TESSA

Teacher Education in Sub-Saharan Africa

# Teaching Pack No.2

## Early Primary

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| **Section 1** | **Literacy:** | **Books from stories, poems and games** |
| **Section 2** | **Numeracy:** | **Exploring shapes** |
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# Literacy: Books from stories, poems and games

1. **Telling stories**
2. **Making big books**
3. **Designing book covers**

**Key question for the teacher:**

How can you support students learning to read and write?

**Keywords:** writing; illustrating; designing; book; cover

**Learning Outcomes for Teachers:**

By the end of this section, you will have:

- used discussion to help students understand the similarities and differences between oral and written texts;
- developed ways students can turn oral stories, poems, songs or games into written and illustrated forms;
- explored how to produce books of stories, poems, games and songs for a class library.

# Overview

One important aspect of teaching is that your students see a real purpose to the tasks you set them. By helping students to make books for the class library, you will be giving them a reason for taking care with their writing and drawing. This will also encourage them to value their home languages and the classroom lingua franca or additional language. The books can be written in the students' home language(s), a classroom lingua franca or an additional language. More than one language can be used in the same book. The books students make, with your help, will also give you extra materials for reading activities.

# 1 Telling stories

Students who speak a language at home that is different from the language of the classroom need to know that you value their home language. This is important because a home language is part of who a person is. One way of demonstrating this is to encourage your students to tell stories and riddles, recite poems, sing songs and explain games in their home languages and then to write these down, either in their home languages or in another language. In **Activity 1**, you help students explore the similarities and differences between oral and written texts. You will encourage them to think about what is valuable about the oral tradition, why people write things down and which languages are used in speech and writing.

## Teaching Example 1

Mr Okitikpi, a Yoruba-speaking teacher, has recently been transferred to a community in Northern Nigeria that has Hausa as a common language, but a number of students speak three Nigerian languages. A few parents and young adults have agreed to act as teaching 'aides'. They know Hausa and some English and are helping Mr Okitikpi to learn Hausa so he can communicate with his students better. As some of his students can speak three Nigerian languages, Mr Okitikpi has involved these aides in storytelling activities to build students' confidence in speaking and to show that their home languages are valued. He wants students to write some stories down, ideally in their home languages. However, a number of the languages do not have a written form, so he decides they should write the stories in Hausa.

One of his aides discusses with students why people write stories down. Next, they write down their favourite story, in Hausa, so that they can put it into a book for the class library. Mr Okitikpi puts the students into groups for this writing activity, making sure that at least one group member is fairly fluent in Hausa and can support the others. He also asks his aide to help him monitor the writing process.

## Activity 1

First, read the following on how books are made

### How stories are made into books

Making a book for your class alongside their normal reading and writing activities gives students an understanding of the importance of being able to read to access information and new stories. This process might encourage your students to want to read more by making a book for the class using their pictures and their own words as they become more competent writers.

### Stage 1: Books begin with a great idea.

The author writes down a story. Probably, the author will write a few drafts of the story, trying to improve it each time. Authors often do research for their stories to

make sure that they spell words right and get their facts straight. Sometimes it takes many weeks for the author to find the right way to tell the story. When the author is satisfied, she'll type up or write her words into a manuscript, which she will send to her editor at the publishing house.

**Stage 2: Editors are very busy people, and they have to read a LOT!**

Manuscripts come in every day from authors all over the world. Editors have to sort through all of the manuscripts and decide which stories they think should be published. Editors love being able to tell authors that they want to publish the author's story. And, of course, the author is thrilled! The editor also decides who should illustrate the manuscript. It's very odd to think that for some books the author and illustrator never meet each other! Sometimes, the editor helps them communicate back and forth.

**Stage 3: The artist's work begins.**

Before an artist sits down to illustrate a story, she finds out the size the book is to be, and then she plans out the pages. She makes a 'dummy' book, with rough sketches, to show to her editor and the book designer. At this point, the editor might make some changes in the text of the story. Editors are good at helping writers find clearer ways of saying things.

**Stage 4: The book designer gets involved.**

The designer takes a look at the artist's dummy book, and he makes suggestions for the art. He also finds the right typeface to use in the book. The style and size of the letters can make a big difference in how the book looks in the end. The designer can also help the artist decide how the words of the story will fit in with the art. Next, the story is sent to a copyeditor so that spelling, grammar, and punctuation can be checked. Then the author has another chance to change any part of the story. Meanwhile…

**Stage 5: The artist gets busy creating the finished artwork!**

She uses her dummy book as a guide. The pages must be measured exactly so that she draws the art in the right place. She makes marks in the border where the pages will be sewn into the binding, and she marks the trim lines where the pages will be cut. It's not easy! She needs to create the art the way it will look in the printed book. It needs to be wonderful. Lines need to be straight, and there needs to be space for the words of the story. When this is finished, she delivers the art to her editor at the publishing house. There, the art is checked for mistakes, and the production director estimates how much it will cost to make the book. He determines the printing schedule for the book and orders paper.

**Stage 6: The book goes into production!**

The designer shows how the words and art will be placed. Then colour proofs are made, and everyone checks to make sure the printed colours match the colours of the artist's illustrations.

Once everyone is satisfied with how the art looks on the pages, final printing plates are made. The plates will be used on the printing press to print the pages.

**Stage 7: Finally! It's time to print the book!**

After months of preparation, the printing takes only a day. The thin plates (with impressions of the book on them) are wrapped around large cylinders that go

in the printing press. Each cylinder prints one of the four colours of the book – first yellow, then blue, then red, then black. The other colours are made from combinations of these four colours. Special grippers and conveyer belts help move the sheets of paper through the press. It's VERY noisy in a printing plant!

**Stage 8: Hooray! The moment everyone has been waiting for is here!**

The book is printed, and it looks wonderful! Did you know that all of the pages of a book are printed on one BIG sheet of paper? Half of the pages are printed on one side of the press sheet and the other half are printed on the opposite side. After these sheets are printed, they are folded, cut and then bound into a book.

**Stage 9: The new books are distributed!**

Bound books are taken to the book warehouse, where they stay until they are sold to libraries and bookshops. How do librarians and booksellers know that a great new book has been published? Other people at the publishing house sell and publicise the book. Sometimes posters and special displays are made. Publicists send out review copies of the book to people in the media. Authors often are interviewed by reporters in the newspaper and on TV. Lots of people work hard to make sure that one day…

**Stage 10: …you read the book!**

All of the people you've met are thinking about you and whether or not you will like the book. The author and artist think about you when they create the story and illustrations. The editor and designer think about you, too, when they put the book together. And YOU are the reason the big noisy printing press prints the books for you to read.

Happy reading!

*Adapted from: How a book is made – http://www.harperchildrens.com*

*Other websites on this topic include http://library.thinkquest.org and http://www.factmonster.com*

Now think about the answers to the five questions below for students.

Ask students for the titles of home language stories, poems, songs and games they know. Write these on the chalkboard.

Discuss these questions with students:

- are these home language texts written in books?
- why do people write down stories, poems, songs and games in books?
- would you like your home language stories, poems, songs and games to be written in books? Why, or why not?
- in which language or languages would you write poems, stories and games for a book? Why?
- how do books get written and produced? Tell students they will be making books for a class library.

Ask students to each choose a favourite story and to write the first draft in the language of their choice.

**Were you pleased with the discussion?**

**How did students respond to this activity?**

# 2 Making big books

Some kinds of learning, such as learning to play a musical instrument, use a computer or drive a car, require a great deal of practice. As a teacher, you need to give students opportunities to repeat and practise what they have tried before so that they can improve on their first efforts. Students will learn that writing is a process and that their written stories, poems and instructions for games will give more pleasure to others if they craft them carefully. Writing, illustrating and reading these books may take several lessons, but as these activities provide many opportunities for language work, the time will be well spent. You can use the following checklist to help students assess their work. The following teaching example suggests how teachers can make books with students who are not yet very skilled as writers.

| Checklist for stories | Tick |
|---|---|
| Does the story have a title? | |
| Will this title make readers interested in the story? | |
| Will readers be able to follow the sequence of events in thestory (what happens first, what happens next…)? | |
| Have characters and places in the story been carefully described so that readers can picture them? | |
| Does the story come to a climax/conclusion? | |
| **Checklist for poems or songs** | **Tick** |
| Does the poem or song have a title? | |
| Will this title make readers interested in the poem or song? | |
| Does the poem or song have a rhythm or rhyme (or both) that readers are likely to enjoy? | |
| Have the words been carefully chosen to describe people, animals, objects, actions or feelings? | |

| Checklist for games | Tick |
|---|---|
| Does the game have a name? | |
| Are the instructions in the correct sequence? (eg first do this… etc) | |
| Are the instructions clear? | |
| If objects (such as pebbles or paper) are needed for the game, have they been listed? | |

## Teaching Example 2

Regina Banda teaches 60 Grade 1 and 2 students, in a combined class, at a farm school near Lilayi in Lusaka. Regina regularly invites parents into school to tell stories in Chinyanja to their students. Regina asked her students to help her turn a favourite story, which they had helped create, into a book. First she made a big blank book. She wrote out the story, using short phrases and sentences. Then she decided where each phrase or sentence should go in the blank book. She used a black wax crayon to write the story in large neat letters, leaving space for drawings. In class, Regina held the book up for students to see, and read the story with them. She discussed what kind of picture was needed on each page. She gave pieces of paper to each pair of students, and two pairs of students illustrated each of the 15 pages. She asked students to find the right page for each picture, and helped them paste the pictures in.

