

TESSA

Teacher Education in Sub-Saharan Africa

Teaching Pack No.14

Upper Primary

Section 1	Literacy:	Ways of becoming a critical reader and writer
Section 2	Numeracy:	Teaching transformations
Section 3	Science:	From earth to the stars
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Literacy: Ways of becoming a critical reader and writer

1. Developing skills to become a critical reader
2. Points of view
3. Reading advertisements critically

Key question for the teacher:

How can you develop students' critical thinking skills when reading and writing?

Keywords: critical reading; critical writing; point of view; questioning; assessment

Learning Outcomes for Teachers:

By the end of this section, you will have:

- Used questioning to help your students become critical readers of a range of texts;
- Assisted your students to design and write stories, information texts and letters that 'write back' to the texts they have read critically and so develop thinking skills;
- Used different ways of assessing learning.

Overview

All writers – whether of political speeches, advertisements, newspaper or magazine articles, school or university textbooks, stories for children, or any other kind of text – write from a particular point of view and for particular reasons. It is important to be able to identify the point of view of a writer and to decide whether or not you agree with it.

Thinking about your own experiences and beliefs, and about what you have learned from your studies, can help you to ask critical questions about anything you read. It will help you as a teacher to remember that your students may have different ideas that are just as valid as yours. If you teach your students to ask questions about what they read and to consider different points of view, you will be helping them to become critically informed citizens. You can start this even when they are very young. As you read stories to them, encourage them to discuss what they agree or disagree with.

The three activities in this section are all examples of ways to help your students become critical readers and writers of texts.

1 Developing skills to become a critical reader

When you and your students are reading stories, you can help them to notice who is included in stories and how they are included, and also who is excluded. You can help them to notice how the settings of stories (a school, a village, a town, etc.) are described. You can also help students to understand the attitude or point of view of the writer, to consider whether there could be other points of view and, if so, what these might be.

When you do this with students, you are helping them develop their thinking skills and their skills as critical questioners. You will also learn what students are interested in and what their points of view are. You can use this to plan to meet their needs more.

Teaching Example 1

Mrs Pinkie Motau in Soweto, South Africa, has three boxes of storybooks in her classroom. Sometimes she reads these books to her Grade 4 class and sometimes they read by themselves. The stories are about children and families, about animals or about imaginary creatures such as dragons.

One day, when she was reading a story about a crocodile, Sizwe said he felt sorry for the crocodile because he was always the 'bad' one in the stories. Mrs Motau asked the class whether they agreed. Most agreed that the crocodile was always 'bad'. Some said this was fine because crocodiles are dangerous, but others said this wasn't fair because crocodiles have to look after themselves just like other animals do. This gave Mrs Motau an idea. She asked the class to suggest how the story could be told from the crocodile's point of view. The students were quite puzzled, so she said, 'Imagine that you are the crocodile in this story. What would you like to tell the other animals about yourself?' This question helped students to make suggestions. After some class discussion, Mrs Motau asked students to work in groups of five to write and draw a story in which the crocodile is a 'good' character. By sharing ideas they wrote and illustrated some very imaginative stories.

While Mrs Motau was reading the stories, she thought about what the words and the drawings told her about her students' abilities to imagine a story from the crocodile's point of view. The next day, she read each group's story aloud and showed the illustrations. After reading each story, she told the whole class what she thought the group had achieved and she also asked students to comment on each other's writing and drawing.

Finally, the stories were made into a book for the class library.

Activity 1

- Find a story in which the characters, setting and events are written and illustrated from a particular point of view (e.g. the 'good' animals; the parents of a naughty child).
- Read this story to the class, making sure to show students the illustrations.
- Ask some questions that encourage them to think critically about how the story has been written and illustrated.
- Next, help your students work in pairs to write a letter to the author, in which they explain what they like/do not like about the way the story they have just read is written and illustrated. This could include the plot, the ending, the characters or specific scenes. Write an outline of the letter on the chalkboard and discuss.

Outline of a letter to an author

The author could be a student in your class. If you have shared books with another class, the author could be that class or a student in that class.

Dear

We have just read (title of story) in our class. We thought you might like to know what we think about this story.

Firstly, we like (one or two sentences here). We like this because (students write their reason).

We also like (one or two sentences here). We enjoyed this because (students write their reason).

However, we did not like (one or two sentences here). We did not like this because (students write their reason).

When you write another story we hope you will (students make suggestions).

Yours sincerely

(Name of the class)

What did students achieve in these critical reading and writing lessons?

How do you know this? What evidence do you have?

Did they do anything that surprised you, pleased you or disappointed you?

Is there anything you would do differently if you were teaching these lessons again?

2 Point of view

All stories are told from a particular point of view. Our views as writers and readers may be influenced by whether we are young or old, male or female, belong to a particular political party, practise a particular religion, enjoy particular activities, have good or poor health, are employed or unemployed, etc. It is important for students to learn that stories can be told in different ways to include or exclude different points of view. It is also true in real life that there is more than one way to view an issue and lots of ways to solve problems.

You can help students to learn this by giving them opportunities to tell the same or similar story from different points of view or by modifying the story.

Teaching Example 2

James, one of the students in Mrs Fortunate Mabusu's Standard 6 class, had been badly injured in a car accident and could only walk with crutches. One day, he told Mrs Mabusu that he felt sad because all the stories about boys in their English textbook described how these boys enjoyed doing things that he couldn't do. Mrs Mabusu felt very upset because she had not thought about this. She asked James what he did when he was at home and found out that he was a skilled musician who played both drums and a tin flute. She asked him if he would play his instruments for the class. He was a bit shy about this but finally said he would.

In their next English lesson, Mrs Mabusu told the class that she wanted to give them some ideas for writing a story. She asked James to play some music for them. The students were surprised and delighted by James's skills. Mrs Mabusu asked them to imagine a story in which James, the musician, was the main character. They shared ideas as a whole class and then worked in pairs to begin writing and/or drawing a story.

During the lesson, some students went to James and his partner to ask advice on details for their stories. In the next lesson, the pairs continued their discussion and wrote and drew their individual stories.

While Mrs Mabusu was reading the stories, she realised that there were other students in the class who probably felt 'left out' of the stories in the textbooks and the class storybooks. She started to plan ways of giving recognition to these students, too.

Activity 2

- Use the same story as in **Activity 1** or another one you have selected.
- Read it with students and discuss how it could be told in a different way. For example, new characters could be added or some existing characters could behave in different ways. In a family story, a father could stay at home and cook while the mother works at a garage. The family could include a child or adult with a physical or mental disability.



