

TESSA

Teacher Education in Sub-Saharan Africa

Teaching Pack No.12

Middle Primary

Section 1	Literacy:	Investigating stories
Section 2	Numeracy:	Exploring Symmetry
Section 3	Science:	Looking at light and shade
Section 4	Social Studies:	Understanding timelines
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- Additional Resources:**
- Group work in your classroom
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Literacy: Investigating stories

1. Storytelling
2. Meaning behind stories
3. Writing a story

Key question for the teacher:

How can you use investigations to develop ideas about story?

Keywords: research; stories; purpose; questions; investigating; community

Learning Outcomes for Teachers:

By the end of this section, you will have:

- Used investigation and research methods to develop your classroom practice;
- Investigate students' understanding of stories;
- Explored ways to create original stories

Overview

Storytelling is an important part of most communities' life and culture. This module explores how to strengthen links between school and community by using the community and its stories as a resource for learning.

This section introduces you to the value of research in teaching and learning. By setting up research activities, you will find answers to questions, try out new ideas and then use them to create an original piece of work.

1 Storytelling

We all tell stories, about our daily lives or about the past. There are many traditions around storytelling and many lessons to be learned from stories.

Activity 1 explores what researching is, how it is done, and how results can be analysed. As you work alongside the class on the task, you will learn what your students are capable of.

Teaching Example 1

Mrs Rashe and her Grade 3 students in Nqamakwe, in the Eastern Cape of South Africa, tell stories every day.

One day she wrote the question 'Why do people tell stories?' on the chalkboard and then listed students' answers:

- To enjoy
- To make people frightened
- To teach me not to do something

She asked each student to go home and ask an older person the same question and to bring the answers back. She made sure that she reminded students that they needed to approach people very respectfully when asking the question. She also reminded them to explain what the information would be used for.

The next day she added their answers to the list. Where more than one person gave the same answer, she added a tick (see below)

Why do people tell stories?

- To enjoy ✓✓✓✓ ✓✓✓✓ ✓✓✓✓ ✓✓✓✓ ✓✓✓✓ ✓✓✓✓ ✓✓✓✓ 35
- To make people frightened ✓✓✓✓ ✓✓ 7
- To teach me not to do something ✓✓✓✓ ✓✓✓✓ 10
- To teach wisdom about life ✓✓✓✓ ✓✓✓✓ ✓✓✓✓ 14
- To show correct behaviour, ✓✓✓✓ ✓✓✓✓ ✓✓✓✓ ✓✓✓✓ ✓✓✓✓ ✓✓✓✓ ✓✓ 32
- To make our language grow, ✓✓✓✓ ✓✓ 7

She asked the students to add up the ticks for each reason. They discussed the following questions:

- Which reasons are the most popular? How do you know?
- Do you agree with the elders' ideas? Why, or why not?

After the discussion, Mrs Rashe asked her students to write what they had found out through their research.

The next day, she asked a few students with different views to read their reports. She was very surprised and pleased with the different ideas that the students came up with.

Activity 1

Explain to students about research, using the additional resource on: **Researching in the classroom** beforehand, to help you plan what you want to say. Explain that they are going to help you investigate storytelling. You may find the additional resources useful on **Explaining and demonstrating in the classroom**.

Write the questions below on the chalkboard.

1. Who are the people who usually tell stories?
2. To whom do they tell them?
3. When and where are the stories told?
4. Why do people tell stories?
5. How do they tell them? (Style of delivery)
6. Are new as well as old stories told? For what reasons are new ones created?

Explain that each student is going to ask these questions of one older person in the community. Remind the students to approach the elder respectfully and to record the answers they are given.

Some days later, divide students into groups of six to eight and let them list (for each question), the answers they got, adding a tick where more than one person gave the same answer.

Now each group reports and you complete a set of data (the information collected by the class) on the chalkboard.

Discuss the most common ideas. Do the students agree with them?

Help students to write a simple report on their findings.

Plan for research report

- Research question
- What we did
- How we analysed data
- What we found out

Report on story research

The Grade 3 students asked elders a question: 'Why do people tell stories?'
35 elders answered the question.

The students made a list of all the answers, and counted how many people gave each answer.

Example report

34 people thought that stories are told for the listeners to enjoy them.

32 people thought that stories are told to show correct behaviour.

14 people thought that stories are told to teach wisdom about life.

10 people thought that stories are told to teach people not to do something.

7 people thought that stories are told to make language grow.

7 people thought that stories are told to frighten people.

2 Meanings behind stories

Once you have your research results, they need interpreting so that you can use the information. In this case, this means helping your students use this information to understand stories more. **Activity 2** helps you to explore meanings in stories as a follow-up to the investigation.

Teaching Example 2 introduces the important idea of getting students to raise their own questions and to try to find answers to them. Being able to raise their own questions in small groups builds independent thought and develops students' ability to think creatively and critically.

Teaching Example 2

Mrs Masiko from Ibanda did careful research into the details of a good, but not well-known, story.

One day, she gathered her Primary 5 students around her, and told them the first part of the story (the first three paragraphs of *The river that swept away liars and other stories*). Next, she asked them to each think of a question about what would happen in the rest of the story. After two minutes, they gave her their questions, and she wrote them on the chalkboard.

She asked the class to think of answers to the questions, taking each question in turn. The students gave reasons for their answers.

After they had gone back over all the questions and answers, she asked them to help her write an ending for the story. They suggested what might happen next and she wrote their ideas on the board. She did not rush the process, or push her ideas on to the students.

Once the story was complete, they read it together.

The students liked working together on the story. The next day, in pairs, they drew pictures for different parts of the story. These were put together in a book.

Finally, Mrs Masiko read them the original story. The students were pleased at their ending compared to the original and talked a lot about the problems of telling lies.

Activity 2

Choose a good story from those that you know. Make sure that you have a complete version of the story.

- Make one copy of the story for each group in your class, or write the story on the chalkboard, where they can all see it.
- Also write up the reasons for storytelling that came out of the class research.
- Ask your students to discuss in groups why they think people would have told this story (i.e. its purpose).
- As groups report back, ask them to explain their reasons.
- Next, discuss the characters in the story and their behaviour.
- Ask the students how they could apply this story to their own lives.
- Ask them, in groups, to discuss the purpose of another story, perhaps one from home and then to draft a paragraph about the story's purpose.

Did they all understand the purpose of their stories? How do you know this?

This activity need not be completed in one 30-minute lesson period. It can be spread to other lesson periods if your students have lots of ideas to discuss.

The river that swept away liars and other stories

A certain master was on a journey with his servant. It was a long journey on horseback. As they were travelling across the country, the master saw a jackal crossing their path.

The master remarked, 'That jackal is quite big.' The servant replied, 'Oh, Master, this is nothing compared to the one I saw yesterday.' 'Is that so?' responded the master. 'Oh yes. It was very, very big. In fact, it was as big as an ox!' 'As big as an ox?' questioned the master. 'Yes, as big as an ox,' answered the servant. The master answered again, 'You say "as big as an ox"?' 'Yes, really, as big as an ox,' said the servant. The master did not utter a word and they continued on their way, without talking to each other, for about an hour.

The servant noticed that his master was not happy and he didn't know what was worrying him. So he asked the master what the matter was. The master told him that they would have to cross four rivers before they reached their destination. The last river was the biggest and the most dangerous of all the rivers. This river was allergic to liars, and no liar could escape its anger. It swept liars there and then down to the deep blue sea. It never missed a liar, even if they were to invoke 'Ifa' to bring them luck (people invoked Ifa to bring them luck, and to give them power to conquer evil spirits).

When the servant heard this, he was quite shocked because he knew how powerful Ifa was. If this river would not yield to Ifa, then he knew it must be a VERY powerful river. As they travelled, he became more and more uneasy. The master also became sadder and sadder the further they rode. And as his master grew sadder, the servant grew more and more panic-stricken.

As they neared each river, the size of the jackal changed. When they reached the first river, the servant said, 'My Lord, the jackal was not exactly as big as an ox. It was a little bit smaller than an ox.' The master said nothing.

When they reached the second river, the servant said, 'The jackal was not even nearly the size of an ox. It was as big as a calf.' But again, the master said nothing. When they had crossed this second river, the master just explained his concerns about the last dangerous river, and said no more.

As they approached the third river, the servant said to his master, 'The jackal was not even as big as a calf. It was as big as a goat.'

Just before they reached the last river, the jackal was the same size as other jackals, which are common everywhere.

Adapted from: Umthamo 2, University of Fort Hare Distance Education Project

3 Writing a story

Research suggests that people learn best when what is being taught is relevant to them. As a teacher, you constantly need to make sure that your students are gaining knowledge that will help them make sense of their world.