**What you will need to make big book**

Some large sheets of 'newsprint' (approx 60 cm x 85 cm)

Some fat wax crayons

A pencil

Thick felt tip pens

A fat sewing (or embroidery) needle

Some thin string

A glue stick

Some smaller pieces of plain white paper

A large sheet of card, or poster paper, or a 'chart'

The beginning of the story that you told your students

The rest of the story, which your students have dictated to you

**How to make a Big Book**

Making books can really motivate children to want to read and write more for themselves. With younger students, you may want to do more preparation beforehand, limiting the tasks they are involved with to specific aspects (see below). Older students, depending on their experience, will be able to undertake many more of the tasks themselves (as in **Activity 2**) See the following instructions:

1. First of all, read through the whole story carefully and make sure it is complete and properly punctuated.
2. Decide how much text (writing) you want to put on each double page spread. If you have Primary 1s and it is the beginning of the school year, you may want to make sure that there are no more than two or three sentences on a double-page spread. In some parts of the story you may only want to write a phrase. If you are working with older students, you can write more.
3. Think about what illustrations or drawings you need to accompany the text. This will help you to decide how long you think the book will be, and how many pages it will have.
4. Take your sheet of thin card, and fold it in half. This will be the cover of your book. If a book made of newsprint pages has a card cover, it lasts much longer.
5. Write out the whole story on an A4 sheet of lined paper and put the text for each double-page spread on a new line. This will be really helpful when you write out the text on the actual pages.
6. Fold each sheet of newsprint in half. Slip the sheets together and make sure that they are neat, and fit nicely. Don't fasten the sheets together yet.
7. Now decide where you are going to put the text. Will you put it on the left-hand page of each double-page spread? Or will you write on the right-hand pages? Will you write at the top of the pages? Or will you write at the bottom? Will each double-page spread look a little different? Perhaps you will choose to write right across the double-page spread sometimes? You will have to make decisions about this.
8. Now take the folded newsprint pages. Work at a large table. Use the fat black wax crayon and write the title of the story neatly on the outside of the first sheet. Write the title just as it would look on the very first page in a book that you would buy in a shop. You want your book to look professional.
9. Underneath, in smaller letters, write the names of all the students who created the story, or your class. (If this is the whole class, it will be very difficult to fit in 50+ names, so just name the class if you can't fit in all of the names!)
10. Next, open the first sheet of newsprint. This will be your first double-page spread. Write the first sentence(s) or phrase(s) on this double-page spread, using the fat black wax crayon. You must leave enough space for the illustrations or drawings.

11. When you have written the text for this double-page spread, turn over to the next double-page spread, and write the next sentence(s), or phrase(s), with the black wax crayon. Carry on in this way, until you have written out the whole story.
12. Take the 'cover' of your book. You need to decide where you want the title. It's a good idea to leave space for an illustration. Will you write the title at the top, or at the bottom? When you have decided, write the title lightly in pencil. When you are happy with the way it looks, write over the pencilled words with a felt tip pen.
13. Slip the newsprint pages neatly inside the 'cover'.
14. Now sew the pages and cover together. There are several ways that you can do this, but the following way works very well:
15. Open out your book so that the cover is at the bottom, and the middle double-page spread is on top. With a big book, it is a good idea to mark two places on the crease in the middle, where you can sew. Mark one place in the top half of the crease, and mark another one in the bottom half. In each place, make three spots. These spots should be about 4 cm apart.
16. Thread your needle with a piece of thin string about 50 cm long. Push the point of the needle through the middle of one of the sets of three spots, right through all the newsprint pages and the cover. Pull the string through firmly, but leave a piece of string about 7 cm hanging and follow the chart.
17. Cut the string attached to the needle, about 7 cm from where it has come through the pages. Now tie the two 7-cm ends together firmly.
18. Repeat the process at the opposite end of the crease.
19. Make a list of the illustrations that you need. Decide if you are going to ask specific children to make the illustrations, or whether you want your whole class to be involved. Students can work well in pairs to create the pictures. Plan how to organise the drawings.
20. Choosing the pictures. Read through the whole text with your students. Hold the pages open, and read the story aloud. Read the story so that it sounds interesting.
21. Tell your students that you want them to make the pictures. As you read through the text a second time, pause on each double-page spread and discuss the picture that it needs. As you and your class decide what is needed on each page, assign each illustration to a specific student, or pair of students.
22. Give them time to make the pictures carefully. Involve the students in sticking them in the book.
23. Even beginner readers can memorise the story, and have a sense of where each picture goes. Underneath each picture, write the name(s) of the students who made the picture. Continue in this way until all the pictures have been glued in and labelled.

24. When all the illustrations have been glued in, read the book with your students. We are sure that both you and your students will feel very proud of their efforts.

### Activity 2

Put students in groups of four and ask them to read the first drafts of their stories (from **Activity 1**) to each other. Ask them to choose two drafts (from the four) to work on in pairs to improve them. They should use the checklist above to guide their work. Remind them 'real' authors revise their work many times. Next, ask them to show it to the other pair in their group for further improvements. Now collect their work and write on it corrections to spelling, grammar and punctuation. Next lesson, give the groups their blank book (see the instructions above) and ask them to do the following: plan which sentences go on each page and where illustrations will be; decide how to divide the writing and drawing tasks, so that each group member participates. Ask them to show you their plan; discuss this and then ask them to carry out their plan. With younger students, you could write a story together in a big book and then the students can do drawings for each page.

## 3 Designing book covers

Communication is not just about words. Today's newspapers carry far more photographs than in the past and modern textbooks include many more illustrations than older ones. Advertisers use images on billboards, in magazines and on television to sell products. Computer screens combine words and images in exciting ways. Students need to be able to create and read texts that combine the verbal (words) and the visual (pictures). As the teacher, your responsibilities include: keeping up to date with what interests students; including design activities (for example, designing grocery packages, posters, advertisements) in language and literacy lessons. This part focuses on designing a cover for the students' books of stories, poems, songs and games.

### Teaching Example 3

Mr Eddie Mubanga encourages his Grade 6 English students to ask questions in their reading lessons about words and expressions that they hear or read but don't understand. One morning, a student told the class he had heard one character in a TV drama say to another, 'Don't judge a book by its cover.' Mr Mubanga asked his students for ideas about what this expression means and why it might have been used in the drama. After a few minutes of discussion, students understood that the design of a book cover may or may not give a good idea of what a book will be about. In a similar way, how a person looks or what he or she says may not be a reliable guide to what that person is like 'on the inside'.

Mr Mubanga decided to take the discussion further. He asked the class to think about the purpose of book covers and then to look at the cover of a storybook he had brought in. Can they tell from the cover what the story is about? What did they like or not like about the cover? Could it be improved and if so, how? After a lively discussion and reading the story to the students, he asked them to work in groups of four to make a new cover design for this book and gave them loose sheets of paper to work on. When they had finished, one student from each group explained to the class why they had chosen their design. Mr Mubanga displayed the covers on the classroom wall.

## Activity 3

Having finished the writing and drawings for their storybooks, your students are now ready to design their book covers. You could use the backs of posters, cardboard boxes and other 'throwaway' materials, especially if resources are limited in your school. See **Being a resourceful teacher in challenging conditions** for further ideas.

Show students some book covers and ask them what they think are good features

**Features of a good book cover**

- Eye-catching – a potential reader is attracted to the 'look' of the cover.
- The title is carefully positioned on the page and stands out clearly.
- The title encourages readers to open the book.
- The words of the title and the name(s) of the author(s) are easy to read.
- The use of colours attracts the reader.
- The use and position of images (drawings or photographs) on the page attracts the reader and these images are 'connected' with the book.

Ask each group to design a cover for their book. They need to agree on the words, drawings and the position of each and decide who will write or draw each part of the cover.

Move around the groups to discuss their designs with them and provide support and guidance as they make their book cover. Allow time for the groups to assemble their books.