- Ask students to work in small groups to write and/or draw different versions of the story you have just read with them. Move round the class, noticing what students are enjoying. If any group is having problems, give suggestions.
- When the groups have finished, ask one student from each group to read the new story to the class and to show the drawings. Collect the stories for assessment.
- You could 'publish' the stories in a book for the class library or display them in the classroom.

What do the stories tell you about students' ideas and about their stages of writing development?

3 Reading advertisements critically

Advertisements on billboards, radio, television and computer screens, in newspapers and magazines, at the supermarket or in 'junk mail' in our letter boxes, try to get us to act in particular ways – usually to spend money. It is important for you and your students to understand how advertisements try to do this by reading them critically in order to appreciate how clever some advertisements can be.

Students' responses to the **Activity 3** below will show you whether or not they have begun to understand how to read advertisements critically.

Teaching Example 3

When Mrs Stella Mapuga participated in a teacher development programme, she was fascinated by the programme's critical literacy activities. She and her colleagues compared advertisements for the same product in magazines for different readerships (younger or older, or from different 'racial' or socio-economic groups). They discovered that the pictures and words used to advertise a product were different in different magazines and that some products were advertised in only one of the magazines. The teachers looked at the language used by the advertisers. They also looked at photographs or drawings in advertisements. A friend of Stella's complained that all the women were young and had perfect figures! Finally, they discussed how the advertisers combined words and pictures on the page and what they (the teachers) noticed first when they looked at the advertisements.

When their lecturer asked what they had learned, the teachers said they would look at advertisements much more critically in future. They had learned that designers of advertisements choose words and pictures to encourage readers to buy the product. These designers also choose different sizes of words and pictures and place them on the page in ways that encourage readers to notice some words or pictures more than others. Some teachers said they looked forward to showing their students how advertisements try to persuade readers to take some action – very often the action of buying – and encouraging them to be selective.

Activity 3

Prepare for this activity and introduce it to students by following the steps in the box that follows titled: 'Critical reading of advertisements'. You need to collect together advertisements or write out some that you have seen in the local shop or market.

Give the advertisements to the groups and ask them to discuss the following questions:

1. What is being advertised?
2. Who do the advertisers hope will buy this product or service?
3. How do they try to 'sell' the product or service? Refer to the list on the chalkboard for ideas.
4. Who is being left out and being excluded of this advertisement?
5. What questions would you like to ask the advertisers?

After 15 minutes or so, ask a few groups to feed back their answers.

For homework, ask students to find an advertisement, place it in their exercise books and write answers to the same questions (1–5) about it.

After you have assessed their homework, plan and teach another lesson in which students design and make their own advertisements. See the information on designing advertisements for suggestions about how to do the assessment and planning.

Critical reading of advertisements

This list below is directed at reading advertisements more critically but can be adapted to be used to read other kinds of texts like poetry, pictures or letters from people with an interest in the school e.g. district education office.

The criteria and questions you ask might be adapted because of this to suit the context more but will still help students read for deeper meaning.

- Collect or write out enough advertisements from magazines, newspapers, supermarket flyers, local markets etc. for each group of four students in your class to have at least one example to work with.
- Before giving these to the groups, ask students to talk to a partner about what it means to advertise something and how they would advertise their school to families who might wish to enrol their children at the school.
- Ask a few students to tell the whole class what they have discussed. Then ask students to suggest what advertisers do to make their product attractive to customers.
- Write their suggestions on the chalkboard.

Adapted from: Focus on English, Grade 10

Designing advertisements

Assessment of students' responses to questions about advertisement

Use these questions to respond to each student's work:

1. Is there evidence that the student understood the task? For example, the student has/has not chosen an advertisement; the student has/has not attempted to answer the questions.
2. Which question(s) has the student answered most successfully?
What is the evidence that the answer(s) is/are successful?
3. Which question(s) has the student answered inadequately or incorrectly?
What is missing from the answer(s) or what is incorrect in the answer(s)?

The follow-up lesson

- Return students' homework and make some general comments on what they did well and where they can improve
- Ask students to work in the same groups as in the lesson on answering questions
- Give each group a large sheet of paper and, if possible, some coloured crayons or paint and brushes.
- Ask them to imagine a new product (e.g. a new kind of food, vehicle, household appliance, item of clothing) and to plan how they would draw and write an advertisement for it. They should think about the questions they answered in the previous activity.
- Tell them to design and make an advertisement for this new product.

This activity may take more than one lesson. When the groups have completed their advertisements, display them and have a discussion about what the students think is well done and what could be improved in each one. (When you assess these group advertisements, look for evidence of creativity/imagination, ability to combine words and images in interesting ways and ability to persuade a reader to buy the product).

Numeracy: Teaching transformations

1 Planning a lesson in geometry

2 Investigating translations

3 Reflections

Key question for the teacher:

How can you develop confident mental modelling in Geometry?

Keywords: congruence; translation; reflection; transformation; multi-grade; differentiation; practical.

Learning Outcomes for Teachers:

By the end of this section, you will have:

- Introduced students to transformation, congruence; translation and reflection;
- Used cut-out shapes as a means to develop the mental transformation of geometric shapes;
- Considered the challenges of differentiating this work for older and younger students, and tries some different approaches

Overview

In our daily lives we see many examples of shapes that have been modified (changed) or transformed.

This section will help you develop your own subject knowledge about geometry and transformation, as well as your skills in developing your students' understanding. Most of the resources in this section, therefore, are to support your subject knowledge as a teacher of mathematics.

1 Planning a lesson in Geometry

In Geometry, 'transformation' means altering some geometric property of a shape, (such as rotating it or moving its position on the page) while keeping other properties of the shape the same (we say the shapes are 'congruent').

An excellent way for students to model transformation is by using physical objects or looking at shapes in everyday life and how they are transformed e.g. in fabric patterns. While students are doing this, encourage them to talk with you and each other about what they are doing. Talking about how they are trying to manipulate the objects will improve their understanding of Geometry and the language associated with it.

Teaching Example 1

Mrs Ogola, a teacher in a primary school in Masindi, Uganda, was discussing her experience in teaching Geometry to her students with a senior associate, Mrs Mwanga. She found that students do not like this topic. Her students complained that Geometry is very abstract, requiring much imagination. Apart from that, it bears little or no relation to real life. Therefore, she herself was not always enthusiastic about teaching it.

Mrs Mwanga admitted to similar experiences, but encouraged her to try using a practical investigative approach and to encourage her students to talk about what they were doing. Together they planned a lesson in which students would carry out step-by-step activities using samples of fabrics with patterns that contain translations and variations of shapes. This can lead to students discovering the concepts to be learned themselves.