You and your class have researched why people tell stories, and looked at the meanings of particular stories. Now we look at how you can help your students apply storytelling to real-life situations and difficulties.

Teaching Example 3

Mrs Alitwala wanted to help her students in her Primary 5 class in Kampala to write their own stories in pairs. She wrote a list of possible story features (see below) on the chalkboard and discussed with her students how these can determine what kind of story is written.

- Animals representing humans
- Marvellous events, unusual creatures
- Someone getting into difficulties and finding a way out
- Good and evil
- Explanations for the way things are

She also gave them a list of events, good and bad, that had happened in the city recently and suggested they use one of these as the context of their story. Next, she asked them to choose whether the characters in their story would be animals or people. Finally, she asked what theme they might choose, such as the battle between good and evil. Once they had decided, she encouraged each pair to start writing.

Over the next week or two, Mrs Alitwala asked each pair to share their story with the rest of the class who then discussed what the story's purpose was. She was very pleased with the variety of the stories.

Activity 3

Ask students to think of problems in their families, school and community that come out of the way people behave towards one another. The problems might range from everyday ones, like laziness, to serious issues, such as HIV/AIDS, step-families, poverty, parents neglecting their roles, drunkenness. You might prompt them by describing familiar situations involving certain kinds of behaviour, but be sensitive to the situations of individual students in your class. You could use old newspapers and magazines to help with ideas for stories.

- Each group should choose one problem to create a story that shows the effects of this kind of behaviour and offers some wisdom about it.
- Discuss some of the features of stories before they write their story or plan how they will tell it (see Teaching Example 3).
- Ask each group to tell their story to the class. Discuss the purpose of each story, list these, and compare them with their research findings from Activity 1.
- Let group members decide for themselves whether their story was successful, and why. (See questions below.)

How well did they assess themselves?

Do you agree with their assessment?

If you have younger students, you may want to do this as a whole-class activity where you write their ideas on the board or on paper.

Questions

1. Did the class enjoy your story?
2. How do you know?
3. Did the class learn something from your story?
4. How do you know?
5. Did your story give its message clearly?
6. How do you know?

Numeracy: Exploring Symmetry

1 Symmetry

2 Creating symmetry in the classroom

3 Multiple lines of symmetry

Key question for the teacher:

How can you use everyday objects to develop students 'abstract' understanding of symmetry?

Keywords: lines of symmetry; reflection; rotation; nature; open-ended questions; cross-curricular

Learning Outcomes for the Teacher

By the end of this section, you will have:

- Used group work to help develop students' understanding of symmetry, including multiple lines of symmetry and orders of rotational symmetry;
- Developed a range of strategies including using open-ended questions to develop thinking skill around symmetry;
- Worked across curriculum areas to extend ideas about symmetry

Overview

If you fold a blank page in half and open it out again, each side of the fold looks like a reflection of the other. When folded, the two sides overlap and cover each other perfectly. This is reflection symmetry. The 'mirror' or 'fold' line that gives these two equal reflections is called the line of symmetry.

Many mathematical shapes have lines of symmetry, and many living things are also approximately symmetrical in shape. This section will help you develop your understanding of symmetry, and try a range of strategies for teaching about it.

1 Symmetry

Introducing the concept of symmetry and reflection needs careful planning. Understanding that a shape is symmetrical if both sides are the same when a mirror line is drawn is best explored using practical activities. You need to think of ways to organise and group your students so that they can participate fully. One way to introduce this topic is by using drawings, photos and flat items like leaves. To see the line of symmetry you need to try:

- looking at a piece of paper held upright on the line of symmetry – look on one side, then the other;
- putting a piece of paper over an item, along the line of symmetry, then turning the paper over to cover the other half;
- holding small hand mirrors on the line of symmetry.

When looking at natural objects or images, your students need to understand that we are only looking at 'approximate' symmetry. For example, the left side of a person's face is probably not 'exactly' the same as the right side. However, by using real examples from the local environment such as fabric patterns or nature, you will motivate students more.

Teaching Example 1

Miss Bwalya, a primary teacher from Juba, Southern Sudan, wanted to introduce her students to the concept of symmetry.

She divided her class into groups of four and distributed to each group four pieces of paper that she had cut into the following shapes – rectangle, square, isosceles and equilateral triangles. She asked one student from each group to take the rectangle and fold it so that the two parts fitted exactly. The rest of the group could offer advice and support. She noticed that some groups found only one way to fold the rectangle while others found two. Miss Bwalya asked each group to show what they did.

Next, she asked another member of each group to take the square and repeat the exercise. The class agreed that there were four ways for a square. She told the class: 'These lines are called lines of symmetry. The rectangle has two, while the square has four.'

She drew a table on the chalkboard drawing the shapes and asked them to enter the number of lines of symmetry.

Next, she asked them to explain the meaning of 'symmetrical' and 'line of symmetry' in words that everyone in the class understood. They then added these terms to their mathematics dictionaries.

For homework, she asked them to collect objects from home or from their journey home that they thought had lines of symmetry to explore in the next lesson.

Activity 1

Before the lesson, collect some natural objects that have approximate symmetry: these could include leaves, flowers or vegetables. You could even use local animals (but you must ensure they are well treated) or you could use photos of them (you might ask your students to help you). There are some useful photos below and you may want to collect more from magazines and newspapers, or some samples of local fabrics.



Original source: <http://creative.gettyimages>

- Divide the class into small groups of five or six and ask each group to consider the objects or images and try to identify all the lines of symmetry. Share their answers as a class (see **Key Resource: Using group work in the classroom** to plan how to do this).
 - Ask your groups to think of other objects from everyday life that are symmetrical. Suggest that on the way home they try to find other examples and either note these down or bring a sample in if possible.
 - In the next lesson, ask each group to make a poster of six different objects that they have found that have lines of symmetry and draw the line(s) of symmetry on them. They could draw or perhaps stick on some objects.
 - Display the posters for the whole class to see and discuss their ideas after a day or so to remind them.
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2 Creating symmetry in the classroom

As well as encouraging students to see symmetry in the world around them, this topic allows students to be creative and make symmetrical patterns and objects. It is a good opportunity to enjoy cross-curricular work with art. These activities can be done with very young students, and yet be so open-ended that even the oldest students can still stretch themselves.

Teaching Example 2

Mrs Ngugi wanted to use art to help students explore symmetry and had decided to spend a lesson making butterfly pictures with her students. She had found two pictures of butterflies, which she showed to her class. She explained how the butterfly has four wings, and how varied the size, shape and colour of these wings can be, but that the wings and their patterns are always symmetrical.

Folding a piece of paper, Mrs Ngugi showed the class how she could cut out a butterfly wing shape, open the page, and have a pair of butterfly wings. She also showed them how they could make butterfly patterns by folding paper with wet paint inside. She invited the class to make their own butterflies, imagining different shapes for the wings and different patterns. The younger students used paint blots to colour their butterflies, while the older students drew intricate symmetrical patterns.

When the butterflies were finished, Mrs Ngugi hung them from the class ceiling with string. Her students were excited by the display and talked about the patterns a lot.

Activity 2

You will need enough paper and pencils or paints for each student to make a colourful mask, string or elastic to tie the masks on, and pieces of cardboard big enough to make the masks with. You may have to spend some time collecting these resources before you can do the activity but your students may be able to help you gather materials together (see **Being a resourceful teacher in challenging conditions** in the Teaching Pack Additional Resources).

Explain to the students that they are going to make masks, but that both the shape of the mask and any drawing or painting on it should be symmetrical. Suggest that they do a rough design before they start working. You could show them some local masks. Perhaps they could gather resources and do a rough design in one lesson, and make the mask in the next lesson or two.

Suggest they make masks of people, leaves, animals, wings, imaginary creatures, or tribal masks. This could be a decision you leave to each student, or one you decide for the whole class.

Think about what resources might help the students design their masks. What other creative activities could students do to consolidate their understanding of symmetry?

3 Multiple lines of symmetry

So far we have mostly looked at one or two lines of symmetry, but some objects have several lines of symmetry – a square has four: one vertical, one horizontal and two diagonally. The square also has rotational symmetry, meaning if we rotate it (turn it around) we can get the same pattern again: a square can be

rotated to make the same pattern four times – it has a rotational symmetry of four. This is sometimes called having rotational symmetry of order 4.

This next part explores the idea of multiple lines of symmetry further by using objects in everyday life and searching for patterns in the shapes. Some of your students may be able to predict the pattern if you set up the activity so that they can work at their own pace and discuss their ideas with others.