Ask one student from each group to display the book and encourage other groups to read it.

**Put the books into the class library.**

**What do you think your students learned from this activity?**

**Were the books read by other students once they were in the library?**

With young children, you could read the story or poems and ask them to draw a picture for the cover or inside.

# Numeracy: Exploring shapes

**1 Studying shape**

**2 Using mathematical words to describe shape**

**3 Playing the feely bag game to practise mathematical words**

**Key question for the teacher:**

How can you help students to develop a mathematical vocabulary of shape

**Keywords:** object; shape; geometry; language; classification; open-ended activities

**Learning Outcomes for the Teacher**

By the end of this section, you will have:

- used open-ended sorting activities to explore knowledge of shapes;
- explored practical ways to introduce students to the language or 'register' of mathematical terms;
- used practical activities to develop students' understanding and use of mathematical descriptions of basic geometric shapes.

## Overview

Investigating shapes or exploring geometry with your students can be very rewarding. Using a practical approach and objects from the students' environment can help to raise students' motivation and interest. In this section, you use objects from everyday life to help students develop important geometrical skills, such as recognising, visualising, describing, sorting, naming, classifying and comparing.

# 1 Studying Shape

To begin with, you will need to collect a range of resources that you could use for the activities in this section. Feely bags or boxes, which can easily be made by you or your students can be used across the curriculum to help develop your students' observations and language skills. In mathematics, it is a good way to help students explore the properties of shapes and objects. In science, you might explore the textures of materials. It may be helpful to gather and keep a box of such objects as a permanent resource. Your students may enjoy helping you collect the resources, and 'looking out for shapes' in everyday life. (Remember to praise the students who contribute, and to take the opportunity to discuss the shape of any objects they bring.

## Teaching Example 1

Some primary mathematics teachers in Umtata, South Africa, were planning a geometry scheme of work for the term. As part of their in-service development, they wanted to prepare good, hands-on geometry activities for their students

They decided to invite a mathematics education expert from their nearby higher education institution to help them write their scheme. She agreed, and suggested they start with a sorting activity. They needed to collect as many different objects as possible, such as empty cans, cotton reels, toilet roll tubes and pictures of different shapes in the environment e.g. buildings, fabric patterns and so on. In pairs, they planned an activity using these shapes and tried it themselves.

Back in their classes, the teachers asked their students to help them collect similar objects. When they had enough for the students to work in groups of five or six, with each group having ten or more different objects to sort, they tried out the activities.

The tasks were all about putting objects into groups that had similar properties, to record what property they shared, and which items had that property. The teachers were surprised and encouraged by the interest and thinking that the activity produced in their students. At the next in-service meeting, each teacher reported back on what happened.

### Using feely bags

Feely bags or boxes, which can easily be made by you or your students (see below) can be used across the curriculum to help develop your students' observations and language skills. In mathematics, it is good way to help students explore the properties of shapes and objects. In science, you might explore the textures of materials. Using a feely bag or box is a great motivator for students as the involvement in the game, the need to listen carefully and the desire to guess the right answer excites and interests them.

### Suggestions for objects for shapes activities

You may use a selection of cubes (dice, blocks), rectangular prisms (boxes, wooden blocks), triangular prisms (wooden wedges, fancy chocolate boxes), spheres (balls), pyramids (wooden or plastic), cylinders (toilet rolls, pens, dowel sticks), cones (party hats, ice cream cones). You may also like to include one or two irregular or semi-irregular objects (stones, shells, leaves) to provoke discussion. All of these could be collected locally to help to link mathematics to the local environment.

### Making a feely bag

For this you could use a paper bag that you cannot see through or you could sew a bag out of fabric about 30 cm by 30 cm with an opening at one end. The top of the bag needs to be able to be closed and opened to put in the objects and to allow the student to put in their hand to feel the object but ensure that no one else sees what is in the bag. You could use an elastic band or a drawstring to keep the top closed.

### Making a feely box

Any medium-sized cardboard box will do for a feely box. You have to cut a hand-sized opening in one side of the box. This is so that a student can put a hand into the box and pick up something to feel. Some people cut two holes so that a student can put two hands into the box to feel for something. You need to keep the opening away from the rest of the class so they cannot see what is in the box. **How to play the game:**

The idea of the game is to hide some interesting, different things (which are familiar to your students) in the feely bag/box. You could use regular shaped bowls or pots, tools, or even tins of food. A student comes to the front and feels for something in the feely bag/box. He/she doesn't take the object out or show it to the other students. Instead, the student then thinks very carefully of ways to describe the thing, without mentioning its name. He/she uses the sense of touch to list and describe observations. At the same time, the student has to be quite scientific/mathematical. He/she has to consider the properties the object is made of. He/she also has to think carefully about the shape, size and form of the item.

- Each time the student makes an observation, another student in the class is given a chance to try to work out what the object is.
- While this is happening, the teacher can act as a scribe (or secretary) and record the observations and the inferences on the board, or on a large sheet of paper. They list the main points only.
- This carries on until someone actually works out what the item is. Then the item can be pulled out of the box and is shown to the rest of the class.
- It is important that a little time is spent discussing the accuracy of the observations – mathematical language skills, the effectiveness of the descriptions, communication skills and the quality of the inferences.

### Activity 1

Collect together as many objects of different shapes as you can. You will need at least two objects for every student. You could use pictures of shapes from the environment as well.

- Divide the class into groups of five or six and give each group a selection of objects (see earlier example of the feely bag game).
- Explain what a 'set' is – a collection of items with some common features, for example, the class is a 'set' of children, who are all taught by you. This 'large set' can be grouped into smaller sets – one example would be a set of boys, and a set of girls. (You may like to physically separate the students into these two sets to illustrate this point.)
- Explain to the groups that they have a set of different objects. You want them to sort these objects into smaller sets. Ask them the following question: How many different ways can you sort these objects into sets? This makes the task an open task, so do not specify how many sets or any criteria.
- Ask them to explain their reasons for their sorting each set.
- As they work, observe them and listen to the discussions they have in their groups, noting carefully what they say. This will help you find out who has clear ideas and who is still exploring the ideas.
- Ask each group to share the different ways they sorted their objects and note the main features on the board. You may wish to use a double lesson for this activity.

# 2 Using mathematical words to describe shapes

Having introduced the concept of sorting objects, and asking students to describe the characteristics in 'everyday' language, it is now time to develop a more mathematical way of describing some of the objects' features.

In every area of activity, people develop special words and terms to describe what they are doing. Introducing students to the language of shape will take time and needs to be built into your lessons over time. As your students understand the concepts behind the names, this is the time to introduce the mathematical words. As well as using these words in practice, you might also like to ask your students to begin making a 'mathematical dictionary' to help them remember the meanings of such terms. You may want to put some words on the chalkboard. Here are some words to start you off!

Surface

Edge

Curved surface

Flat surface

Vertex

## Teaching Example 2

Mrs Nsofu asked her students to sort a collection of different shaped objects that she had provided. Some students decided to group the objects according to where they would be used in the home, such as the bedroom, kitchen and bathroom. Other students were looking at whether the objects looked alike. Some groups found it difficult to describe the features of their objects; for example, they said that some shapes were flat, but could only describe the other shapes as 'not flat'.

Drawing the whole class around her, Mrs Nsofu examined some of these problematic 'not flat' objects with the students. Not using the mathematical terms at first, she began pointing out certain features (like curves, edges and corners) and asked students to describe these in their own words. Then, when a few students had described these features, and thought of all the words they could use, Mrs Nsofu began to introduce the correct mathematical terms, and agreed with the class how they would describe such terms in their own words. She explained that they were beginning to learn 'the beautiful language of mathematics'.

Mrs Nsofu made a large sheet for the wall and wrote the new mathematical words on it, and the definitions they had agreed. She asked the students to start to write their own mathematical dictionary at the back of their exercise books, drawing diagrams to show the meanings of these words. They added to this dictionary during subsequent mathematics lessons.

## Activity 2

Introduce and practise using words for shapes through a sorting' activity (see **Activity 1**).

- Use a game to give students more practice. The game should be at the right level of difficulty for your students. Here are examples of games that can easily be adjusted for different ability levels.

### Games

#### Find the difference

Equipment: Pairs of pictures with different, but similar, objects. Each picture should be folded so that it can't be seen by the other player. Instructions: Without showing their pictures to each other, or using gestures, players describe their pictures and ask each other questions until they identify a given number of differences between them (e.g. three). When they have done this, they reveal their pictures to each other.