Mrs Mwanga and Mrs Ogola both taught the lesson to their classes and then met afterwards to discuss how it went. Mrs Ogola was surprised at the level of her students' thinking and how much they wanted to talk about what they were doing. Mrs Mwanga agreed that allowing students to talk about their work not only excited them, but also gave them confidence in their ability to do mathematics.

Activity 1

To complete this activity, you will need a piece of cardboard and a pencil and ruler for each pair or small group of students, and several pairs of scissors.

- Ask your students to draw three different straight-sided shapes on their card and then cut out their shapes. They should number each of their cardboard shapes 1, 2 or 3.
- Next, on a separate piece of paper, ask your students to draw around each shape; then move the shapes any way they like without overlapping what they have already drawn, and draw round them again. Repeat this until the page is full of shapes, then label inside each outline with a letter (e.g. a, b, c...). (The finished work should be similar to the congruent shapes below.)

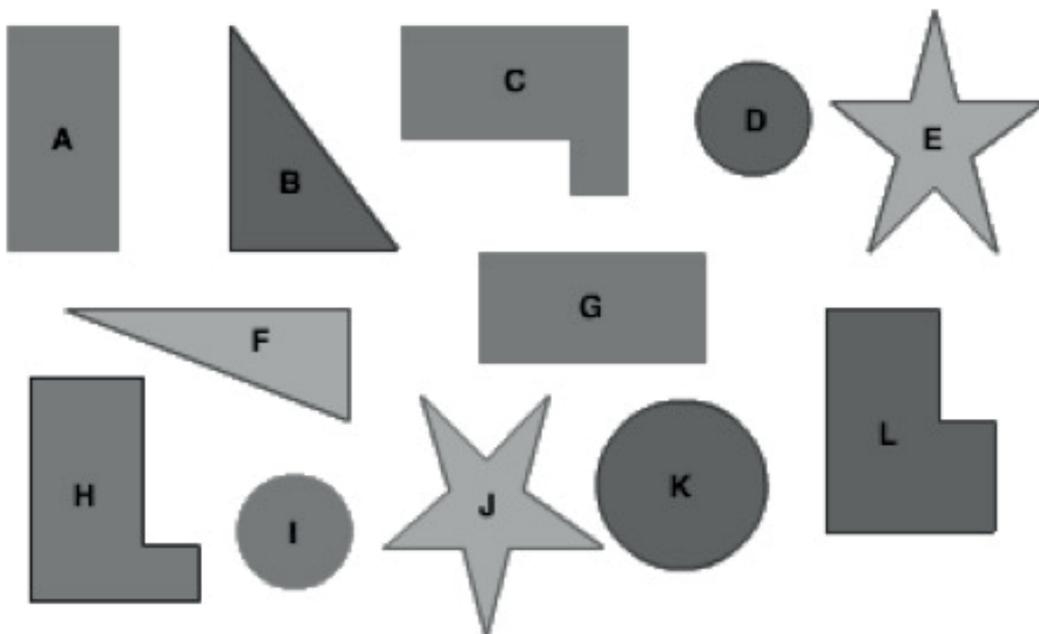
Examples of congruent shapes

If two shapes are congruent, they are identical in both shape and size.



Question

Which of the following shapes are congruent?



Answers:

- A and G
- D and I
- E and J
- C and H

Remember that shapes can be congruent even if one of them has been rotated (as in A and G) or reflected (as in C and H).

Original Source: <http://www.bbc.co.uk/schools/>

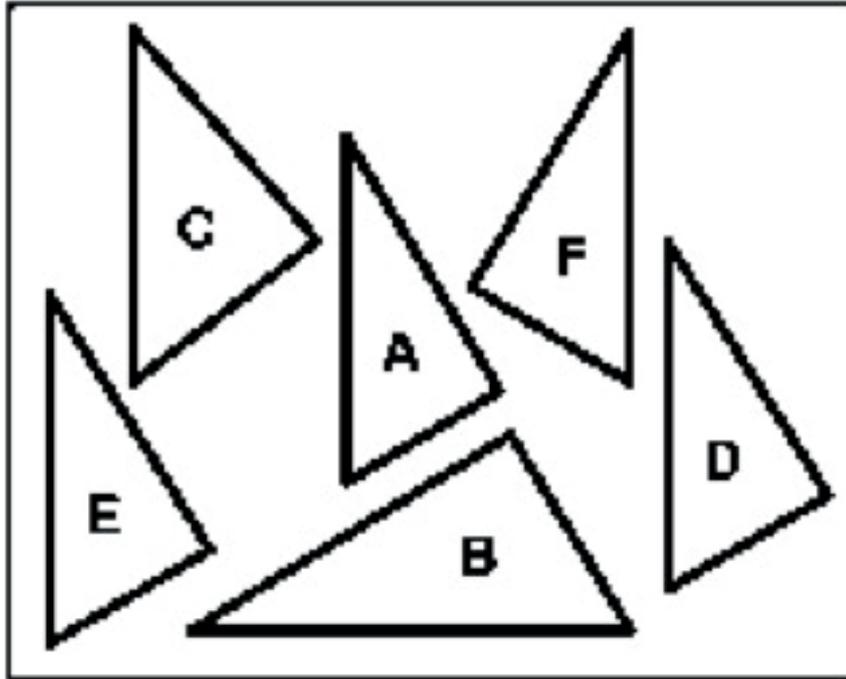
- Ask students to swap their work with another group. Can they find the outlines that were made with the same shape? (Younger children might need to use the cardboard shapes to help them.) Ask them to write down what they think is the answer – e.g. shape 1, outlines a, b, d, g.
- Using the cut-out shape, can they show you what has to happen in moving from one outline to another? Can they describe this in their own words?

Early finishers can colour in their work, using one colour for outlines from the same shape. You could display these on the classroom walls, headed 'Congruent shapes'.

2 Investigating translations

One of the simplest transformations is translation. To translate a shape, we simply move its position on the page, up or down, left or right, but do not change the shape in any other way. See the example of translations below.

Which of the following shapes are translations of triangle A?



Answer: D and E are translations of triangle A.

Original Source: <http://www.bbc.co.uk/schools>

Because translating a shape is simple, even very young students can grasp the idea, especially if they have physical shapes to manipulate. For older students, the activity can be made more challenging by using x-y coordinates and calculation, rather than manipulating physical shapes.

