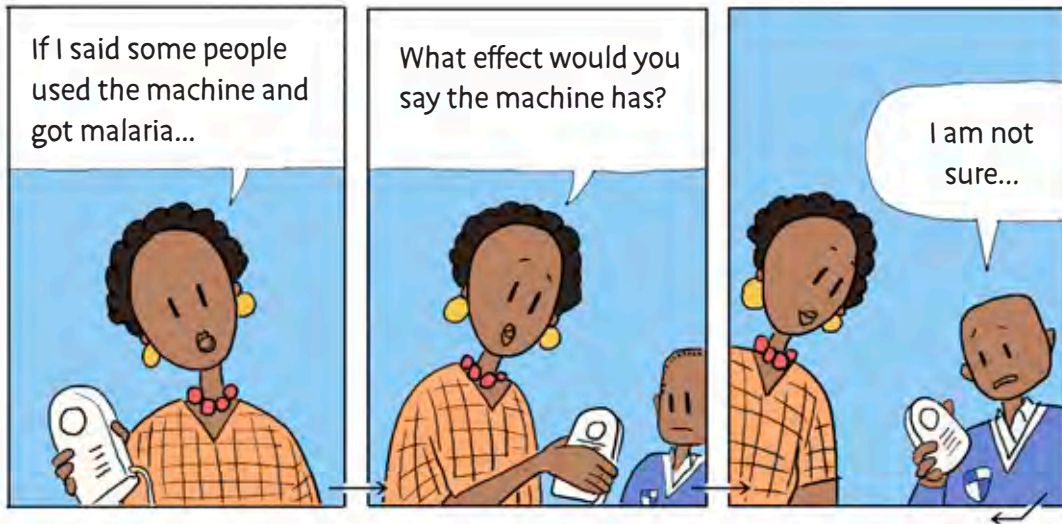
is a question that researchers try to answer.

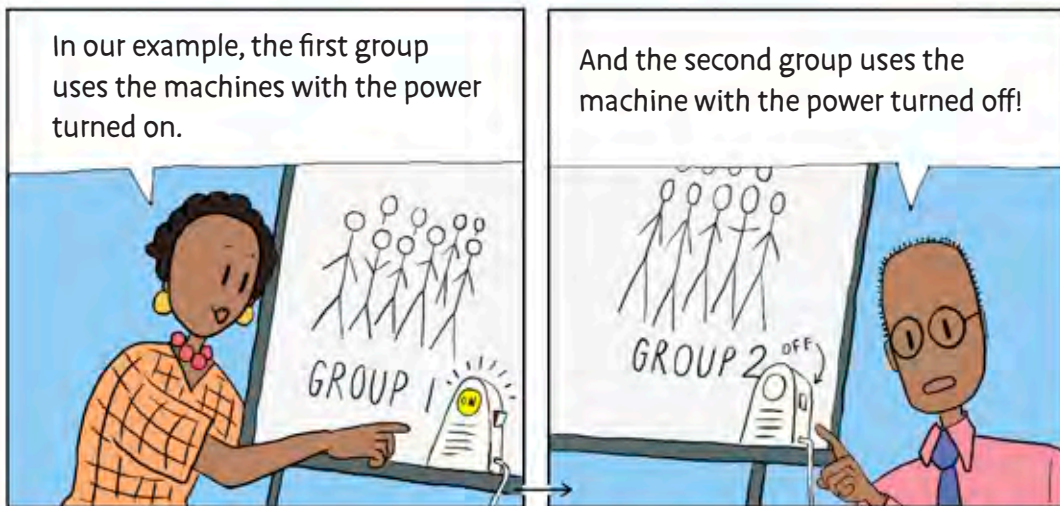
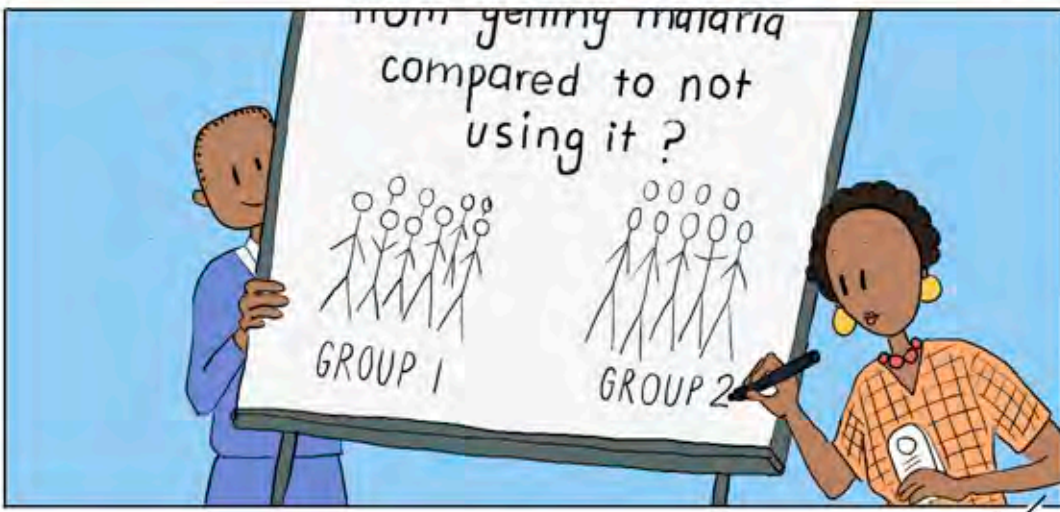
IN LUGANDA: “Ensonga enoonyerezebwako” oba “Ekibuuzo abanoonyereza kyebaba bagezaako okuddamu oba okuzuula” oba “Ensonga abanoonyereza gyebabeera bagezaako okwekenneenya”

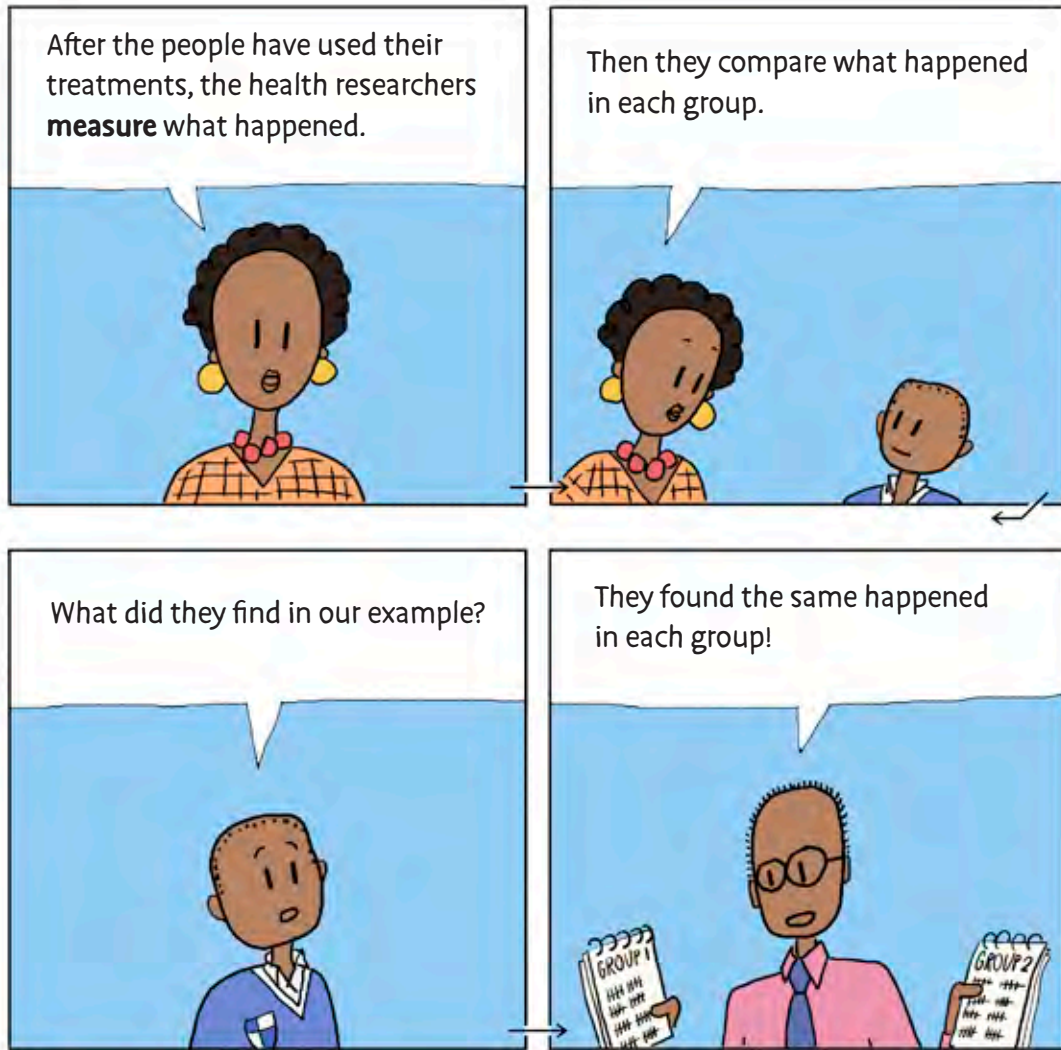
IN KISWAHILI: “Swali la utafiti”









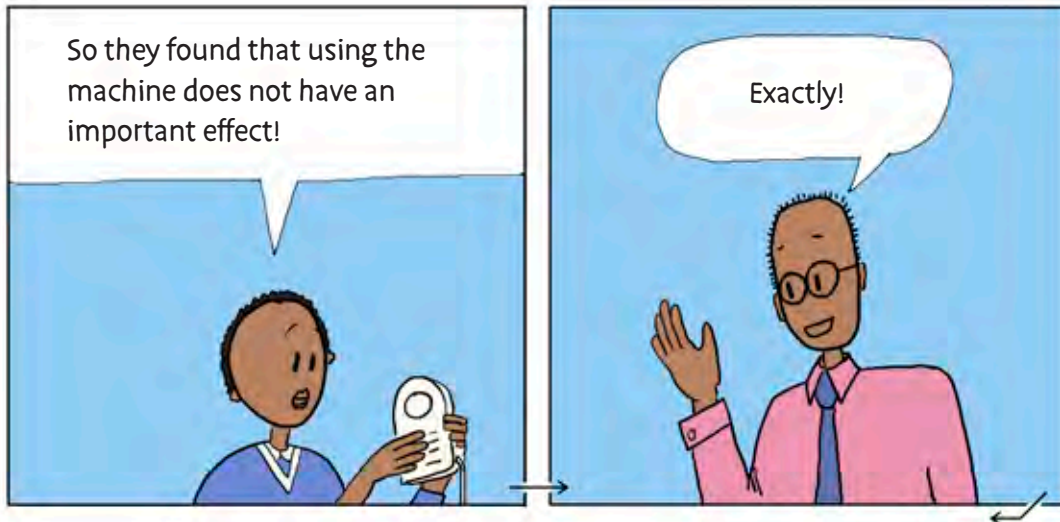


To **MEASURE**

is to look at how much there is or how many there are of something.

LUGANDA: “Okupima” oba “Okubala”

IN KISWAHILI: “Kupima”



Extra examples of claims turned into research questions:

Extra example 1

Claim: Putting vaseline on your skin will make it stay soft!

Research question: Does putting vaseline on your skin make it stay soft compared to not putting vaseline on your skin?

Extra example 2

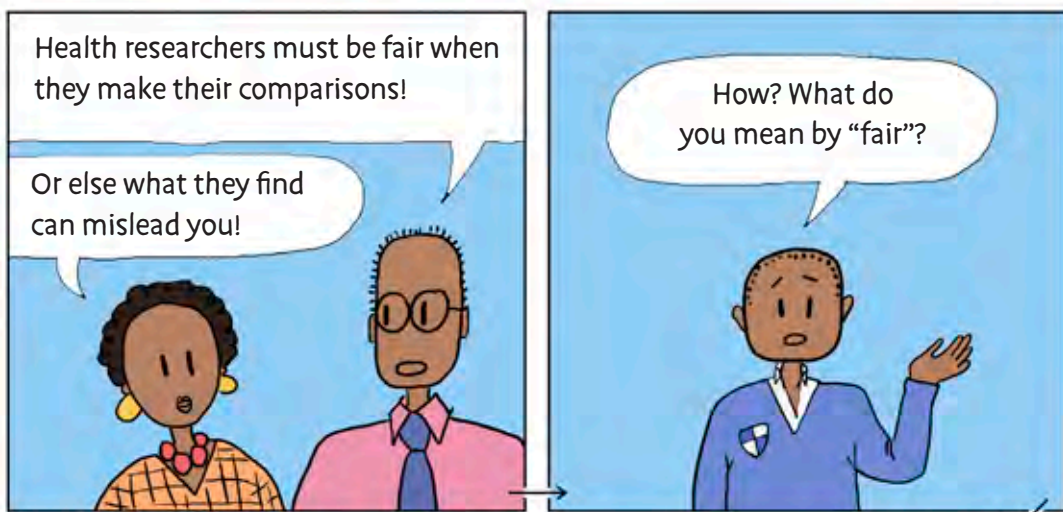
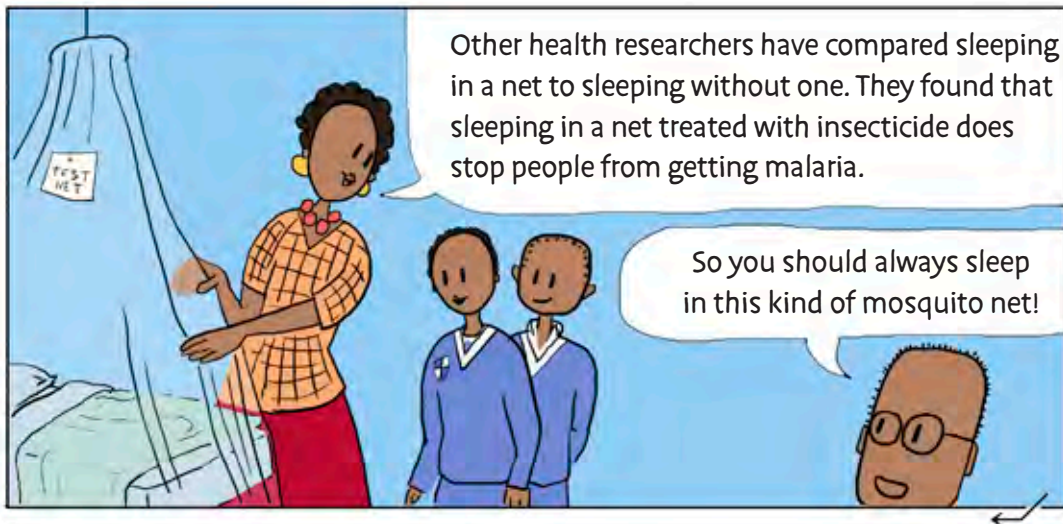
Claim: You will sleep better at night if you drink tea during the day than if you drink coffee!

Research question: Do you sleep better at night if you drink tea during the day compared to drinking coffee?

To **FIND** something after a comparison is to find a difference or similarity.

IN LUGANDA: “Okuzuula ensonga oba ekintu oluvannyuma lw’okukola okugeraageranya wakati w’ekintu ekimu n’ekirala”

IN KISWAHILI: “Gundua”



Instructions and notes for teachers

Background: Researchers have compared people sleeping under bed nets sprayed with insecticide to people not sleeping under bed nets or sleeping under bed nets without insecticide. Bed nets sprayed with insecticide are highly effective in reducing the number of children who get malaria and die from malaria.

These are questions and answers for reviewing what you read aloud, with the children.

- 1. What is the first step health researchers take to find out more about the effects of a treatment?**

They turn a claim into a research question.

- 2. What treatment did the health researchers compare to using Ms. Namuli's machine?**

Using the machine with the power off, which is the same as not using the machine.

- 3. What did the health researchers find?**

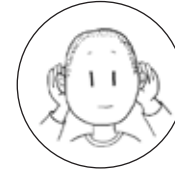
They found the machine has no important effects.

- 4. What have health researchers found about the effects of sleeping in mosquito nets?**

They have found that it stops people from getting malaria if the nets are sprayed with insecticide.

There are no extra examples for you to give the children, for this lesson.

ACTIVITY



Instructions

Objective: Explain why health researchers must compare treatments.

Part 1 of Activity 5: Trying to find an effect without a comparison

Step 1: Children put their hands behind their ears, as shown above.

Step 2: The teacher covers their mouth and says a word in a low voice. Children try to hear what the teacher said.

Say, "Tomato," or, "Potato." Write "Tomato" and "Potato" on opposite sides of the board.

Step 3: The teacher writes two words on the board. One of the words is the word that the teacher just said.

Step 4: The teacher asks how many children think it was the first word that the teacher said.

Step 5: Children who think so stand up.

Step 6: All children sit down.

Step 7: The teacher asks how many children think it was the second word that the teacher said.

More instructions →

ACTIVITY



Step 8: Children who think so stand up.

Step 9: All children sit down.

Step 10: The teacher says what word it was.

Step 11: Led by the teacher, children discuss whether putting your hands behind your ears that way helps you hear better.

Without comparing the treatment (putting your hands behind your ears) to another treatment, you cannot find out more about the effects.

Part 2 of Activity 5: Trying to find an effect with a comparison

Step 1: The teacher divides the class into two groups.

Step 2: The teacher chooses one group to listen with their hands behind their ears. This is Group 1.

Children remain at their desks. Divide the class in two between the back and the front of the classroom. Children at the front of the classroom are Group 1.

The other group will listen without their hands behind their ears. This is Group 2.

Step 3: The teacher covers their mouth and says a new word in a low voice.

Say "Playing," or, "Praying." Write "Playing" and "Praying" on opposite sides of the board.


Step 4: The teacher writes two words on the board. One of the words is the word that the teacher just said.

More instructions →



ACTIVITY



- Step 5:* The teacher asks how many children think it was the first word.
- Step 6:* Children who think so stand up.
- Step 7:* The teacher counts how many children in each group have stood up. The teacher writes the numbers in a chart on the blackboard.
- Step 8:* All children sit down.
- Step 9:* The teacher asks hoe many children think it was the second word.
- Step 10:* Children who think so stand up.
- Step 11:* The teacher counts how many children in each group have stood up. The teacher writes the numbers in a chart on the blackboard.
- Step 12:* All children sit down.
- Step 13:* The teacher says what word it was.
-  *Step 14:* Again, led by the teacher, children discuss whether putting your hands behind your ears that way helps you hear better.

 Instructions and notes for teachers

Expalantion: After making the comparison, you either found that the treatment (putting your hands behind your ears) helps you hear better, it makes no difference or it makes it harder to hear. However, you cannot be sure that what you found was the effects of the treatments because the comparison was not fair and it was too small. The children will learn more about this in the next two lessons.



EXERCISE 1

Write what the words mean. Remember that the meanings of the words are in the back of the book.

Example:

What is a “health researcher”?

A health researcher is someone who carefully studies health to find out more
about health.

1. What is a “reliable” claim?

A reliable claim is a claim with a good basis.

2. What is a “comparison” of treatments?

A comparison of treatments is a look at the differences between two or more
treatments.

3. What is to “measure”?

To measure is to look at how much there is or how many there are of something.

EXERCISE 2

Tick the best way to measure what happened in each comparison of treatments.

Example:

How much people weigh after using different treatments

- Weigh them on a scale Look at them

1. How fast people run when using different treatments

- Time them with a watch Ask them

2. Whether people still have fevers after using different treatments


- Touch their heads Smell them

3. Whether people still feel head pain after using different treatments

- Ask them Look at them

EXERCISE 3

Imagine that the faces are people who have been in comparisons of two tablets for malaria. People in Group A were given a new tablet for malaria. People in Group B were given an old tablet. Each face like this is a person with malaria

Each face like this is a person with malaria: 

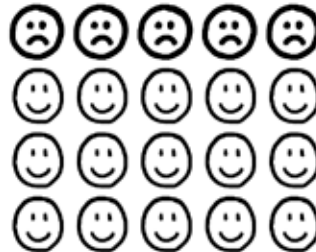
Measure the difference between the groups.

Example:

Group A:



Group B:



How many people had malaria in each group?

Group A: 10 out of 20

Group B: 5 out of 20

What was the difference between the groups?

There were 5 more people with malaria out 20 in Group A .



EXERCISE

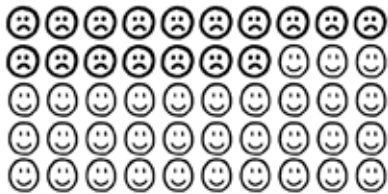
Group A:



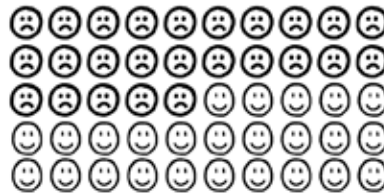
Group B:

**How many people had malaria in each group?**Group A: 5 out of 20Group B: 11 out of 20**What was the difference between the groups?**There were 6 more people with malaria out 20 in Group B.

Group A:



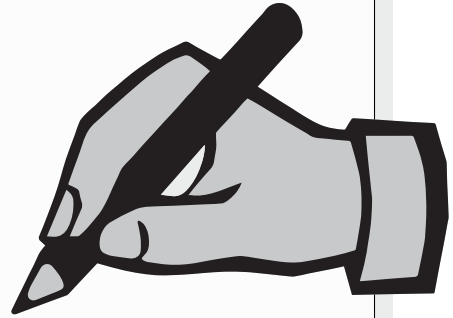
Group B:

**How many people had malaria in each group?**Group A: 17 out of 50Group B: 25 out of 50**What was the difference between the groups?**There were 8 more people with malaria out 50 in Group B.

STEP 6

Fill in evaluation form

Fill in the separate lesson evaluation form.



LESSON EVALUATION FORM

Informed Health Choices project

Background about lesson for teachers

It is impossible to know the effects of a treatment without comparing it to something else. Most often, health researchers compare what happens to one group of people who use the treatment to another group of people who did not use that treatment. Sometimes, the people in the other group get a different treatment.

For example, before health researchers compared taking an herb called valerian to not taking the herb, it was impossible to be sure about the effects. Some people believed that valerian helps you sleep better if you have been sleeping poorly. The claim was based on personal experiences. Eventually, health researchers compared taking valerian to taking a treatment that looked and smelled like valerian, but had no active ingredients. A fake treatment like this is called a “placebo”. They gave valerian to one group of people and the placebo to another. Then they compared what happened in the two groups, they found that there was little or no difference. In other words, they found that valerian has little or no effect on how well you sleep compared to the effect of a placebo.

Before health researchers make comparisons, they must have a research question. They make research questions by turning claims into questions. For example, they turned the claim that valerian helps you sleep better into a question about whether it does. All science and research starts with questioning what people believe is right, including what scientists and researchers believe is right. The next step is careful study to find out more, so we can be more sure whether the belief is right or wrong.



Allen Nsangi, member of the project team, chats with a teacher during testing, Uganda, October 2014.

LESSON 6

Fair comparisons of treatments

LESSON 6

Fair comparisons of treatments

Everything you need to prepare and teach this lesson

Objectives	page 175
Preparation	page 175
Lesson	page 176
Step 1: Review last lesson	page 177
Step 2: Read aloud	page 178
Step 3: Discuss	page 197
Step 4: Lead activity	page 199
Step 5: Manage exercises	page 201
Step 6: Fill in lesson evaluation form	page 204
Background about lesson for teachers	page 205

Objectives

What the children should learn in this lesson:

- What a “fair” comparison of treatments is
- Why health researchers should be fair when comparing treatments
- How health researchers should be fair when comparing treatments

Preparation (20 minutes)

This is what you should do before the lesson.

Read ahead

- Read pages for this lesson in the children's book
- Read pages for this lesson in the guide

Gather materials

Make sure you have:

- This guide
- The lesson evaluation form
- Some rubbers

Make sure each child has:

- A copy of the children's book
- Their exercise book
- A pencil or pen

Summary of story: The Professors find John and Julie at the field in their village. John and Julie have gathered 10 friends. The Professors teach John and Julie more about health research. They make a comparison together, so John and Julie can learn why and how health researchers must be fair when they compare treatments. Their research question is: Does drinking juice before running give more people stomach pain compared to drinking water?

Lesson (80 minutes)

This is a suggested plan for teaching the lesson.

TEACHERS	CHILDREN	TIME
STEP 1 Review last lesson		10 min
<ul style="list-style-type: none"> Review the last lesson by asking the questions on page 177 in this guide. 	<ul style="list-style-type: none"> Answer the questions as instructed. 	
STEP 2 Read aloud		25 min
<ul style="list-style-type: none"> Lead reading aloud starting on page 178 in this guide. <p><i>For different ways of reading see page 19 in this guide.</i></p>	<ul style="list-style-type: none"> Open to page 100 in their books and read aloud as instructed. 	
BREAK		5 min
STEP 3 Discuss		10 min
<ul style="list-style-type: none"> Discuss the story by asking the questions on page 197 in this guide. If necessary, give extra examples on page 198 in this guide. 	<ul style="list-style-type: none"> Answer the questions as instructed. 	
STEP 4 Lead activity		15 min
<ul style="list-style-type: none"> Lead the activity starting on page 199 in this guide. 	<ul style="list-style-type: none"> Open to page 119 in their books and do activity as instructed. 	
STEP 5 Manage exercises		10 min
<ul style="list-style-type: none"> Manage the exercises starting on page 201 in this guide. Help children as they complete exercises and lead marking of exercises. <p><i>For different ways of marking see page 20 in this guide.</i></p>	<ul style="list-style-type: none"> Open to page 121 in their exercise books and complete exercises. 	
STEP 6 Fill in evaluation form		5 min
<ul style="list-style-type: none"> Fill in the lesson evaluation form. 		

These are questions and answers for reviewing the previous lesson, with the children.

- 1. What is the first step health researchers take to find out more about the effects of a treatment?**

They turn a claim into a research question.

- 2. What treatment did the health researchers compare to using Ms. Namuli's machine?**

Using the machine with the power off, which is the same as not using the machine.