#### Draw it

Equipment: Simple pictures mounted inside a piece of folded card. (The pictures should not be visible to the other player.) Paper and pencil. Instructions: Without showing his/her picture to the other player, or using gestures, one player describes his/her picture while the other player tries to draw it. When the drawing is finished, the player with the picture shows it to the other one

- Put the students into pairs (or small groups if you have a large class) and give each pair/group a set of cards. After doing the activity with one set of cards, the sets can be passed around so that everyone has a new set. As the students play the games, go around the room and monitor what they say. Don't interrupt unless they ask for help, but take a note of anything you want to tell the whole class afterwards

**Pictures for Games**

# 3 Playing the feely bag game this time to practise mathematical words

One way to assess how well your students have learned to understand and use language to describe shapes is to use 'feely bags' (see Activity 1 for more detail). One student must carefully describe an object hidden inside a bag. The student should use the special words they have learned, and other students must try and guess which object is being described. In this way, students have to visualise the shape in the bag, and correctly use the simple geometric terms they have learned, if they are to 'win' in the feely bag game. How you organise this, so that all students are engaged in the activity, is important because if done well, the learning of more students will be enhanced.

## Teaching Example 3

Mrs Nsofu made some cloth bags big enough for a student's hand to fit into, and with a drawstring around the top to close the bag up.

She put one of the objects from her collection into each bag, having carefully chosen the objects to give variation. Mrs Nsofu explained the game to her class and chose the student who would feel and describe the shape of the object in the first bag. This student had to describe the object using their newly learned words. The other students had to put their hands up when they thought they knew what the object was.

Being able to feel and describe the object in the next feely bag was the reward for the student who guessed correctly. When doing the activity, Mrs Nsofu made sure all the students were paying attention, only allowing one to speak at a time so that students could think about what each person was saying.

## Activity 3

First prepare your feely bag or box. You need a bag or box in which you put an object and the student can put a hand in to feel the object but not see it (see making a feely bag above).

You could have one feely bag for the class or, if your class is big, have more than one so that several groups can work at once. This will help more students participate.

Then proceed with the game.

- One student should feel one object in the bag/box and, without taking it out, describe it very carefully to the others. The student must not name the object.
- They should say things like, 'it has all flat surfaces, it has so many corners, it has so many flat surfaces,' etc. This carries on until one student thinks they can name the object.
- If it is the correct answer, the object is pulled out of the bag and the successful student is the next to do the feeling (but allowing only one chance per student).

Encourage your students to use the vocabulary they have learned in the previous activities to describe their objects. Ask them to add them to their mathematical dictionaries.

# Science: Investigating and classifying

**1 Finding and naming different types of materials**

**2 Solids, liquids and gases**

**3 Investigating and unknown material**

**Key Question for the teacher:**

How can you use games and investigations to help students identify and classify materials?

**Keywords:** properties; solid; liquid; gas; games; investigations

**Learning Outcomes for the Teacher**

By the end of this section, you will have:

- used games to assess and develop students' awareness of materials around them;
- explored ways of demonstrating properties of matter to students and helped them to classify materials around them;
- guided students to more independence in setting up their own investigations

## Overview

Most of us take our material world for granted. Thinking scientifically can cause us to pay more careful attention to the matter around us. Have you ever stopped to think how many substances we come into contact with and use? This section looks at how you can help students scientifically identify, sort, and classify the matter around them. Using games, labelling and simple investigations, you will help your students build a 'mental' map of the material world.

# 1 Finding and naming different kinds of materials

What earthly substance are we most in contact with? Soil; plants; water; wood; concrete; cloth...?

Did you think of nitrogen? We live our lives immersed (totally surrounded) in the gas nitrogen (80% of the air).

We start this section by looking at the 'big picture' of the matter and materials that make up our world. Teaching Example 1 and Activity 1 describe games in which students name, describe, sort and group matter and materials.

These fun activities will help you establish what the students already know, a key part of good teaching in any topic.

## Teaching Example 1

Running a teacher development workshop in northern Nigeria, the presenter, Ismaila, thought it was time for useful fun. He suggested a scavenger hunt game.

To play this game, you divide students into groups of four or more. Each group gets the same list of items. They have to find them quickly and resourcefully and bring them back or use a camera to record that they have found the item. The first group to be able to prove they have scavenged (collected) all items is the winner. See the following example of the way the game was played.

Students were given the 'list of items' in the central column. The table then shows how Groups A and D solved the challenge of finding examples of the items.

| The scavenger hunt game | | |
|---|---|---|
| **Group A – 12 minutes** | **List of items** | **Group D – 9 minutes** |
| Ms Obiri's diamond | **The hardest of substances** | A steel screw |
| Milk | **From a cow** | A shoe and a leather belt |
| Goat droppings from the road | **Something eaten** | A leaf eaten by an insect |
| Ohene cries and laughs | **Something changed** | A burnt match |
| Our group – four boys and three girls | **A mixture** | Air in an empty glass |
| Salt | **Something pure** | Sugar |
| Candle | **Something that disappears** | Water (evaporates) |
| Pencil | **From a tree** | Paper |
| Glass from sand | **Something from something** | Same paper |
| Sand again | From the mountains | The wind and the tap water |
| The game proved to be an exciting challenge that made the teachers think more carefully about what is around us and where it comes from. They saw the value of the task and enjoyed the next challenge of modifying and adapting the list for their own students | | |

## Activity 1

This activity is based on the game 'musical statues'.

- Divide your class into groups of 10–12 students.
- Play music. The first group dances in a space in the centre of the classroom. Everyone else is the audience.
- Stop the music.
- The dancers freeze (anyone who moves is out and sits down).
- The teacher calls out the name of some sort of matter, e.g. 'metal!'

The dancers unfreeze and rush to put a finger on something metal.

Anyone who touches a type of metal already touched is OUT!

The last one to find a metal of their own is OUT!

The 'touchers' take turns to tell something interesting about what they are touching.

If they can't tell, or it is a repetition, they are OUT!

Students from the audience can ask questions about the thing touched.

If the 'toucher' can't answer satisfactorily, they are OUT!

The survivors get another turn later.

- The next group comes to the centre, dances, freezes, rushes to touch a new substance (liquid, paper, wood, etc.) and try to survive the telling and the questioning.

**Did this game allow you to assess and, at the same time, grow the students' awareness of their material world?**

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# 2 Solids, Liquids and Gases

As you get to know your class, it is really useful to talk to your students about their personal characteristics; things they can do, their likes and dislikes, and their strengths and weaknesses. A nice way to summarise this sharing talk is to ask them to draw a careful full-length self-portrait and to label their distinguishing features in one colour. They could use other colours to list and record their other different types of characteristics. Now they will be ready to do the same thing when they consider the properties of different common substances (kinds of matter) they know from their environment. **Activity 2** explores one way of doing this, using pictures.

In **Teaching Example 2**, a teacher introduces the idea of properties and the three states of matter (solids, liquids and gases) by starting with a single property –compressibility. Is this different to the way you usually introduce this topic? What other topics could you explore using this approach?

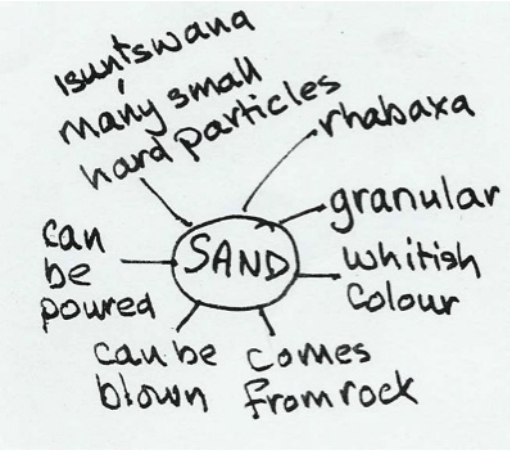
## Teaching Example 2

Miss Yvonne Manu works with Primary 4 students and plans to introduce them to the idea of the three states of matter: solid, liquid and gas. But she doesn't want to just tell them.