Teaching Example 2 and **Activity 2** look at translation and how to differentiate tasks according to age and stage.

Teaching Example 2

Mrs Kiboa teaches a multigrade class in which she has a group of older children who are doing well at mathematics. Feeling their current work had not been stretching them enough, Mrs Kiboa took an opportunity to let them enjoy a real challenge. (For more information on teaching multigrade classes, see the additional resource on **Working with large and/or multigrade classes**.)

Mrs Kiboa had already introduced x-y coordinates to the whole class. One day, while most of the class were working on a triangle translation activity using cut-out shapes, Mrs Kiboa gave these four students extra support.

Drawing a triangle with labelled x-y axes on some grid paper, she asked the students what the coordinates of the three corners (vertices) were – they answered easily, and wrote their answers down. Next, she asked them, ‘What would happen if I were to move the shape six spaces to the right? What would the new x-y coordinates be?’ When they had answered correctly, she went on: ‘And if I moved the shape 3 spaces down?’ Mrs Kiboa went on in this fashion until she felt the students clearly understood what was happening.

Next, she said to them, ‘Now, each of you set one another a problem – give coordinates for a triangle, and a translation to apply to the triangle. Write this down, then draw the triangle you have been set, calculate the translated coordinates, and draw the new position. If you do this correctly, you may then try shapes other than triangles to test each other with.’

The students enjoyed the respect of their teacher, as well as the opportunity to work more freely and to challenge each other mathematically.

Activity 2

Make sure students understand how to give x-y coordinates, through whole-class teaching. To differentiate the task for older or younger students, see the notes on differentiation in the ‘Translating and reflecting triangles’ section.

- Ask students to draw and cut out a triangle, square and rectangle from a piece of squared paper: emphasise that each corner (or vertex) of their shapes should be at one of the ‘crosses’ on their grid paper by drawing an example on the board. No side should be more than 10 squares long.
- On a second piece of grid paper, ask students to draw and label x-y axes at least 20 squares long as shown in ‘Translating and reflecting triangles’.
- Putting one of their cut-out shapes on the paper so that its corners are on the ‘crosses’ of the grid, they should mark the vertices (a, b, c & d as appropriate), then draw the shape and write down the coordinates of each vertex.
- Ask them to move their shape to a new position (keeping it the same way up) and repeat this process.
- Ask your students: ‘What happens to the x coordinates between the two positions? Does the same thing happen to each coordinate? What happens to the y coordinates?’

**What parts of this activity caused difficulty for your students?
How will you support them next time?**

Translation is relatively simple, because it affects the coordinates of all vertices in the same way (for example, all x coordinates will increase or decrease by the same amount).

3 Reflection

Reflection is more mathematically complex, because you must treat each coordinate separately and in relation to another item – the location of the mirror line. Reflection therefore requires students to hold quite a number of different ideas in their minds at the same time.

Think about what familiar examples of reflection you might be able to use to help your students with this topic – perhaps some work you may have done on symmetry or patterns and designs in art using local traditional ideas. Consider how students could use cut-out shapes as they develop the ability to manipulate such shapes mentally.

In addition, this part suggests you continue to encourage students to discuss their thinking – an important key in unlocking their understanding of mathematics.

Teaching Example 3

Mrs Nkony, an experienced teacher in a primary school in Kilimanjaro, has taught the basics of reflection to her class. She now decides to help them discuss their activity and their findings.

She knows that discussion is not merely answering short, closed questions, so she decides to set up a structure to help discussion among her students. She arranges them into pairs. They are asked to look at each other's work, and make three observations about reflection that they will report back. For each observation, they must both be happy that they have found a way to describe or explain it as clearly as they can. When both members of the pair are in agreement that they have three clear observations, they are to put their hands up.

Mrs Nkony then puts the pairs together to make fours, asking each pair to explain their observations to the other. She then asks the fours to decide on the three best or most interesting observations to feed back to the class.

She realises that she could use this way of working in lessons other than mathematics. To find out what your students know and can do see the **additional resource on Assessing Learning**.

Activity 3

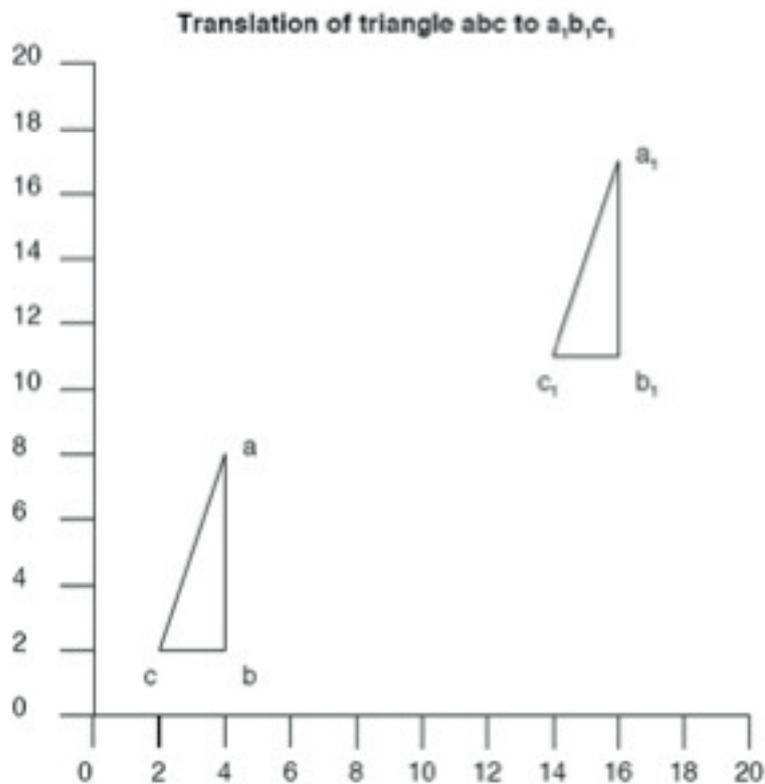
For this activity, your students could reuse the shapes they cut out of grid paper in Activity 2, or make some more if necessary.



- On a second piece of grid paper, ask students to draw and label x-y axes at least 20 squares long, as shown in the graph below.
- Putting one of their cut-out shapes on the paper so that its corners are on the 'crosses' of the grid, they should mark the vertices (a, b, c & d as appropriate) then draw the shape and write down the coordinates of each vertex (corner).
- Ask students to draw a vertical or horizontal mirror line on their grid. They should then draw the reflection of the shape on the other side of the mirror line (remind students that they may use the cut-out shape if it helps them) and write down the coordinates of the reflection.
- Challenge your students to work out the reflection coordinates without using the cut-out shape. Ask them to explain how they did it. Practise using lots of shapes so that students become confident.