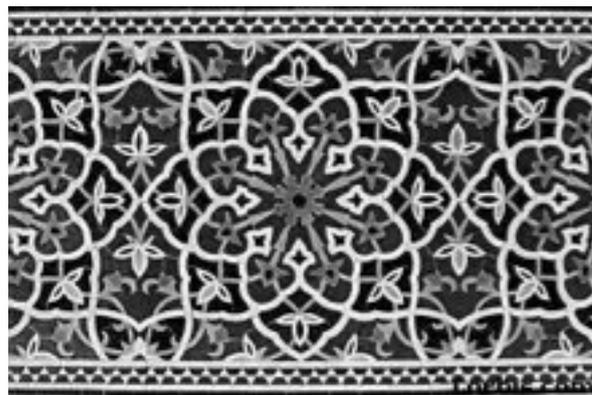
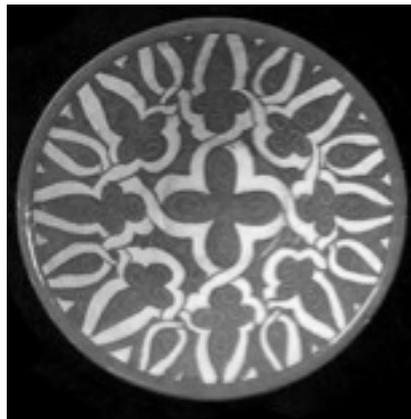
Teaching Example 3

Mr Namisi thought his students had become confident at working with one line of symmetry and he wanted to stretch them further by looking at different kinds of symmetry. He had drawn and cut out four different religious symbols (see below), making each one as large as he could on a piece of A4 paper.

Religious symbol	Lines of symmetry	Order of rotational symmetry
 <p>Star of David</p>	12	6
 <p>Cross (Christian)</p>	1	0
 <p>Mosque (Islamic)</p>	1	0

Mr Namisi held these shapes up and asked if students knew what each one was called. First, he asked his students to look for lines of symmetry. On the Cross and the Mosque, they easily found the line. With a little encouragement, they were then able to see that there were many possible lines of symmetry on the Star of David and the Dharma Wheel; the older students were able to count these.

Mr Namisi then put a thumbtack in the centre of the Cross, and showed that if he turned it round, it only looked the same in one position – where it started. He said this meant it had no rotational symmetry. He showed the students the other shapes and they tried the same rotation with each. They counted a rotational symmetry of six for the Star of David and eight for the Dharma Wheel. His class were eager to look for other shapes in real life that had multiple lines of symmetry, which pleased him.



Original sources:

<http://www.islamicarchitecture.org/art/images/>

<http://blog.vcu.edu/arts/images/>

Activity 3

You will need a page of polygon shapes for each small group of students.

You will need to use the following 2D polygons:

- Pentagon
- Octagon
- Square
- Septagon
- Triangle
- Hexagon

First, ask students to write in their books three column headings: 'polygon sides' 'lines of symmetry' 'rotational symmetry'. Then ask them to look at the shapes and, for each polygon, count and record:

- How many sides it has.
- How many lines of symmetry they can find.
- How many orders of rotational symmetry they can find.

After the first few shapes, some students may begin to spot a pattern and be able to complete their table without counting; others may not see the pattern. If this happens, ask the students who have seen a pattern to explain how it works to those who have not.

Use questions like: 'How many lines of symmetry would a polygon of $[n]$ sides have? And how many orders of rotational symmetry?' ($[n]$ could be any whole number.)

Ask each group to complete the chart you have drawn out on a sheet of newsprint and display their charts in the classroom).

Object	Lines of symmetry	Order of rotational symmetry

Science: Looking at light and shade

- 1 Investigating light and shadow
- 2 Reflection
- 3 Applying science to real life

Key Question for the teacher:

How can we integrate science with other areas of the curriculum?

Keywords: light; shadow; reflections; patterns; evaluate; prediction; investigation

Learning Outcomes for the Teacher

By the end of this section, you will have:

- Supported students in carrying out their own investigations;
- Encouraged your students to develop the science skill of prediction;
- Developed your own skills and confidence in integrating different areas of the curriculum

Overview

As a teacher of science, you need to help your students look carefully at things often taken for granted. Light, dark, shade, shadow, colour and reflection are very much part of our daily lives, but we often pay little attention to the science involved.

This section looks at how light behaves on different surfaces and objects. It suggests using active learning to help students understand how light is used for different purposes and develop their skills at prediction. It also builds on the links between science and the arts and technology. This should help students develop an understanding of applications of science.



Safety advice for teachers

Not looking at the sun

It is really important that you warn children to NEVER look at the sun directly. Tell them our eyes have built-in lenses that act like magnifying glasses and will focus the HEAT as well as the light energy from the sun onto the tender back of the eyeball, the retina, which helps us see. This heat can burn and destroy forever the cells of the retina, just like a magnifying glass can burn and destroy paper. (Using things like binoculars would be even more dangerous.) Tell them that nobody should ever take chances with something as precious as their sight.

Don't get burnt

Most other direct light sources also involve quite intense heat. Only insects like fireflies and glow-worms seem able to produce light without heat. Supervise children carefully when flames are involved. Also, make sure that matches are kept safe and used properly.

Electric shocks

All the usual necessary precautions need to be taken when electrical appliances are being used in the classroom as sources of light. (No damaged cables, no faulty connections, plugs properly wired, and no water near electricity.)

Finally, it is not nice to think of any student getting hurt, burnt or injured, but make sure that you have thought about the possibility that it might happen to you or a colleague, and be prepared to take the proper first aid action.

1 Investigating light and shadow

Start by investigating light and shade for yourself, using pictures from magazines or photographs. Which parts of the picture stand out because they are directly in the light? Where do you see shade or shadows? Can you work out where the light source is coming from? When do we see a silhouette (the dark outline of an object or person)? Try this out for yourself, perhaps with a colleague.

You are now investigating 'cause' and 'effect' with regard to light by considering the evidence you have observed and you are thinking scientifically. You might want to try this investigation with some of your students.

Teaching Example 1 shows how it is important for students to experience the science they are talking about. In **Activity 1**, you encourage your students to think about effects they observe and to recognise patterns when doing experiments with light.

Teaching Example 1

Busiku was going to read her class a story about a child losing their shadow. First, she planned for them to notice their own shadows more consciously. Outside in the morning sun they traced their shadows on large sheets of paper. The shadows were shaded in, carefully cut and proudly

displayed and talked about in the class and at a school assembly.

The popular story of the lost shadow was reread many times. In this story, a child loses their shadow, but finds a way to get it back again. By now, the original shadows were getting a little damaged. 'Yes! Yes!' they clamoured when Busiku suggested they repeat the activity. This time she specifically took them out at noon. They, too, were losing their shadows! The students were confused and worried. Wisely, Busiku chose deliberately to leave them like that.

Over the next few weeks, the class talked about this experience, relating it to other observations. They slowly built up their understanding of what had happened to their shadows.

Activity 1

With your class, discuss the creative game played at night using hands to make shadow images on a wall. Set them a homework task of inventing images that can be made.



They should find out what they must do to make (cause) the shadow picture to be bigger or smaller (effect).

Students must come back tomorrow ready to demonstrate what they have found out.

Set up a way for students to demonstrate their wall shadows in the classroom.

Help them record what they have found out by:

- listing the different images they demonstrate (students do drawings to show the shape of their hands);
- writing down the 'cause and effect' findings.

If nobody mentions it, ask them to investigate what causes the effect that some images are blurred while others are clear?

Finally, use everyday objects (a cup, a comb, scissors, a hammer etc.) to pose problems. The students should only see the image and not the object or how it is held. Hold different objects in a range of positions to cast interesting shadows. Ask your students to work out what the object is and explain why they think this.

2 Reflection

Reflection plays a large role in how we see or perceive light and colour. In fact, without reflection, we would see nothing.

Sources of light

- The sun – major source of light and heat here on Earth.
- Stars – distant suns. We can just see the light of these but don't feel the heat.
- The moon and planets – reflect the light of the sun.
- Lightning flashes during thunderstorms.
- Fire, flames, sparks, heated metals and glowing embers.
- Electric lights.

Colour

- When white light is refracted (bent) by certain transparent surfaces, even raindrops, it is split and reveals the seven colours of the rainbow.
- Coloured things absorb all the other colours but reflect their own colour. So a red car reflects only red light, red glass in a car's brake light transmits only red light.

Light travels

- Nothing travels faster than light.
- Like sound, light travels as waves of energy. We talk of sound waves, but light 'rays' or 'beams' of light.
- Light rays generally travel in straight lines that radiate out from a source.
- We see things because light rays bounce off them (get reflected).
- Darkness is because of an absence of light. If there is no source of light to reflect off things we get blackness and cannot see anything.