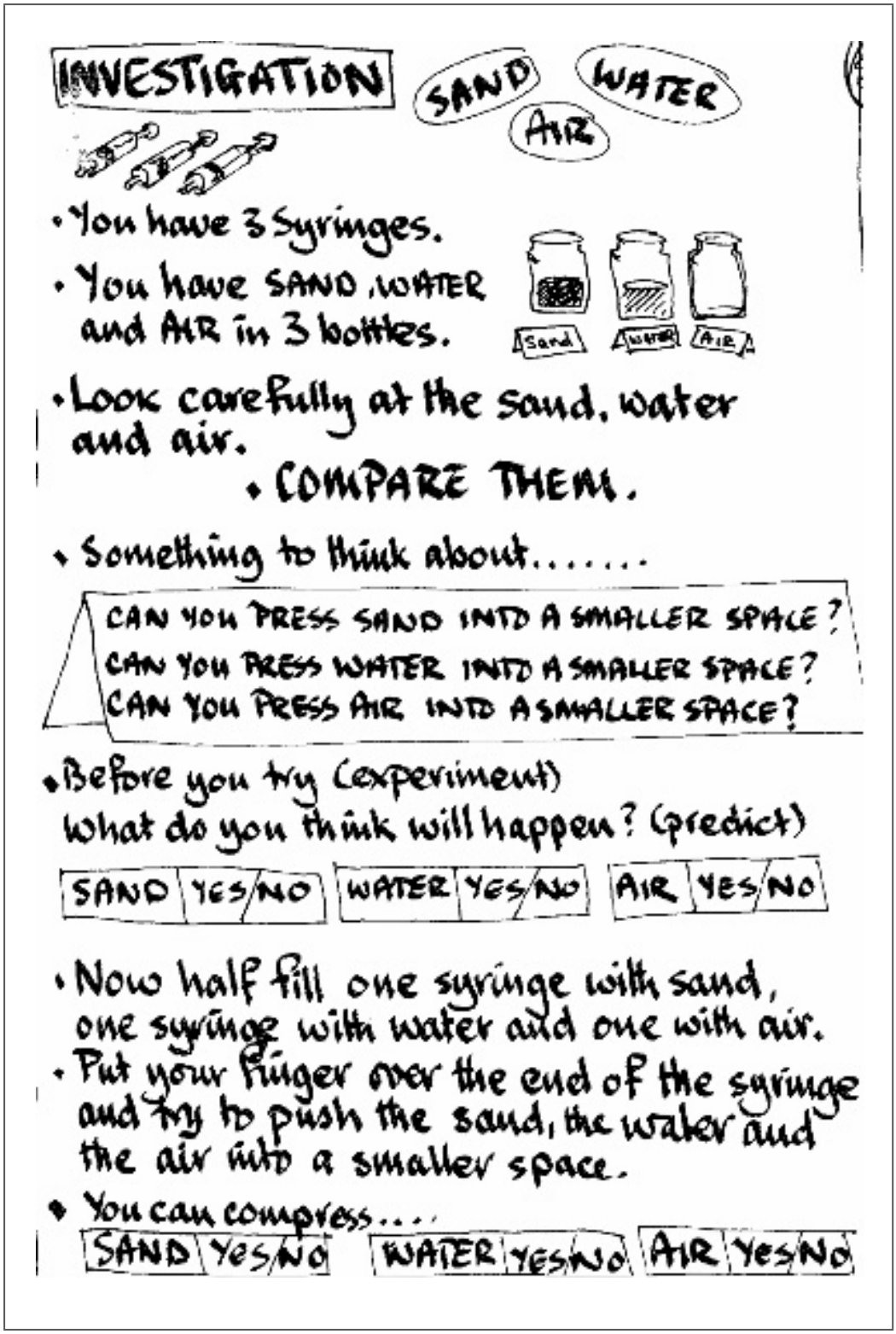
She carefully plans a lesson around the idea of compressibility. She shows them a small sponge, a ball of cotton wool, a soft square of cloth (like a yellow flannel duster) some water and a block of hard wood. With each in turn, Yvonne demonstrates how she can squeeze, force or press them down into the small hollow space of a clenched fist. All except the water and the block of wood. She cannot easily change the size or shape of the wood, and although she can change the shape of the water, she can't change its size. She follows this up with a lesson where she uses syringes to demonstrate compressibility in liquids compared to solids (sand) and air. You may find Yvonne's planning useful.

**Lesson plan: Which can be compressed – solid, liquid or gas?**

Yvonne used the activity below as the basis for her lesson. First she got her students to do a quick spider diagram of their observations and knowledge about sand and this is what one of the better groups produced.




Then she decided that with an activity like this she could have given the students more ownership of the whole task. She made a worksheet (see below). She found that this change in approach really made a difference to the motivation, enthusiasm and learning of her students.




## Activity 2

To do this activity with the whole class, you need to find a large poster of a room, showing a range of different substances (for example, a shop, a clinic or a kitchen).

For group work you will need a large picture for each group – use a different picture for each group. (Look for pictures in magazines and catalogues.) Using different pictures gives the students a very real reason for reporting back,

because each group has different information to share.

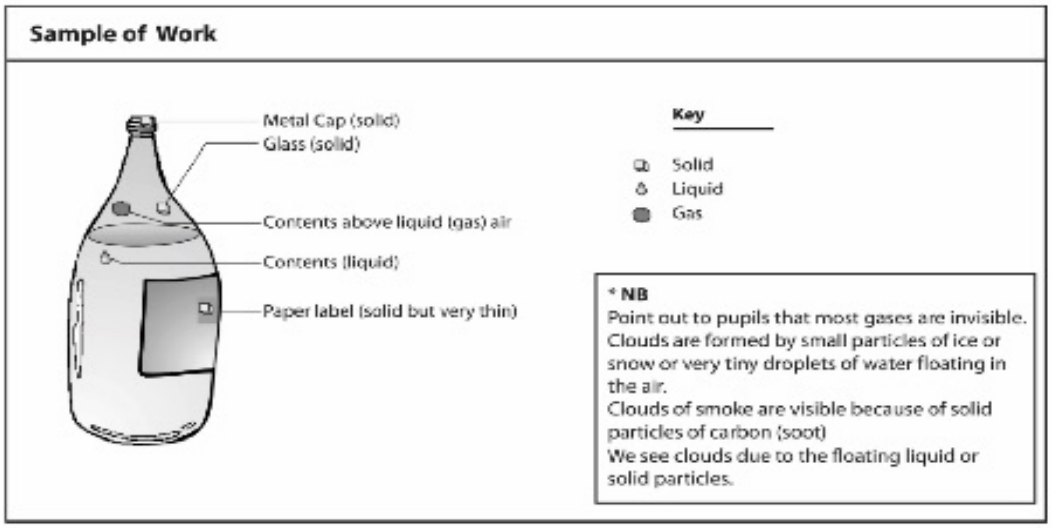
With your students, choose three suitable icons to use in this lesson.

You will need icons to represent a solid (perhaps a picture of a block or cube – brown or black), a liquid (perhaps a droplet – blue) and a gas (perhaps a cloud of dots – grey or pencil).

Students draw these icons on bits of scrap card or cut out the shapes and colour them if possible.

Then they use small bits of sticky tape to mark solids, liquids and gases on their pictures.

**Encourage discussion and feedback from each group. How did they identify liquids? Gases? You may find the following example of students' work useful**




# 3 Investigating an unknown material

Thinking and behaving scientifically is most evident when students investigate something practically.

Investigating is a key skill in science. It involves you and your students in:

- deciding on the question you are trying to answer;
- deciding what equipment to use;
- deciding what measurements and observations to take;
- deciding how to present your results and how they give you an answer to the problem.

**Teaching Example 3** shows how teachers can lead a class investigation of an 'unknown' substance. If the students have experienced a teacher-led investigation, they will be better prepared to do their own independent investigations of other substances. You may find the following lesson plan useful

## Teaching Example 3

A few years ago, some colleagues were running in-service primary science workshops in rural Northern Ghana. In one series of workshops, a science lesson was planned, tested, reflected on and improved collectively. The heart of the lesson was the teacher guiding the step-by-step investigation of the properties of an 'unknown' powder (powdered clay). First, the teacher focused on developing the skills of observation and communication in her students. Then she asked: 'What will happen if we add a few drops of water to the powder?' Students' answers led to more investigation, observation and communication. On reflection, it was clear that the students were thinking and acting scientifically. You may find the following lesson plan useful

**The plan of the lesson**

Before the lesson, you need to find some dry clay and to crush, pound and grind it until it forms a fine dry powder. You don't need much – just enough to give each group a heaped teaspoonful.

**Step 1a – Investigation by observation, comparing and recording**

Give each group a small dish or the flat lid of a jar to hold the powdered clay. Ask them to observe the substance carefully and to note down all their observations in the local language or English on paper or in their books.

(We found that it is important that the teacher doesn't interfere with the groups at the start of the lesson. You need to give them a few minutes on their own to get started.)

Before the end of Step 1, ask these guiding questions to ensure that the observation has been thorough:

- Have you noted the colour of the substance?
- How does it feel?
- List other substances you know that are similar to this substance.

**Step 1b – Communication**

Ask the groups to feed back their observations. Summarise them on the chalkboard. This is a chance to bring languages together. If students answer in the local language, you can negotiate that the answers are written up in English. At this point you can identify the substance as dry clay powder.

**Step 2a – Prediction and recording**

Get the groups to use a different colour or kind of pen/pencil for this step.

Hand out droppers with water, or show the class a small bottle of water.