- 3. What did the health researchers find?**

They found the machine has no important effects.

- 4. What have health researchers found about the effects of sleeping in mosquito nets?**

They have found that it stops people from getting malaria if the nets are sprayed with insecticide.

*John and Julie learn about
COMPARISONS of treatments*

6

Fair comparisons of treatments

What you will learn in this lesson:

1. What a “fair” comparison of treatments is
2. Why health researchers should be fair when comparing treatments
3. How health researchers should be fair when comparing treatments

Keywords for this lesson:

- A **FAIR** *comparison of treatments* is a comparison where the only important difference is the treatments.
- *Choosing by* **CHANCE** *who gets which treatment* is a way of choosing without knowing who will get which treatment.

People in this lesson



**PROFESSOR
COMPARE**

**PROFESSOR
FAIR**

JOHN

JULIE

KASUKU



FRIENDS FROM THE VILLAGE

*These are 10 of John and Julie's friends from the village.
They have come to the field to help John, Julie and the
Professors make a comparison.*

THE FIELD IN JOHN AND JULIE'S VILLAGE

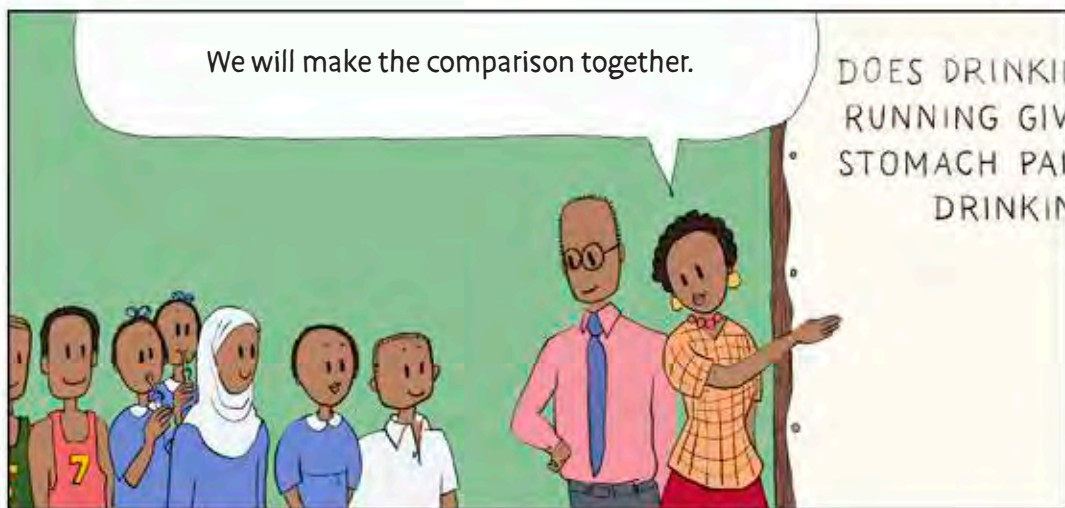


102 Lesson 6: Fair comparisons of treatments

Instructions and notes for teachers

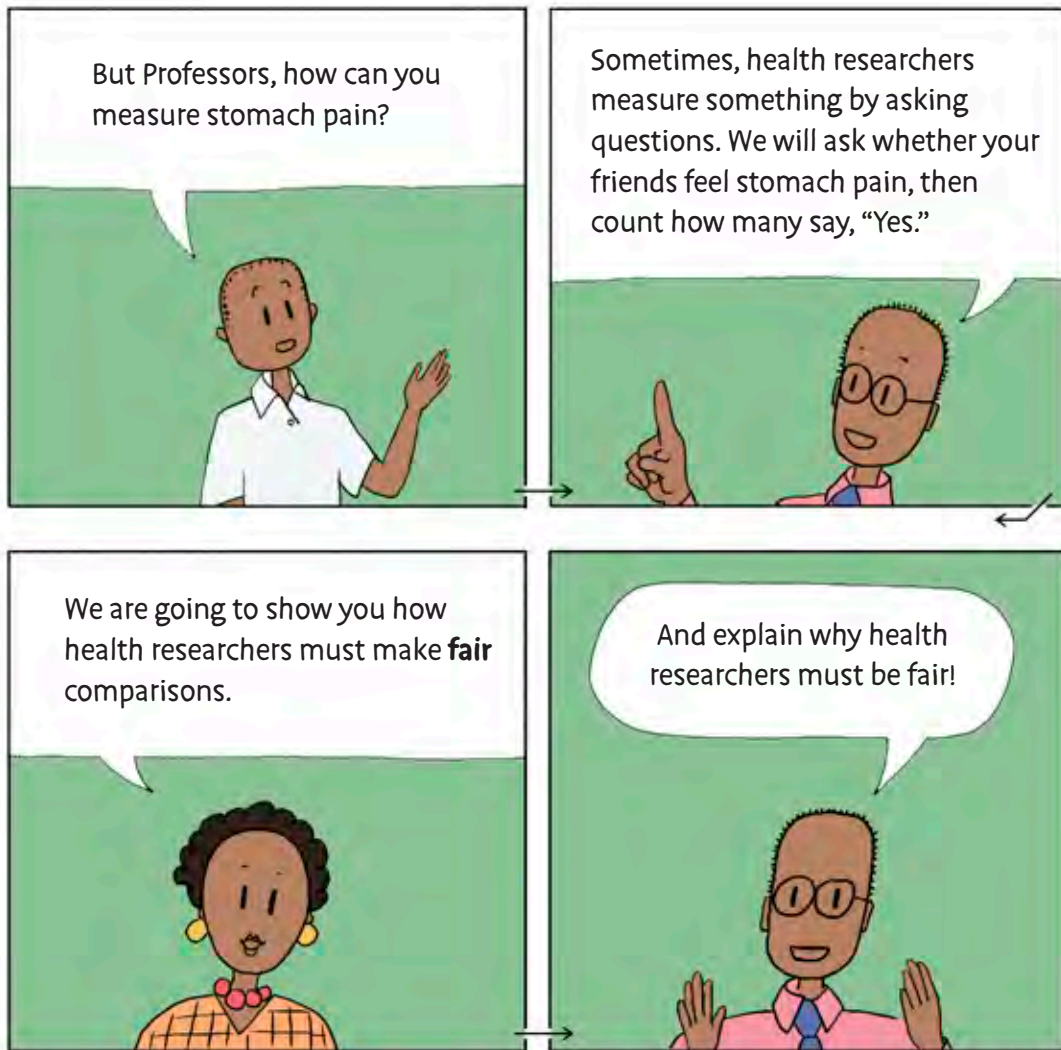


Instructions and notes for teachers



104 Lesson 6: Fair comparisons of treatments

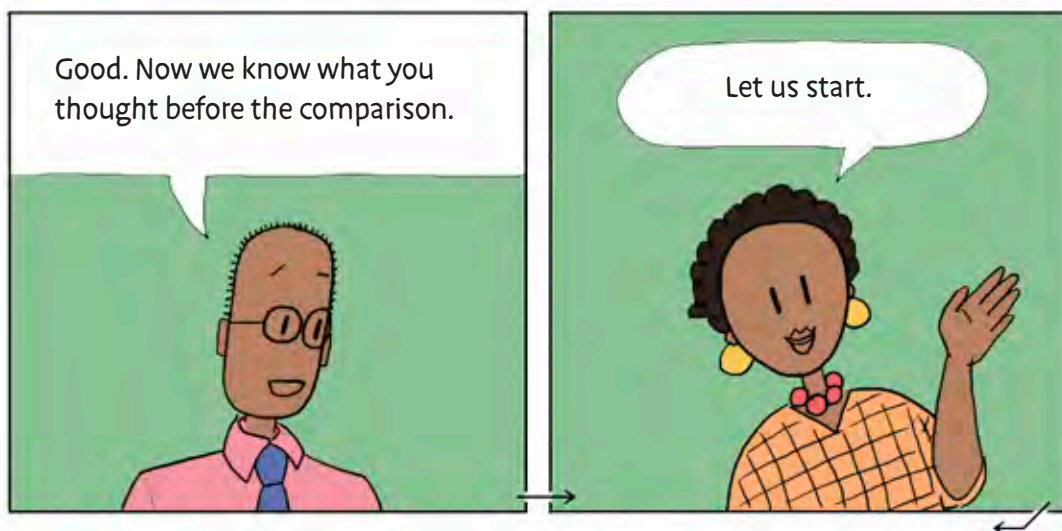
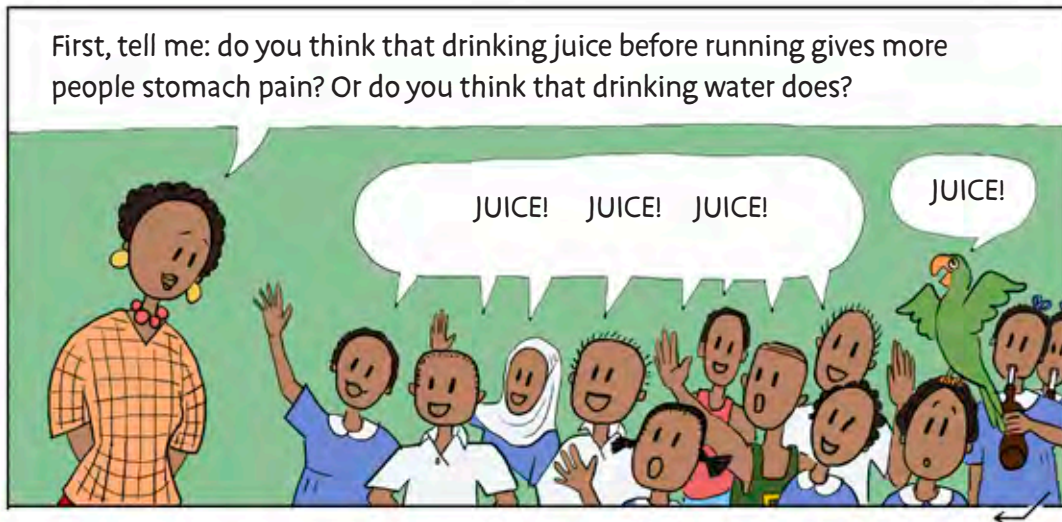
Instructions and notes for teachers



A **FAIR** comparison of treatments is a comparison where the only important difference is the treatments.

IN LUGANDA: "Okugeraageranya obujanjabi obumu n'obulala okw'obwenkanya"

IN KISWAHILI: "Mithilisho halisi"

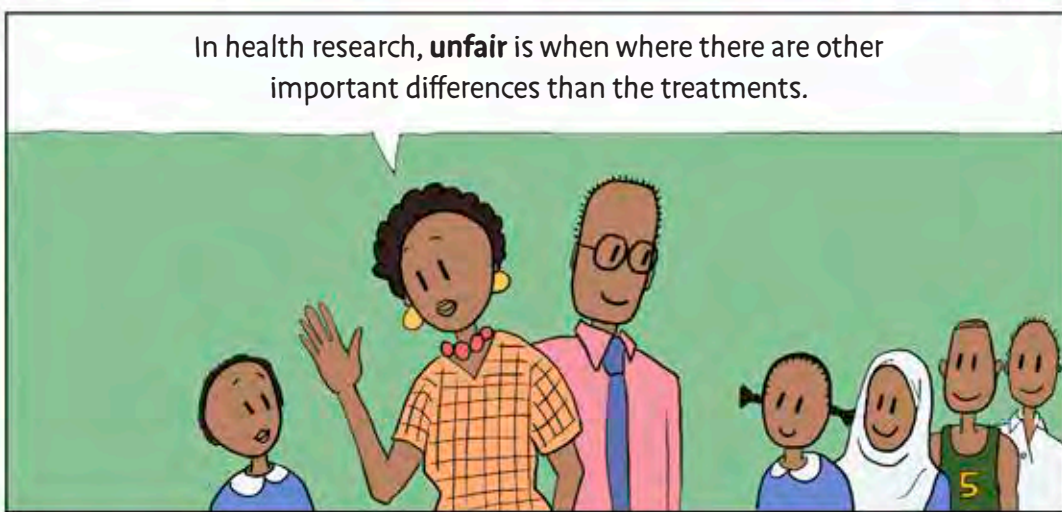


Discussion:

Why do you think the Professors asked the children what they thought would happen?

Explanation: Later in the story, the Professors use what John, Julie and their friends answer to explain a problem that can make a comparison unfair. This discussion question is here so the children in your class remember what John, Julie and their friends answered.

Instruction: Ask the children in your class to answer Professor Compare's question.



An **UNFAIR COMPARISON** of treatments is a comparison where there are other important differences than the treatments.

IN LUGANDA: “Okugeraageranya obujjanjabi obumu n’obulala okutali kwabwenkanya oba okulimu okubbira”

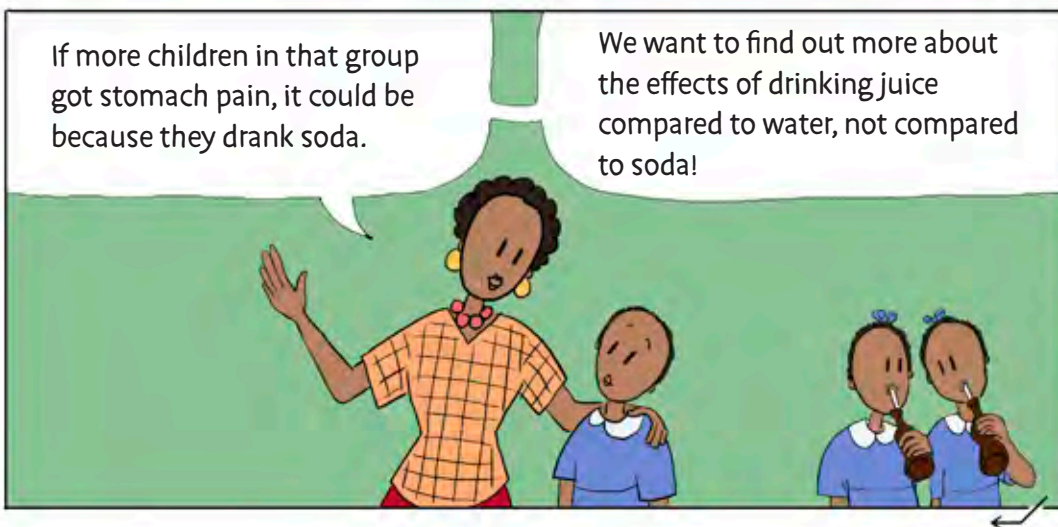
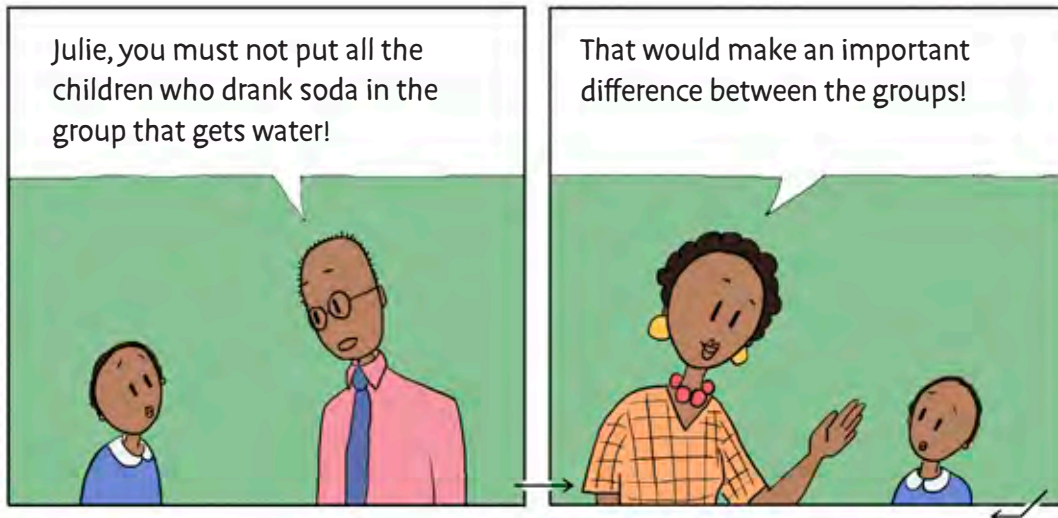
IN KISWAHILI: “Mithilisho isiyu halisi”

Instructions and notes for teachers

Explanation: In other words, in health research, "unfair" is when there are important differences between the people in the comparison groups or how they are treated, how they receive their treatments or how what happened to them is measured.

STEP 1: Making the groups



**Extra example**

Research question: Does eating bananas before running help you run faster compared to not eating bananas?

How researchers made groups: They let people choose whether to eat bananas or not. The fastest people chose to eat them.

Explanation: The comparison was unfair. There was an important difference between the groups other than the treatments. The fastest people were in the same group. It is possible those people would have been fastest whether they had eaten bananas or not. The researchers should have chosen who got bananas by chance.

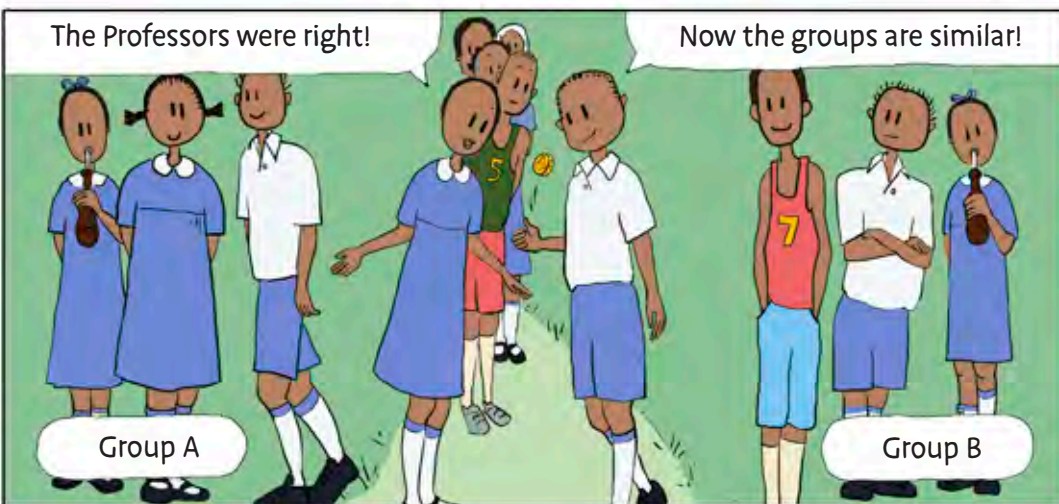
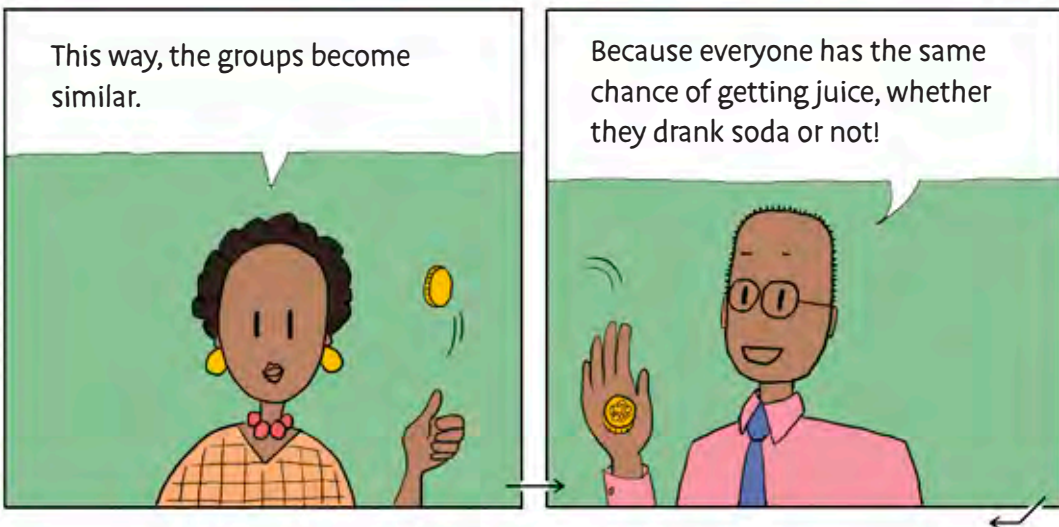


Choosing by **CHANCE** who gets which treatment is a way of choosing without knowing who will get which treatment.

IN LUGANDA: "Omuntu okufuna ekintu lwa lukisakisa gamba nga okukuba akalulu okusalawo ani afuna ekintu ekimu obba ekirala"

IN KISWAHILI: "Kibahati"





STEP 2: Giving people the treatments

The second problem that can make a comparison unfair happens when people get the treatments.

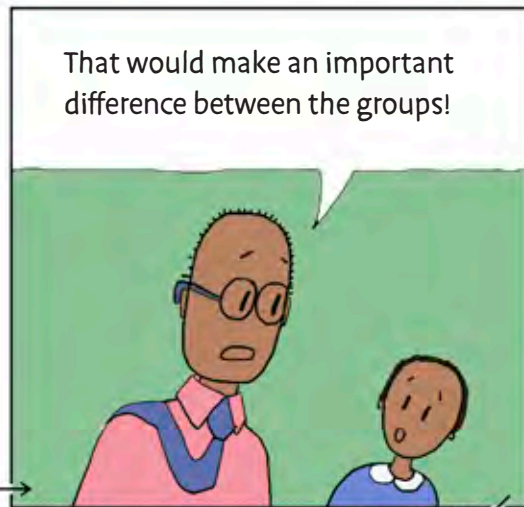
Let us give juice to this group!



No, Julie!



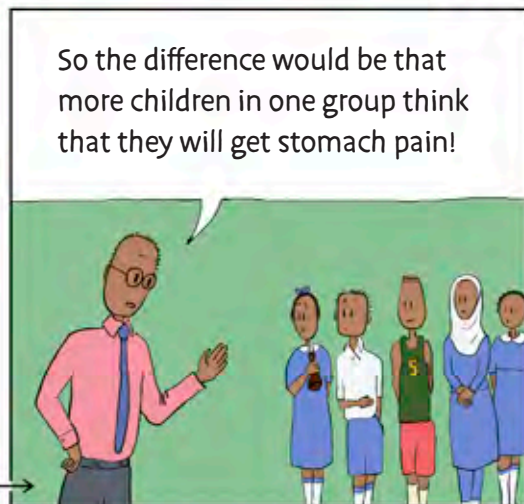
That would make an important difference between the groups!



Remember, you all think that drinking juice before running gives more people stomach pain.



So the difference would be that more children in one group think that they will get stomach pain!

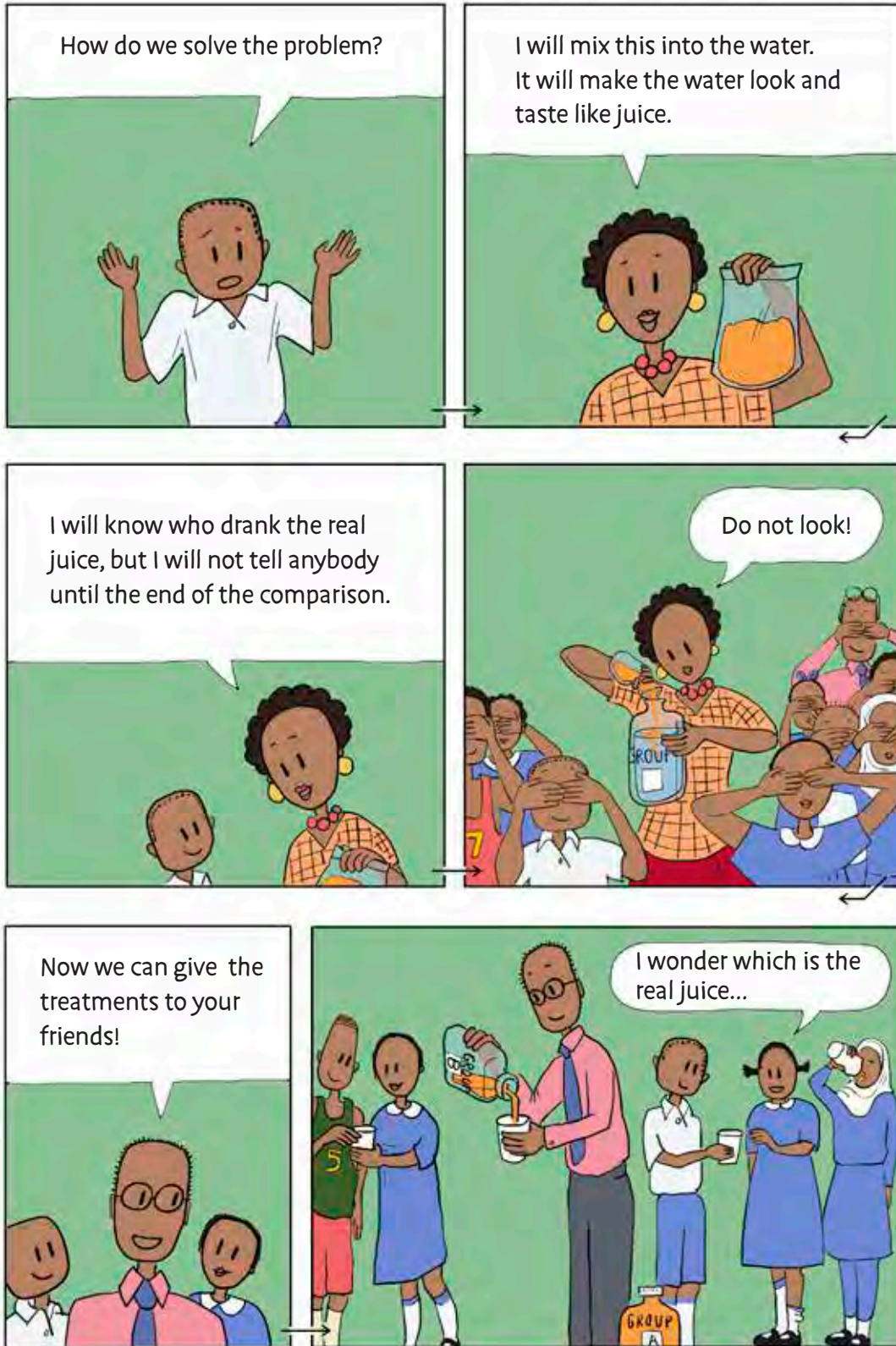


**Extra example**

Research question: Do people run faster in running shoes that cost a lot of money compared to other shoes?