What happens to travelling light?

- It passes straight through transparent things (glass, water, clear plastic, etc.).

- It partly passes through translucent things (wax paper, tissue, tinted or frosted glass, mist and clouds, etc.).
- Light is blocked by opaque things – this causes shade and shadows.
- Light is also reflected by opaque things.
- Very shiny surfaces (mirrors, polished metal etc.) reflect a clear image/picture.
- Dull surfaces scatter the light that they reflect.
- When light is neither transmitted or reflected, it is absorbed.
- When all the light is absorbed by anything we see it as black.

Mirror images

- When we look into a mirror, the image we see seems to come from behind the mirror.
- A mirror image turns things otherwise (lateral inversion). That is why we can't easily read a page held up to a mirror.
- Try to shake hands with your own image in a mirror – you will see that as you hold out your right hand, the mirror image 'holds out' its apparent left hand.

In this part, we look at ways you can help your students explore what happens when light is reflected off different surfaces. Your aim should not be to provide them with the 'right' answers, but to give them a range of experiences that make them thoughtful and interested in this topic. In Activity 2, you encourage your students to observe carefully examples of reflection around them. Teaching Example 2 shows how one teacher's work on reflection encouraged some students to become better artists

Teaching Example 2

Mrs Moonga teaches a combined primary class. She had carefully collected and mounted on card good pictures from old magazines for language, literacy and communication work.

When she read the introduction to part one of this section, she realised she could use her pictures again for science. She could see so many different sorts of reflections in the photographs (not only shadows and shade). There was light glistening on the water, reflections in glass windows, the sparkle of shiny objects, as well as the glow on the skin of an apple. She realised that even the glint in someone's eye is in fact a reflection.

First, Mrs Moonga explained to her class some of the facts she knew about light and reflection.

Next, she gave them the pictures to look at and she was surprised at just how much detail they were able to notice. They were much more aware about the effects of light on different surfaces. She was totally amazed when some of the children, more interested than others in drawing, began to experiment with shading and drawing in the reflections on round objects so that their drawings became more realistic.

Activity 2

Mirror game

Start with this game. In pairs, children take turns to act as the mirror image of the other. One student carefully leads, and the other copies (mirrors) the slow deliberate movements. Let students do this for a few minutes.

Discuss the experience. Do they realise that if the leader winks with the left eye, then the follower ('mirror image') winks with the right?

Reversals in reflections

Now use lipstick or eyeliner to mark the cheeks and hands of some students. Write 'L' or 'R' in the palm of each hand and the letters 'AB' on the right cheek and 'OB' on the left. Let them observe what they find when they look at themselves in real mirrors. Discuss their observations.

Are we really two-faced?

Are the two halves of our face exactly the same? Students might enjoy an activity where you look at full-face passport photographs that they or you bring.

Stand a small hand mirror down the midline of the face in the photograph so that the reflected half makes one face with the uncovered half. Now do the same to the opposite side. Isn't it amazing how different the two faces are? That is because our faces are not exactly symmetrical.

Shaking the wrong hand

Try to shake hands with your own image in a large mirror – when you hold out your right hand, it offers you its apparent left hand.

Repeat this, but this time, arrange two mirrors at right angles. Look into the corner and you will see one image of yourself. Offer to shake hands.

What hand does the image in the two mirrors offer this time?

Can you work out why this happens?

Using reflection

Brainstorm uses of mirrors:

- Which devices contain mirrors?
- Where are they useful?
- How could mirrors be useful in a shop to help security?

Scary reflections

Experiment with looking at reflections in curved pieces of metal like spoons and kettles.

- What happens to the reflection?
- What patterns can you notice?

Light and dark

Gather together a collection of different shiny materials and objects. Experiment

with looking at them:

- in normal classroom light;
- in a 'black box' where there is very little light;
- when a torch is shone on them.

Which objects are the shiniest? Can you put them in order of shininess? What happens when you put them in the box? What happens when you shine a torch on them? Can you see any patterns in your observations?

3 Applying science to real life

We try to make sense of our world and then we use what we have found out to help us do things. It is the same with science. Results from investigations can sometimes be used to solve problems we face in life. This is linking science and technology and helps students to understand why it is important to study science.

Activity 3 (read this now) builds on knowledge gained from **Activity 2** to solve a technological problem. How will you assess your students in this activity? After the activity, think about how your students reacted to this way of working – did they work well in groups? Would you do anything differently next time you do this?

In **Teaching Example 3**, a teacher encourages his students to use what they have found out from **Activity 1** to plan and present shadow-puppet plays.

Teaching Example 3

Mr Mapushi projected shadows of mystery objects on a screen when doing Activity 1. Three students stayed behind to investigate and play with the items used. He watched them as he tidied the classroom.

They realised that the scissors or the pliers seemed to 'speak' if you moved the parts.

'Hello, I am Mr Scissor-mouth. I am a very sharp guy!'

'And I am Mr Heavy Hammer and I am going to beat you to death!'

They soon improvised a plot for a short play where Mr Hammer threatens Mr Scissor-mouth. But Mr Scissor-mouth is rescued by Mr Long-handle Pliers! Mr Mapushi gave them a chance to present their shadow-puppet play to the class.

The class became very interested in shadow puppets. Some students made cut-out puppet characters and discovered how to join parts that could move, using thin wire or dry grass-stalks for rods and supports. The way they used what they had learned in science amazed Mr Mapushi. They made the puppets appear larger and smaller, clearer and more blurred, and they were able to create different shapes with the same puppet by holding it at different angles to the screen.

Activity 3

Write this question on the board:

'What is the problem if you are a short person standing near the back of a crowd at a soccer match?'

You can't see! Ask your students how might you solve your problem? What about mirrors? Design something to solve the problem of seeing over something higher than you.

In groups of three/four, students design, make, compare and assess their own device to see around corners or over the top of a high obstacle.

Before they start, students need to discuss the following points in their groups:

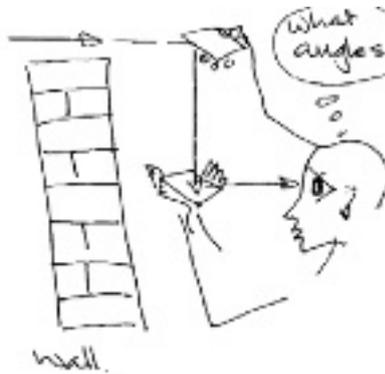
- How many mirrors will you need?
- What angles will the mirrors need to be placed at?
- How will you hold, fix or support the mirrors safely and securely?
- Draw a plan for the device.

Then, before students start building their devices, discuss with them the criteria you will use to evaluate their devices. Draw up a list and display it during the activity.

Periscopes

Start by finding two mirrors.

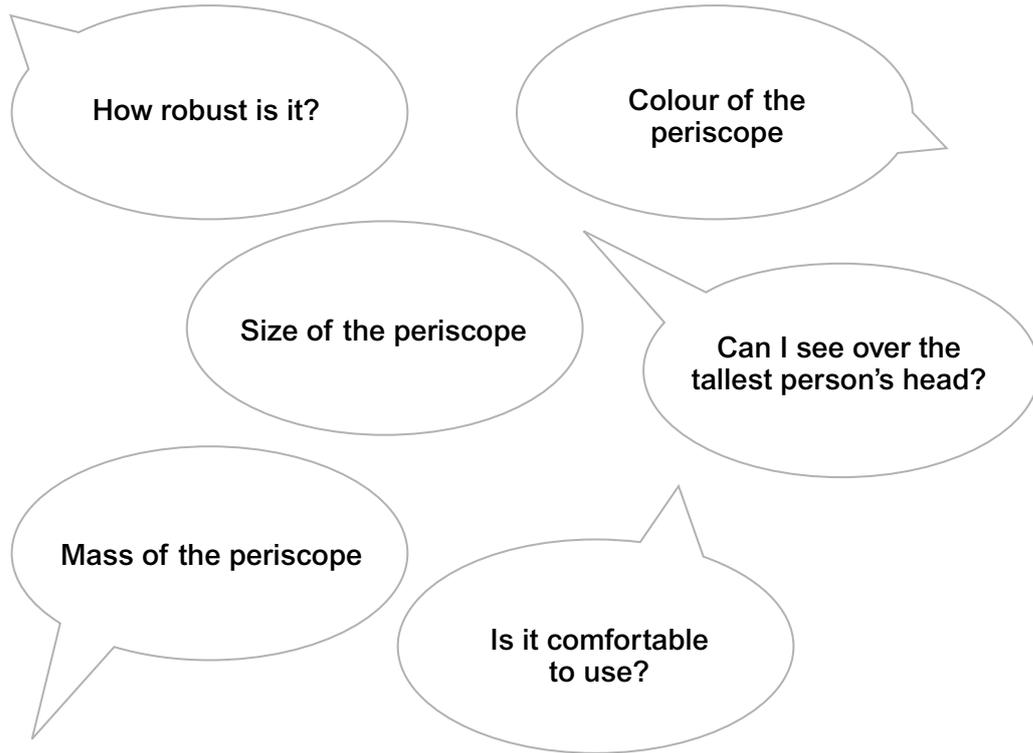
Hold one in each hand and see if you can use them to peer over a wall or see round a corner.