Here are the questions we prepared for this step:

- What will happen if we add just a few drops of water to this substance?
- Write down what you predict will happen if you add a few drops of water to the dry clay powder.

- How will the water change the clay?
- Write down all the changes that your group thinks will happen.

Then leave them to get on with the work. After about five minutes, you might give them a few prompts. Will the colour change? Will the appearance of the substance change? What will it feel like?

**Step 2b – Communication**

Add the students' new work to the chalkboard using a different colour of chalk. Use English to record, and comment on their answers, extending the knowledge where necessary.

**Step 3a – Investigation, observation and recording**

Again, change the colour of the groups' writing tools/pens. Now let them add and mix a few drops of water. What changes do they see and feel? Were their predictions correct? Get them to investigate and write down what they notice.

**Step 3b – Communication**

For the third time, record the combined work of the groups on the board, using a third colour of chalk if possible.

**Step 4 – Discussion**

At this stage, ask the students to talk about and write down the things that damp clay can be used for. Record their suggestions on the chalkboard. Then get them to roll out a small snake from the damp clay in their dish/lid. Let them record or measure its length before they leave it in a safe place to dry. Ask students to record what they think will happen to the clay over the next few days. You should now have a mind map on your board showing observations and predictions about clay.

*Adapted from: Primary Science Programme Cross Curricular Work*

## Activity 3

Tell students that each group (three/four students) will be getting a different 'unknown' white powder to investigate. Remind them about properties and the steps and processes of the powdered clay lesson from the case study.

Guide them as they plan the steps of their own investigation for the next day. They must include the equipment they need in their plan and perhaps some predictions. Give them time to share and improve their plans in class.

The next day, hand each group a different 'unknown', BUT safe to use, white powder, such as icing sugar, salt, soap powder, sodium bicarbonate, fruit salts, maize meal, flour.

Support them as they do their investigations and plan how to report on their findings.

**Can they identify the substances?**

**How did you assess their work? What advice would you give to a colleague who is going to do this activity?**

A follow-up language lesson could be reading details on the packaging of substances used.

Use these questions to help your students look at different packages

1. What does the picture tell us?
2. Does all the writing look the same?
3. Who makes this product?
4. What do we get in this packet?
5. Where does it tell us what is inside?
6. What do you see first? Why?
7. What do you see next? Why?
8. And then what do you see? Why?

# Social Studies: Investigating family histories

**1 Family histories**

**2 Family timeline**

**3 Changing times**

**Key Question for the teacher:**

Helping students to understand history through studying their families.

**Keywords:** family; history; confidence; investigation; small-group work; discussion

**Learning Outcomes for the Teacher**

By the end of this section, you will have:

- structured your activities to help students understand themselves and their relationships with other family members;
- used small-group discussions to build students' self-confidence as they investigate their family histories.

## Overview

Good teaching often starts by encouraging students to explore situations that they are already familiar with. In terms of history, this means using their own lives, and the lives of their immediate families, as a source of investigation. The skills used to explore this familiar history can then be used in the study of broader historical questions. All of us have a history, which starts from the moment we are born. This will include all our experiences and all the people we interact with. In this section, you start by exploring your students' immediate family situations and their roles and responsibilities within the family. You will also look at the wider context of the extended family. As you work in this area, you will have to be sensitive to different backgrounds and family or other structures that your students live in.

# 1 Family histories

When investigating the family, it is useful to first explore students' understanding of what a family is and show them the diversity among families. Celebrating such diversity helps students feel better about themselves when they realise how different families can be.

## Teaching Example 1

Mr Nguzo is a social studies teacher at Muhimu Primary School in Tanzania. He wants his students in Standard 3 to learn about families and the roles of different family members.

He organises groups of not more than six; he puts students together who do not usually work with each other. In the groups, students take it in turns to answer the following questions, which he has written on the board.
What is your name?

1. What is your name?
2. Who are your father and mother? What are their names?
3. Who are your grandfathers and grandmothers? What are their names?

Are they older or younger than you?

During the discussion, Mr Nguzo goes to each group to check that all the students are being given a chance to contribute. After 10 to 15 minutes, he asks the groups to share with the whole class what they have found out about different families.

Then he asks the groups to consider this question

6. What makes someone your sister, your brother, your aunt, etc.?

After 10 minutes, one member of each group presents their answers to question 6 to the class. Mr Nguzo prepares a large, basic kinship chart to help focus the discussion.

A kinship chart shows how each person is related or connected to the others and their family or community. Different cultures have different ways of describing relatives.

Below is a simple kinship chart for Zambia

<table>
<tr><td>Me</td><td rowspan="2">My Parents<br>Father<br>Mother</td><td>My Grandparent<br>Grandfather<br>Grandmother</td></tr>
<tr><td>My brothers<br>and/or sisters</td><td>Grandfather<br>Grandmother</td></tr>
</table>

Mr Nguzo and the students note that although there are words in their language that express cousin, uncle and aunt, these relations are normally referred to as brother or sister; grandfather, father are usually simply

father; grandmother, mother are similarly simply mother. There is a distinction between the uncles and aunts from the mother's side and those from the father's side. Mr Nguzo realises that teaching students about the relationships within families can be confusing for younger students

### Activity 1

Before the lesson, draw some kinship charts on the board or prepare some paper copies

- Ask the students to work in groups of three or four. One student volunteers to list all the people they know in their family and fill in the details on a kinship chart. (You may wish to select which student is chosen.)
- Students might want to draw pictures of their relatives on the chart.
- Share these charts with the class. Discuss the variation in families and emphasise how good this variety is.
- For the paper copies, display the kinship charts on the wall of the classroom.

# 2 Family Timeline

When studying past events, it is important to help students understand the passage of time and how things change from generation to generation. Developing the ways that young students look at their family histories will help them link events together as well as put them in sequence. They may want to develop a kinship chart bigger than the one above to help them see relationships between family members e.g. their cousin is their mother's or father's sister's or brother's child. See below for some examples of Lunda kinship terms

**Lunda kinship terms and Lunda term Explanation**

**mama** mother, aunt on mother's side

**a-mama** mothers, mother's sisters

(Honorific 'mothers' in general)

**mama wakansi** aunt, a younger 'mother', mother's younger sister

**mama wamukulumpi** aunt, mother's older sister

**tata** father, uncle on father's side

**a-tata** fathers, fathers' brothers

(Honorific 'fathers' in general)

**tata wakansi** uncle, a younger 'father', father's younger brother

**tata wamukulumpi** uncle, father's older brother

**yaya** older brother, sister or cousin

**a-yaya** older relation

Used honorifically as well

**mwanyikami** young brother

## Teaching Example 2

Joyce Phiri plans to teach about family relations over time with her Grade 5 students.

She cuts a series of pictures from magazines of people of different ages, doing different things, e.g. at a wedding, a school prize day, and writes numbers on the back of each picture. She tells her students that the photographs represent different events in one person's life and asks her students, in groups of six, to sequence the photos in terms of the age of the person. She gives them 15 minutes to discuss the order and then asks each group to feed back. She asks why they chose the order they did and lists the clues they found in the pictures to help them order the events. They discuss the key events shown in the pictures and Mrs Phiri tells the students they have made a 'timeline' of life.

## Activity 2

The following example can be a starting point for your class to do their own timeline.

- First, discuss the importance of knowing one's own origins and members of one's family.
- Explain what a timeline is.
- Model (demonstrate) the making of a timeline yourself (you don't have to use your own life – you could do a realistic one based anonymously on someone you know). Modelling is an excellent way of supporting students to learn a new skill/behaviour. Draw this timeline on the board and talk through what you are doing, or have one prepared on a large roll of paper. Remember to use a suitable scale – a year should be represented by a particular length. (When your students come to do their timelines, they could use 5 cm or the length of a hand if they don't have rulers.)
- Ask students to write down key things they remember about their lives and also give them time to ask their parents/carers about when they first walked etc. Ask them to record any other information they want to include on their timeline.
- Support them as they make their timelines. You could encourage them to write in the main events that have happened to them personally, and in a different colour (or in brackets under the line) the main events that happened to their wider family (e.g. older sister went to college, father bought a field etc.).

- Display their timelines in the classroom.
- Students who finish quickly could be asked to imagine and draw a timeline of their future. What will be the main events when they are 20, 25, 40 etc.?

# 3 Changing times

Helping students to develop their understanding of past and present takes time, and involves giving them a range of activities where they have to observe, ask questions and make judgements about what they find out. How can they develop skills to help them think about how things change over time?

## Teaching Example 3

Mr Kabwe Kato, Mrs Siame Sime and Miss Banda Benda planned their social studies classes together. They did not all do the same topic at the same time, but it helped them to share ideas.