How researchers made the groups: They let people choose shoes from two boxes. They wrote "NEW" on the box with new shoes.

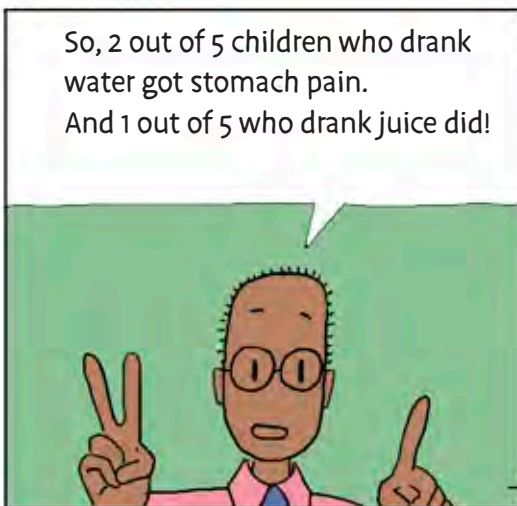
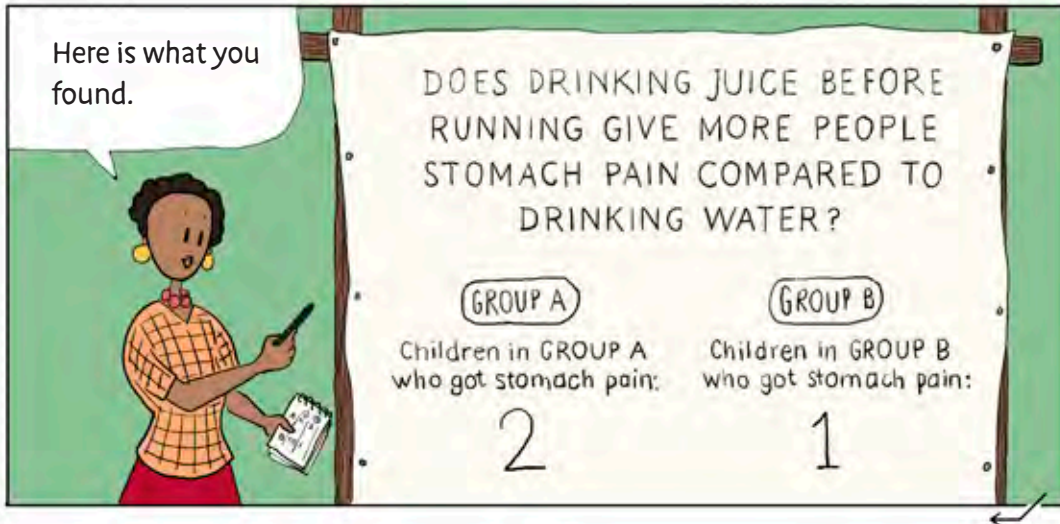
Explanation: The comparison was unfair. There was an important difference between the groups other than the treatments. People knew whether they were wearing new shoes. It is possible that people wearing the new shoes tried harder to run fast because they thought the new shoes help them. Nobody should have known who got which shoes until the end.





STEP 3: Measuring what happened







These are questions and answers for reviewing what you read aloud, with the children.

1. What is a fair comparison of treatments?

A comparison where the only important difference between groups is the treatments being compared.

2. What is the first problem that can make a comparison unfair?

People choosing who gets which treatment.

3. How did John, Julie and the Professors solve the first problem?

They flipped a coin to choose who got juice and who got water. This way, the groups became more similar because everyone had the same chance of getting juice.

4. What is the second problem that can make a comparison unfair?

People knowing what treatment they got.

5. How did John, Julie and the Professors solve the second problem?

Professor Compare mixed a powder into the water to make it look and taste like juice. This way, the friends who drank juice did not know whether they were drinking the real juice. Remember, all the children thought drinking juice before running gives more people stomach pain compared to drinking water. So, if they knew who got what, those who drank juice would think that they should get more stomach pain. It is possible that some of them would say they got stomach pain because they thought they would.

Extra examples to give children, if necessary

These are extra examples to help explain what the children should have learned from the story. Only use these examples if you think it is necessary.

Why someone choosing who goes in which group can make a comparison unfair

Research question: Does dancing at least once every week make people happier compared to not dancing at all?

How researchers made the groups: They let people choose if they wanted to dance. The happiest people chose to dance.

Explanation: There is an important difference between the groups because people chose their treatment. All the happiest people are in the same group. If the health researchers find that people who danced are happier, it could be because they were happier to begin with, not because of the dancing.

How to make groups without anyone choosing who goes in which group

Example 1: Mix green and yellow paper cards. Each person picks a card without looking at it. If they get a green card, they go in a first group. If they get a yellow card, they go in a second group.

Example 2: Give people dice. Each person rolls one die. If it shows 1, 2 or 3, that person goes in a first group. If it shows 4, 5 or 6, that person goes in a second group.

Why someone knowing who got which treatment can make a comparison unfair

Research question: Does taking a new tablet that costs more money reduce head pain faster than an older tablet?

How researchers made the groups: They give boxes of tablets to people. On the boxes, it says whether it contains the new or the old tablet.

Explanation: If people think one tablet is better than the other, there is an important difference between the groups. For example, if people think the newer tablet is better, than people in the group that gets the new tablet will have different expectations than people in the other group. They think their head pain will go away fastest, so they could feel like it is going away faster.

ACTIVITY



Instructions

Objective: Explain why health researchers must be fair when comparing treatments.

For this activity, the children will make the same comparison as in the activity for Lesson 5. However, this time, the children must try to make the comparison fair.

The teacher chooses one group to put their hands behind their ears, as shown above. This is Group 1.

The other group will listen without their hands behind their ears. This is Group 2.



Step 1: Led by the teacher, children discuss and agree on how to be fair when making the groups.

Step 2: The teacher makes the groups in a fair way, as discussed in Step 2.

For large classes, put every other child in Group 1 and the others in Group 2. In smaller classes, use a coin to make the groups.

Step 3: The teacher covers their mouth and says a word in a low voice. Children try to hear what the teacher said.

Say either "Seeing," or, "Being." Write "Seeing" and "Being" on opposite sides of the board.

Step 4: The teacher writes two words on the board. One of the words is the word that the teacher just said.


More instructions →

Instructions and notes for teachers

Explanation: In the last lesson, when you divided the class in two between the back and the front of the classroom. All children in Group 1 were at the front of the classroom. All children in Group 2 were in the back of the classroom. This was an important difference between the groups. What you found in the activity for Lesson 5, could have been because of this difference, not because of the treatments.

ACTIVITY



- Step 5:* The teacher asks how many children think it was the first word.
- Step 6:* Children who think so stand up.
- Step 7:* The teacher counts how many children in each group have stood up. The teacher writes the numbers in a chart on the blackboard.
- Step 8:* All children sit down.
- Step 9:* The teacher asks how many children think it was the second word.
- Step 10:* Children who think so stand up.
- Step 11:* The teacher counts how many children in each group have stood up. The teacher writes the numbers in a chart on the blackboard.
- Step 12:* All children sit down.
- Step 13:* The teacher says what word it was.
-  *Step 14:* For the last time, led by the teacher, children discuss whether putting your hands behind your ears helps you hear better.

 Instructions and notes for teachers

Explanation: It would be impossible for children not to know who got which treatment. This could make important differences between the groups. If children thought that holding your hands behind your ears helps you hear better, it is possible that the children in Group 2 would not try as hard to hear what you said because they thought they would not hear as well as the children in Group 1 anyway. Health researchers would have to consider how important this is, if they compared the treatments.

EXERCISE 1

Tick whether each point is true or false.

Example:

Many times, health researchers have compared using a treatment to not using the treatment.

True False

1. Health researchers' comparisons may not always be fair.

True False

2. If you think that a treatment will make you happier, you could feel happier after using it without the treatment really doing anything.

True False

3. In a fair comparison, the treatment is the only important difference between groups.

True False

4. Health researchers can measure something by asking questions.

True False

EXERCISE 2

Imagine that Professor Compare and Professor Fair are studying the measles vaccine.

A vaccine is an injection that is used to stop people from getting a disease.

Measles is a type of disease.

So, the measles vaccine is an treatment for stopping people from getting measles.

The Professors are going to compare using the vaccine to not using the vaccine.

1. What is the Professor's research question?

Does using the measles vaccine stop people from getting measles compared to not using the vaccine?

2. Should the Professors choose who gets the vaccine? Why?

No. It could make the comparison unfair.





EXERCISE 3

3. Should the people in the comparison choose who gets the vaccine?
Why?

No. It could make the comparison unfair.



4. Should the people in the comparison know if they got the vaccine?
Why?

No. It could make the comparison unfair.

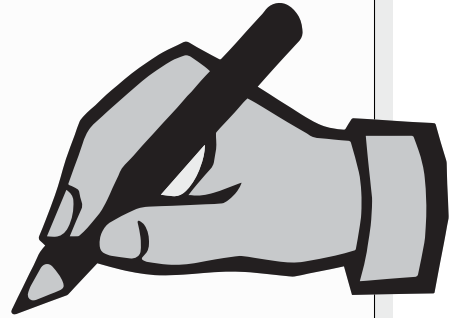
 Instructions and notes for teachers

1. Instruction: Remind children to collect claims in the back of their exercise books.
2. Background: Health researchers have studied the measles vaccine and found it stops people from getting measles without having serious bad effects.

STEP 6

Fill in evaluation form

Fill in the separate lesson evaluation form.



LESSON EVALUATION FORM

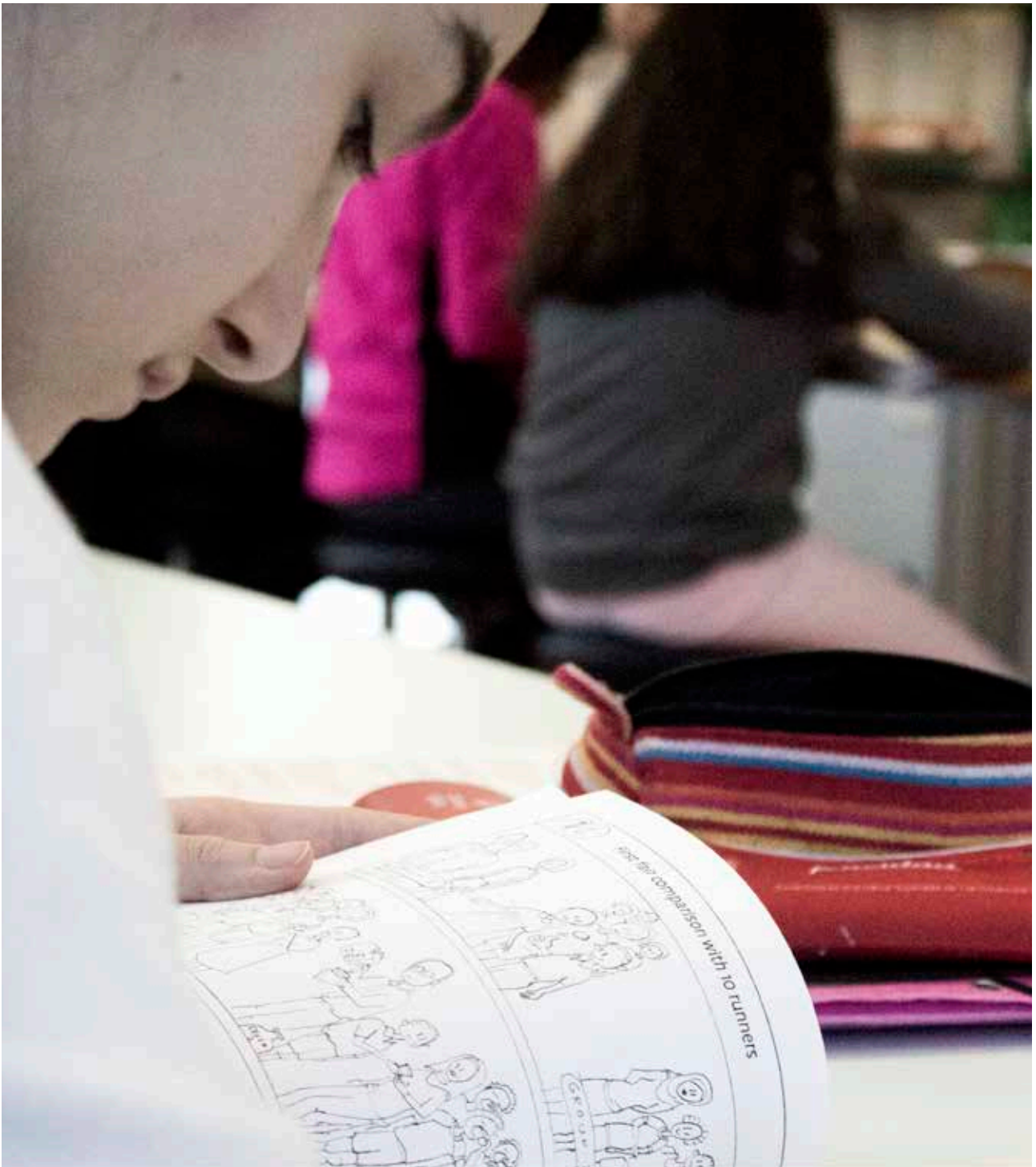
Informed Health Choices project

Background about lesson for teachers

When there are important differences between groups in a comparison, other than the treatments, the comparison is unfair. When their comparisons are unfair, what health researchers find can be because of those important differences, not because of the treatments being compared. In other words, we cannot be sure that what happened were effects of the treatments. Findings from unfair comparisons can mislead us if we do not recognise that the comparisons were unfair. In health research, mistakes that make comparisons unfair are called “systematic errors” or “bias”. In this lesson, the children learn about two types of systematic errors.

The first type is when people are allowed to choose who gets which treatment. For example, doctors claimed that if women take a type of medicine called hormones, fewer of them will have heart attacks. The basis for their claim was unfair comparisons. The comparisons were between groups of women who took the hormones and groups of women who did not. The women were allowed to choose whether they took the hormones. Some women had taken better care of their health before the comparisons. More of those women chose to take the hormones. This means women who chose to take hormones were already at a lower risk of getting a heart attack. This was an important difference between the groups. Eventually, health researchers made new comparisons where they choose by chance which women got the hormones. In these fair comparisons, the health researchers found that more of the women who took the hormones got heart attacks compared to those who did not take them! In health research, choosing by chance who gets which treatment is called “random allocation”. Most times, health researchers use a computer programme to “randomly allocate” each person to a treatment. Random allocation is not always possible or ethical. When random allocation is not possible, health researchers must consider other important differences between the groups.

The second type of systematic error that the children will learn about is when people are allowed to know who got which treatment. For example, there is a part of the knee that is called the meniscus. A torn meniscus is a common injury. Surgeons have claimed that there is an operation that heals the injury and reduces pain. The basis for their claim was comparisons where people had known whether they got the operation. Eventually, health researchers compared getting the operation to getting a fake operation. A fake treatment is called a “placebo”. Health researchers sometimes use placebos so nobody knows who got what. This is called “blinding”. For the fake operation, doctors made a small incision (cut) in the patient’s knee and acted as if they were operating. The researchers found that in the group that got the fake operation, there were as many people who felt less pain as in the group that got the real operation! Blinding is not always possible, either.



A child reads the last version of the cartoon, Norway, February 2016.

LESSON 7

**Fair comparisons
with many people**

LESSON 7

Fair comparisons with many people

Everything you need to prepare and teach this lesson

Objectives	page 209
Preparation	page 209
Lesson	page 210
Step 1: Review last lesson	page 211
Step 2: Read aloud	page 212
Step 3: Discuss	page 234
Step 4: Lead activity	page 236
Step 5: Manage exercises	page 240
Step 6: Fill in lesson evaluation form	page 242
Background about lesson for teachers	page 243

Objectives

What the children should learn in this lesson:

- Why health researchers should give the treatments to many people in their fair comparisons

Preparation (20 minutes)

This is what you should do before the lesson.

Read ahead

- Read pages for this lesson in the children's book
- Read pages for this lesson in the guide

Gather materials

Make sure you have:

- This guide
- The lesson evaluation form
- Some rubbers

Make sure each child has:

- A copy of the children's book
- Their exercise book
- A pencil or pen

Summary of story: John and Julie meet the Professors on the field at the university. The Professors have gathered 100 runners to teach John and Julie why health researchers must make their comparisons big enough. They make new comparisons together, using the same research question: Does drinking juice before running give more people stomach pain compared to drinking water?

Lesson (80 minutes)

This is a suggested plan for teaching the lesson.

TEACHERS	CHILDREN	TIME
STEP 1 Review last lesson		10 min
<ul style="list-style-type: none"> Review the last lesson by asking the questions on page 211 in this guide. 	<ul style="list-style-type: none"> Answer the questions as instructed. 	
STEP 2 Read aloud		25 min
<ul style="list-style-type: none"> Lead reading aloud starting on page 212 in this guide. <p><i>For different ways of reading see page 19 in this guide.</i></p>	<ul style="list-style-type: none"> Open to page 124 in their books and read aloud as instructed. 	
BREAK		5 min
STEP 3 Discuss		10 min
<ul style="list-style-type: none"> Discuss the story by asking the questions on page 234 in this guide. 	<ul style="list-style-type: none"> Answer the questions as instructed. 	
STEP 4 Lead activity		15 min
<ul style="list-style-type: none"> Lead the activity starting on page 236 in this guide. 	<ul style="list-style-type: none"> Open to page 146 in their books and do activity as instructed. 	
STEP 5 Manage exercises		10 min
<ul style="list-style-type: none"> Manage the exercises starting on page 240 in this guide. Help children as they complete exercises and lead marking of exercises. <p><i>For different ways of marking see page 20 in this guide.</i></p>	<ul style="list-style-type: none"> Open to page 148 in their exercise books and complete exercises. 	
STEP 6 Fill in evaluation form		5 min
<ul style="list-style-type: none"> Fill in the lesson evaluation form. 		

These are questions and answers for reviewing the previous lesson, with the children.

1. What is a fair comparison of treatments?

A comparison where the only important difference between groups is the treatments being compared.

2. What is the first problem that can make a comparison unfair?

People choosing who gets which treatment.

3. How did John, Julie and the Professors solve the first problem?

They flipped a coin to choose who got juice and who got water. This way, the groups became more similar because everyone had the same chance of getting juice.

4. What is the second problem that can make a comparison unfair?

People knowing what treatment they got.

5. How did John, Julie and the Professors solve the second problem?

Professor Compare mixed a powder into the water to make it look and taste like juice. This way, the friends who drank juice did not know whether they were drinking the real juice. Remember, all the children thought drinking juice before running gives more people stomach pain compared to drinking water. So, if they knew who got what, those who drank juice would think that they should get more stomach pain. It is possible that some of them would say they got stomach pain because they thought they would.

*John and Julie learn about
COMPARISONS of treatments*

7

Fair comparisons with many people

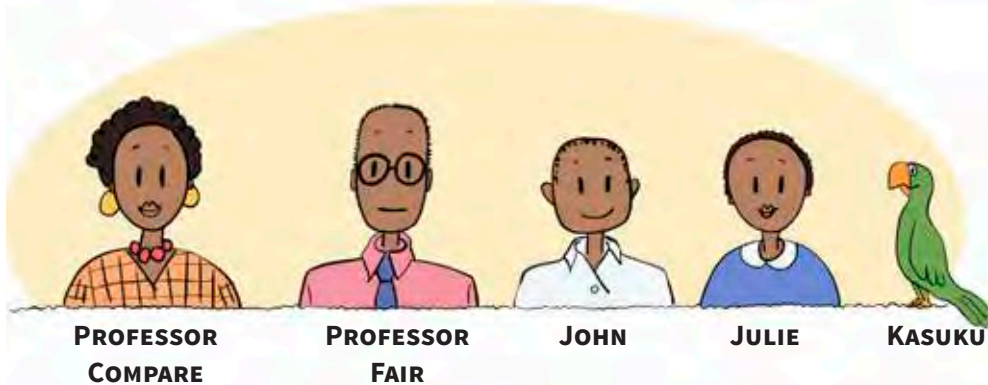
What you will learn in this lesson:

1. Why health researchers should give the treatments to many people in their fair comparisons

Keyword for this lesson:

*Finding something by **CHANCE** in comparisons that were too small is finding something without knowing why it happened because the comparisons were too small.*

People in this lesson



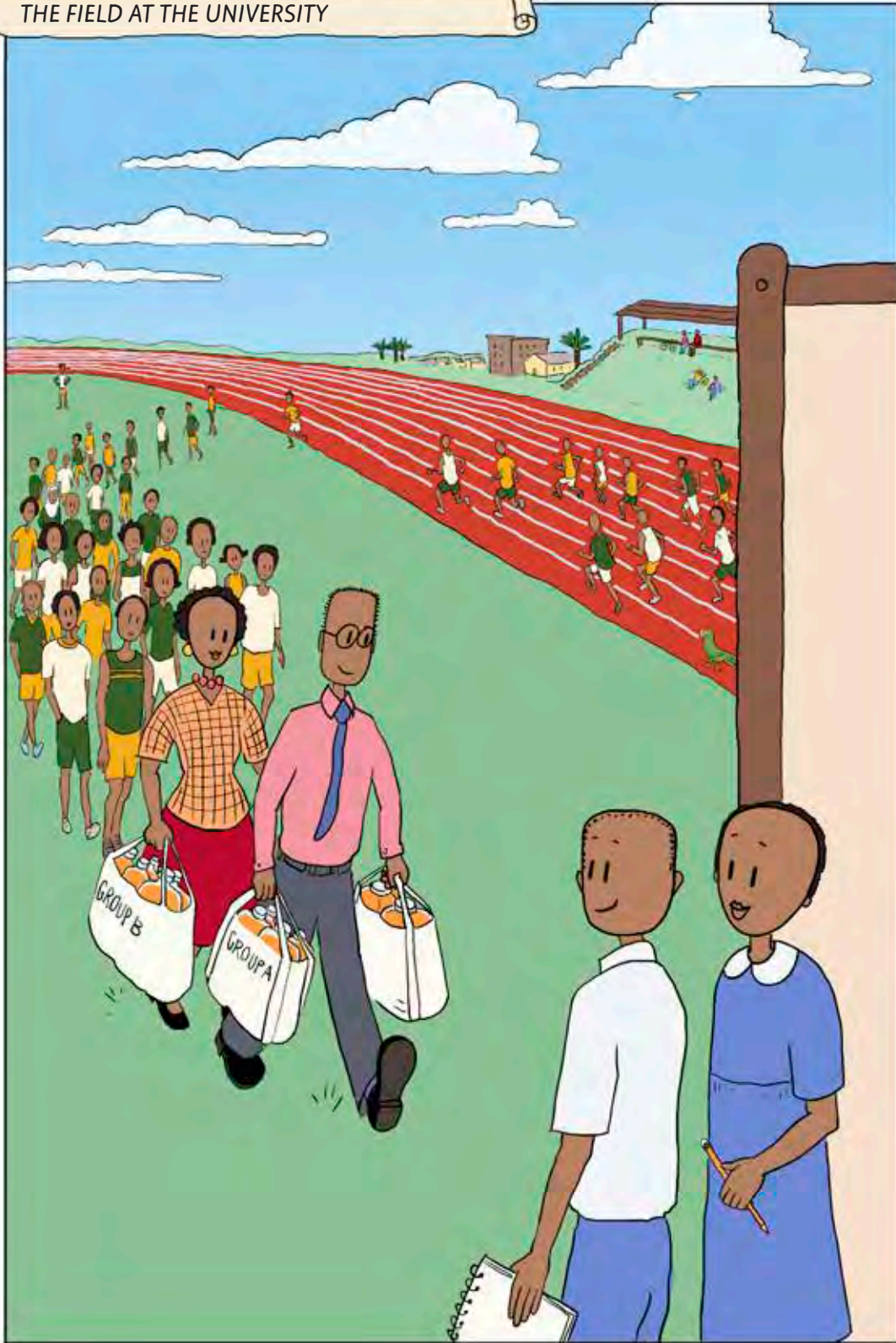
RUNNERS AT THE UNIVERSITY

These are 100 runners at the university. They have come to the field to help John, Julie and the Professors make comparisons.