When you have a good image over the wall or round the corner, stop. Look at how the mirrors are arranged – what do you notice about the angles?

Now you can use your observations to build a periscope. The images below give you some ideas of how to do this.

How will you evaluate your periscope? Are any of these criteria useful? Can you think of anymore?



Draw up a table of the criteria you choose and use it to record judgements on everyone's periscope.

Social Studies: Understanding timelines

- 1 Dividing time
- 2 Chronology
- 3 African timelines

Key Question for the teacher:

How can you use timelines and other sources to develop understanding of cause and effect?

Keywords: timelines; historical change; chronology; history; historical sources; debate

Learning Outcomes for the Teacher

By the end of this section, you will have:

- used timelines to represent historical change over time;
- helped students to identify the key events in a particular historical process;
- encouraged students to view history not just as a series of dates to be learned but as a process to be investigated;
- used a variety of sources to help students see that one event may have many causes.

Overview

When developing an understanding of time past and passing, it is important to be able to sequence events into the order in which they happened.

Students often struggle with the concept of time. In this section, you will first help your students to divide time into periods that are more manageable and then, once they are able to do this, think about the order of events and why this is important. (With young students, this might be as simple as helping them order how they do certain tasks, leading on to more complex activities as their understanding grows.) You will then help your students identify the most important events in a particular passage of time. This can lead, with older students, into an analysis of cause and effect, and the understanding that there is usually more than one cause of an event.

1 Dividing time

Investigating a particular period in history, and trying to sequence events in the order in which they happened, will help students begin to see the links between events and some of the possible causes. Understanding the causes of change in our countries and societies may help us to live our lives better.

The purpose of this part is to explore how using timelines in history can be a useful way to divide time into more manageable 'bits', so that we know which 'bit' or period we are dealing with. This is particularly important when we are teaching history, because it is crucial that students understand the idea of change over time.

From an early age, students need help to sort and order events. As they grow and experience life, they can revisit activities like these ones, using more complex sequences and events.

Teaching Example 1

Ms Tetha Rugenza, who teaches history at a small school in Rwanda, wants to show her Grade 4 class how to divide up time into smaller periods. In order to do this, she plans a lesson where she and her students explore how to construct a timeline and divide it into periods.

Ms Rugenza decides to use the example of Rwanda. She draws a timeline on the board of the history of Rwanda. To help students understand the concept of periods, she divides the history of Rwanda into the pre-colonial, the colonial and the independence period. To give a sense of how long each of these periods is, she draws each period to scale.

She writes a list of important events, together with the date on which they took place, on separate pieces of paper and displays these on a table. Each event, she tells the class, falls into a particular period. She asks her students to work out which events fall into which period and in which order, doing a couple of examples herself. She calls out one event at a time and allows a student to come and stick it next to the appropriate place on the timeline. The rest of the class check that it has been put in the correct place. Through discussion, she helps the students if they are not sure where an event should go. She asks them if they can think of any other national events that should be placed on the timeline and adds them as appropriate.

Activity 1

Tell the class that they are going to make a timeline of the school year together.

- Start the lesson by asking your students to write down the most important events that have taken place in school during the year.
- Ask them to give each event a date if they can, or to find this out.
- Ask students to order these events from the beginning to the end of the school year.

- Help students to decide on how big they want their timelines to be and to create a scale accordingly.
- Ask students to mark out each month correctly in terms of their chosen scale and to write down the event dates on the left-hand side of the timeline – starting at the bottom of their timeline with the past, and working up to the present at the top.
- On the right-hand side of the timeline, ask students to write a short description of the appropriate event next to each date.
- Display the timelines for all to see.

(If you do not have enough resources for this to be done individually then it can be done in groups of up to five students.)

Discuss as a whole class whether there are some school events that could happen at any time of the year. Are there some that have to happen at a particular time? Why? (End-of-year exams, for example – why can't they happen at the start of the year?)

2 Chronology

The study of time and the order in which events took place over time is called chronology. This part explores how you can help students understand this sequencing of events, the relationship between the order events happen and the outcomes. In using these activities with students, you will realise the importance this has on their understanding of the past.

Teaching Example 2

Mr Ngenda wants to show his Grade 5 students how chronology affects their understanding of events. He writes the following sentences on the chalkboard:

- A body of a man lies on the floor in the room.
- A man is arrested for murder.
- Two men go into the room.
- A man leaves the room.
- A man screams.

He asks the students to rearrange these sentences into an order that makes sense and to provide a reason for why they think the sentences should go in that particular order. Mr Ngenda uses this exercise to show how important it is to place events in a logical order.

However, he also wants students to begin to see the connections between events, and how one event influences another. He tells the class about the events in Rwanda since independence from Belgian rule to the genocide in April 1994. See the historical events listed in more detail below.



Using some of these events, he and his students construct a timeline on the chalkboard. He cuts these events up into strips and asks his students to put them in date order. He asks his students if they can identify the most important events that changed the course of Rwandan history.

Mr Ngenda is pleased that his students are beginning to see chronology as the first step in explaining why things happen

Some important historical events since independence

1300s – Tutsis migrate into what is now Rwanda, which was already inhabited by the Twa and Hutu peoples.

1600s – Tutsi King Ruganzu Ndori subdues central Rwanda and outlying Hutu areas.

Late 1800s – Tutsi King Kigeri Rwabugiri establishes a unified state with a centralised military structure.

1858 – British explorer Hanning Speke is the first European to visit the area.

1890 – Rwanda becomes part of German East Africa.

1916 – Belgian forces occupy Rwanda.

1923 – Belgium granted League of Nations mandate to govern Ruanda-Urundi, which it ruled indirectly through Tutsi kings.

1946 – Ruanda-Urundi becomes UN trust territory governed by Belgium.

Independence

1957 – Hutus issue manifesto calling for a change in Rwanda's power structure to give them a voice commensurate with their numbers; Hutu political parties formed.

1959 – Tutsi King Kigeri V, together with tens of thousands of Tutsis, forced into exile in Uganda following inter-ethnic violence.

1961 – Rwanda proclaimed a republic.

1962 – Rwanda becomes independent with a Hutu, Gregoire Kayibanda, as president; many Tutsis leave the country.

1963 – Some 20,000 Tutsis killed following an incursion by Tutsi rebels based in Burundi.

1973 – President Gregoire Kayibanda ousted in military coup led by Juvenal Habyarimana.

1978 – New constitution ratified; Habyarimana elected president.

1988 – Some 50,000 Hutu refugees flee to Rwanda from Burundi following ethnic violence there.

1990 – Forces of the rebel, mainly Tutsi, Rwandan Patriotic Front (RPF) invade Rwanda from Uganda.

1991 – New multi-party constitution promulgated.

Genocide

1993 – President Habyarimana signs a power-sharing agreement with the Tutsis in the Tanzanian town of Arusha, ostensibly signalling the end of civil war; UN mission sent to monitor the peace agreement.

1994 April – Habyarimana and the Burundian president are killed after their plane is shot down over Kigali; RPF launches a major offensive; extremist Hutu militia and elements of the Rwandan military begin the systematic massacre of Tutsis. Within 100 days, around 800,000 Tutsis and moderate Hutus are killed; Hutu militias flee to Zaire, taking with them around 2 million Hutu refugees.

Adapted from: BBC NEWS:

http://news.bbc.co.uk/1/hi/world/africa/country_profiles/1070329.stm

Ask students to use the summary of a 'History of Zambia' below to produce a simplified account of 20th-century Zambian history. They should:

- read through the account;
- underline what they think are the important events that took place;
- using the events that they have underlined, create a timeline. Remind them about the importance of listing the events in order;
- mark on their timeline the event they believe is the key event;
- explain below the timeline why they have chosen that particular event as most important. In other words, how did that event cause later events?
- share their answers and, by discussion, agree the key event and then discuss whether or not this key event was the only cause of later events.