How well did you introduce and explain this work? How do you know this?

Translating and reflecting triangles



x-y coordinates always give the 'x' (horizontal axis) value before the 'y' (vertical axis) value.

So, in the illustration, the x-y coordinates for abc:

$$a = 4, 8$$

$$b = 4, 2$$

$$c = 2, 2$$

The translation to $a_1b_1c_1$ increases the value of x by 12, and y by 9. So:

$$a_1 = 16, 17$$

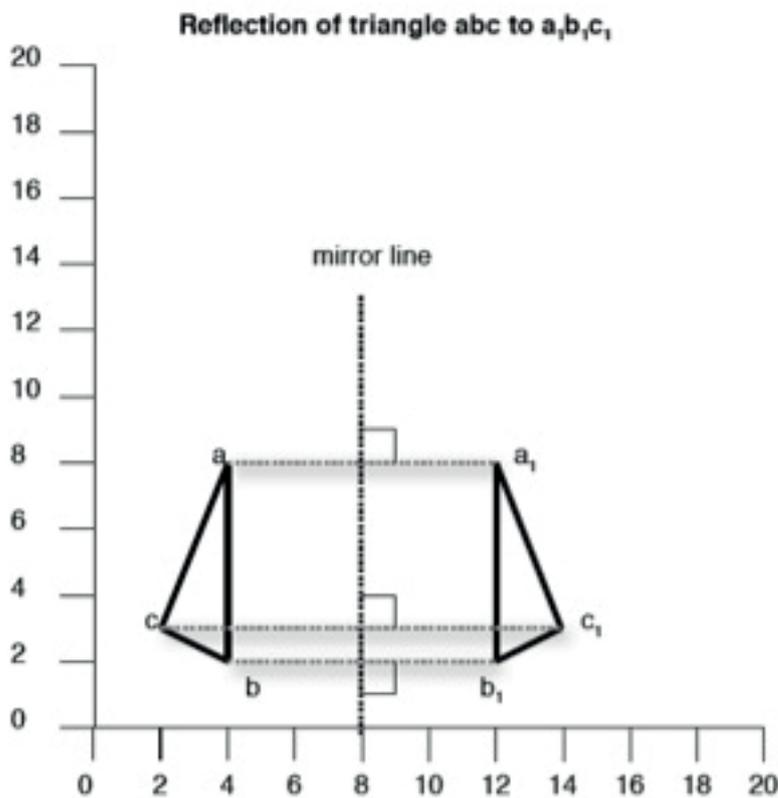
$$b_1 = 16, 11$$

$$c_1 = 14, 11$$

Differentiation

This can be made simple, by moving a cut-out shape around the grid, drawing around it and recording the new coordinates.

This can be made more challenging by giving coordinates for a shape and asking students to draw the shape. Then say how a translation affects the x - y values, and ask them to work out the new coordinates and redraw the position of the shape.



In the illustration, the x - y coordinates for abc are:

$$a = 4, 8$$

$$b = 4, 2$$

$$c = 2, 3$$

Reflecting abc in a vertical 'mirror line' ($x=8$) gives an image ($a_1b_1c_1$) at new coordinates:

$$a_1 = 12, 8$$

$$b_1 = 12, 2$$

$$c_1 = 14, 3$$

Note

The object and its image are always at the same perpendicular distance (distance measured at right angles) from the mirror line, e.g. if 'a' is 4 squares from the mirror line, 'a₁' must also be 4 squares from the mirror line.

Compare the x-y coordinates of abc and a₁b₁c₁ and observe that a vertical mirror line leaves the y coordinates unchanged.

Similarly, a horizontal mirror line would leave the x coordinates unchanged.

Original Source: <http://www.bbc.co.uk/schools>

Science: From Earth to the stars

1. Night and Day
2. The Moon
3. Modelling the solar system

Key question for the teacher:

How can you use models to help students develop their understanding of the universe?

Keywords: models; storytelling; stimulation; sun; moon; solar system

Learning Outcomes for Teachers:

By the end of this section, you will have:

- Used different models to help students develop their understanding of the Earth in space;
- Used brainstorming, observation and model building to explore students own ideas about the universe;
- Explored storytelling as a way of encouraging students in the study of space.

Overview

What is meant by a year? What shape is the Earth? What do we mean by 'the sun rising'?

Helping students understand how their home, the Earth, fits into the wider environment of our solar system is not easy because hands-on experiences and visits are not possible. But we can use models to help our students understand the key scientific ideas.

This section aims to develop your skills in using models to explore night and day, the phases of the moon and our solar system. These teaching models include physical models (built out of everyday materials), diagrams and computer simulations to help your students understand the relative sizes, positions and movements of bodies in our solar system.

1 Night and Day

Students have their own ideas about the difference between night and day based on their experiences. These ideas do not always agree with the scientific understanding. For example, in everyday life, we talk about the sun rising or setting, which implies that it is the sun that moves and not the Earth. However, by using a simple model, it is possible to challenge and extend students' ideas and help them answer the question: 'Why do we have night and day?'



Activity 1 provides a simple way of modelling night and day and **Teaching Example 1** explores further ideas. You might like to try the activity with your colleagues first, before trying it with students. This will test your understanding and help you decide the best way to use the model in your classroom.

Teaching Example 1

Mrs Abdul, who works with Grade 6 students in a small rural school in Republic of the Sudan was exploring her students' ideas about night and day. For homework, she asked them to note down the answers they got when they asked friends, carers and other community members the following questions:

- Why does it get dark?
- How does night and day happen?
- How could you show this to others?

The next day, students reported back what they had found out.

Mrs Abdul showed them her way of modelling day and night. She used a candle as the sun and asked several students, in turn, to come up and be the Earth and turn round slowly. As they turned, she asked them when they could see the candle. Next, as they turned a second time, she asked them which was day and night and when was it dawn and sunset.

They talked about their ways of showing night and day and compared these with Mrs Abdul's day and night model and discussed how much their ideas matched.

Mrs Abdul was surprised at the number of questions the students asked about night and day, but also how the model helped them to understand what was happening.

Activity 1

Working with the whole class, ask them to tell you what they know about how night and day happens. Accept and record each different idea and alongside each suggestion put the name of the person who suggested it. Once all the ideas are listed, ask the rest of the class to show, by raising their hands, which idea they support and put the number by the side.

Using the information below to help you, model day and night for the class.