Lesson 7: Fair comparisons with many people **125**

Instructions and notes for teachers

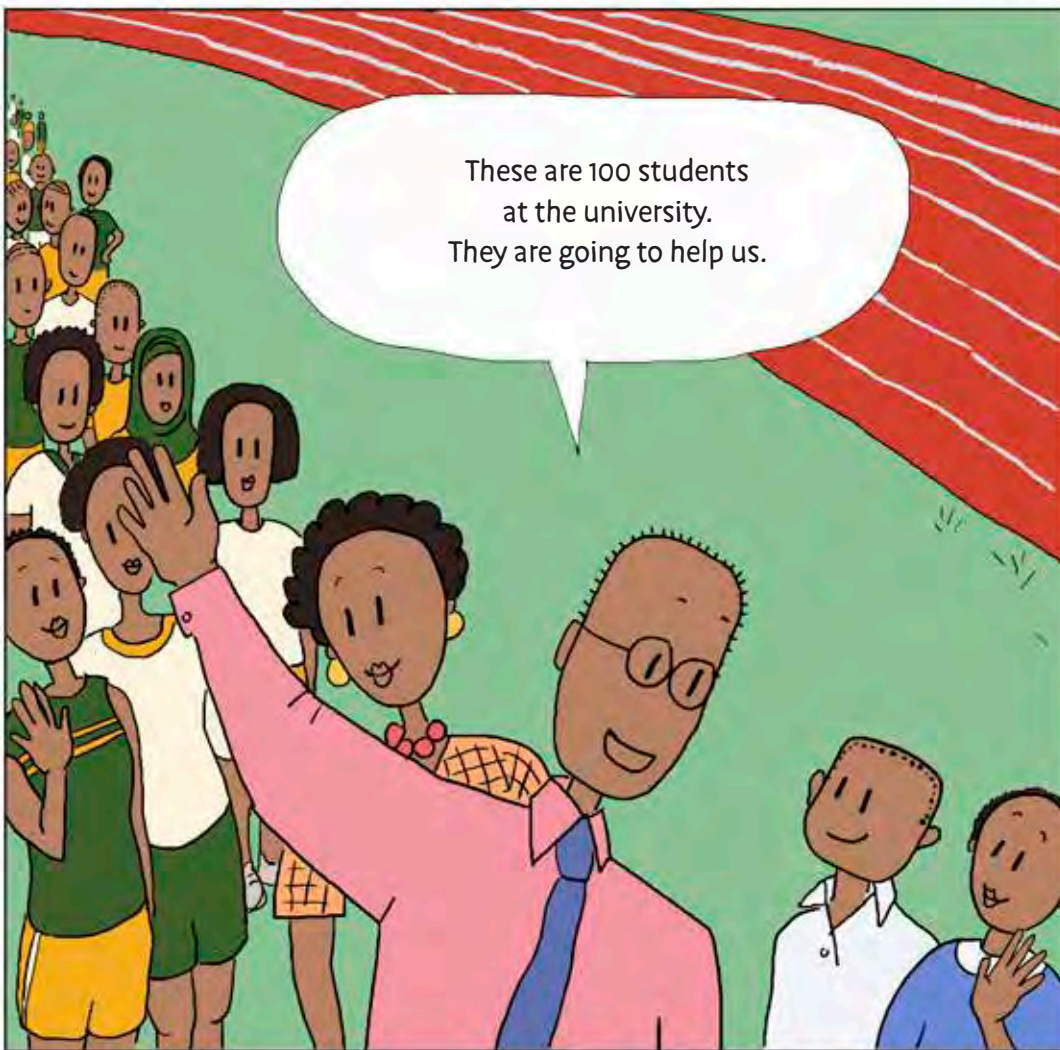
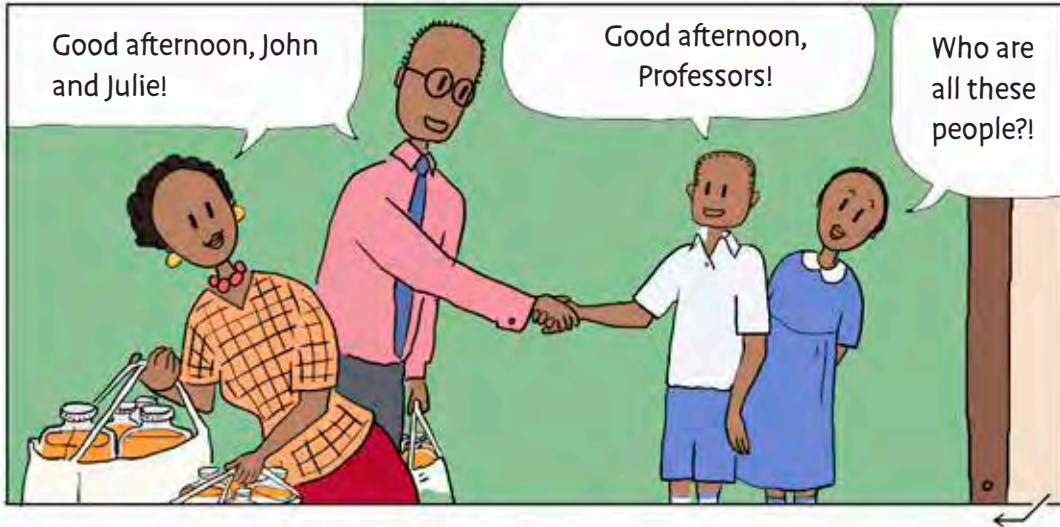
THE FIELD AT THE UNIVERSITY



126 Lesson 7: Fair comparisons with many people

Instructions and notes for teachers

Instruction: Remember to discuss what is happening in boxes where there is little or no text.





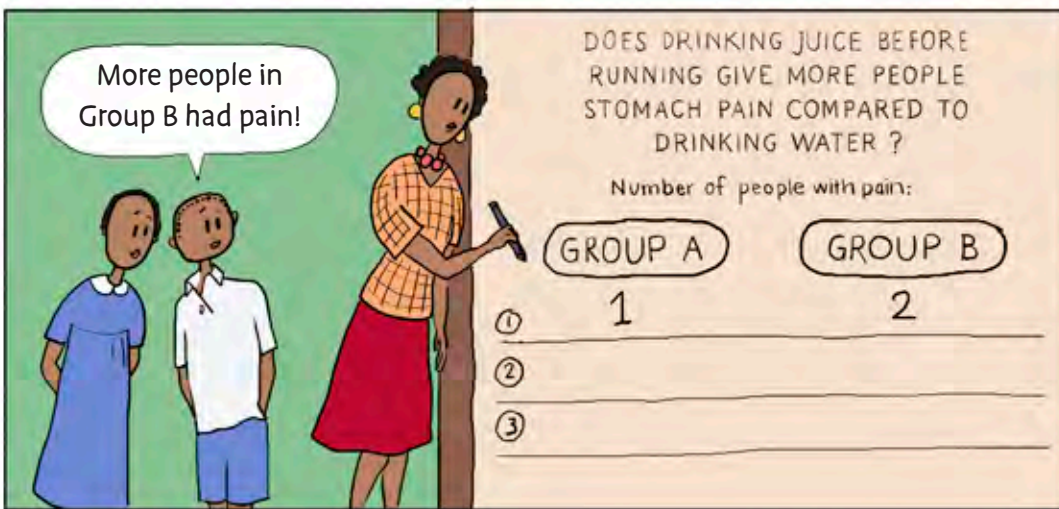
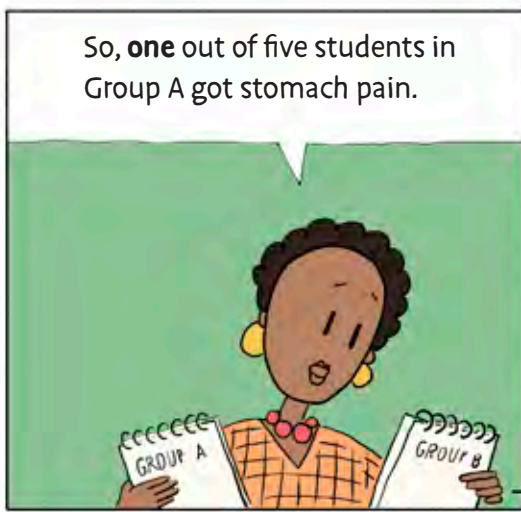
*Finding something by **CHANCE** in comparisons that were too small is finding something without knowing why it happened because the comparisons were too small.*

IN LUGANDA: "Ekintu okuzuulibwa oba okusangibwa lwa mukisa bukisa oba lwa lukisakisa"

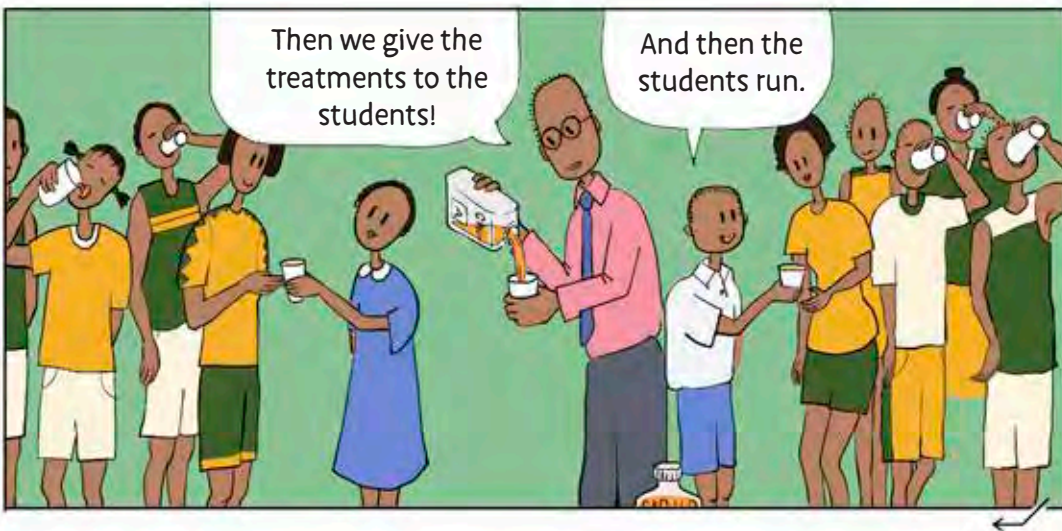
IN KISWAHILI: "Kibahati"

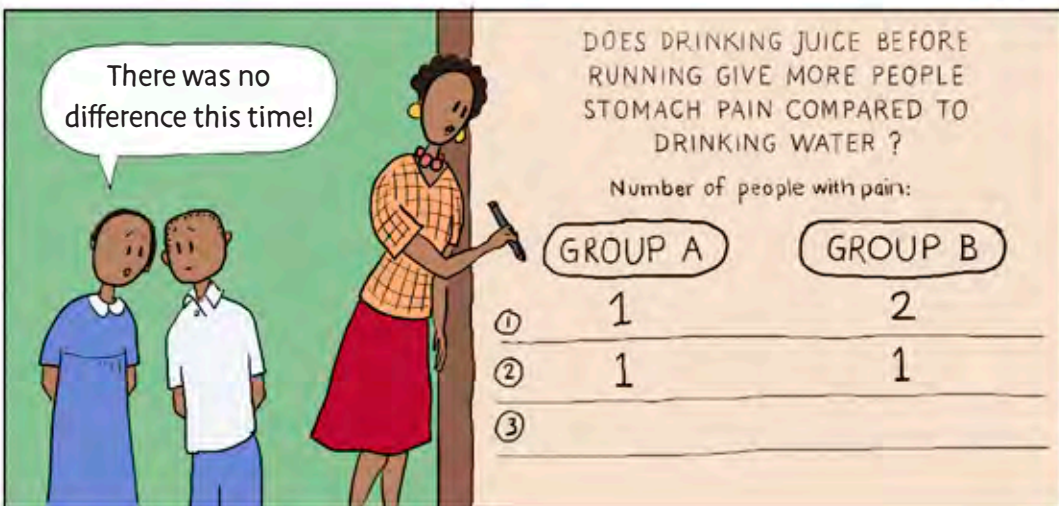
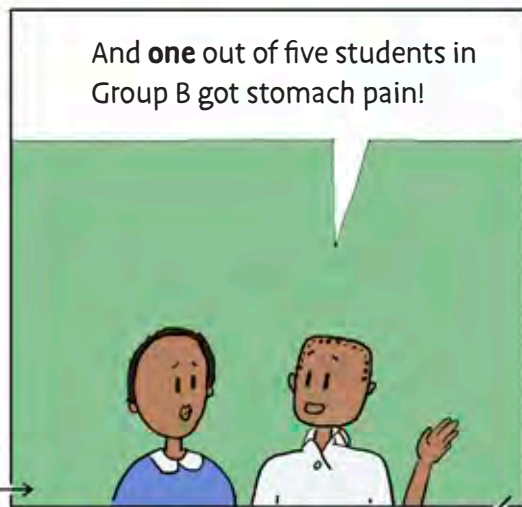
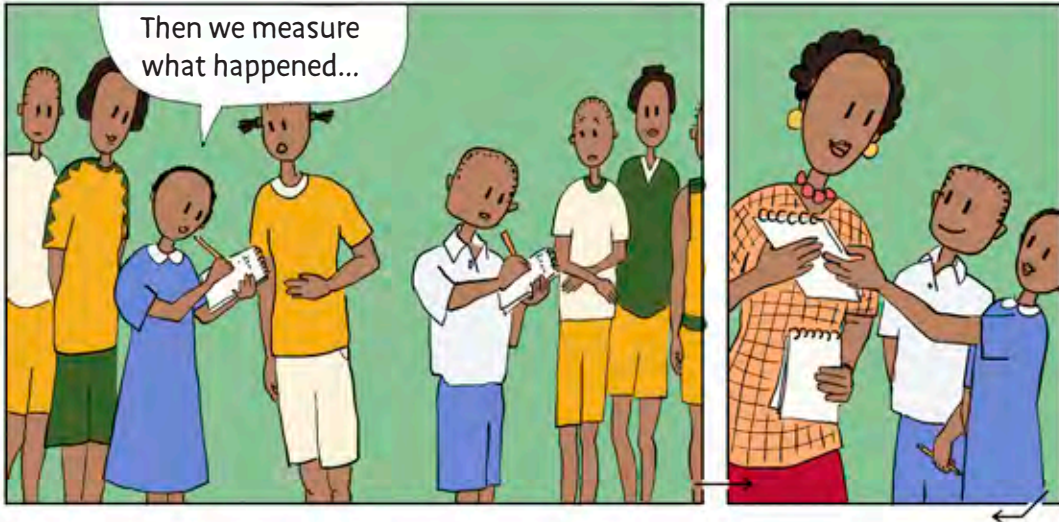


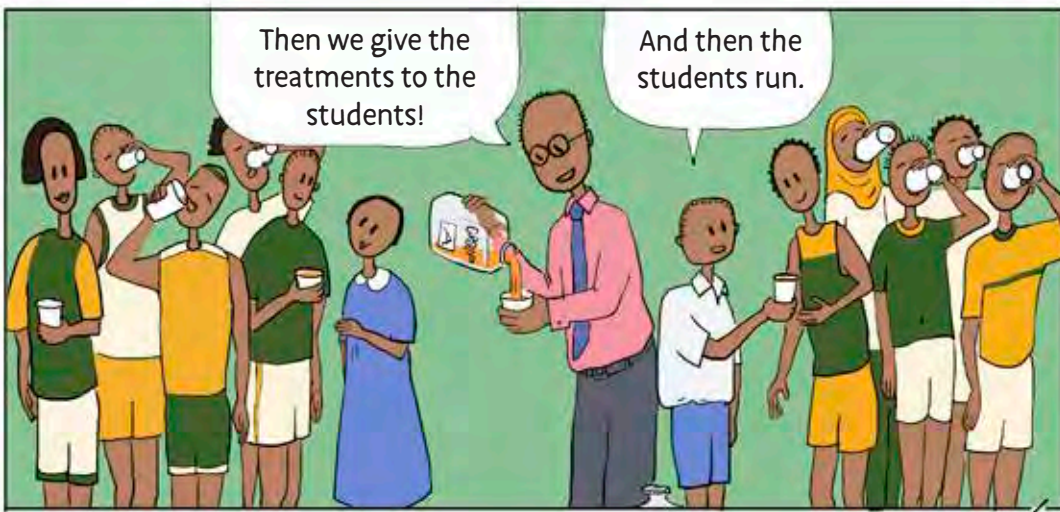


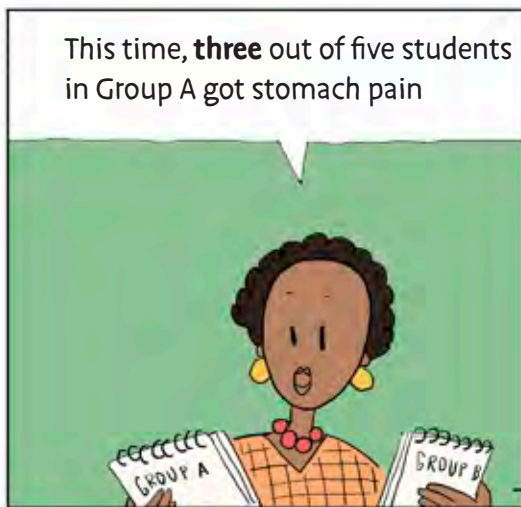
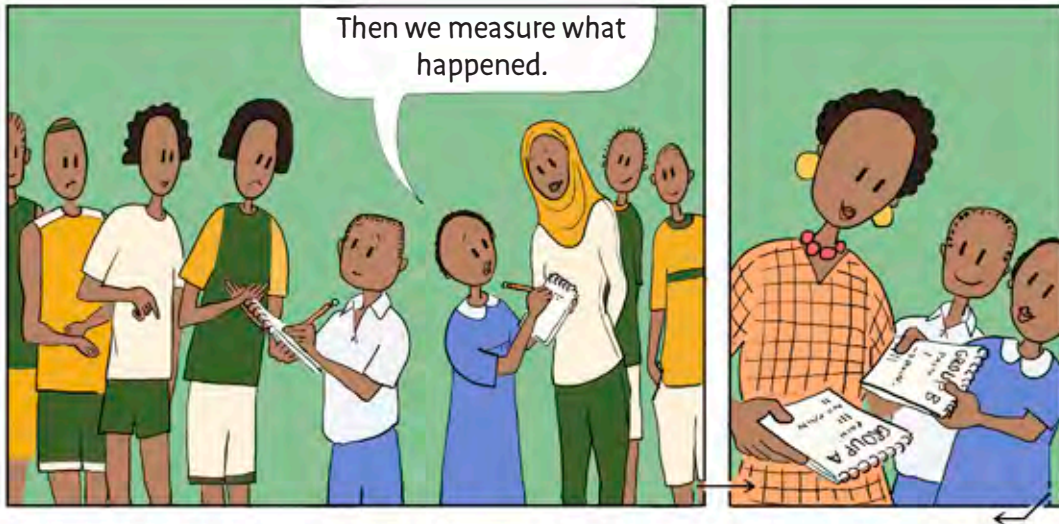


2 Second fair comparison with 10 runners







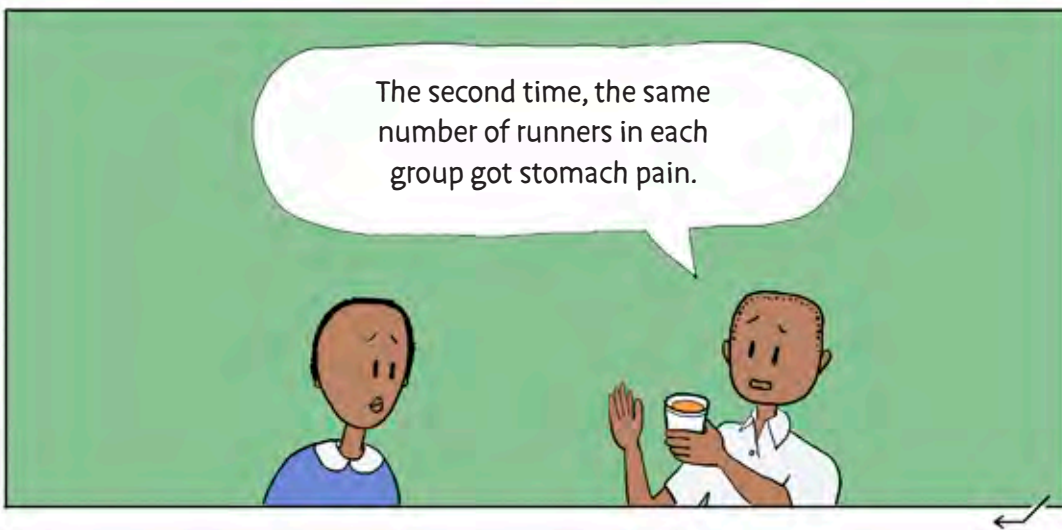


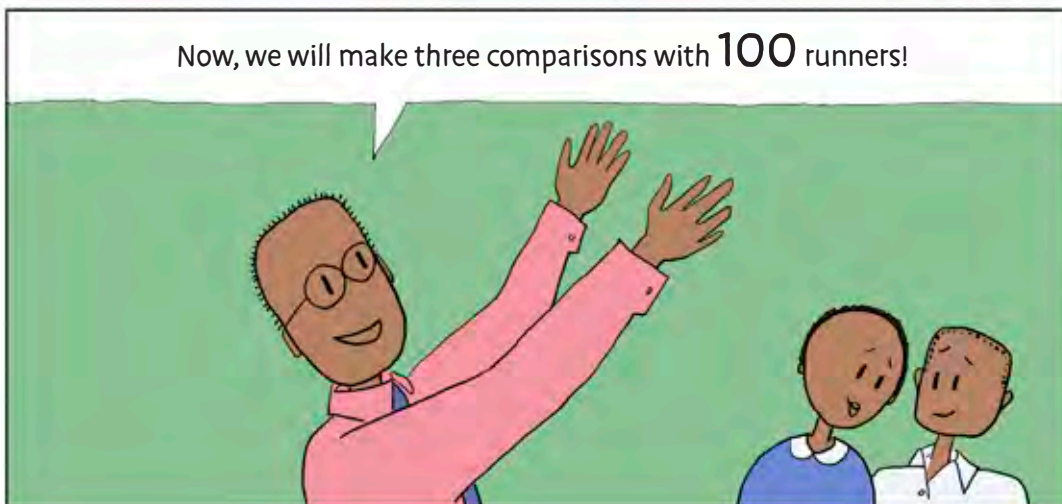
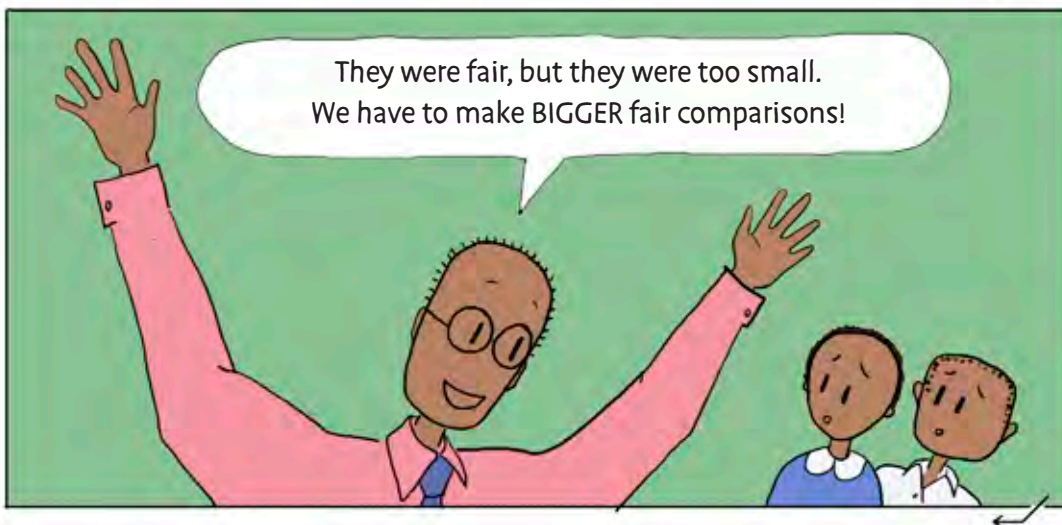
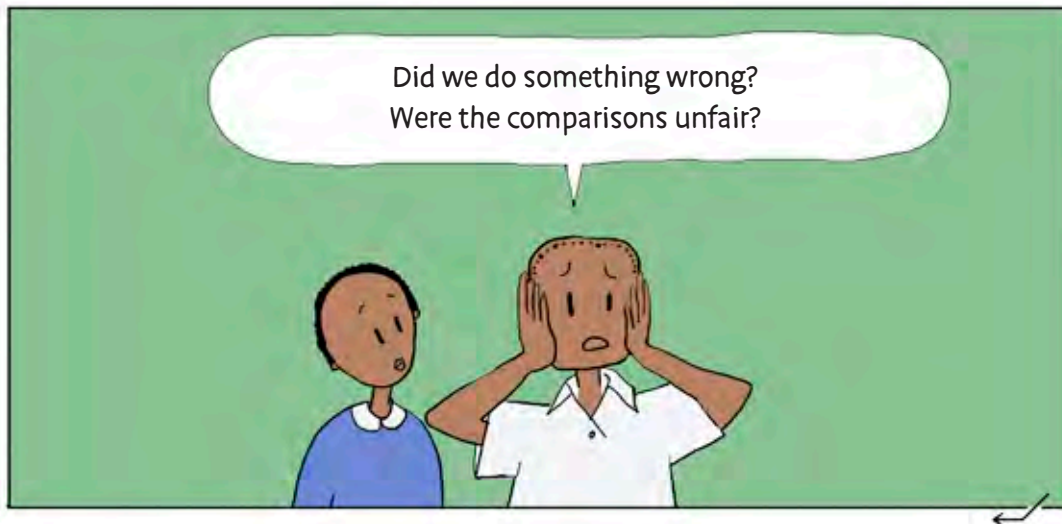
So what do you think of these findings, John and Julie?

DOES DRINKING JUICE BEFORE RUNNING GIVE MORE PEOPLE STOMACH PAIN COMPARED TO DRINKING WATER ?