History of Zambia

Early history to the 19th century

Some Bantu-speaking peoples (probably including the ancestors of the Tonga) reached the region by c. AD 800, but the ancestors of most of modern Zambia's ethnic groups arrived from present-day Angola and Congo (Kinshasa) between the 16th and 18th centuries. By the late 18th century, traders (including Arabs, Swahili, and other Africans) had penetrated the region from both the Atlantic and Indian Ocean coasts; they exported copper, wax and slaves. In 1835, the Ngoni, a warlike group from South Africa, entered eastern Zambia. At about the same time, the Kololo penetrated western Zambia from the south, and they ruled the Lozi kingdom of Barotseland.

The colonial period

The Scottish explorer David Livingstone first came to the area that is now Zambia in 1851; he visited Victoria Falls in 1855, and in 1873 he died near Lake Bangweulu. In 1890, agents of Cecil Rhodes's British South Africa Company signed treaties with several African leaders, including Lewanika, the Lozi king, and proceeded to administer the region. The area was divided into the protectorates of Northwestern and Northeastern Rhodesia until 1911, when the two were joined to form Northern Rhodesia.

The mining of copper and lead began in the early 1900s. By 1909, the central railroad from Livingstone to Ndola had been completed and about 1,500 Europeans had settled in the country. In 1924, the British took over the administration of the protectorate. In the late 1920s extensive copper deposits were discovered in what soon became known as the Copperbelt, and by the late 1930s, about 4,000 European skilled workers and some 20,000 African labourers were engaged there. The Africans protested the discrimination and ill treatment to which they were subjected by staging strikes in 1935, 1940 and 1956. They were not allowed to form unions but did organise self-help groups that brought together persons of diverse ethnic backgrounds.

In 1946, delegates from these groups met in Lusaka and formed the Federation of African Welfare Societies, the first protectorate-wide African movement; in 1948, this organisation was transformed into the Northern Rhodesia African Congress. In the early 1950s, under the leadership of Harry Nkumbula, it fought strenuously, if unsuccessfully, against the establishment of the Federation of Rhodesia and Nyasaland (1953–63), which combined Northern Rhodesia, Southern Rhodesia (now Zimbabwe), and Nyasaland (now Malawi). The booming copper industry had attracted about 72,000 whites to Northern Rhodesia by 1958, and the blacks there experienced increasing white domination.

Independence and Kaunda

Kenneth Kaunda, a militant former schoolteacher, took over the leadership of the Africans from the more moderate Nkumbula and in 1959 formed a new party, the United National Independence Party (UNIP). Following a massive civil disobedience campaign in 1962, Africans were given a larger voice in the affairs of the protectorate.

On 24 October 1964, Northern Rhodesia became independent as the Republic of Zambia, with Kaunda as its first president; he was re-elected in 1968 and 1973. The main problems faced by Kaunda in the first decade of independence were uniting Zambia's diverse peoples, reducing European control of the economy, and coping with white-dominated Southern Rhodesia (which unilaterally declared its independence as Rhodesia in November 1965).

Adapted from original source: <http://www.onfoplease.com/>

3 African timelines

Timelines can help us compare the similarities and differences in a series of events for different people, or different groups, or different countries.

For example, if your students drew timelines for themselves, there would be some events the same (starting school) and others different (birth of baby brother or sister for example).

Using timelines to compare the history of a variety of African countries during the time of moving to independence can help your students see common themes but also differences between their experiences.

Teaching Example 3

Mrs Banda organised her class to work in groups to make a comparative multiple timeline that helped them to learn about the experiences of their own and other countries' journey towards independence.

For each country that she chose she made a long strip of paper (she did this by sticking A4 pieces of paper together, one piece equalling five years). See the African timelines template.

This would enable the groups, when finished, to place one under another to allow for easy comparison.

With her own books, and books and other materials borrowed from a colleague in a secondary school, the groups carried out their own guided research to find out the major events for each chosen country and then wrote each event in at the correct time on the chart. (For younger classes you could provide the events and dates yourself to help them construct the timeline.) The key events in the move to independence found next to the timeline templates provides examples of some key dates and also suggests websites where further information can be found if necessary.

Mrs Banda made the timeline for 'World events' as an example (World War II, independence for India, first flight in space, the Cold War, Vietnam War, the invention of the Internet, Invasion of Iraq etc.).

She made sure that each 'country' wrote 'Independence' in the appropriate time spot in another colour.

When all the groups had finished, she asked them to line up their timelines one under the other neatly. This enabled easy comparison between the countries.

Activity 3

- Follow the activity carried out in Teaching Example 3.
- When the timelines have been completed, let each group introduce their country and talk through their timeline.
- Prepare a series of questions for the class to answer, for example:
 - What are the major events on the timelines?
 - What similarities can you see between the experiences of different African countries?
 - What are the major differences?
 - Which countries were the first to gain independence and which were the last?
 - Which countries have suffered most from internal wars since independence?
 - What major events are soon to happen (e.g. African countries involvement in the next World Cup)?

(This sort of work can easily be extended. Groups can carry on researching their designated countries to find out more about them: languages spoken; major industries; agriculture; cities and towns etc. They could draw maps of their countries and label them. There are many possibilities.)

African timelines template

Nigeria																				
Date	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000	2005	2010					
Ghana																				
Date	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000	2005	2010					
Sudan																				
Date	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000	2005	2010					
Kenya																				
Date	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000	2005	2010					

Rwanda															
Date	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000	2005	2010

South Africa															
Date	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000	2005	2010

World Events															
Date	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000	2005	2010

Key events in the move to independence

1957	Ghana becomes first independent black state in Africa under Kwame Nkrumah through Gandhi-inspired rallies, boycotts and strikes, forcing the British to transfer power over the former colony of the Gold Coast.
1958	Chinua Achebe (Nigeria): <i>Things Fall Apart</i> , written in 'African English', examines Western civilisation's threat to traditional values and reaches a large, diverse international audience.
1958	All-African People's Conference: Resolution on Imperialism and Colonialism, Accra, 5–13 December 1958
1954 – 1962	French colonies (Francophone Africa) oppose continued French rule despite concessions, though many eager to maintain economic and cultural ties to France – except in Algeria, with a white settler population of 1 million. Bitterly vicious civil war in Algeria ensues until independence is gained in 1962, six years after Morocco and Tunisia had received independence.

1958	White (Dutch-descent) Afrikaners officially gain independence from Great Britain in South Africa.
1964	Nelson Mandela, on trial for sabotage with other ANC leaders before the Pretoria Supreme Court, delivers his eloquent and courageous 'Speech from the Dock' before he is imprisoned for the next 25 years in the notorious South African prison Robben Island.
1960 – 1961	Zaire (formerly Belgian Congo, the richest European colony in Africa) becomes independent from Belgium in 1960. Then, in Elisabethville (now Lubumbashi), 'charismatic nationalist Patrice Lumumba was ... martyred in 1961, with the connivance of the [US] Central Intelligence Agency and a 30-year-old Congolese colonel who would soon become president of the country, Joseph Deséré Mobutu.' (Bill Berkeley, 'Zaire: An African Horror Story', The Atlantic Monthly, August 1993; rpt. Atlantic Online)
1962	Algeria (of Arab and Berber peoples) wins independence from France; over 900,000 white settlers leave the newly independent nation.
1963	Multi-ethnic Kenya (East Africa) declares independence from the British.
1963	Charter of the Organisation of African Unity, 25 May 1963.
mid-60s	Most former European colonies in Africa gain independence and European colonial era effectively ends. However, Western economic and cultural dominance, and African leaders' and parties' corruption intensify the multiple problems facing the new nations.
1965	Rhodesia: Unilateral Declaration of Independence Documents.
1966	Bechuanaland gains independence and becomes Botswana.
1970s	Portugal loses African colonies, including Angola and Mozambique.
1976	Cheikh Anta Diop (Senegal, 1923–1986), one of the great African intellectuals of the 20th century, publishes the influential and controversial book, <i>The African Origin of Civilization</i> , his project to 'identify the distortions [about African history] we have learned and correct them for future generations'.
1980	Zimbabwe (formerly Southern Rhodesia) gains independence from large white settler population after years of hostilities.
1970s – 1980s	Police state of South African white minority rulers hardens to maintain blatantly racist and inequitable system of apartheid, resulting in violence, hostilities, strikes, massacres headlined worldwide.
1986	Nigerian poet/dramatist/writer Wole Soyinka awarded the 1986 Nobel Prize in Literature.
1988	Egyptian novelist and short story writer Nabuib Mahfouz awarded the 1988 Nobel Prize in Literature, the first prizewinning writer with Arabic as his native tongue.
1994	The Hutus massacre up to a million Tutsis in Rwanda; then fearing reprisals from the new Tutsi government, more than a million Hutu refugees fled Rwanda in a panicked mass migration that captured the world's attention.
1996	500,000 of Hutu refugees streamed back into Rwanda to escape fighting in Zaire.