Modelling night and day

Why do we get night and day?

You can use a simple model to help you find out the answer to this question.

You will need:

- a large ball to show the Earth
- a torch to show the sun



Investigate

- Use the ball and torch to investigate why we get night and day – see below.
- Explain how your model shows the difference between night and day.

Ask students to talk with their neighbour about how they would now explain night and day, and record their ideas.

To assess their understanding, use day and night questions found below.

You might read out the questions or ask one student in each pair to read out the questions to their partner. Ask students to record their answers and then share the answers with them at the end.

I know it is true	1
I think it is true	2
I am not sure	3
I think it is wrong	4
I know it is wrong	5

What do you think about the statements below?

Score each one according to the following scale. Then discuss your scoring with others.

1. At night, the moon blocks out the sun. (False)
2. The sun revolves around the Earth every 24 hours to give day and night. (False)
3. The atmosphere blocks the sun at night. (False)
4. At night, the planets get in the way of the sun. (False)
5. One half of the Earth has day, while the other half has night. (True)
6. The day and night cycle has something to do with the movement of the Earth. (True)
7. The Earth moves around the sun every 24 hours to give day and night. (False)
8. When we are facing the sun it is day and when we are facing away from the sun it is night. (True)
9. It is dark at night because clouds cover the sun. (False)
10. The Earth spins round once every 24 hours to give day and night. (True)
11. The moon is in a part of the sky where it is always night. (False)
12. The Earth turns around an imaginary line from the North to the South Pole once every day. (True)
13. The Earth spins on a line through the equator once every day. (False)
14. At night, the Earth turns to face the moon. (False)

2 The Moon

People sometimes refer to the moon when writing or speaking: they use expressions like ‘once in a blue moon’, ‘moonstruck’ and ‘harvest moon’. What expressions do you know that use the word ‘moon’? What expressions do your students know? You might make links with literacy work here.

In **Activity 2**, your students observe in detail the shape of the moon over several weeks. You then build on these observations by using everyday objects to model the changes in the moon shape. This will help students to understand the pattern in the phases of the moon. Try the model part of the activity yourself before using it with the class.

Using traditional tales about the sun and moon is another way to stimulate students’ interest. You could use your own traditional tale instead of the one used in **Teaching Example 2**.

Teaching Example 2

Mr Lowassa decided to read a story to his Standard 2 class about the sun and moon to stimulate their interest before studying the moon as a science topic. He used the Sun, Moon and Water story, which talks about the sun and moon as being man and wife and living on Earth. His class enjoyed the story, especially as Mr Lowassa read it in a lively way, using different voices for the characters.

Sun, Moon and Water

Long ago, before humans first walked on the earth, the Sun and Moon lived together in Africa as man and wife.

The Sun’s greatest friend was Water, and he said to Water one day: “Here I am, visiting you again and yet not once have you ever visited me.”

“Ah” gurgled the Water, “I should love to visit you and to meet your lovely wife the Moon. But I’m afraid your house is too small for me and all those who come with me, as part of me, wherever I flow. You know the shellfish, the starfish and butterfly fish, the mackerel, the sharp-toothed shark and the mighty whale. Build yourself a huge kraal and I will visit you with pleasure, again and again.”

“That’s just what I’ll do,” said the Sun. And he set to work immediately and built a great collection of huts surrounded by a fence, a kraal that stretched out in all directions as far as the eye could see.

When the vast kraal was completed, the Sun sent his invitation to the Water. Soon he and his wife, the Moon, could see the Water coming. Miles away they could see him flowing in across the plains, making his way amongst the trees and hills until, at least, he swirled in about their ankles. “Here I am, dear Sun, so pleased to be here and to be meeting your wife. What a big and beautiful place you’ve built for me to visit you.”

Even as he spoke the Sun and Moon were knee-deep in the Water sparkling with fishes big and small. “Are you sure you’ve got room for us all?” bubbled the Water. “We’re not all here yet.”

“Certainly”, smiled the Sun. “Without a doubt,” beamed the Moon.

But as they said this Sun and Moon were perched on the highest part of their roof while the flying fishes flashed past them in the air.

“Are you sure you’ve got room for us all? gargled the Water, his voice almost lost as the whales crashed and blew. He could not have heard the Moon as she whispered fearfully, “I believe you’re filling our kraal to overflowing.”

“Nonsense” shouted the Sun, “There’s room for everyone.”

But there wasn’t. The Water was already lapping over the top of the roof and, to escape, the Sun and the Moon had to make a mighty leap high into the sky. Their leap carried them so far, that from the earth, the Sun looked no bigger than a small plum. And as they leapt up, the Moon said to the Sun, “I told you he was filling our kraal to overflowing!” These were the last words the Moon ever spoke on earth.

Original source: Nevin T (1995), Fire’s Wild Dan

After discussing the story, Mr Lowassa asked his class to tell him what the moon looks like in the sky. (He reminded the students never to look straight at the sun as it could damage their eyes.)

He drew their ideas and then showed them a model he had made of the phases of the moon to help them understand why the moon has different phases.

Activity 2

Ask your class, if they can, to look at the moon in the evening when they go home and pay particular attention to its shape. The next day, ask students to draw the shape of the moon. Ask them if the moon is always this shape. If not, why not? If not, what other shapes does it take? Are they always the same? Is there a pattern to the shapes?

Set up a rota of students to look at the moon each night over several weeks and record its shape on the chart you have prepared for this task.

After a month, ask students to discuss and answer the following questions:

- How does the moon’s shape change in a week?
- How would you describe the shape(s) of the moon?
- Why does the shape change?

Next, help the students develop their understanding by modelling the phases of the moon using balls or mud to see how the moon appears to change shape. The background information below gives you further information on the moon.

Background information for the teacher

The moon is a spherical body that is illuminated by the sun and reflects some of its light. But how is the moon placed in relation to the sun and the Earth, and how does it move?

We know that:

- the moon is visible at different times during the day and/or night;
- the time at which the moon is visible is closely related to the shape and size of its bright part (phases);
- the moon is much less bright than the sun and emits a negligible amount of heat;
- the complete cycle of lunar phases has a period of about 29.5 solar days;
- the moon is visible, albeit at different times, for some part of each solar day (provided that it is not hidden by clouds);
- the moon shows the same face to the Earth at all times;
- the moon is always of the same apparent size;
- the apparent size of the moon is about the same as that of the sun;
- eclipses of the moon occur relatively rarely (no more than twice a year).