### Activity 3

See **Using Mind Maps and Brainstorming** at the end of this Teachers Pack 2. Ask them to consider how they could investigate the ways in which life for their families has changed in the village/community over time. What sources could they use to find out about this?

They are likely to come up with ideas such as: using their own observations and memories to think about what has changed in their own lifetime; asking their parents; talking to other older people; talking to people in authority (such as the chief); looking at older maps; using a museum (if there is one); reading from books about the area etc.

**Ask the students to gather stories from their own families about how life has changed for them over the last few generations. What was everyday life like for their grandparents and great grandparents? What are the family stories from previous times? Does the family have any old newspapers, photos, letters, etc. that help show what life used to be like?**

Students could share their stories with each other in class and use them as a basis for presentations – these could include pictures of what they think life was like, role plays about life in the past, written factual accounts based on family stories and other documents, and imaginary stories e.g. 'describe a day in the life of your grandmother when she was young'.

# Life Skills: Health and well-being in younger learners

**1** Growth

**2** Games for Growth

**3** Healthy development

**Key Question for the teacher:**

How can you plan to develop health and well-being?

**Keywords:** lesson preparation; games; problem solving; whole-school activities; planning; self-esteem)

**Learning Outcomes for the Teacher**

By the end of this section, you will have:

- planned lessons that are focused on clear learning outcomes to investigate growth and development;
- explored ways to include games and exercises into your lessons;
- used problem solving in whole-school activities

## Overview

This section focuses on your planning and preparation of lessons. It is important to do this well if your students are to achieve what you want them to achieve. One of your roles is to help your students understand the concepts of physical growth and development. These include both the physical changes that will take place as they get older, and also the different things they need to think about and do in order to stay healthy. As you plan practical activities about physical growth and development, you need to use students' existing knowledge as a base from which to plan and extend their understanding. This section suggests different ways to work in and outside the classroom, which you could also plan to use elsewhere in your teaching.

# 1 Growth

You may want to prepare yourself for your lesson by reading the following:

**Introduction to physical development. Background information / subject knowledge for teacher**

We are all growing all the time. We are growing physically, but are also extending our ideas and understanding, and often these are happening alongside each other.

During the years that children are at school, they go through many physical changes. You can see this by comparing students in different classes. The older children are taller and stronger, and they can usually also express themselves better. As part of the natural process, children also develop sexually once they reach their teenage years. Children cannot develop and grow on their own. Just like a plant needs water, sun and good health to develop, people need certain things to help them. They include:

- good food;
- exercise;
- protection from illnesses;
- clean surroundings.

Each of these things contributes to the physical development of the child.

- If a child does not eat well, they will not grow as quickly as others. Food contributes to other things, too: the amount of energy that children have, how much they are protected from illness etc.
- If children do not exercise, they will not develop their arm and leg muscles and so will not be as strong. Physical exercise also helps develop their bodily coordination when doing exercises like running, jumping and rope skipping. Coordination helps with other skills, like reading and writing. Physical exercise is also good for well-being and physical growth.
- If children are not protected from illnesses, they will become sick more often, which will affect the way in which they grow. If children are ill, they cannot exercise, and so will not develop their muscles. If they are ill, they also find it hard to study, and so will fall behind in their learning.

You need to think carefully about how you will introduce this topic. Just reading out information and hoping that the students understand is not the best way for most students to learn. You need to plan your lesson carefully, thinking about what will happen at each stage of the lesson and finding out what they already know and think. Each lesson should have a particular learning outcome (intention). In this case, you want the students to be able to identify the four basic things that contribute to improved physical development.

For each stage of the lesson, you need to answer three questions:

How does this activity contribute to the learning outcome?
What will the students be doing to help them learn?
What will I be doing to support them?

Look at the games and activities you could use. Which ones will support your learning outcomes?

## Teaching Example 1

Biduga teaches in a small school in a rural area of Tanzania. This term, her colleague Mary is on maternity leave, so she is teaching a large, multigrade class of 85 students from Grades 3–6. This means that she has to deal with a large number of children at different stages of physical development. Biduga knows she needs to consider this when organising her classroom.

She has noticed that the older children often take responsibility for some of the younger children. So, she organises the class into groups, each with a group name and a Grade 6 'leader'. The leader checks that each child is present, and gets their group settled and ready for study.

She also finds that the younger children enjoy having many different activities in a lesson. She plans lessons with two strands of activities: one for Grades 5–6 and one for Grades 3–4:

- First, she gives Grades 5–6 some group work or longer exercises.
- Then, she spends time with Grades 3–4, using shorter activities, including simple games.

This means preparing lessons with more stages for Grades 3–4. See **Working with Large/ Multi-grade Classes** in the Teaching Pack Additional Resources. In this way, Biduga has recognised the differences in her students' physical development and is using it to help plan her teaching.

## Activity 1

Introduction to physical development above covers the four principles that contribute to physical development. Write a lesson plan to introduce these four principles to your students.

Identify the activities and resources you will use. You could adapt the 'same or different' activity from Teacher Pack 1 if you have it to hand but you don't have to! Look at similarities and differences in physical growth e.g. height, shoe size, hand and arm length.

Plan your lesson like this:

- Introduction to the lesson and intended learning outcomes.
- Introduce the ideas using students' previous knowledge.
- In groups or pairs, the students do a 'same and different' activity or your own activity.
- The students do another similar activity so you can check their understanding.

To cover the four principles of physical development in a lesson plan, think about these questions:

- What is the key thing you want them to learn?
- How will you introduce the topic?
- How will you organise the first activity? What will your instructions be?

- Will the students work in groups or pairs?
- How will you demonstrate the four principles?
- What resources could you use to help explain them? For example, could you use pictures? Could you bring in different kinds of food?
- Where would you get them?
- How will you check the students' understanding?
- What issues do you need to be sensitive to?

Write down your answers to these questions on a piece of paper. Then use these to plan each stage of your lesson. Remember to always be sensitive to the context in which you are working in so as not to embarrass students.

After the lesson, make some notes for yourself about how it went:

**Was it successful?**
**What did your students learn?**
**Did any part not work so well? If so, why was this?**
**What would you do differently next time?**

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# 2 Games for growth

In the first part of this section, you considered ways to plan teaching your students about physical development. We are now going to look at one element of this: the physical exercise students may get while at school or at home.

## Teaching Example 2

You may find the following examples useful

**Using games and physical exercise**

Physical exercise serves many functions. As we know, it helps children build up their strength and fitness. But it can also help students to develop social, creative and leadership skills. It can help students make friends and learn new things, and it contributes to their emotional well-being.

Think about the range of different physical games and exercises there are:

- sports e.g. football, wrestling;
- play e.g. skipping, dancing, running games;
- word and number games e.g. singing, rhymes.

Children will automatically invent and play games with each other and you can exploit this as part of your teaching.

The use of physical games and exercises as part of your teaching can encourage students to enjoy learning, and so develop a greater interest in coming to school.

By using physical games as part of your teaching, you will also encourage students to learn new skills and behaviour patterns.

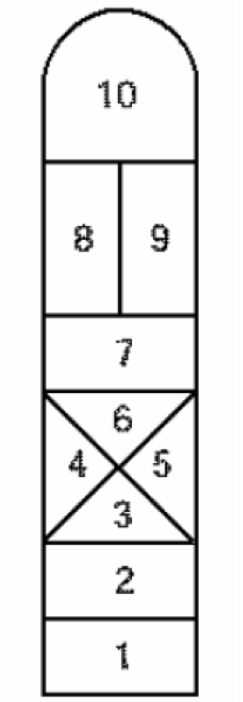
These can include:

- collaborative learning;
- thinking skills;
- sharing resources and taking turns;
- motivation and involvement in learning.

All of these are attributes you should encourage in the classroom, as they will contribute to more effective learning.

Below you will find some examples of Kenyan games that use physical exercise.

**SHISWECHELI**




**Play instruments:**
A piece of broken pottery, a ten-cent coin or a stone. A pattern drawn on the ground.

**Age group:**
5 to 6 years and above

**Players:**
One to four

**How to play:**
The first player throws a piece of pottery, or coin, or stone, into the first segment of the pattern. She jumps on one leg over this compartment into the second compartment as she plays. She then jumps into the other compartments until the last one. At the 4th and 5th compartments, she stands astride with one foot in the 4th compartment and the other in the 5th. The same is repeated at compartments 8 and 9 before she proceeds.

At compartment 10, she turns back the same way she came until she reaches the compartments before the piece of pottery. She bends, picks it up, and jumps over this compartment to the outside with the piece. She then throws the piece into the second compartment and continues the game, jumping over the compartment with the piece to the last compartment, and turns back the same way she came, to the outside. This is repeated with the piece being thrown into each successive compartment until the last one has been covered.