2001	After 38 years in existence, the Organisation for African Unity (OAU: http://www.oau-oua.org/) is replaced by the African Union.
2013	Death of Nelson Rolihlahla Mandela, 5th December 2013

Adapted from original source: <http://www.http://africanhistory.about.com/gi/dynamic/offsite.htm?zi=1/XJ/Ya&sdn=africanhistory&cdn=education&tm>

Timeline – African countries in order of independence

Country	Colonial name	Colonial power	Independence date	First head of state
Ethiopia	establishment as the Kingdom of Aksum		1st century BC	Menelik I
Liberia	Commonwealth of Liberia	American Colonization Society	26 July 1847	Joseph Jenkins Roberts
Libya	Joseph Jenkins Roberts	Italy	24 December 1951	Idris
Egypt	Joseph Jenkins Roberts	Britain	1922/1936/1953	n/a
Sudan	Joseph Jenkins Roberts	Britain	1 January 1956	Ismail al-Azhari
Tunisia	Joseph Jenkins Roberts	France	20 March 1956	Muhammad VIII al-Amin
Morocco	Joseph Jenkins Roberts	France	7 April 1956	Mohammed V
Ghana	Joseph Jenkins Roberts	Britain	6 March 1957	Kwame Nkrumah
Guinea	Joseph Jenkins Roberts	France	2 October 1958	Sékou Touré
Country	Colonial name	Colonial power	Independence date	First head of state
Cameroon	Cameroun	France, Britain	1 January 1960	Ahmadou Ahidjo
Togo	French Togoland	France	27 April 1960	Sylvanus Olympio
Mali	French West Africa	France	20 June 1960	Modibo Keita
Senegal	French West Africa	France	20 June 1960	Léopold Senghor
Madagascar	Malagasy Protectorate	France	26 June 1960	Philibert Tsiranana
DR Congo	Belgian Congo	Belgium	30 June 1960	Patrice Lumumba
Somalia	Italian Somaliland, British Somaliland	Italy, Britain	1 July 1960	Aden Abdullah Osman Daar
Benin	French West Africa	France	1 August 1960	Hubert Maga
Niger	French West Africa	France	3 August 1960	Hamani Diori

Country	Colonial name	Colonial power	Independence date	First head of state
Burkina Faso	French West Africa	France	5 August 1960	Maurice Yaméogo
Côte d'Ivoire	Côte d'Ivoire	France	7 August 1960	Félix Houphouët-Boigny
Chad	French Equatorial Africa	France	11 August 1960	François Tombalbaye
Central African Republic	French Equatorial Africa	France	13 August 1960	David Dacko
Congo	French Equatorial Africa	France	15 August 1960	Fulbert Youlou
Gabon	French Equatorial Africa	France	17 August 1960	Léon M'ba
Nigeria	Nigeria	Britain	1 October 1960	Nnamdi Azikiwe
Mauritania	French West Africa	France	28 November 1960	Moktar Ould Daddah
Sierra Leone	Sierra Leone	Britain	27 April 1961	Milton Margai
Country	Colonial name	Colonial power	Independence date	First head of state
Tanzania	Tanganyika	Britain	9 December 1961	Julius Nyerere
Rwanda	Ruanda-Urundi	Belgium	1 July 1962	Grégoire Kayibanda
Burundi	Ruanda-Urundi	Belgium	1 July 1962	Mwambutsa IV
Algeria	Algeria	France	3 July 1962	Ahmed Ben Bella
Uganda	British East Africa	Britain	9 October 1962	Milton Obote
Kenya	British East Africa	Britain	12 December 1963	Jomo Kenyatta
Malawi	Nyasaland	Britain	6 July 1964	Hastings Kamuzu Banda
Zambia	Northern Rhodesia	Britain	24 October 1964	Kenneth Kaunda
Gambia	Gambia	Britain	18 February 1965	Dawda Kairaba Jawara
Botswana	Bechuanaland	Britain	30 September 1966	Seretse Khama

Adapted from original source: http://en.wikipedia.org/wiki/Decolonization_of_Africa#Timeline

Life Skills: Investigating self-esteem

- 1 Addressing issues of self
- 2 Child abuse
- 3 Community-based learning

Key Question for the teacher:

How can you use stories and other activities to develop and assess students' self-esteem?

Keywords: self-esteem; relationships; group work; community activities; assessment; stories

Learning Outcomes for the Teacher

By the end of this section, you will have:

- Used different activities and ways of grouping students to develop self-esteem;
- Developed your understanding of factors that can influence self-esteem;
- Planned a community-based activity;
- Used ways of assessing learning.

Overview

This section looks at how to introduce students to the nature of different relationships and to help them understand that these relationships can either support or undermine self-esteem. The impact of such relationships on students' education can be significant. As a teacher, you have the responsibility to do your best to provide a supportive learning environment.

The 'African Charter on the Rights and Welfare of the Child' (page 2) states that:

'In all actions concerning the child undertaken by any person or authority the best interests of the child shall be the primary consideration...

...Parties to the present Charter shall ensure, to the maximum extent possible, the survival, protection and development of the child'

This section raises, but in no way covers the complexities of the issues surrounding abusive relationships and inappropriate behaviour. It explores how these can affect students' learning and self-esteem and provides you with a small insight into your roles and responsibilities and the need to seek help from other professionals when you are concerned

Finally, we discuss how you can encourage students to work together and help those who are having difficulty.

1 Addressing issues of self

Self-esteem is a major key to success in life. If you feel good about who you are, you have more confidence to join in with others, to make new friends and face new situations.

As a teacher, you play a crucial role in developing students' self-esteem through the way you interact with them. You need to be sensitive towards students' feelings and emotions, and you need to be careful about what you say and how you speak to them.

It is important to be positive and encouraging, praising them for their hard work and achievements and using kind words wherever possible. Try to catch them being good, rather than looking out for bad behaviour. This does not mean that you do not have to discipline students, but how you do this is crucial if you wish to maintain a positive working relationship with them.

It is always useful to start off a new topic by finding out what your students already know. Ask them for ideas about self-esteem – you may be surprised at the variety of answers they come up with.

Teaching Example 1 and **Activity 1** show how you can use a story in different ways to explore an idea such as self-esteem.

Teaching Example 1

John Nvambo in Nigeria has a good relationship with his 36 Primary 4 students. One day, he noticed that not all of his students were contributing in class anymore. Some were now shy and withdrawn, and didn't ask him questions. He also noticed that this was affecting their grades, so he decided to address the problem.

The next morning, John told the story of three children to help introduce the idea of self-esteem which can be found below.

He then divided the class into three groups, A, B and C, directing each group to list the qualities of a person with either:

- healthy self-esteem;
- low self-esteem; or
- overrated self-esteem.

Next, John organised them into threes, one from each group, to share their ideas before talking together as a class.

They were able to identify the different characteristics, and why they were good or bad for the individuals involved. From this, they were able to talk about how to get a balance of self-esteem by using an activity like the one in **Activity 1**

A story about self-esteem

There were three children who lived in the same village – two boys and one girl. One day, they all started going to school. Because they were the same age, they all attended the same class, but they reacted in very different ways.



The first boy was clever, and started to do very well at school. He could answer many questions and always got good marks. But because of this, he started to think a lot of himself. He didn't want to listen to other people's views. He became arrogant, and thought he knew everything. He was rude to others, and so he started to lose friends.

The second boy found school difficult, and didn't understand some things. But he was afraid to ask the teacher in case he was punished. He fell further and further behind in his studies. Because of this, he thought poorly of himself. He thought his classmates were making fun of him. He felt unwanted and thought he was looked down upon by the teacher, and so never talked in class.

The girl enjoyed going to school from the beginning. She liked making friends, and realised she could learn a lot from them. She had good learning abilities but liked sharing ideas with others. She was good at listening to others. She had a good sense of humour, but learned not to make too much noise. She could ask questions when it was needed, but knew not to demand attention from everyone.

Activity 1

Adapt the story about self-esteem to help you with this activity.

- Divide the class into groups. Call the groups either As or Bs.
- Ask the A groups to help the arrogant boy develop balanced self-esteem.
- Ask the B groups to help the boy with poor self-esteem to develop confidence.
- Monitor group discussions to check that all students are participating.
- After 15 minutes, match each A student with one B student. Ask the pairs to compare ideas and make suggestions for each other.
- After ten minutes, have a class discussion about ideas for helping first the arrogant child and then the timid child.
- Finally, as a class, list the main features of healthy self-esteem and how it helps students to gain from one another.

Did this activity have an impact on the behaviour of your students towards each other?