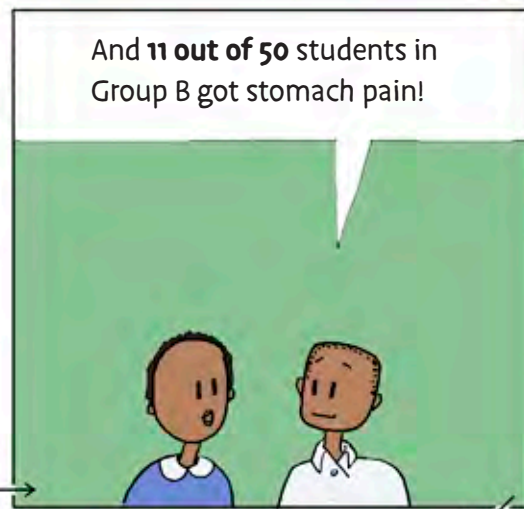
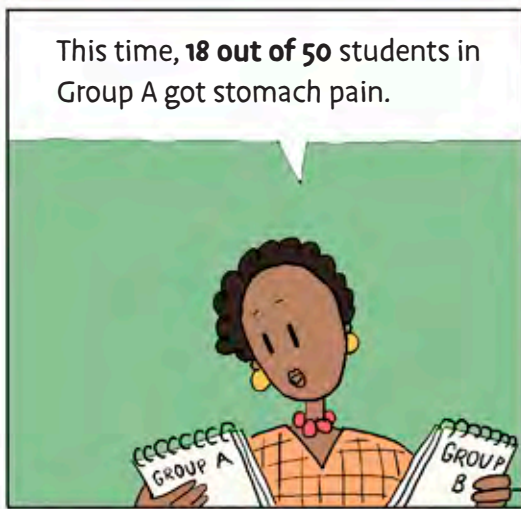
Number of people with pain:

	GROUP A	GROUP B
①	1	2
②	1	1
③	3	1



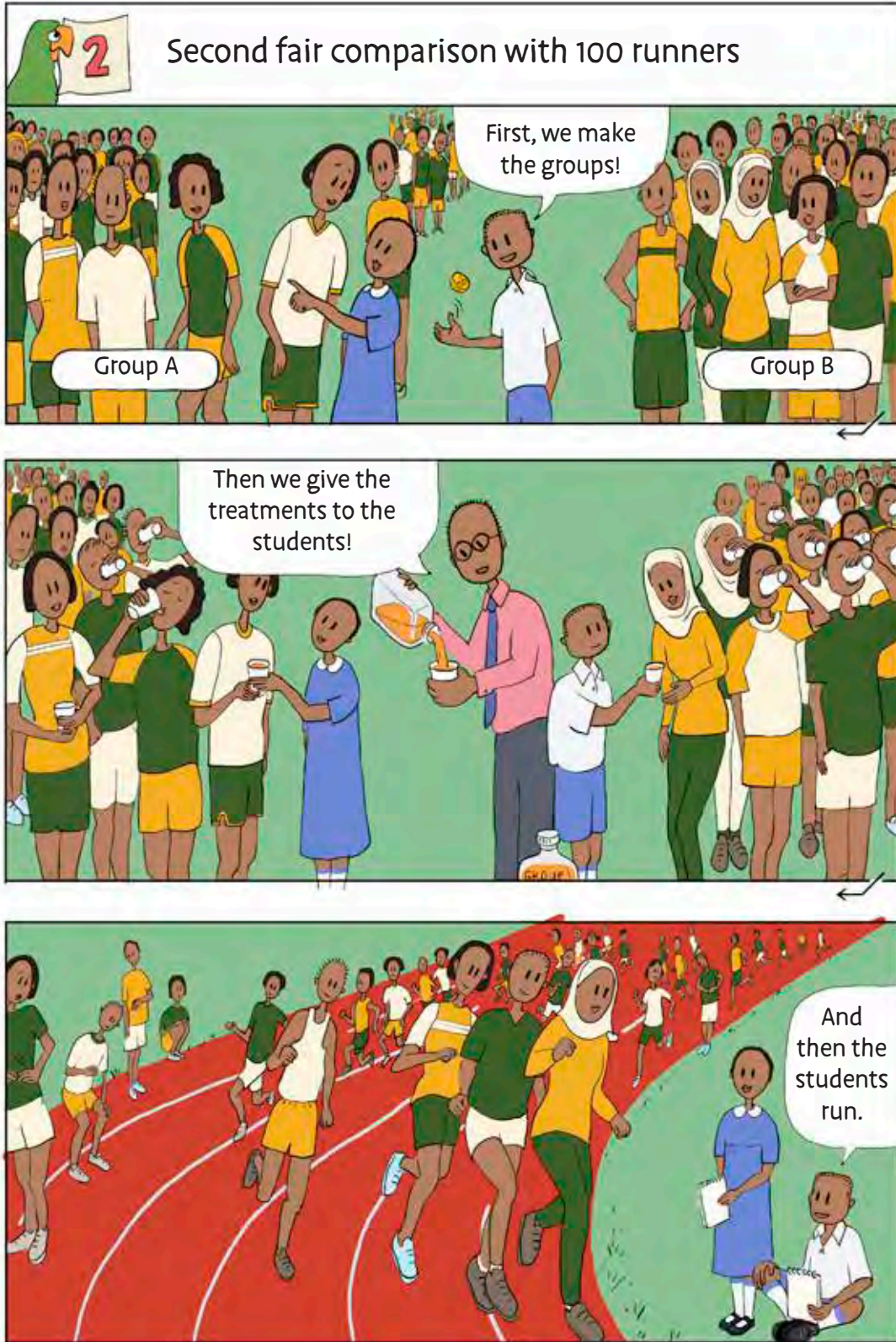






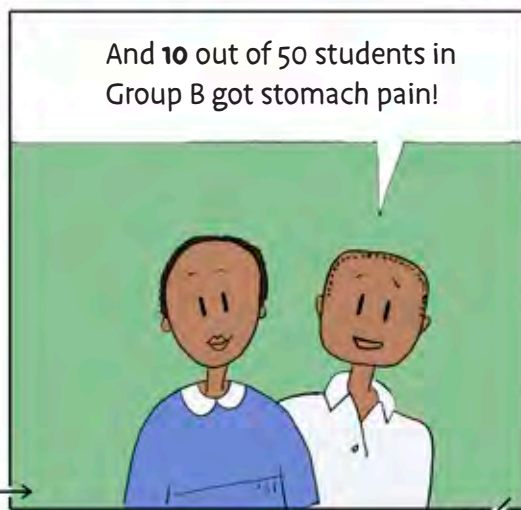
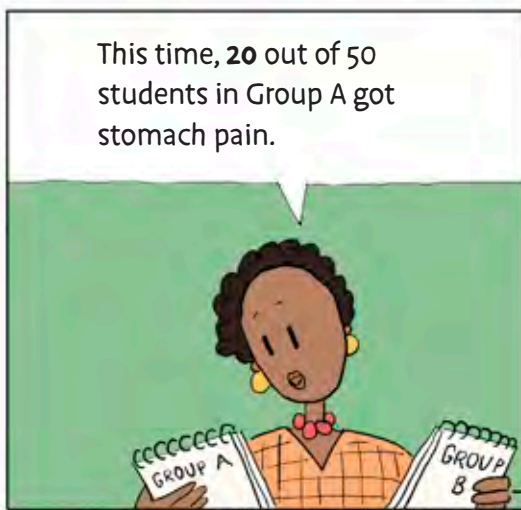
This time, there were many runners who got stomach pain!

STOMACH PAIN COMPARED TO DRINKING WATER ?		
Number of people with pain:		
	GROUP A	GROUP B
①	1	2
②	1	1
③	3	1
④	18	11
⑤		
⑥		



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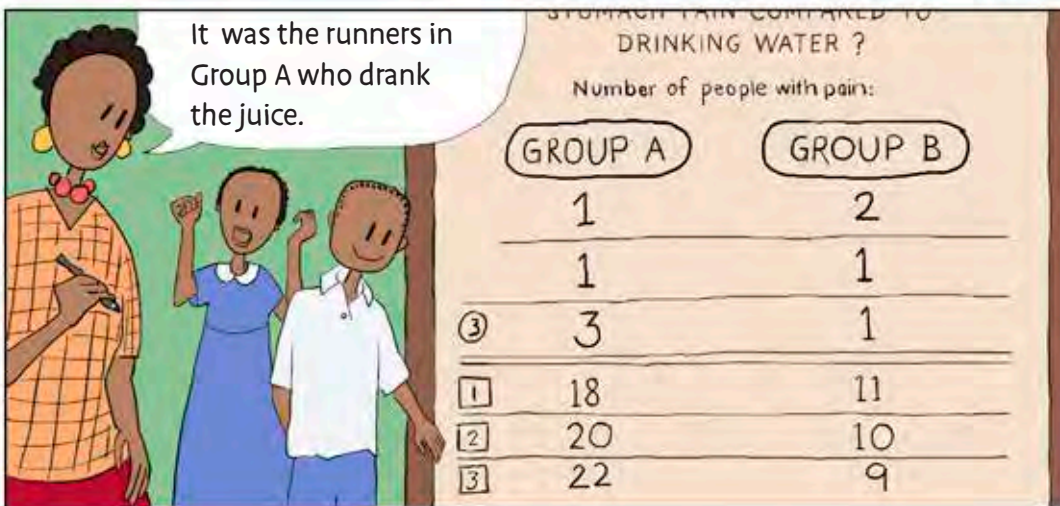
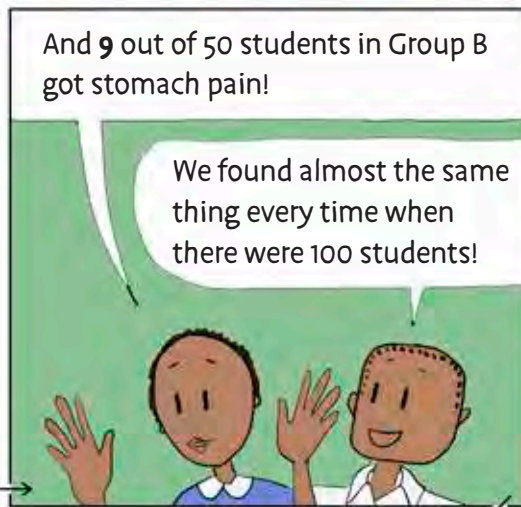
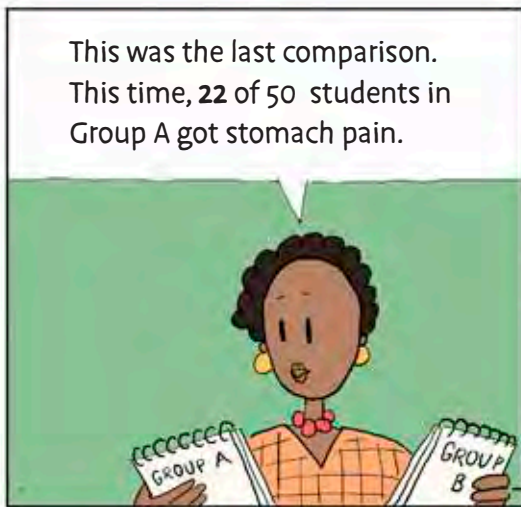
Instructions and notes for teachers

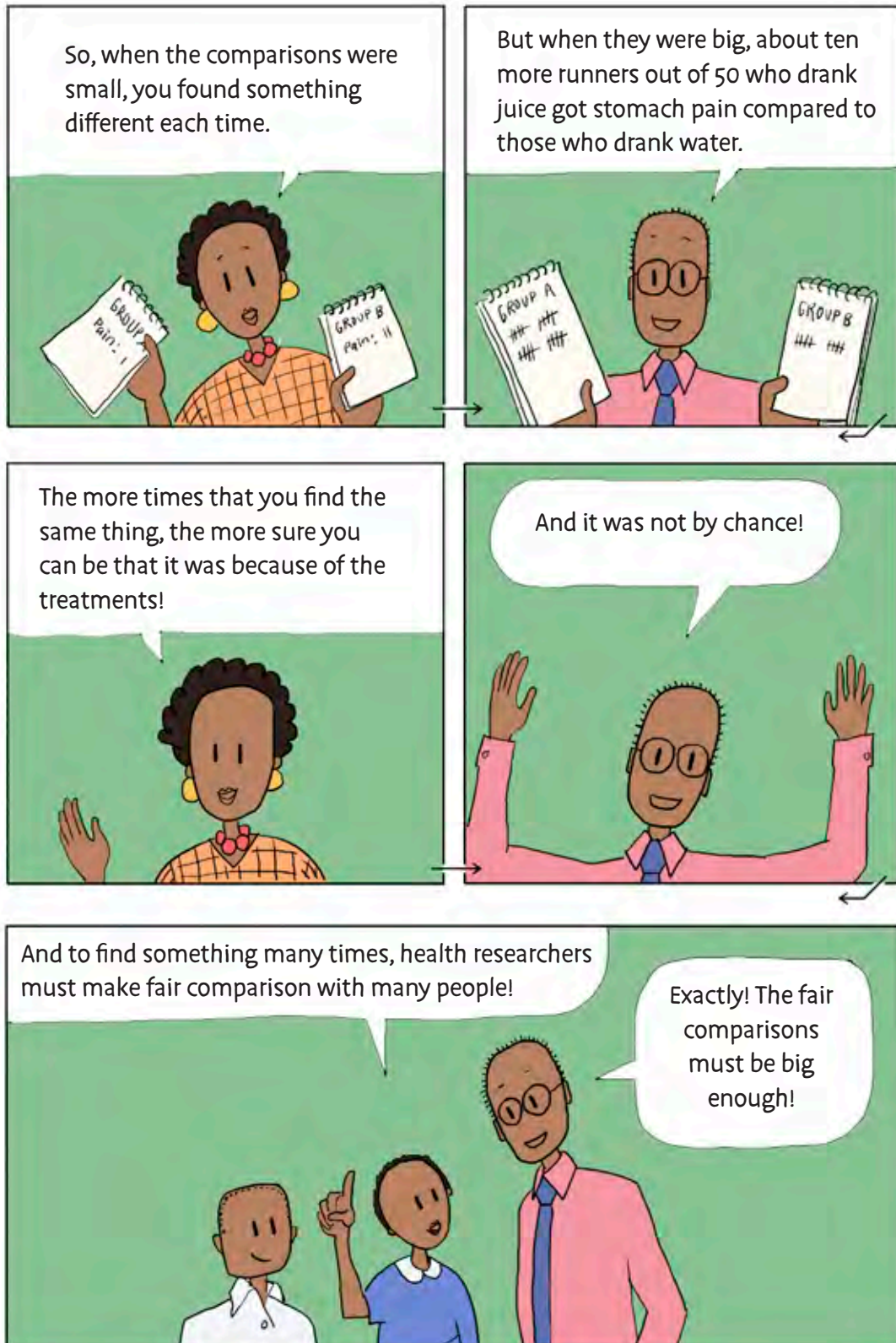


That is almost the same as what we found in the first comparison with 100 students!

STOMACH PAIN COMPARED TO DRINKING WATER ?		
Number of people with pain:		
	GROUP A	GROUP B
	1	2
	1	1
③	3	1
①	18	11
②	20	10
③		



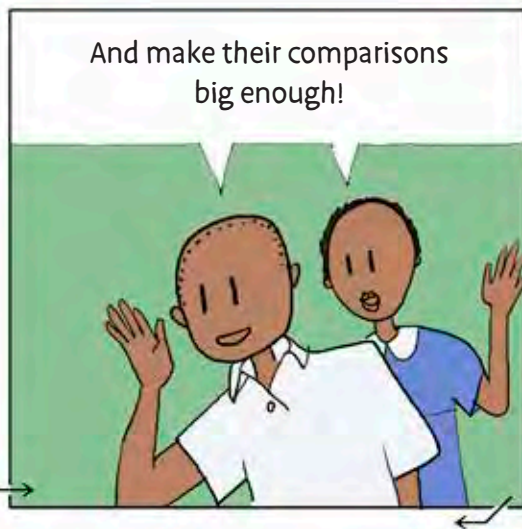
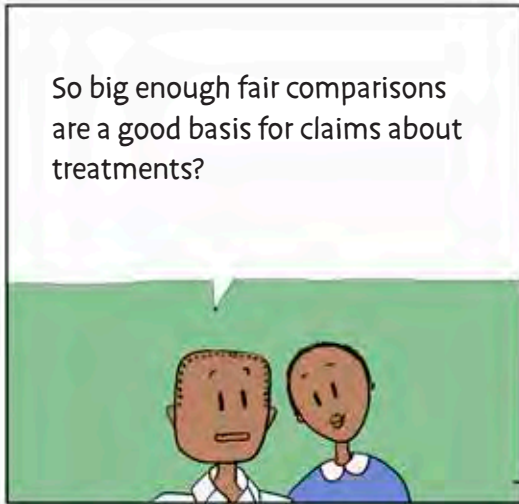




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Instructions and notes for teachers

Explanation: If John, Julie and the Professors had added 90 runners to each of the first three comparisons, they would have found something closer to what they found in the last three comparisons.



These are questions and answers for reviewing what you read aloud, with the children.

1. What did John, Julie and the Professors find when they made comparisons with 10 runners?

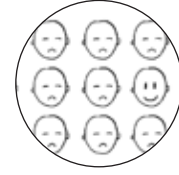
They found something different every time. First, more runners who drank water got stomach pain. Then the same number in each group got pain. Finally, more who drank juice got pain.

2. What did John, Julie and the Professors find when they made comparisons with 100 runners?

They found almost the same each time: about double as many of the runners who drank juice got stomach pain.

There are no extra examples for you to give the children, for this lesson.

ACTIVITY

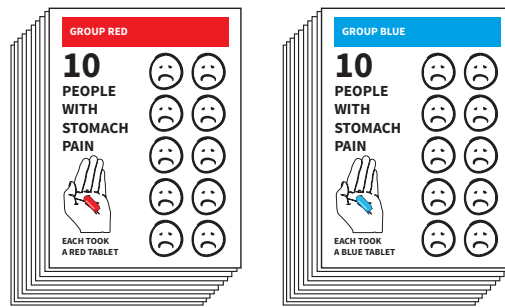


Instruction

Objective: Explain how comparisons with few people can be misleading
 Draw the chart at the top of page 238 in this guide on the blackboard.

Step 1: The children imagine that they are health researchers. The teacher has two sets of 10 papers. One set is red and the other is blue. Children imagine that each set is a group of people in their comparison.

On the front of each paper, there are 10 sad faces. The sad faces are people who have stomach pain. That means there are 100 people with stomach pain in each of the two groups.

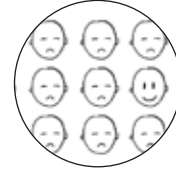


Step 2: The children imagine they have given a red tablet for stomach pain to people on the red papers. These people are in Group Red. They imagine they have given a blue tablet for stomach pain to people on the blue papers. These people are in Group Blue.

The people have used their treatments, so now the children can measure what happened.

More instructions →

ACTIVITY



Step 3: Led by the teacher, the children measure what happened to 10 people in each group.



The teacher chooses two children. One child turns over the top red paper to show the back. The other child turns over the top blue paper. On the back of each paper, some of the faces are smiling. Each smiling face is a person who no longer has stomach pain.

Step 4: The teacher and children count how many people in each group no longer have stomach pain. In the chart in their exercise book, each child writes how many people in each group no longer have stomach pain. The teacher writes how many in a chart on the board.

Step 5: Led by the teacher, children discuss which tablet seems best to take if you have stomach pain.

Step 6: The teacher and children repeat Steps 2 to 4 until they have turned over all the papers

Step 7: When all the papers have been turned over, led by the teacher, children discuss whether the same tablet seemed best at the beginning of the activity as at the end.

Lesson 7: Fair comparisons with many people **147**

 Instructions and notes for teachers

STEP 4

Lead activity

The children have almost the same chart on page 37 in their exercise books. Before starting the activity, you should have drawn this simplified chart on the board:

CARD	NO PAIN, GROUP RED	NO PAIN, GROUP BLUE
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
TOTAL		

Here is an example of what the chart could look like after measuring what happened to 20 people in each group (turning around two red cards and two blue cards):

CARD	PEOPLE WITHOUT PAIN IN GROUP RED	PEOPLE WITHOUT PAIN IN GROUP BLUE
1	5 OUT OF 10	4 OUT OF 10
2	8 OUT OF 20	9 OUT OF 20

In this example, 5 faces on the back of the first red card are smiling and 3 faces on the second red card are smiling. In other words, out of the first 20 people in Group Red, 8 no longer have stomach pain (5 out 10 + 3 out of 10 = 8 out of 20).

Explanation for discussion: After measuring what happened to the first 10 people in each group (turning around the first pair of papers), there was a difference between how many people no longer had stomach pain in each group. When you had measured all 100 people in each group, there was no difference. There were as many people without stomach pain in each group. In other words, had you stopped after measuring what happened to the first 20 people, it would have looked like the red or the blue pill was better. This would have happened no matter which red card and which blue card you turned over first. By measuring what happened to all 200 people in the comparison, you found that there really is no difference. The comparison with only 20 people was too small to know there was no difference.

ACTIVITY CHART

The teacher will lead the activity using 10 red and 10 blue cards. There are 10 people with stomach pain on each card. Each time a card is turned, write how many people on that card no longer have stomach pain.

Group Red	Group Blue
In the space below, write the number of people who no longer had pain after taking a red pill	In the space below, write the number of people who no longer had pain after taking a blue pill
Red Card 1:	Blue Card 1:
Red Card 2:	Blue Card 2:
Red Card 3:	Blue Card 3:
Red Card 4:	Blue Card 4:
Red Card 5:	Blue Card 5:
Red Card 6:	Blue Card 6:
Red Card 7:	Blue Card 7:
Red Card 8:	Blue Card 8:
Red Card 9:	Blue Card 9:
Red Card 10:	Blue Card 10:
Total:	Total:

 Instructions and notes for teachers



STEP 5

Manage exercises

EXERCISE 1

Tick whether each point is true or false.

Example:

In a fair comparison, the groups are similar.

True False

1. In fair comparisons, health researchers can be more sure why something happens when it happens many times.

True False

2. If a comparison is big enough, it is not important whether it is fair.

True False

3. Most of the time, health researchers should make more than one fair comparison of the same treatments.

True False

EXERCISE 2

Remember that the two meanings of “by chance” are in the back of the book

1. What does it mean to choose “by chance” who gets which treatment?

To choose by chance who gets which treatment means to choose without

knowing who will get which treatment.

2. What does it mean to find something “by chance” in a comparison that was too small?

To find something by chance in a comparison that was too small is to find

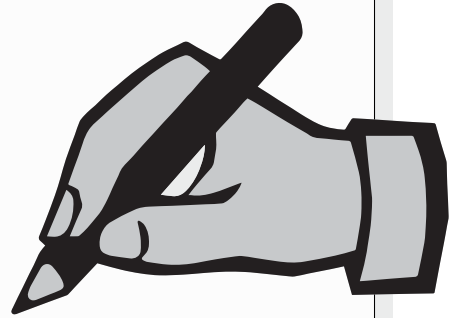
something without knowing why it happened because the comparison was

too small.

STEP 6

Fill in evaluation form

Fill in the separate lesson evaluation form.



LESSON EVALUATION FORM

Informed Health Choices project

Background about lesson for teachers

Sometimes, health researchers make a comparison that is fair, but too small for us to be sure why they found what they found. Most treatments do not have big effects. Health researchers must make fair comparisons with lots of people to find out more about the effects of those treatments. Otherwise what they find can be by chance. When health researchers make comparisons that are too small, it is called a “random error” because they could have found what they found randomly. Most times, health researchers must make many fair comparisons of the same treatments for us to be very sure about the effects.

For example, children who have diarrhoea can become dehydrated. This means they lose a lot of the water in their body. For more than 20 years, the World Health Organization (WHO) and the United Nations Children’s Fund (UNICEF) recommended giving such children a large amount of sugar and salt mixed in water. However, some health researchers thought a small amount of sugar and salt might be better.

When researchers first studied using a large amount of sugar and salt compared to a small amount, there were only 38 children in the comparison. Nine of the children became seriously dehydrated. Four of the seriously dehydrated children were in the group that drank the mixture with a small amount of sugar and salt. The other five were in the group that took the mixture with a large amount.

In the next ten years, health researchers made 10 more comparisons of the same treatments. Sometimes more children in one group got seriously dehydrated. Other times, the same number in each group did. Eventually, researchers added up the findings from all of the comparisons. It was as if they were making one bigger fair comparison. That bigger fair comparison was big enough that they could be very sure whether what they found was the effects of the treatments. They found that fewer children got seriously dehydrated of those that drank the mixture with a small amount of salt and sugar. In other words, the mixture with a small amount of salt and sugar was the better treatment! That is what WHO and UNICEF now recommend.



Children discuss what they have read, Uganda, January 2016.

LESSON 8

Advantages and disadvantages of a treatment

LESSON 8

Advantages and disadvantages of a treatment

Everything you need to prepare and teach this lesson

Objectives	page 247
Preparation	page 247
Lesson	page 248
Step 1: Review last lesson	page 249
Step 2: Read aloud	page 250
Step 3: Discuss	page 264
Step 4: Lead activity	page 266
Step 5: Manage exercises	page 269
Step 6: Fill in lesson evaluation form	page 271
Background about lesson for teachers	page 272

Objectives

What the children should learn in this lesson:

- What an “advantage” of a treatment is
- What a “disadvantage” of a treatment is
- What an “informed choice” is
- Why it is important to make informed choices of treatments
- How to make informed choices of treatments

Preparation (20 minutes)

This is what you should do before the lesson.

Read ahead

- Read pages for this lesson in the children's book
- Read pages for this lesson in the guide

Gather materials

Make sure you have:

- This guide
- The lesson evaluation form
- Some rubbers

Make sure each child has:

- A copy of the children's book
- Their exercise book
- A pencil or pen

Summary of story: John and Julie are at the clinic because they both have ear infections. The Professors help each of them make an informed choice about whether to use an antibiotic or not. They use John and Julie's choices as examples to explain two important questions that you should always ask before choosing whether to use a treatment.

Lesson (80 minutes)

This is a suggested plan for teaching the lesson.

TEACHERS	CHILDREN	TIME
STEP 1 Review last lesson		10 min
<ul style="list-style-type: none"> Review the last lesson by asking the questions on page 249 in this guide. 	<ul style="list-style-type: none"> Answer the questions as instructed. 	
STEP 2 Read aloud		25 min
<ul style="list-style-type: none"> Lead reading aloud starting on page 250 in this guide. <p><i>For different ways of reading see page 19 in this guide.</i></p>	<ul style="list-style-type: none"> Open to page 152 in their books and read aloud as instructed. 	
BREAK		5 min
STEP 3 Discuss		10 min
<ul style="list-style-type: none"> Discuss the story by asking the questions on page 264 in this guide. 	<ul style="list-style-type: none"> Answer the questions as instructed. 	
STEP 4 Lead activity		15 min
<ul style="list-style-type: none"> Lead the activity starting on page 266 in this guide. 	<ul style="list-style-type: none"> Open to page 166 in their books and do activity as instructed. 	
STEP 5 Manage exercises		10 min
<ul style="list-style-type: none"> Manage the exercises starting on page 269 in this guide. Help children as they complete exercises and lead marking of exercises. <p><i>For different ways of marking see page 20 in this guide.</i></p>	<ul style="list-style-type: none"> Open to page 169 in their exercise books and complete exercises. 	
STEP 6 Fill in evaluation form		5 min
<ul style="list-style-type: none"> Fill in the lesson evaluation form. 		