At this juncture she steps into compartment 10, with both feet still facing the front, and throws the piece over her head without looking back. If the piece falls well into one of the compartments, it becomes her territory. If at any point the player aims at a compartment and misses, she loses, and another player takes over the game.

SHIHULUKHU

**Play instruments:**
No equipment required

**Age group:**
3 upwards

**Players:**
Five or more

**How to play:**
One player assumes the position of a lion (Italanyi). He moves/goes ahead of the other players as the others question him:

Players: King Lion, what time is it?
Lion: Seven o'clock.
Players: King Lion, what time is it?
Lion: It is noon.
Players: King Lion, what time is it?
Lion: It is the hour to feed on (eat) sheep! (Here the other players run away as the lion chases after them. The player the lion catches is the next to be the lion.

TSIBEA NE KIGUMBA

**Play instruments:**
Stones, sticks and a piece of cloth

**Age group:**
4 to 6 years

**Players:**
Usually eight children or more

**How to play:**
Players stand in pairs facing each other, forming two lines. The pairs are given numbers. An object is placed in the middle of the two lines. The leader calls out the numbers of two players, and the player from each team who has that number has to run and try to pick up the object first. The player who picks up the object earns a point for that player's group.

When planning to use games in your teaching, you need to think about:

- the content of the game, so that it helps the students reach the learning
- objectives you have set for the lesson;
- the organisation of the game:
- How do you play the game?
- How will you give instructions to the students?
- How will you check they understand how to play?
- Will they play in pairs, groups or as a class?
- Where will they play – inside or outside?

## Activity 2

Mr Oyugi, a teacher in the township of Kiambu, wanted to use students' games in his lessons. So he planned a lesson where they would:

- identify their favourite games;
- describe how to play them;
- use the games to learn about different ideas and topics such as sharing and numbers.

To start the lesson, he used the 'likes and dislikes' survey to find out what games his students knew. To save time, he planned to:

- conduct the survey with the whole class at once;
- record the information on the board himself.

Next, he wanted the students to do something themselves. He decided that, in groups, they would write a description of their favourite game, but they would have to include answers to some key questions that he would provide about how to play the game. He included questions such as: Where do you play it? How many people could play? What equipment is needed? What are the rules? Finally, he built in time for each group to explain their game to the class.

They would vote and play one game each week.

**How Mr Oyugi taught his lesson**

Here are the stages Mr Oyugi used in his lesson:

1. Everybody wrote down five games they liked most.
2. Mr Oyugi asked the students to talk, in pairs, about their favourite games and choose one between them. This took ten minutes.
3. To do the survey, he stood at the front of the class asking each pair which game they had chosen.
4. He wrote the game on the board and put one tick next to it. If it was a game someone else had already mentioned, he just added a tick. The list on the board started to look like this:

Football 111111

Skipping 1111111

Clapping 111111

Catch 1111

Marbles 111

5. The survey took 15 minutes to complete. Next, he asked which game was most popular and which least popular.
6. He asked the class to get into seven groups of five. He asked each group to choose one game and write a description for the class of how to play it.

7. He asked them to read their instructions to the class. There were too many games to describe in one lesson so he decided to do one new game during the last lesson of each day.

To help with this, he gave each group the name of a day of the week. Now each group knew when they should give their description. At the beginning of each day, he asked whose turn it was today.

These lessons used the following format:

1. First, the group gave their description of the game and demonstrated it in front of the whole class. This took about ten minutes.
2. Then all the other groups practised playing the game as well. If necessary, Mr Oyugi took them outside. This took 15 minutes.
3. Next, he asked them to think about new ways of playing the game so that it helped them remember what they had learned in class that day.
4. Each group came up with different ideas for adapting the game. This discussion usually lasted about 15 minutes.
5. Finally, they discussed some of the changes and tried them out together until the end of the lesson.

This way, Mr Oyugi started using his students' games to help with teaching different subjects. The best ideas he used again. Also, the students started playing the new learning games in their free time.

# 3 Healthy development

In the first part of this section, we identified key factors needed for healthy physical development. Now we investigate how your school can promote these ideas with the students and local community. Having discussed using exercise and games in your lessons, you now need to promote the importance of a) good food, b) protection from illnesses, and c) clean surroundings, but this will have to be done sensitively.

This can be done by making the school a health-promoting environment.

This will involve discussion with the school staff, about:

- setting the school up as a good example for students and the community.

To resource this, you may need to plan to involve the community and other people to work together, such as local health clinics and NGOs;

- encouraging healthy living practices in your school by having health promotion activities as part of the regular routine;
- having inputs from experts such as HIV/AIDS coordinators and health clinics. Who will be involved, and when?

## Teaching Example 3

Having used games in his lessons, Mr Oyugi thought about other ways he could promote healthy development at school. He decided to hold a school and community Games and Sports Day.

Once a term, the whole school could compete at games and sports. This would involve sports like football and running, but also some of the learning games such as one about the points of the compass that he had been using in lessons.

To plan this, he listed the people he should speak to, such as the head teacher, other teachers, the Parents-Teachers' Association (PTA) and the students. Having gained the support of the head teacher, he planned the competitions with the staff and the PTA. First, they decided the time – it would start at 09.30 and finish at 12.30. Then they chose the different activities.

They organised the games and races according to classes, and wrote a schedule of activities for the day. Then they planned who would help on the day: the PTA, the Board of Governors (BOG), the teachers and some older children. They decided who would make announcements, record the results, give the prizes and so on. This way, they developed a full plan for the first Sports Day.

They planned it over two to three weeks, which meant that it was well organised and a huge success.

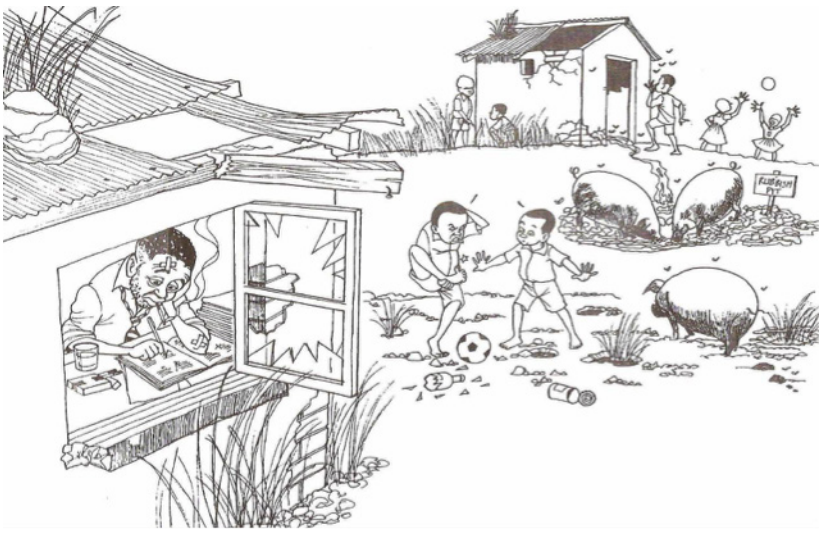
**Mr Oyugi's other ideas for health promotion**

As well as Sports Day, Mr Oyugi came up with some other ideas for health promotion at school, such as:

- Students and teachers could clean the playground and classrooms after assembly every morning.
- Using rubbish bins would stop people dropping rubbish just anywhere. (It would also stop dogs and rats coming into the school and reduce the possibility of the children and teachers catching diseases or falling ill.)
- Using the school as a local inoculation centre when the health workers were visiting would ensure that children and teachers would all receive regular inoculations. It would also mean that the children would receive some additional health guidance from doctors and nurses.
- Establishing connections between the school and local and visiting health workers would help the school with health resources.
- Developing a school garden would provide food (such as vegetables to make soup) and exercise, as well as learning about the environment.
- A first aid/rest area or room could be created.
- The school could invite visitors to come and talk about particular problems, e.g. HIV/AIDS, malaria.
- They could run after-school exercise or games clubs.

## Activity 3

First, discuss the picture with your students and ask them to identify the problems in this school environment.



Organise your students to carry out a survey of your school environment to see if it is health promoting or health demoting. Send the children around the school in pairs or threes to note down anything in the school environment that fits into these categories.

Next, each pair/group presents their findings to the whole class. You make a list of their findings and put them on two posters on the wall – one for health promoting, one for health demoting.

Discuss what needs to be done to make changes for a healthier school environment. Remember to celebrate the positive aspects of your school environment.

Ask your head teacher if you can present your findings to the whole school in assembly. Invite everyone in the school to form teams to tackle all the tasks that need changing to make your school environment fully health promoting.

You may need to ask parents or other community members for help. You will also have to encourage the children to be creative and think of ways to improve the school without spending a lot of money.

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