2 Child abuse

Unfortunately, as some of your students grow up they may encounter an abusive relationship. This type of relationship can influence their social, emotional and physical development for the worse, and it takes more time and effort to help them overcome the damage done.



The concept of 'abuse' here should not be confused with offensive and insulting language. 'Abuse' in this sense occurs when individuals use other people in a wrong and improper way. Relationships of this kind leave a lasting psychological, emotional and physical impact on the abused person. There are several types of 'abuse', such as physical and mental abuse. There are examples of these below, which you should read.

Types of abuse

There are many different forms of abuse – physical, sexual, emotional and psychological. They can take place between adults, between children, or between adults and children.

It is important that your students have some awareness of these forms of abuse, because while they are children they are very vulnerable. They trust adults, and usually do what they say, but they need to know that not everything an adult may do is correct.

Physical abuse involves the beating or hitting of someone. It does not have to be hard or violent, but if physical abuse is regular and frequent it can have a bad effect on a relationship.

Sexual abuse is the improper use of another person for sexual purposes, generally without consent or under physical or psychological pressure. This happens between adults and adults, adults and children, and also between children entering into adulthood. The trauma and psychological damage can be very severe and students may become very aggressive or withdrawn, nervous around adults or engage in inappropriate behaviour with their fellow students.

Emotional and psychological abuse involves treating someone cruelly over a long period, so that it makes them unhappy and depressed. It can involve calling them names or being rude, or just undermining their confidence and belittling their achievements.

There are other examples as well, such as **parental abuse**. This could take the form of a father luring his son into smoking by fixing a cigarette in his mouth and lighting it up for him. Parental abuse could also be in the form of beating a child regularly and violently so as to inflict wounds on them and suppress and control them beyond reason.

There can be **domestic abuse** – poor treatment of wives or housekeepers, no matter how hard they work.

Such abuse causes physical and emotional pain, and can lead to depression and low self-confidence.

As a teacher, your responsibility is to help your students learn. If they are not happy or are being abused, they will not learn. Your role is to protect your students and you may need to involve others who are more expert and can give counselling.

The role of schoolteachers

Schoolteachers are in a position to identify when children are being abused. They have opportunities to get to know individual children well, and thus to notice changes in a child's behaviour or performance, which could be linked to abuse. Children may also disclose their circumstances as part of life skills lessons or other parts of the curriculum.



If a teacher suspects abuse, a useful process to follow is:

- Start gathering information as soon as you suspect child abuse.
- Continue to do so consistently, and document all information gathered.
- Treat all this information as confidential.
- Discuss your suspicions and the information that you have gathered with the head teacher (unless she or he is possibly implicated).
- Ensure confidentiality by opening a separate file for the particular student. This file must be kept in the strong room or safe.
- The head teacher and the teacher must consult the list of criteria for the identification of different types of abuse to verify the information before making any allegations of child abuse. Include in this process professionals who have experience.
- Remain objective at all times and do not allow personal matters, feelings or preconceptions to cloud your judgement.
- Any information to do with child abuse is confidential and must be handled with great discretion.
- The reporting and investigation of child abuse must be done in such a way that the safety of the student is ensured.
- Justice must not be jeopardised, but at the same time the support needed by the student and their family must not be neglected.

Other important things to remember when talking to students are:

- Do not tell a child who discloses abuse that you do not believe them.
- Affirm the child's bravery in making the disclosure.
- Tell the child what you are going to do about what you have been told, and why.
- If possible, tell the child what will happen next.
- Refer the child for counselling if necessary.
- Be prepared to give evidence in court if there is a trial.

There are many organisations across Africa dedicated to the prevention of child abuse, for example the African Network for the Prevention and Protection against Child Abuse and Neglect (ANPPCAN). See <http://www.anppcan.org/> for more information.

Since 1997, the Nigerian Child Welfare Fund has undertaken a number of activities for the protection of children in Nigeria. You can find out about their work at <http://nigerianchildwelfarefund.virtualactivism.net/> if you can access the internet.

Please note: The World Day for Child Abuse is 19 November every year.

The best way you can help is to explore with your students what they understand about correct and incorrect behaviour in relationships. However, you must do this sensitively and carefully.



Teaching Example 2

Sara Nduta, a teacher of Standard 5 in Kibera Community School, Nairobi, brought in the local government welfare officer to talk to her class about child abuse.

The welfare officer began by telling the students that using young people to work in trade and on farms had been a common practice in most parts of Africa. It was a way of bringing up the young ones to learn skills and responsibility, and to be self-reliant.

But with the 'UN Rights of the Child' (see Overview), he said that the government disapproved of using children as street hawkers and farmhands where they were exploited and made to work long hours. It was dangerous to their health, sometimes leading to death. It took children from school and education, and sometimes led them into crime.

The welfare officer said that parents sometimes argue that they need their children to bring in food and money for the family. However, he said that the government regards it as unlawful, as all children have the right to free schooling, and that any community needs to tackle the issue.

Following the talk from the welfare officer, the next day, Sara's class did a role play on child abuse. They demonstrated it first for the whole school, and then for the Parents-Teachers' Association (PTA) committee.

Activity 2

Plan a role play for your class that deals with the issue of child abuse. You need to think carefully about this. It can be a very sensitive issue for young people, so you will need to be careful how you organise such activities.

First, list the different forms of child abuse and their outcomes. Choose which of these you want to focus on in class.

Think how you will introduce these issues to the class. For the role play, decide on the students' different roles. What are the issues for each role?

Plan how many students will be in each group, and how they will prepare and perform their role plays. How will you explain this to them?

Finally, how will you summarise the main points with them after they have performed the role plays? Will you have a discussion? How will you manage it?

3 Community-based learning

It is important that students develop ways to reflect upon how different relationships work so that they can make friends and protect themselves from harm.



One way to do this is to help the students work with the community to address a particular issue. Activities like these bring students together with the community to find common solutions to a community problem. Students learn about relationships through working with others, by:

- sharing information with local experts;
- learning how groups work together;
- learning how to accept and fulfil responsibilities;
- learning how to treat each other properly;
- bringing together different ideas to help solve a problem.

Planning and organising an activity where the students work with other people in the community can be difficult. You need to organise a task that the students can realistically contribute to and you need to choose people who are willing to work with children. You also need to plan with them how the interaction will work – it may need to take place over two or three weeks or longer. It is important that everybody involved – adults and children – knows what is expected of them.

Before starting this section, we suggest reading **Key Resource: Using the local community/environment as a resource.**

Teaching Example 3

Mrs Wanjiku was talking with her Standard 6 students about keeping their surroundings clean. She asked them to think of things in the community that needed cleaning up.

One thing they mentioned was the number of plastic bags in the street. The bags caused problems by blocking water channels. Sometimes, cows and goats would eat them and get sick.

Mrs Wanjiku's class decided to start a community campaign. They spoke to the local environmental officer and he came to help them plan their campaign in class. They also spoke to the market traders' committee and they organised the campaign together.

The environmental officer organised a community event and got some sponsorship from a local NGO working on the environment. The market traders told their customers about it. Having discussed the issues with the environmental officer, Mrs Umar organised her students to:

- design a poster campaign;
- write a drama and a song;
- organise a debate for the event;
- organise a clean-up campaign.

The event was a big success. The market traders displayed the posters on their stalls, explaining the issues to their customers.



One Saturday, the whole school picked up bags in the street and out of the water channels. With help from the market traders and the environmental officer, the village was much cleaner now.

Activity 3

If you are going to organise a community-based activity for your students, plan how you will assess what they have gained from the relationship. Carry out the activity with your class.

Afterwards, ask them to discuss with each other and then write about their activities, explaining:

- what information they used;
- what activities they did and the skills they developed;
- how they interacted with the other people involved, and who did what;
- how they organised their work.

Once they have done this, you should have evidence of the new skills and knowledge they have developed. Encourage them to think about how effective their event was.

Now, ask them what new things they have learned. Ask them to discuss it in groups and then write a list.

Finally, ask them to describe:

- how they plan to use their new skills in the future;
- who they would like to work with next.

Did the students find this activity stimulating? How do you know this? How could you use this kind of activity again?

Guidelines for planning a community-based activity

- Identify a community issue that your students could address. It needs to be relevant to their learning and help the community.
- Identify who from the community they will work with. If possible, these partners will have some experience of working with schoolchildren. They need to be willing to contribute to this activity and to support the students with information and guidance.
- Plan how and when the community members will be involved, and with whom.
- Plan how you will organise the students to do these activities.
- Plan how you will explain the activities to your students.
- Decide how you will observe and guide your students during the different stages.

Now carry out the activity and then think about how successful it was. If you did this again, what would you change?

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