These are questions and answers for reviewing the previous lesson, with the children.

1. What did John, Julie and the Professors find when they made comparisons with 10 runners?

They found something different every time. First, more runners who drank water got stomach pain. Then the same number in each group got pain. Finally, more who drank juice got pain.

2. What did John, Julie and the Professors find when they made comparisons with 100 runners?

They found almost the same each time: about double as many of the runners who drank juice got stomach pain.

*John and Julie learn about
CHOICES of treatments*

8

Advantages and disadvantages of a treatment

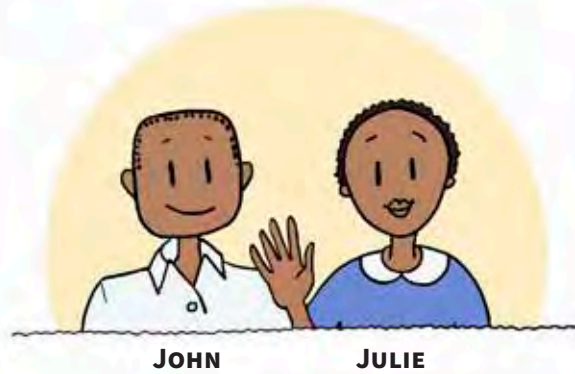
What you will learn in this lesson:

1. What an “advantage” of a treatment is
2. What a “disadvantage” of a treatment is
3. What an “informed choice” is
4. Why it is important to make informed choices of treatments
5. How to make informed choices of treatments

Keywords for this lesson:

- An **INFORMED** *choice* is a choice made when you understand the information that you have.
- An **ADVANTAGE** *of a treatment* is something about a treatment that you think is good.
- A **DISADVANTAGE** *of a treatment* is something about a treatment that you think is bad.

People in this lesson

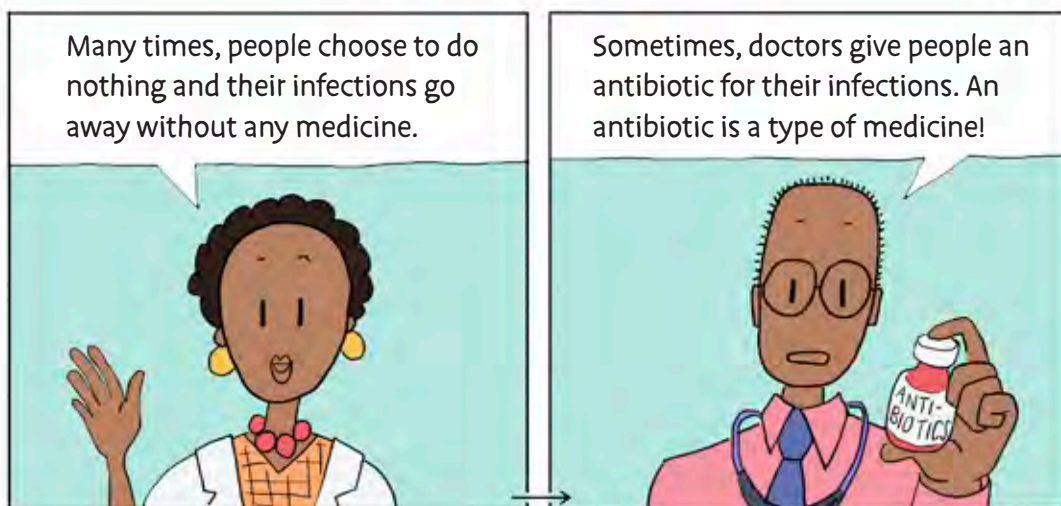
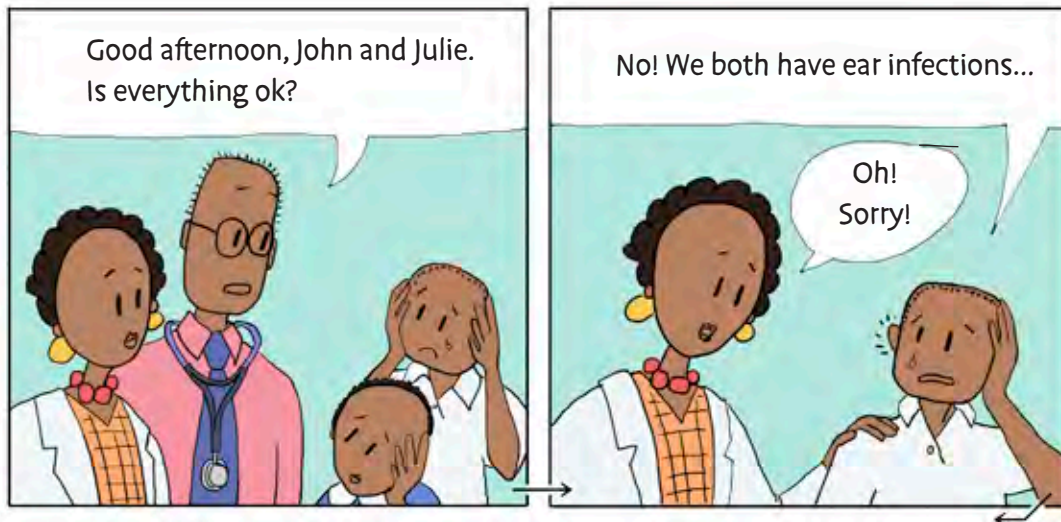


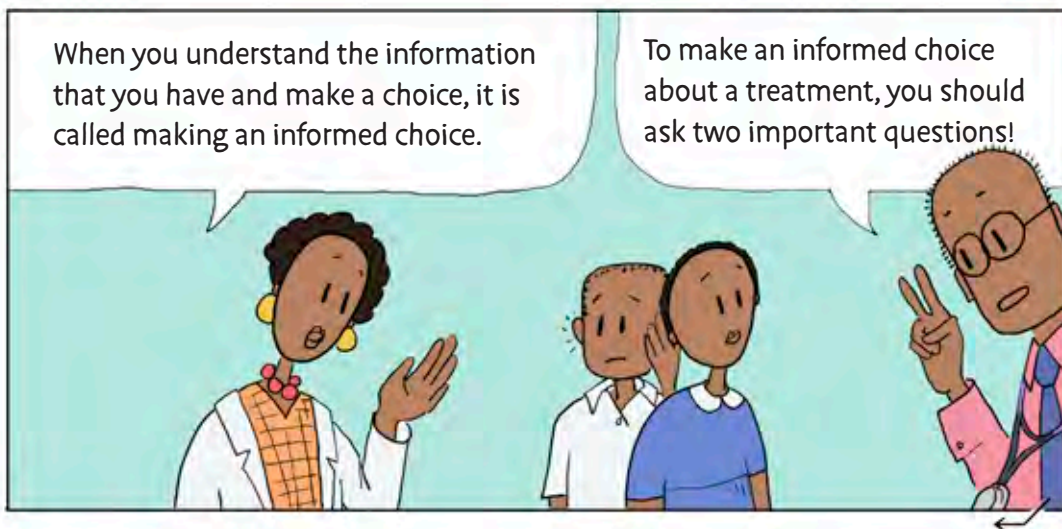
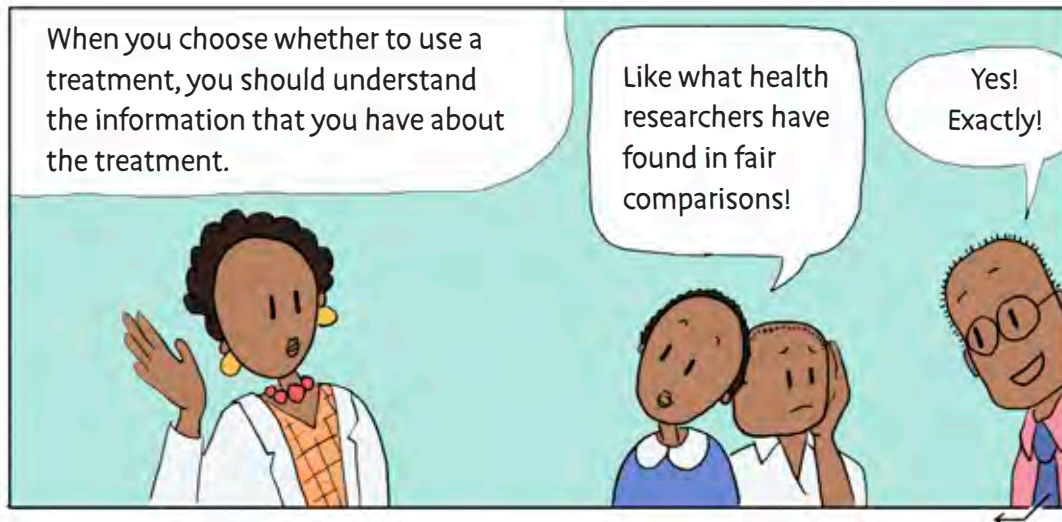
Instructions and notes for teachers



154 Lesson 8: Advantages and disadvantages of a treatment

Instructions and notes for teachers





INFORMATION *about treatments* is what we are told or learn about treatments.

IN LUGANDA: “Obubaka ku by’obujjanjabi”

IN KISWAHILI: “Ambukizo” au “Amakuru”

An **INFORMED** *choice* is a choice made when you understand the information that you have.

IN LUGANDA: “Okusalawo okukolebwa nga omuntu asoose kutegeera ensonga zonna ezikwata ku ky’asalawo”

IN KISWAHILI: “Ambukizo”



An **ADVANTAGE** of a treatment is something about a treatment that you think is good.

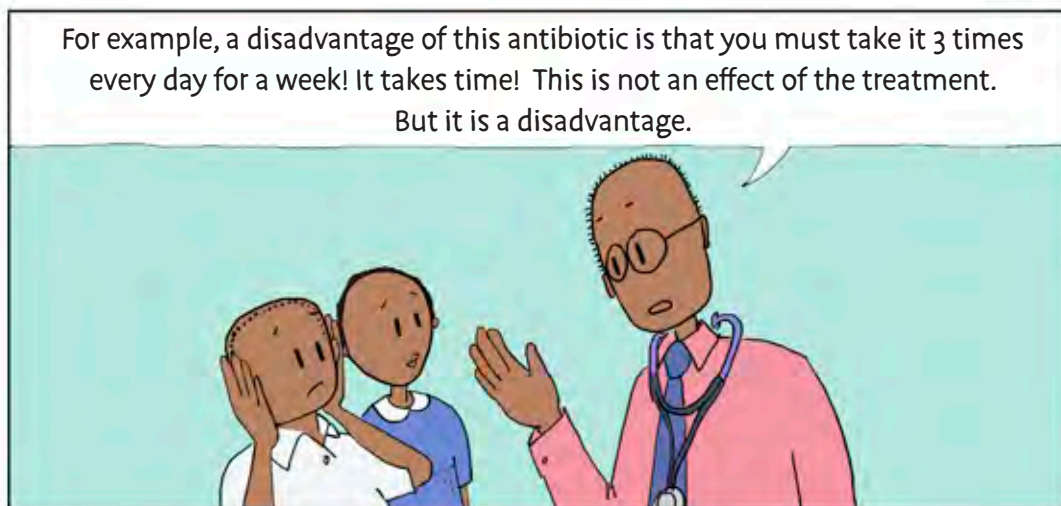
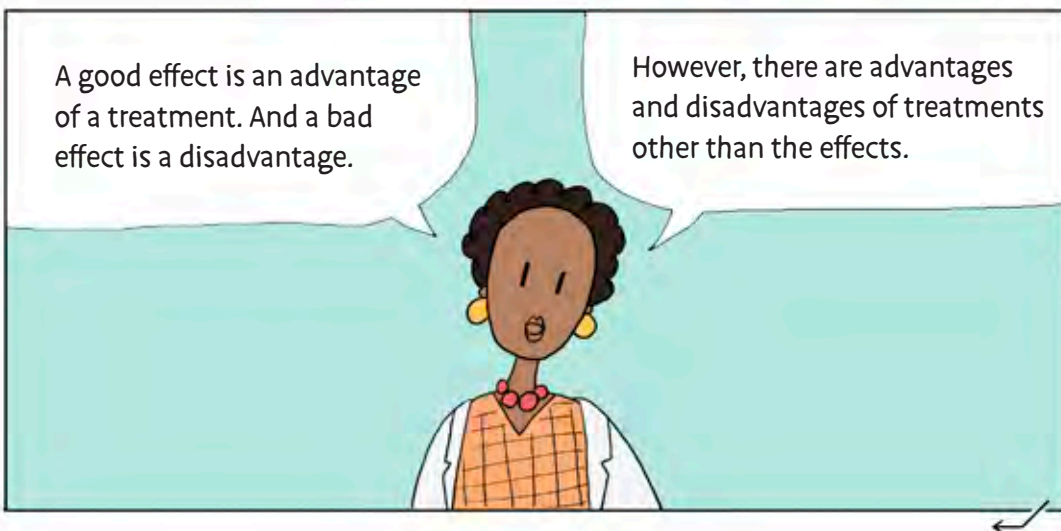
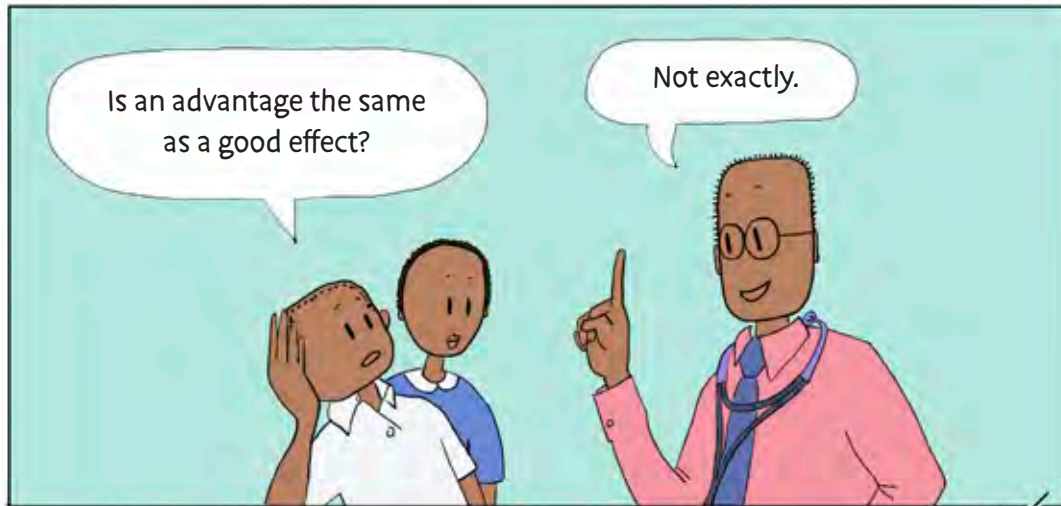
IN LUGANDA: “Ekirungi ku bujjanjabi obumu oba obulala”

IN KISWAHILI: “Manufaa”

A **DISADVANTAGE** of a treatment is something about a treatment that you think is bad.

IN LUGANDA: “Ekitali kirungi ku bujjanjabi obumu oba obulala” oba “Ekibi ku bujjanjabi obumu oba obulala”

IN KISWAHILI: “Kwa madhara”



The most important advantage of the antibiotic is that it sometimes makes an infection go away faster.

If the infection goes away, the pain and fever go away!

However, most times, the infection will go away without any medicine.

Sometimes it takes longer for the infection to go away without medicine. But sometimes it takes the same amount of time!

An important disadvantage of the antibiotic is that it sometimes makes you sick. It can make you vomit or give you diarrhea.

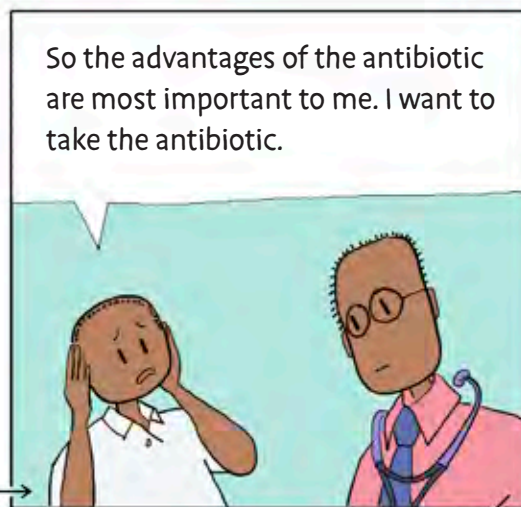
Finally, you should ask what is most important to you.



My ear infection is very painful and I have a fever.



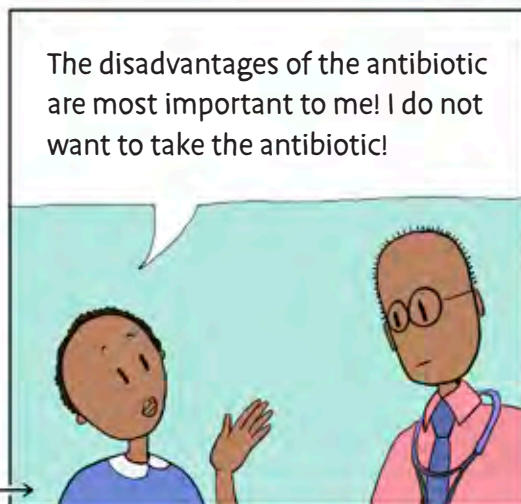
So the advantages of the antibiotic are most important to me. I want to take the antibiotic.



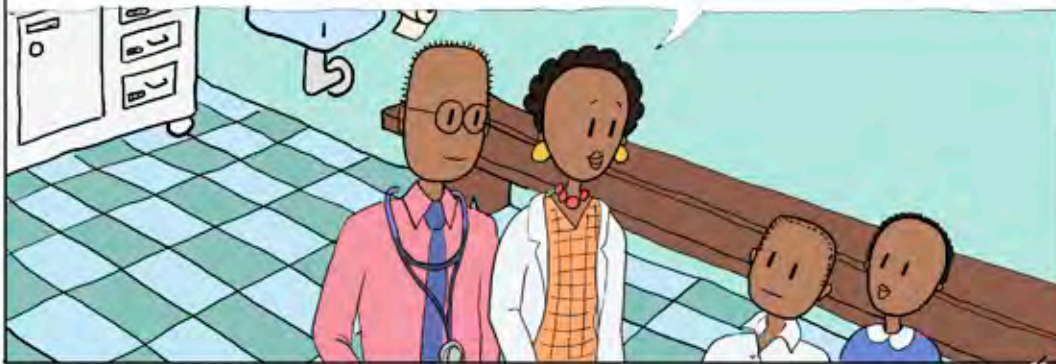
I do not want to get sick! And my infection is not so painful!



The disadvantages of the antibiotic are most important to me! I do not want to take the antibiotic!



So you see, John and Julie, when people make informed choices like you are now, there is no right choice for everyone...



There is only the right choice for each person! What is most important to one person is not always the same as what is most important to another person.



But John, before you take the antibiotic, first ask your mother about it.



You are only children.



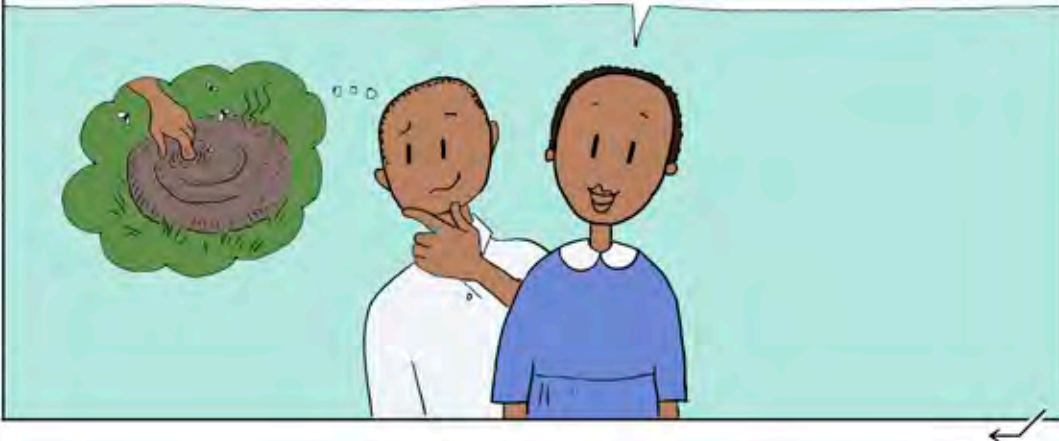
Instructions and notes for teachers

Background: Infections like John's and Julie's, which are inside the ear, are called middle ear infections. Many such infections are caused by viruses, not bacteria. Antibiotics have no effect on viruses and bacteria become resistant to the antibiotic when we overuse the medicine. Most middle ear infections disappear without medicine. Therefore, taking antibiotics for a middle ear infection is only recommended for children in severe pain.

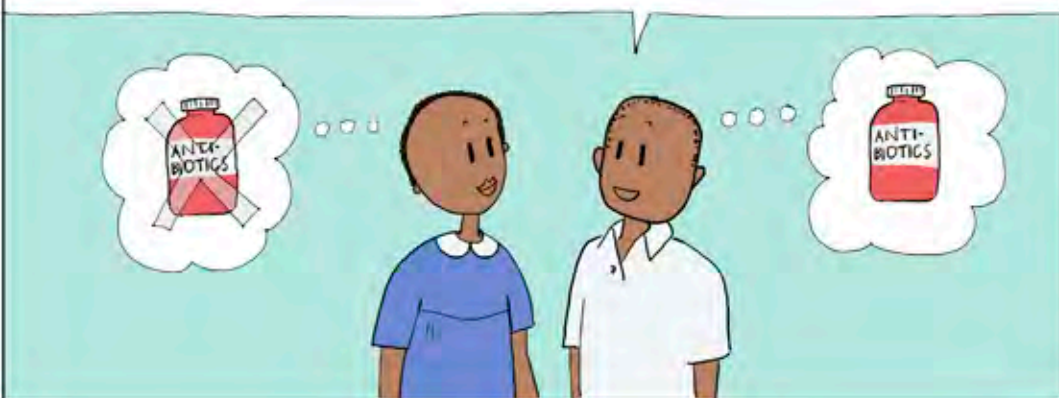
Thank you for teaching us so many important lessons, Professors.

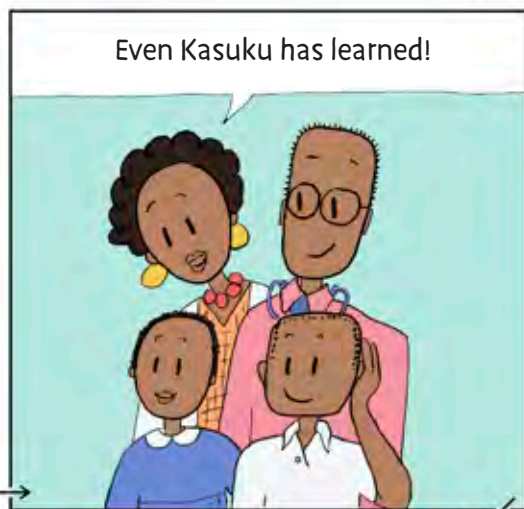
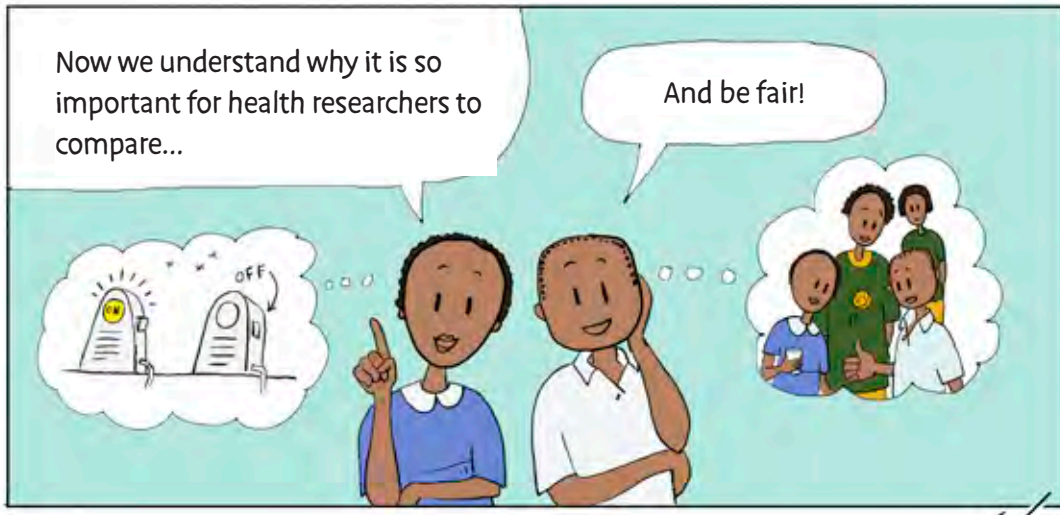


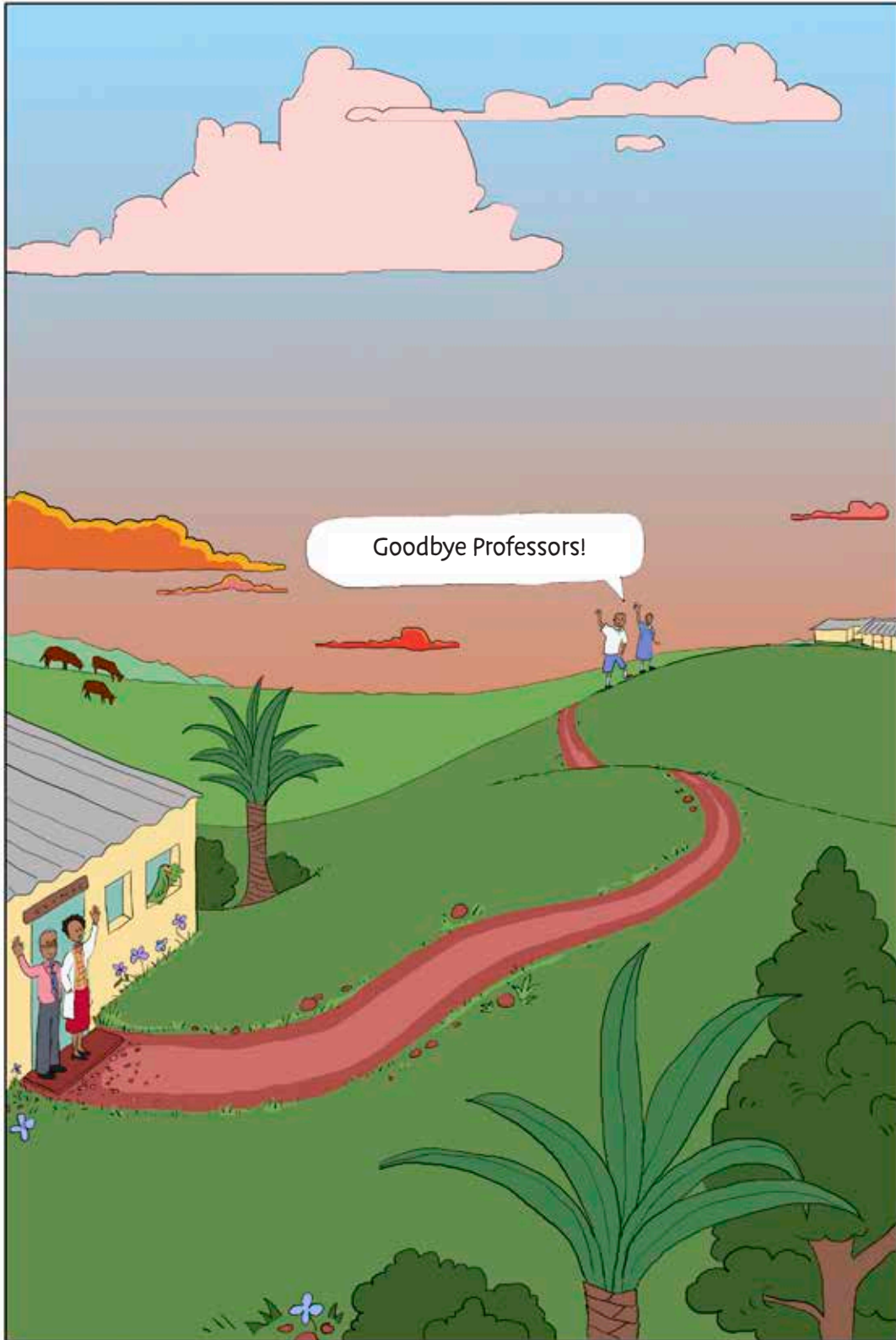
We will ask questions about what people say.