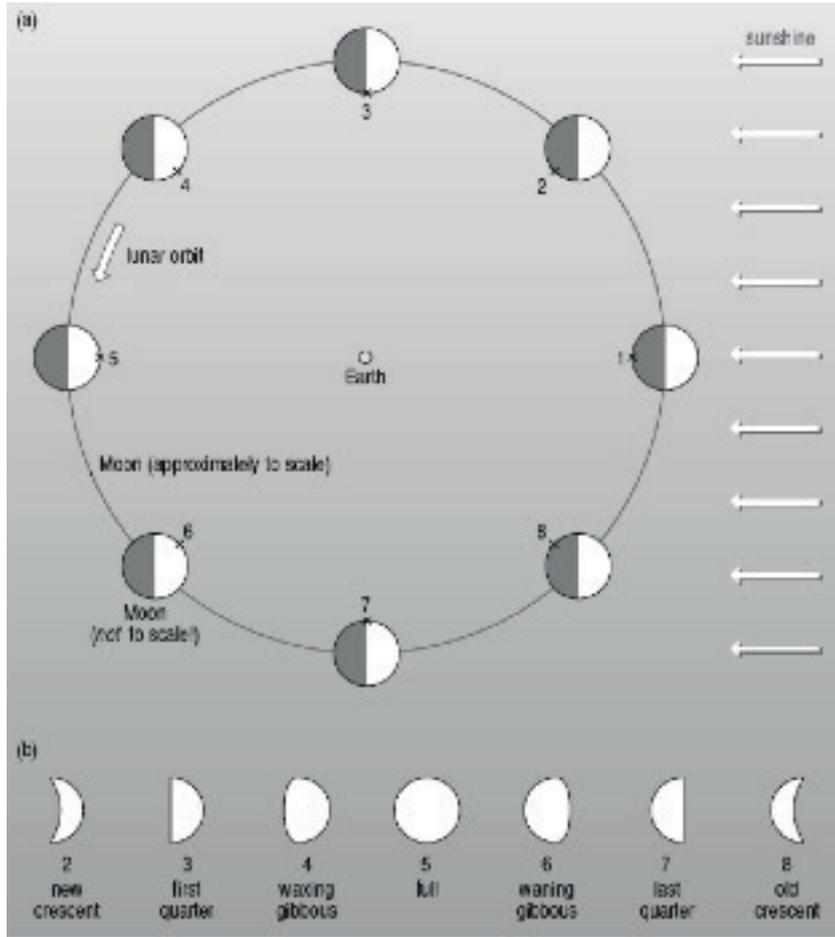
Commentary

The diagram on the next page will help you to make sense of how the moon moves around the Earth. It shows how we only see different-sized bits of the moon at different stages in its orbit. It shows how the phases of the moon arise from its orbit around the Earth. The time between occurrences of the same phase (e.g. full) is, on average, 29.5 days.

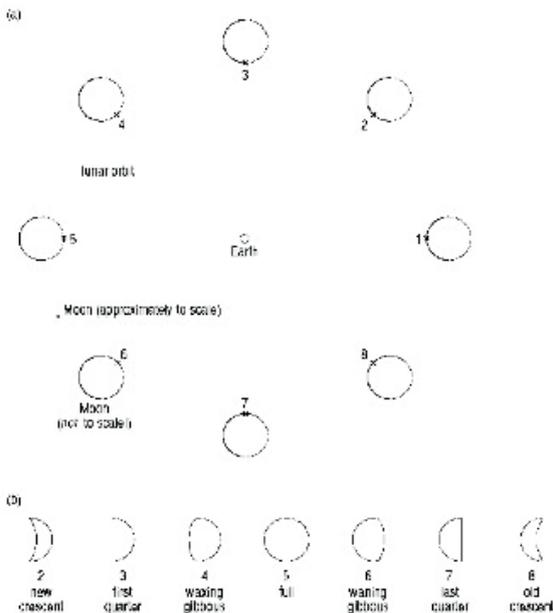
You will see that the moon always presents the same face to the Earth: the moon rotates on its axis in the same time that it orbits the Earth, and in the same direction. Moreover, whenever you see a full moon, everyone else on the same side of the Earth will also see a full moon. This applies to a new moon and to every other phase of the moon as well.

Please note: You will need to reverse the sequence in the diagram for the southern hemisphere.





Person on earth sees everything inside the circle
Moon number 1 = New Moon



Part of the moon illuminated by the Sun



Part of the moon in darknes

3 Modelling the solar system

People have always been fascinated by space. Most students are interested in space, and the night sky is their first realisation that there is more beyond our world.

Exploring the solar system cannot be done through school visits. But by using books, telescopes, computers, the Internet and models, you can show the vastness and detail of the solar system to your students. The size is something students find hard to grasp, but making a scale model of the solar system will help.

In **Teaching Example 3**, a teacher uses a simulation on the computer, one kind of model, to help develop students' understanding. The Teaching Example shows how the teacher allowed each group of students a turn on the computer and the rest of the class worked on a different but related activity.

In the **Activity 3**, your students use models to show the arrangement of the planets. You could extend the model of the solar system by asking students to find out how long it takes for each planet to orbit the sun and to turn on its axis (day and night).

Afterwards, reflect on the activity. How did your students react to building models? Do you think the models helped them to understand more about the solar system? Could you use models in another topic – what about building models to show particles?

Teaching Example 3

Mrs Mucaba was working with her Standard 5 class of 46 students in Usangi Primary School exploring the solar system. She had downloaded from the Internet onto the school computer a simulation model of the orbits of the sun, Earth and moon. She wanted her students to find answers for some of the questions that they had asked about the sun, Earth, moon and other planets. The questions were listed on a sheet by the side of the computer and the groups of four/five students had to try and answer these as they looked at the simulation.

The rest of the class were writing poems about their feelings about being part of the solar system, which they had discussed as a whole class at the beginning of the lesson.

Activity 3

Start with a class brainstorm on the solar system. (See the Additional Resource on **Using mind maps and brainstorming to explore ideas.**) Record all their ideas and questions about the planets, sun, moons and so on.

Share with your students the information on the planets. Ask the students to work in pairs to draw a diagram showing each planet in order, giving some indication of the size of each planet. Each pair then shares their diagram with another pair to check their answers.

Ask each group of four students to make a model, using clay and mud, of one planet. If you have access to books and/or the Internet use these to give more information. Try to make sure the models are all to the same scale.



Then, use these model planets to build a model of the solar system. You will need to go outside to place their models in order. The table below contains hints on the sizes and positions of the planets in the model.

Finally, plan an assembly with your class. They should show their model and tell the rest of the school what they have found out about the solar system.