And we will make informed choices for ourselves.







164 Lesson 8: Advantages and disadvantages of a treatment

Instructions and notes for teachers

EXTRA EXAMPLE

These are extra examples of what you learned in the chapter.

Extra example of two people making different choices because of what is most important to each of them.

Treatment A:

Getting surgery for a broken bone

Advantage: Can make the bone heal faster

Disadvantage: Costs a lot of money and you can get an infection

Treatment B:

Not getting surgery for a broken bone

Advantage: Does not cost anything



Nelson's choice: Nelson chooses to get the surgery because he is a basketball player and it is most important to him that he can play again soon.

Rhona's choice: Rhona chooses not to get the surgery because she would rather wait and save the money, and she does not want to take the chance of getting an infection.

 Instructions and notes for teachers

Explanation: "Surgery" means "an operation".

These are questions and answers for reviewing what you read aloud, with the children.

1. What are the two important questions that John and Julie learned to ask when choosing whether to use a treatment?

The first question is: What are the advantages and disadvantages of the treatment?
The second question is: What is most important to me?

2. Why did John choose to use the antibiotic?

His ear infection was very painful, so the advantages of the antibiotic were most important to him.

3. Why did Julie choose not to use the antibiotic?

Her ear infection was not so painful and she did not want to get sick, so the disadvantages of the antibiotic were most important to her.

There are no extra examples for you to give the children, for this lesson.

ACTIVITY



Instructions

Objective: Imagine making the right choice for yourself by thinking carefully about the advantages and disadvantages.

The advantages and disadvantages are listed on the next page.

Step 1: The children imagine they have a painful ear infection like John has in the story.

Step 2: Led by the teacher, children discuss which advantage or which disadvantage of each treatment is most important to each of them.

Remember, most treatments have good and bad effects.

Step 3: The teacher reads all of the advantages and disadvantages.

Step 4: The children raise their hand when the teacher says the advantage or disadvantage that would be most important to them if they had an ear infection like John's.

Step 5: The children discuss with the other children on their bench which treatment they would use and why..

More instructions →

ACTIVITY



- Step 6:* The teacher asks who would choose to use the antibiotic.
- Step 7:* Children who would use the antibiotic stand up.
- Step 8:* All children sit down.
- Step 9:* The teacher asks who would not use the antibiotic.
- Step 10:* Children who would not use the antibiotic stand up.
- Step 11:* All children sit down.
- Step 12:* The children imagine that they have a less painful ear infection like the one Julie has in the story.
- Step 13:* Repeat steps 6 to 11.

More instructions →

ACTIVITY



Treatment 1: Taking an antibiotic

**Advantages
of taking the antibiotic:**

- It sometimes makes pain and fever from an infection go away faster.

**Disadvantages
of taking the antibiotic:**

- It sometimes gives people diarrhoea or makes them vomit.
- It tastes bad.
- You must take it several times each day for several days.
- It costs some money.

Treatment 2: Not taking an antibiotic**Advantages
of not taking the antibiotic:**

- It does not give people diarrhea or make them vomit.

**Disadvantages
of not taking the antibiotic:**

- It will not make the pain or fever go away faster.



EXERCISE 1

Write what the words mean. Remember that the meanings of the words are in the back of the book.

Example:

What is a “fair” comparison of treatments?

A comparison where the only important difference is the treatments.

1. What is an “informed choice”?

An informed choice is a choice made when you understand the information that you have.

2. What is an “advantage” of a treatment?

An advantage is something about a treatment that you think is good.

3. What is a “disadvantage” of a treatment?

A disadvantage is something about a treatment that you think is bad.

Instructions and notes for teachers

Instruction: Remind children to collect claims in the back of their exercise books.

EXERCISE 2

Tick whether each point is true or false.

Example:

If a comparison is big enough, it is not important whether it is fair.

True False

1. Costing a lot of money is an advantage of a treatment.

True False

2. A good effect is an advantage of a treatment.

True False

3. When two people make informed choices that means they are making the same choice.

True False

4. An advantage to one person can be a disadvantage to another person.

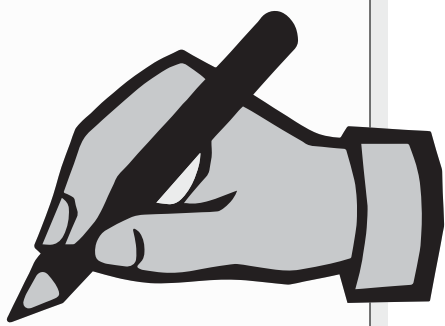
True False

5. Disadvantages of a treatment are always more important than the advantages.

True False



Fill in the separate lesson evaluation form.



LESSON EVALUATION FORM

Informed Healthcare Choices project

Background about lesson for teachers

When you understand the information that you have about a treatment before choosing whether to use it, you are making an informed choice. There are many types of information about treatments. Findings from fair comparisons of treatments are the most helpful type of information for making choices. When you have understood the information that you have, you can make an informed choice, considering the advantages and disadvantages, and which are most important to you.

All treatments have advantages and disadvantages. A good effect is an advantage of a treatment, but there can be other advantages. For example, if a treatment costs much less money than others, that is an advantage. Doctors and other health researchers typically say “benefits” instead of “advantages.” Likewise, a bad effect is a disadvantage of a treatment, but there are other possible disadvantages. For example, if a treatment costs a lot more money than other treatments, that is a disadvantage. Health professionals typically say “harms” instead of “bad effects.” Disadvantages that are not bad effects, they sometimes call “burdens.”

For example, there is a type of tablet called aspirin. In fair comparisons, health researchers have found that people who take a small aspirin every day have fewer heart attacks than other people. They have also found that taking the aspirin does not have bad effects on most people. However, they have found that some people get serious bleeding in their stomach if they take a small aspirin everyday.

The same advantage or disadvantage of a treatment can be more important to one person than another. In the example of aspirin, the advantages are more important to people at a higher risk of getting a heart attack: men, people who smoke, older people, people who have already had heart attacks and people who have family members who have had heart attacks. For other people, who are at a lower risk of getting a heart attack, the disadvantages are more important. Most of those people will not have heart attacks whether they take the aspirin or not and taking the aspirin could cause some of them to have serious bleeding in their stomach.





Children test a game that was part of the first version of the materials, Uganda, October 2014.

LESSON 9

**What is most important
to remember from this book**

LESSON 9

What is most important to remember from this book

Everything you need to prepare and teach this lesson

Objectives	page 277
Preparation	page 277
Lesson	page 278
Step 1: Review last lesson	page 279
Step 2: Read aloud	page 280
Step 3: Discuss	-
Step 4: Lead activity	page 300
Step 5: Manage exercises	page 304
Step 6: Fill in lesson evaluation form	page 307
Background about lesson for teachers	-

Objectives

What the children should learn in this lesson:

- What is most important to remember from this book

Preparation (20 minutes)

This is what you should do before the lesson.

Read ahead

- Read pages for this lesson in the children's book
- Read pages for this lesson in the guide

Gather materials

Make sure you have:

- This guide
- The lesson evaluation form
- Some rubbers

Make sure each child has:

- A copy of the children's book
- Their exercise book
- A pencil or pen

Lesson (80 minutes)

This is a suggested plan for teaching the lesson.

TEACHERS	CHILDREN	TIME
STEP 1 Review last lesson		10 min
<ul style="list-style-type: none"> Review the last lesson by asking the questions on page 279 in this guide. 	<ul style="list-style-type: none"> Answer the questions as instructed. 	
STEP 2 Read aloud		25 min
<ul style="list-style-type: none"> Lead reading aloud starting on page 280 in this guide. <p><i>For different ways of reading see page 19 in this guide.</i></p>	<ul style="list-style-type: none"> Open to page 172 in their books and read aloud as instructed. 	
BREAK		5 min
STEP 3 Discuss		-
STEP 4 Lead activity		15 min
<ul style="list-style-type: none"> Lead the activity starting on page 300 in this guide. 	<ul style="list-style-type: none"> Open to page 192 in their books and do activity as instructed. 	
STEP 5 Manage exercises		20 min
<ul style="list-style-type: none"> Manage the exercises starting on page 304 in this guide. Help children as they complete exercises and lead marking of exercises. <p><i>For different ways of marking see page 20 in this guide.</i></p>	<ul style="list-style-type: none"> Open to page 194 in their exercise books and complete exercises. 	
STEP 6 Fill in evaluation form		5 min
<ul style="list-style-type: none"> Fill in the lesson evaluation form. 		

These are questions and answers for reviewing the previous lesson, with the children.

1. What are the two important questions that John and Julie learned to ask when choosing whether to use a treatment?

The first question is: What are the advantages and disadvantages of the treatment?
The second question is: What is most important to me?

2. Why did John choose to use the antibiotic?

His ear infection was very painful, so the advantages of the antibiotic were most important to him.

3. Why did Julie choose not to use the antibiotic?


Her ear infection was not so painful and she did not want to get sick, so the disadvantages of the antibiotic were most important to her.

Review

9

What is most important
to remember from this book

172 Lesson 9: What is most important to remember from this book

 *Instructions and notes for teachers*



This final lesson is a review of everything you have learned.

In **Lesson 1**, you learned the meanings of “health,” “treatment” and “effect”.

And you learned what this book is about.



What is “health”?



What is a “treatment”?



What is an “effect” of a treatment?



Why should you think carefully before choosing whether to use a treatment?

Lesson 9: What is most important to remember from this book **175**

 *Instructions and notes for teachers*

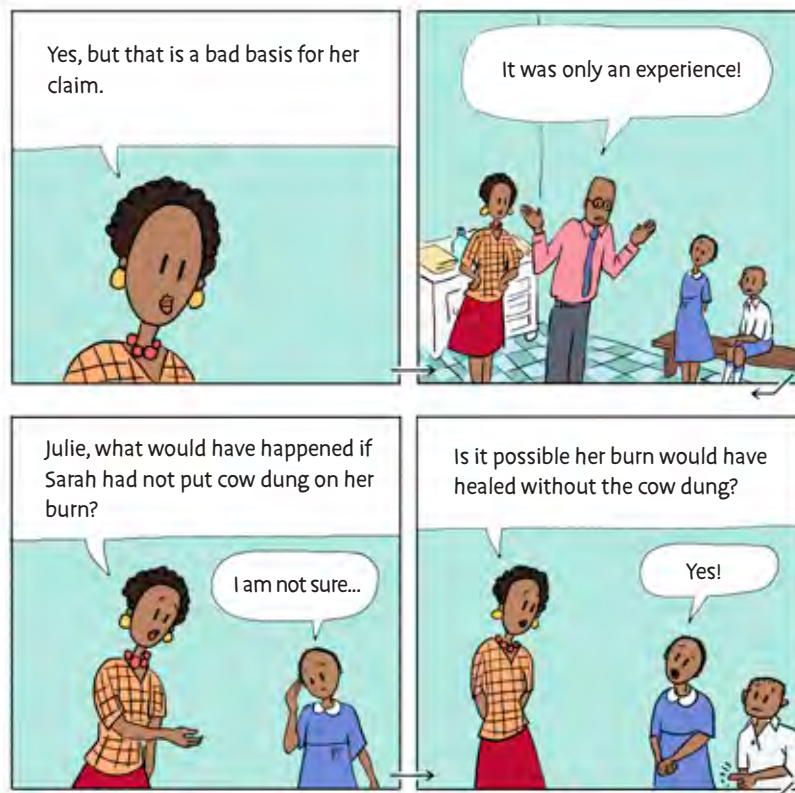
In **Lesson 2**, you learn the meanings of “claim,” “unreliable” and “basis”.

You learned that a claim with a bad basis is an unreliable claim.

You learned that someone’s personal experience using a treatment is a bad basis for claims about the effects of the treatment.

In the story, John and Julie went to the clinic, where they met the Professors.



**Discuss:**

What is a “claim”?

What is the “basis” for a claim?

Why was Sarah’s claim unreliable?

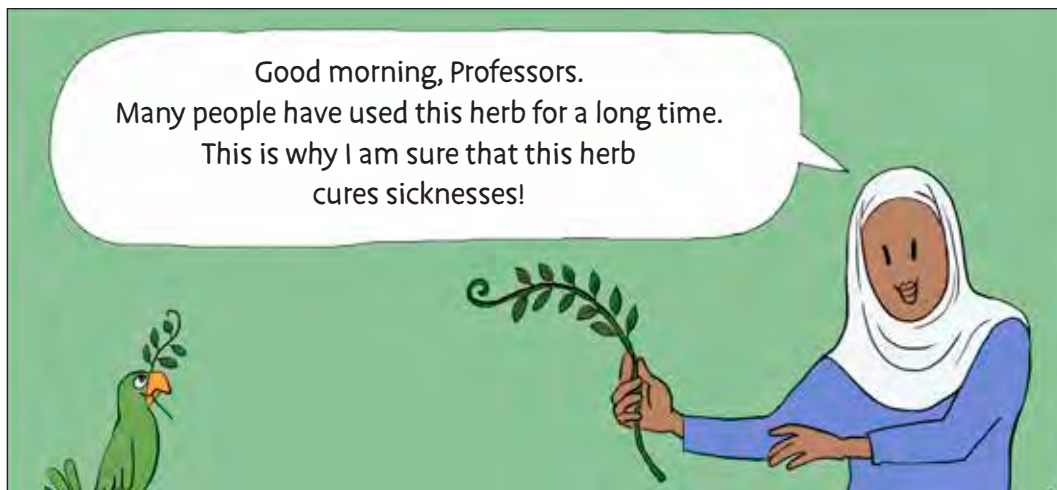
What should you always ask when you hear a claim about the effects of a treatment?

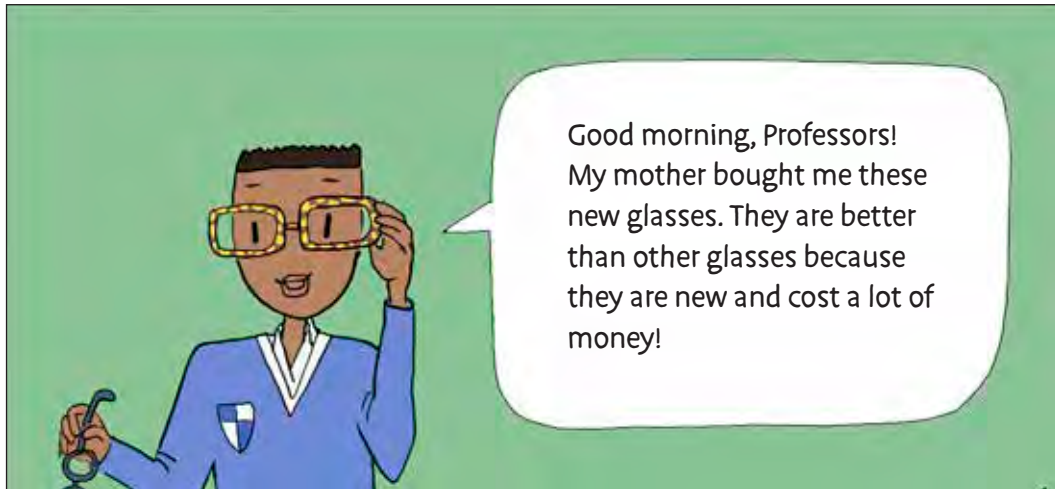
In **Lesson 3**, you learned about two more bad bases for claims about the effects of treatments.

You learned that how long people have used a treatment or how many people have used it is a bad basis for claims about the effects of the treatment.

And you learned that how new a treatment is or how much money it costs is a bad basis for claims about the effects of the treatment.

In the story, the Professors visited John and Julie at their school.



**Discuss:**

Why was Ruth's claim unreliable?

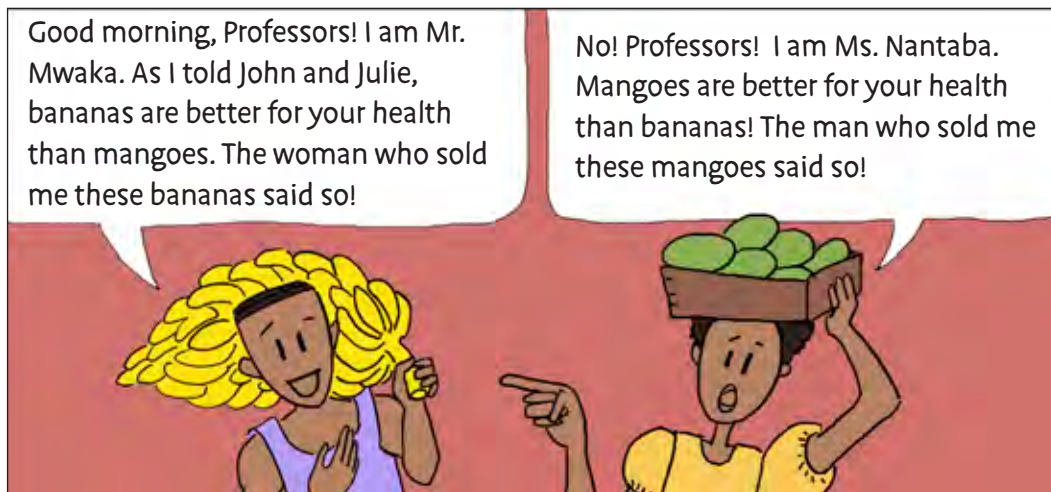
Why was Ahmed's claim unreliable?

In **Lesson 4**, you learned about two more bad bases for claims about the effects of a treatment.

You learned that someone selling a treatment saying something about it is a bad basis for claims about the effects of the treatment.

And you learned that an expert saying something about a treatment is a bad basis for claims about the effects of the treatment.

In the story, John and Julie met the Professors at the market.



Good morning, Professors! This small electric machine makes a sound so mosquitoes go away! It stops you from getting malaria! I am sure because an **expert** told me! This expert knows a lot about mosquitoes!



Discuss:

Why were Mr. Mwaka's and Ms. Nantaba's claims unreliable?

Why was Ms. Namuli's claim unreliable?

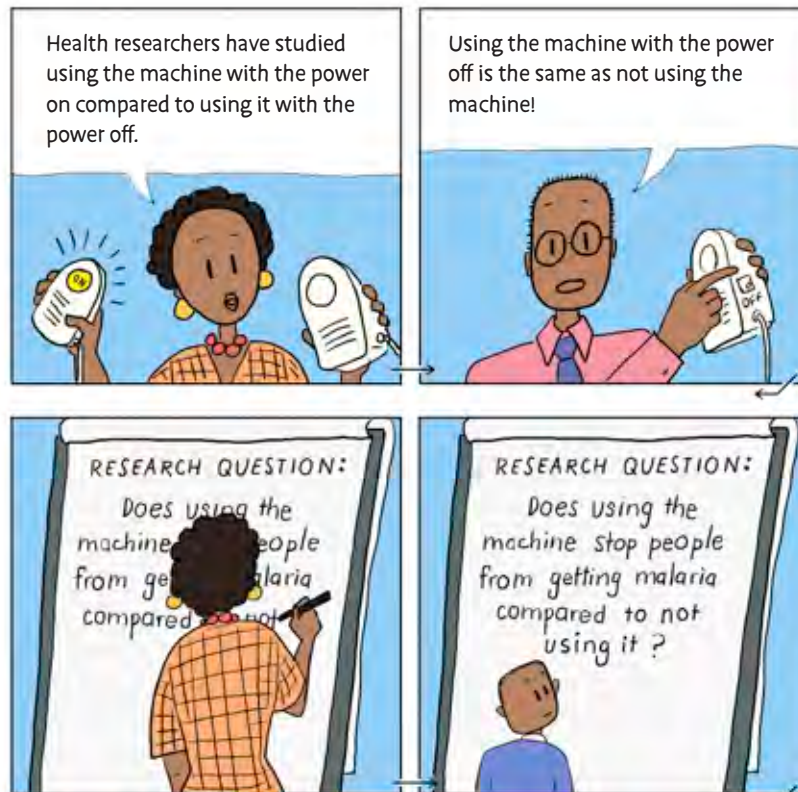
In **Lesson 5**, you learned about why health researchers must compare treatments.

In the story, John and Julie visited the Professors at their office.



182 Lesson 9: What is most important to remember from this book

Instructions and notes for teachers

**Discuss:**

Why do health researchers study treatments by comparing them?

In **Lesson 6**, you learned about the meaning of a “fair” comparison of treatments.

You learned why and how health researchers should be fair when comparing treatments.

In the story, the Professors visited John and Julie at the field in John and Julie’s village.



**Discuss:**

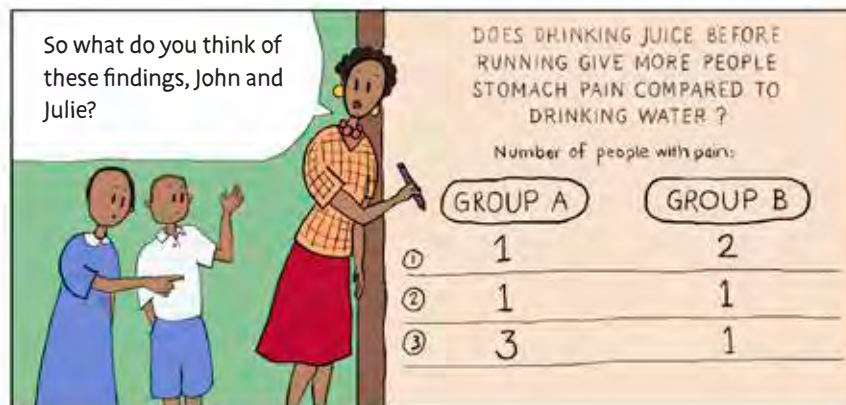
What is a “fair” comparison of treatments?

Why should health researchers be fair when they compare treatments?

How should health researchers be fair when they compare treatments?

In **Lesson 7**, you learned about why health researchers must give treatments to many people when they compare treatments.

In the story, John and Julie met the Professors at the field at the university.



186 Lesson 9: What is most important to remember from this book

Instructions and notes for teachers

This was the last comparison. This time, 22 of 50 students in Group A got stomach pain.

And 9 out of 50 students in Group B got stomach pain!

We found almost the same thing every time when there were 100 students!

It was the runners in Group A who drank the juice.

STOMACH PAIN COMPARED TO DRINKING WATER ?	
Number of people with pain:	
GROUP A	GROUP B
1	2
1	1
③ 3	1
① 18	11
② 20	10
③ 22	9

Discuss:

Why must health researchers make many fair comparisons with many people?

In **Lesson 8**, you learned about two questions that you should ask before choosing whether to use a treatment.

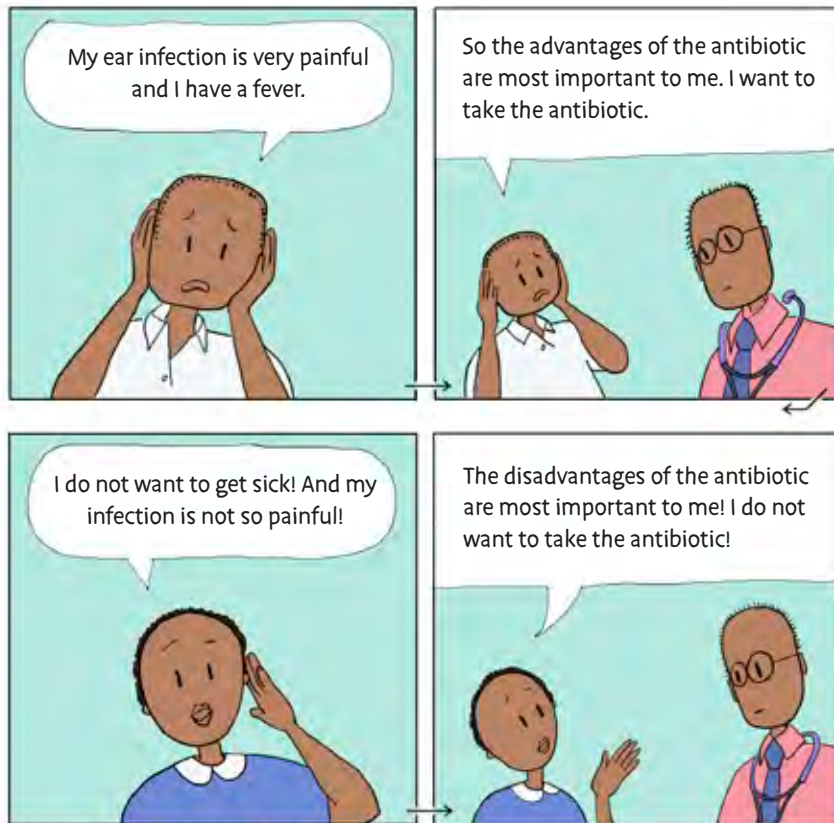
In the story, the Professors found John and Julie at the clinic.

John and Julie were there because they both had ear infections.



188 Lesson 9: What is most important to remember from this book

Instructions and notes for teachers

**Discuss:**

What are the two questions that you should always ask before choosing whether to use a treatment?

Why should you ask these questions?

On the next page, there is a list of what is most important to remember from this book.

You can use the list for making choices of treatments.

And you can use it to teach other people about what you have learned.

Remember that there is much more to learn about claims about treatments, comparisons of treatments, and choices of treatments.



Remember!

- **Think carefully before choosing whether to use a treatment.**
 - **Most treatments have both good and bad effects.**
 - **What someone says about a treatment can be wrong.**

CLAIMS about treatments

When you hear a claim about the effects of a treatment, always ask:

- **What is the basis for the claim?**

If the basis for the claim is bad, the claim is unreliable.

These are bad bases for claims about the effects of a treatment:

1. Someone's personal experience using the treatment
2. How long the treatment has been used or how many people have used it
3. How much money the treatment costs or how new it is
4. That someone selling the treatment says something about it
5. That an expert says something about the treatment, if not based on fair comparisons

COMPARISONS of treatments

If the basis for the claim is good, the claim is reliable.

Fair comparisons are a good basis for claims about the effects of treatments.

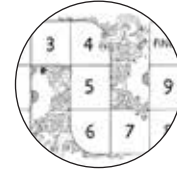
This is how health researchers make a fair comparison:

1. They compare one treatment to another treatment or to no treatment.
2. They choose who gets which treatment by chance (like flipping a coin).
3. They do not let anyone know who got which treatment until the end.
4. They give the treatments to many people, so what they find is not by chance.

CHOICES of treatments:

When you choose whether to use a treatment, always ask:

- **What are the advantages and disadvantages of the treatment?**
 - **What is most important to me?**

ACTIVITY
CLASS DISCUSSION

Instructions

Objective: Remember what is most important to learn from this book.

Step 1: Each child turns their book around so the game board is facing up.

Step 2: The teacher divides children into pairs and names one child in each pair Player 1 and the other child Player 2.

Step 3: Each child picks something to use as their game piece and places it on the “START” square on the board--for example a small rock, a coin or a bottle cap.

The teacher has a list of questions.

The questions are in this guide on the page after the example.

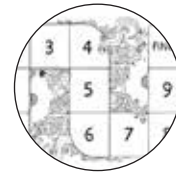
Step 4: The teacher asks one of the questions.

Step 5: In each pair, Player 1 tells Player 2 what they think the answer is.

Step 6: The teacher explains the right answer.

Step 7: In each pair, if Player 1 gave the right answer, that child gets to move their piece one square forward.

ACTIVITY
CLASS DISCUSSION



Step 8: Repeat steps 4 to 7, except this time Player 2 answers.

When a child reaches the “FINISH” square, they win. That pair starts over.

Example

Teacher: “Do most treatments only have good effects, only have bad effects or have both good and bad effects?”

Player 1 on each bench gives their answer to Player 2.

Teacher: “The right answer is that most treatments have both good and bad effects! Remember the example of using an antibiotic. Using the antibiotic can make an infection go away faster, but it can also make you sick.”

Player 1 on each bench moves their piece one square forward if they gave the right answer.

Questions for the activity

Question: Can not doing something be a treatment?

Answer: Yes

Question: Do most treatments have good effects, bad effects or both?

Answer: Both

Question: Can we be completely sure about the effects of most treatments?

Answer: No

Question: What should you always ask when you hear a claim about the effects of a treatment?

Answer: What is the basis for the claim?

Question: Is the person who makes the claim or the basis for the claim more important?

Answer: The basis for the claim

Question: What is the first step health researchers must take to find out more about treatments?

Answer: Turn a claim into a research question

Question: When is a comparison fair?

Answer: When the groups are similar (the only important difference is the treatments)

Question: How should health researchers choose who gets which treatment?

Answer: By chance

Question: What can happen if people know which treatment they were given?

Answer: They can think that the treatment had an effect that it really did not

Question: What can happen if health researchers' make a comparison that is too small?

Answer: What they find will be by chance

Question: What two questions should you always ask before choosing whether to use a treatment?

Answer: What are the advantages and disadvantages of the treatment, and what is most important to me?

What are the bases for these claims and are they reliable?

Claim: Ali says aloe vera cures malaria, because he used aloe vera once when he had malaria and his malaria went away.

Answer: The basis is Ali's personal experience of using aloe vera, which is a bad basis for the claim, so the claim is unreliable.

Claim: Patricia says people have for a long time used aloe vera for coughs, so it must cure coughs.

Answer: The basis is how long people have used aloe vera for coughs, which is a bad basis for the claim, so the claim is unreliable.

Claim: Lillian claims using a mosquito net that costs a lot of money is better than using a net that costs less.

Answer: The basis is how much the net costs, which is a bad basis for the claim, so the claim is unreliable.

Claim: Gabriel says there is a tablet that helps you sleep better, because health researchers compared taking the tablet to taking another tablet, even though people in the comparison knew which tablet they were given.

Answer: The basis is an unfair comparison, which is a bad basis for the claim, so the claim is unreliable.

Claim: Hussein says there is a creme that makes muscle pain go away, because health researchers compared using the creme to using another creme and the comparison was fair, even though there were only 10 people in the comparison.

Answer: The basis is a very small fair comparison, which is a bad basis for the claim, so the claim is unreliable.

Claim: James says some surgeries are safe and others are not, because health researchers have compared each of the surgeries to other treatments in many big fair comparisons.

Answer: The basis for the claim is many big fair comparisons, which is a good basis for the claim, so the claim is reliable.

EXERCISE

Instructions

Open to the back of your exercise book to where you have collected claims.

Fill in the basis for each claim and tick one of the boxes to show that you think it is reliable or unreliable, or that you are not sure. There is an example on the next page.

Remember, the bases that you have learned about are:

- Someone's personal experience using the treatment
- How long the treatment has been used or how many people have used it
- How much money the treatment costs or how new it is
- That someone selling the treatment said something about it
- That an expert said something about the treatment
- A fair comparison of the treatment to other treatments or no treatment
- An unfair comparison of the treatment to other treatments or no treatment

If you do not know what the basis for a claim is, leave the space empty for that claim.

Leave some time at the end of the lesson to discuss some of the claims that the children have heard.



EXERCISE

Example:

Claim:

Cow dung heals burns!

Treatment:

Putting cow dung on a burn

Effect:

Healing burns

Basis:

Someone's personal experience

Is the claim reliable?

 Yes No Not sure

EXERCISE

Claim:

Treatment:

Effect:

Basis:

Is the claim reliable?

Yes

No

Not sure

Claim:

Treatment:

Effect:

Basis:

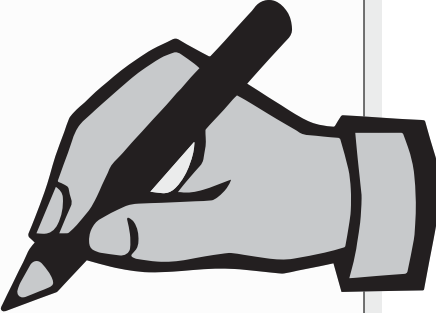
Is the claim reliable?

Yes

No

Not sure

Fill in the separate lesson evaluation form.



LESSON EVALUATION FORM

Informed Healthcare Choices project



Children think carefully about treatments, Uganda, January 2014.

GLOSSARY

The definition in red are for teachers. They are not in the children's book.

A

An **ADVANTAGE** of a treatment

is something about a treatment that you think is good.

WORDS THAT MEAN THE OPPOSITE: “Disadvantage” → See “D”.

EXAMPLE: “Good effects of a treatment are **advantages** of that treatment. Another **advantage** of some treatments is that they cost little or no money.”

IN LUGANDA: “Ekirungi ku bujjanjabi obumu oba obulala”

IN KISWAHILI: “Manufaa”

An **ADVANTAGE** of a treatment

is a good effect of the treatment or the low cost or small burden of the treatment.

WORDS THAT MEAN THE SAME: “Benefit”

B

To **BASE** a claim on something

is to support a claim with something..

EXAMPLE: “Sarah’s claim was **based** on her experience.”

IN LUGANDA: “Okusenziira kyoba oyogeddeyogedde kubujjanjabi ku nsonga emu oba endala”

IN KISWAHILI: “Kwa kuzingatia”

The **BASIS** for a claim

is the support, foundation or reason for the claim.

EXAMPLE: “Sarah’s experience was the **basis** for her claim”

IN LUGANDA: “Esonga esenziirwako ekyogerwayogerwa”

IN KISWAHILI: “Uasili”

The **BASIS** for a claim

is the justification or explanation for the claim.

C

(Note that “by CHANCE” has two meanings. Both are in this glossary.)

Choosing by **CHANCE** who gets which treatment

is a way of choosing without knowing who will get which treatment.

EXAMPLE: “John and Julie tossed a coin to choose which friends got juice and which friends got water. This way, they chose by **chance** who got juice. John and Julie did not know who would get juice.”

IN LUGANDA: “Omuntu okufuna ekintu lwa lukisakisa gamba nga okukuba akalulu okusalawo ani afuna ekintu ekimu obba ekirala”

IN KISWAHILI: “Kibahati”

Choosing by CHANCE who gets which treatment

is using a chance process, like tossing a coin or drawing lots, to ensure that everyone has the same chance of getting one treatment or the other, so the groups being compared are similar.
WHAT HEALTH RESEARCHERS CALL IT: “random allocation”

Finding something by CHANCE in comparisons that were too small

is finding something without knowing why it happened because the comparisons were too small.

EXAMPLE: “Health researchers compared two medicines to find out which is better for head pain. They gave one medicine to the first group and another medicine to the second group. People in the first group felt their head pain go away fastest. However, there were too few people in the comparison. It is possible that they found the first medicine was better by **chance**. They could not know why people in the first group felt their head pain go away fastest.”

IN LUGANDA: “Ekintu okuzuulibwa oba okusangibwa lwa mukisa bukisa oba lwa lukisakisa”

IN KISWAHILI: “Kibahati”

Finding something by CHANCE in comparisons that were too small

is a result of a study of treatments that occurred without any obvious reason.

A CLAIM

is something that someone says that can be right or wrong.

EXAMPLE: “Sarah’s **claim** was that cow dung heals burns. Her **claim** is wrong.”

IN LUGANDA: “Ekintu ekyogerwayogerwa”

IN KISWAHILI: “Madai”

A CLAIM

is a statement of something as a fact or an assertion of truth.

To CLAIM

is to say something that can be right or wrong.

EXAMPLE: “Sarah **claimed** that cow dung heals burns. Her **claim** is wrong.”

IN LUGANDA: “Okwogerayogera ebintu ku kintu”

IN KISWAHILI: “Kudai”

A COMPARISON of treatments

is a look at the differences between two or more treatments.

WORDS THAT MEAN THE SAME: “Study of treatments” or “Test of treatments”

EXAMPLE: “Health researchers have made **comparisons** between sleeping under a mosquito net and sleeping without a net.”

IN LUGANDA: “Okugeraageranya okukoledwa wakati w’obujjanjabi obumu n’obulala”

IN KISWAHILI: “Kilinganisho”

A COMPARISON of treatments

is a study or trial in which health researchers measure the difference in what happens to people who take different treatments.

To **COMPARE** *treatments*

is to look at the differences between two or more treatments.

EXAMPLE: “Health researchers have **compared** sleeping under a mosquito net to sleeping without a net.”

IN LUGANDA: “Okugeraageranya obujjanjabi obumu n’obulala”

IN KISWAHILI: “Kulinganisha”

D

A **DISADVANTAGE** *of a treatment*

is something about a treatment that you think is bad.

WORD THAT MEANS THE OPPOSITE: “Advantage” → See “A”.

EXAMPLE: “Bad effects of a treatment are **disadvantages** of that treatment. Another **disadvantage** of some treatments is that they cost a lot of money.”

IN LUGANDA: “Ekitali kirungi ku bujjanjabi obumu oba obulala” oba “Ekibi ku bujjanjabi obumu oba obulala”

IN KISWAHILI: “Kwa madhara”

A **DISADVANTAGE** *of a treatment*

is a bad effect of the treatment or the high cost or big burden of the treatment.

E

An **EFFECT** *of a treatment*

is something that a treatment makes happen.

EXAMPLE: “Seeing better is an **effect** of wearing glasses.”

IN LUGANDA: “Ekivaamu mukufuna oba okukozesa obujanjabi”

IN KISWAHILI: “Tokeo”

An **EFFECT** *of a treatment*

is an increase or decrease in a health outcome that is the result of the treatment.

An **PERSONAL EXPERIENCE** *using a treatment*

is what happened to a person after using a treatment.

WHAT RESEARCHERS CALL IT: “anecdote” or “anecdotal evidence” or “case study”

An **EXPERT**

is someone who knows a lot about something.

EXAMPLE: “An herbalist is an **expert** in herbal medicine, but herbalists can be wrong. All **experts** can be wrong.”

IN LUGANDA: “Kakensa” oba “Kafulu”

IN KISWAHILI: “Mtaalam”

An EXPERT

is a person who has special skill in a particular area or special knowledge about a particular subject.

WORDS THAT MEAN THE SAME: “Authority”

F**A FAIR comparison of treatments**

is a comparison where the only important difference is the treatments.

WORDS THAT MEAN THE OPPOSITE: “Unfair comparison” → See “U”

EXAMPLE: “Health researchers compared sleeping under a mosquito net to sleeping without a net. The people in the one group were similar to the people in the other group. It was a **fair** comparison because the only important difference between the groups was whether people slept under a net or not.”

IN LUGANDA: “Okugeraageranya obujanjabi obumu n’obulala okw’obwenkanya”

IN KISWAHILI: “Mithilisho halisi”

A FAIR comparison of treatments

is a study designed, conducted, reported and interpreted to minimize systematic errors in measuring the effects of treatments.

WORDS THAT MEAN THE SAME: “Fair test”

To FIND something after a comparison

is to find a difference or similarity.

EXAMPLE: “Health researchers **found** that fewer people got malaria of those who slept under nets.”

IN LUGANDA: “Okuzuula ensonga oba ekintu oluvannyuma lw’okukola okugeraageranya wakati w’ekintu ekimu n’ekirala”

IN KISWAHILI: “Gundua”

To FIND something after a comparison

is to measure a difference or similarity in something that happened or changed.

A FINDING from a comparison

is a difference or similarity found after a comparison.

EXAMPLE: “The health researchers’ **finding** was that fewer people got malaria of those who slept under nets.”

IN LUGANDA: “Ekizuuliddwa oba ekisangiddwa oluvanyuma lw’okukola okugeraageranya”

IN KISWAHILI: “Matokeo”

A FINDING from a comparison

is a result showing the size of the difference in something that was measured.

H

Your **HEALTH**

is how well your body and mind are.

EXAMPLE: “Julie’s **health** is good because she is free from sicknesses and injuries. John has an infection, so his **health** is worse than Julie’s.”

IN LUGANDA: “Eby’obulamu”

IN KISWAHILI: “Afya”

HEALTH

is a person’s physical or mental condition.

A **HEALTHCARE CHOICE**

is a choice about how to care for your health or others’ health.

EXAMPLE 1: “When you choose to use a treatment, you are making a **healthcare choice**.”

EXAMPLE 2: “When the government chooses which treatments to pay for and give people, they are making a healthcare choice.”

IN LUGANDA: “Okusalawo ku nsonga z’ebyobulamu”

IN KISWAHILI: “Uduma ya kiafya”

A **HEALTHCARE CHOICE**

is a decision about using one of two or more options, for example treatments, to maintain or improve the health of one or more people.

HEALTH RESEARCH

is the careful studying of health to find out more about health.

EXAMPLE: “Health researchers carefully compared sleeping under mosquito nets to sleeping without nets. By doing this **health research**, they found out more about the effects of sleeping under a net.”

WORDS THAT MEAN THE SAME: “Health science”

IN LUGANDA: “Okunoonyereza kuby’obulamu okw’ekikugu”

IN KISWAHILI: “Utafiti wa afya”

HEALTH RESEARCH

is the use of systematic and transparent methods to answer questions about health.

A **HEALTH RESEARCHER**

is someone who carefully studies health to find out more about health.

EXAMPLE: “Some **health researchers** study the effects of treatments on our health. For example, they have carefully compared sleeping under mosquito nets to sleeping without nets. By doing this, they found out more about the effects of sleeping under a net.”

WORDS THAT MEAN THE SAME: “Health scientist”

IN LUGANDA: “Abasawo abakugu abanoonyereza kuby’obulamu”

IN KISWAHILI: “Mdadisi wa afya”

A **HEALTH RESEARCHER**

is a researcher, investigator or scientist who studies or investigates health using scientific methods.

HEALTH SCIENCE

→ See “Health research” above.

A HEALTH SCIENTIST

→ See “Health researcher” above.

|

An INFECTION

is a disease caused by germs.

EXAMPLE: “John got an **infection** in his finger after putting cow dung on it.”

IN LUGANDA: “Obulwadde”

IN KISWAHILI: “Ambukizo”

An INFECTION

is damage to the body or disease caused by microorganisms such as viruses, bacteria or parasites.

INFORMATION *about treatments*

is what we are told or learn about treatments.

EXAMPLE: “Health researchers’ findings are **information** about treatments.”

IN LUGANDA: “Obubaka ku by’obujjanjabi”

IN KISWAHILI: “Ambukizo” or “Amakuru”

INFORMATION *about treatments*

is facts or knowledge about treatments that are provided or learned.

An INFORMED *choice*

is a choice made when you understand the information that you have.

EXAMPLE: “Health researchers compared using an antibiotic to not using one. John and Julie understood the health researchers’ findings. They made **informed choices** about whether to use the antibiotic.”

IN LUGANDA: “Okusalawo okukolebwa nga omuntu asoose kutegeera ensonga zonna ezikwata ku ky’asalawo”

IN KISWAHILI: “Ambukizo”

An INFORMED *choice*

is a decision that is made when someone has the best available information about the advantages and disadvantages of the treatments and understands that information.

M

To **MEASURE**

is to look at how much there is or how many there are of something.

EXAMPLE: “Health researchers compared sleeping under a mosquito net to sleeping without a net. They **measured** how many people got malaria.”

IN LUGANDA: “Okupima” oba “Okubala”

IN KISWAHILI: “Kupima”

To **MISLEAD**

is to make someone think something is right when it is wrong.

WORD THAT MEANS THE SAME: “Confuse” or “Fool”

EXAMPLE: “An unreliable claim can **mislead** you.”

IN LUGANDA: “Okubuzaabuza”

IN KISWAHILI: “Kupotosha”

P

A **PERSONAL EXPERIENCE** *using a treatment*

is something that happened to someone after using a treatment.

EXAMPLE: “Sarah claims cow dung heals burns. Her claim is based on her **personal experience** putting cow dung on a burn. Her claim is wrong.”

IN LUGANDA: “Ekintu ky’oyiseemu nga omuntu ssekinnoomu mukufuna obujjanjabi” oba “Omuntu kyabeera afunye oba kyalabye oba kyawulidde mubulamu bwe nga omuntu ssekinnoomu oluvannyuma lw’okufuna oba okukozesa obujjanjabi obumu oba obulala”

IN KISWAHILI: “Ujuzi”

A **PROFESSOR**

is a teacher or researcher at a university.

EXAMPLE: “**Professor** Fair and **Professor** Compare teach at the university. They teach students who are studying to become doctors and health researchers. The **Professors** do health research as well.”

IN LUGANDA: “Omukenkufu” oba “Pulofeesa”

IN KISWAHILI: “Profesa”

R

A **RELIABLE** *claim*

is a claim with a good basis.

WORDS THAT MEAN THE OPPOSITE: “Unreliable” → See “U”.

EXAMPLE: “Mosquito nets stop people from getting malaria. This is a **reliable** claim because it is based on fair comparisons.”

IN LUGANDA: “Ekyogerwayogerwa ekyesigika”

IN KISWAHILI: “Ya maana”

RESEARCH

is the careful studying of something to find out more about that something.

WORD THAT MEANS THE SAME: “Science”

EXAMPLE: “Professor Fair and Professor Compare do **research** about treatments to find out more about their effects.”

IN LUGANDA: “Okunoonyereza okwasaayansi okw’ekikugu”

IN KISWAHILI: “Utafiti”

RESEARCH

is the systematic, rigorous investigation of a situation or problem in order to generate new knowledge or validate existing knowledge.

A RESEARCH QUESTION

is a question that researchers try to answer.

EXAMPLE: “The **research question** was: Does sleeping under mosquito nets stop people from getting malaria?”

IN LUGANDA: “Ensonga enoonyerezebwako” oba “Ekibuuzo abanoonyereza kyebaba bagezaako okuddamu oba okuzuula” oba “Ensonga abanoonyereza gyebabeera bagezaako okwekenneenya”

IN KISWAHILI: “Swali la utafiti”

A RESEARCH QUESTION

Is a clearly formulated question that a study is designed to answer.

A RESEARCHER

is someone who carefully studies something to find out more about it.

WORD THAT MEAN THE SAME: “Scientist”

EXAMPLE: “Professor Fair and Professor Compare are **researchers** who study treatments to find out more about the effects. ”

IN LUGANDA: “Omuntu anoonyereza mungeri eya saayansi ey’ekikugu”

IN KISWAHILI: “Mtafiti”

A RESEARCHER

is an investigator or scientist who studies or investigates something using scientific methods.

S**SCIENCE**

→ See “Research” above.

A SCIENTIST

→ See “Researcher” above.

To be **SURE** about the effects of a treatment

is when you have very little doubt about the effects of a treatment.

WORDS THAT MEANS THE SAME: “Certain” or “Confident”

EXAMPLE: “We cannot be completely **sure** about the effects of most treatments.”

WORDS THAT MEANS THE OPPOSITE: “Unsure” or “Uncertain”

IN LUGANDA: “Obukakafu ku kiki ekiva mu kufuna obujjanjabi obumu oba obulala”

IN KISWAHILI: “Kuwa na uhakika”

*Being **SURE** about the effects of a treatment*

is being certain or confident about the effects.

T

A **TREATMENT**

is something you do for your health.

EXAMPLE: “Wearing glasses is a **treatment**.”

IN LUGANDA: “Obujjanjabi” oba “Ekintu kyonna ekikolebwa osobole okusigala nga oli bulungi oba weyongere okubeera obulungi mu nsonga z’ebyobulamu” oba “Ekintu kyonna ekikolebwa okutuwonya oba okuziyiza obulwadde”

IN KISWAHILI: “Tibabu”

A **TREATMENT**

is any action intended to improve the health of individuals.

WHAT RESEARCHERS CALL IT: “Intervention”

U

An **UNFAIR COMPARISON** of treatments

is a comparison where there are other important differences than the treatments.

WORDS THAT MEAN THE OPPOSITE: “Fair comparison” → See “F”.

EXAMPLE: “Health researchers compared sleeping under a mosquito net to sleeping without a net. The people in the first group lived in an area where there are very few mosquitoes. It was an **unfair comparison** because there was an important difference between the groups other than the treatments.”

IN LUGANDA: “Okugeraageranya obujjanjabi obumu n’obulala okutali kwabwenkanya oba okulimu okubbira”

IN KISWAHILI: “Mithilisho isiyo halisi”

An **UNFAIR COMPARISON** of treatments

is a study where there is a high likelihood of systematic errors in measuring the effects of treatments, because of problems with how it is designed, conducted, reported or interpreted.

WORDS THAT MEAN THE SAME: “Unfair test”

An **UNRELIABLE** *claim*

is a claim with a bad basis.

WORDS THAT MEAN THE OPPOSITE: “Reliable” → See “R”.

EXAMPLE: “Sarah claimed that cow dung heals burns. The basis for her claim was her experience putting cow dung on a burn. Her claim was **unreliable** because it was only based on an experience.”

IN LUGANDA: “Ekyogerwayogera ku kintu nga tekyesigika”

IN KISWAHILI: “Kutokuwa na uhakika”

The goal of the *Informed Health Choices* project is to help people make better choices for their health by thinking carefully about treatments. The *Health Choices Book* is for helping children do this and this guide is for helping teachers who are using the book in their classroom. It includes instructions for preparing and teaching lessons, as well as background information about the objectives.

We, the authors of the book and guide, are health researchers and designers in Uganda, Kenya, Rwanda, Norway and England. Teachers and children in all four countries have tested earlier versions of the book and guide. A network of teachers in Uganda and an international network of researchers have advised us.

More information about these resources and the project can be found on the project website:
www.informedhealthchoices.org

Feedback about how to improve these resources is welcome and should be sent to:
contact@informedhealthchoices.org

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Informed Health Choices

www.informedhealthchoices.org