PLANET	REPRESENTED BY	DISTANCE FROM 'SUN'	FOR YOUR MODEL*
MERCURY	1 mm poppy seed	12 metres	<i>12 centimetres</i>
VENUS	3 mm pinhead	23 metres	<i>23 centimetres</i>
EARTH	3 mm pinhead	30 metres	<i>30 centimetres</i>
MARS	1.5 mm mustard seed	50 metres	<i>50 centimetres</i>
JUPITER	30 mm ball	167 metres	<i>1.67 metres</i>
SATURN	30 mm ball	300 metres	<i>3 metres</i>
URANUS	10 mm marble	600 metres	<i>6 metres</i>
NEPTUNE	10 mm marble	900 metres	<i>9 metres</i>
PLUTO	1 mm poppy seed	1.25 kilometres	<i>12.5 metres</i>

Social Studies: Investigating the changing environment

- 1 Local resources
- 2 Pollution
- 3 Global Warming

Key question for the teacher:

How can you raise students' awareness of the issues of resources and pollution in the environment?

Keywords: environment; group investigations; fieldwork; resources; global warming; pollution

Learning Outcomes for Teachers:

By the end of this section, you will have:

- Used different strategies to raise awareness of pollution and climate change;
- Used an investigative approach to help students understand the effects of pollution;
- Used group work and simple fieldwork to develop young students' understanding of local resources

Overview

Developing an appreciation in your students of their local environment and the need to preserve and protect it is important if they are to understand their responsibility to care for their environment. This section aims to help you to structure lessons and activities that will link care of the local environment to worldwide problems of pollution and weather change. To support your students, you should read about environmental issues as this will provide ideas for lessons and keep you up to date on key ideas.

By investigating issues such as pollution in real-life situations and by conducting experiments, your students will enjoy learning, as they are actively involved in activities that have meaning for them.

1 Local resources

What do your students know about local resources? This part looks at raising your students' awareness of natural resources – particularly plant resources – that are found in their local area.



A good way to do this is to bring in local experts to talk, as in **Teaching Example 1**. Experts bring a specialised knowledge from which both you and your students can learn. Using experts also makes learning exciting because it is different.

In **Activity 1**, you heighten your students' awareness of their local environment through field trips in which they are actively involved in gathering data. (If you are working in an urban area, or it is not safe to let your students walk out near the school, you could change the activity to look at food in the market. Ask students to each name five foods from plants and to try to find out where the food was grown.)

Teaching Example 1

Mrs Hlungwane teaches in Hoxane Primary School in Limpopo Province in South Africa and wants her students to develop their understanding of their own environment and its natural resources. She has read about local expertise and knowledge regarding medicinal plants, and thinks looking at local plants, including those used for healing, might be a good way to extend the idea of resources from **Section 2**. She decides to contact the seven local plant experts who live near the school and invites them to come and be interviewed by her students. They agree to bring some of the important plants growing in the area to show the students.

Mrs Hlungwane divides the class into groups, each to interview one of the visitors. She discusses with her students the importance of showing respect. Together they draw up a list of questions to ask. She suggests that they find out the following three things about each plant:

- what it is called;
- where it grows around the village;
- its food or medicinal properties.

Afterwards, having thanked their visitors and said farewell to them, each group reports back and Mrs Hlungwane writes this information on the chalkboard in three columns:

- Plants that I find near the school
- Is this plant cultivated?
- Do we use this plant? If yes, how do we use it?



PLANT SURVEY		
Plants that I find near the school	Is this plant cultivated?	Do we use this plant? If yes, how do we use it?
Maize	Yes	Food
Thorn tree	No	A handle for a hoe
Rose	Yes	No
Mango Tree	Yes	Food
Eucalyptus Tree	Yes	Decorating
Nim Tree	No	Medicinal
Acacia	Yes	Firewood and charcoal

Next, they discuss how to protect these plants, as they are an important resource for the community. They decide that learning to identify the plants so that they do not pick them is important. Also, that they should not trample them or damage the locality where they grow.

Finally, Mrs Hlungwane asks the students, in groups, to make posters of the main plants, showing the uses of each plant and where it grows.

Activity 1

- The table will help students focus on exactly what you want them to do.
- Ask each student to draw a table to record their observations. Draw the table on the board for them to copy.

Plant name	Where does it grow?	Do we use this plant? How?

- Send them out in pairs into the area surrounding the school for say 30 minutes and ask them to fill in at least five lines of the table. Walk around with your students and support them as they work.
- If students don't know the names of plants, encourage them to describe and/or draw them for later identification.
- When they return to class, draw a big version of the table on the board.
- Go around the class and fill in all the students' findings on the big table.

Ask the students what they have discovered from today's lesson about the natural environment and the kinds of resources it provides for the community.

2 Pollution

Because our natural environment can provide us with our livelihoods, you need to encourage your students to think about how to preserve the environment so that it continues to provide what we need.

To start your students thinking about the damage that is being done to the environment, you can actually show them the harmful effects of pollution. This is what the teacher in **Teaching Example 2** does with her class. **Activity 2** shows another way – conducting an experiment to show the effects of polluted water or lack of water on the growth of plants. Once your students can see the damage done by pollution, they will be in a better position to develop positive and proactive attitudes towards protecting and caring for the environment.

Teaching Example 2

Mamadou Tanle, the Class 6 teacher in the Wa Catholic School, wants to develop her students' awareness of the harmful effects of water pollution. She realises that she can do this by taking them on a field trip to the local river, which is littered with rubbish.

At the river, she asks them to make a list of everything they can find that is polluting the water. Once the students have done this, they sit on the riverbank and Mamadou asks them a series of questions to encourage them to think beyond what they see. For example, she asks them: 'How many people rely on this river as a water supply?' 'What would happen to all those people if the water from the river is contaminated?' 'What do they use this water for?'

Back in class, she asks each group to develop a strategy to help clean up the river and its surroundings. As she moves around, listening and helping, she is excited by the plans that they are coming up with. Ideas include involving the community and the school to combat pollution, not only at the river, but in other areas of the village as well. Mamadou feels she has achieved her aim of developing an awareness of the harmful effects of water pollution, and is pleased that she has encouraged an attitude of community-mindedness in her students as well.

Note: When planning field trips a teacher needs to be conscious of the culture/religion of the immediate environment. Field trips should not be undertaken to sacred places within the community if there is a taboo. In areas where students have to attend the secular schools and Koranic schools, the teacher must ensure that the students come back in good time to enable them to attend the Koranic schools.

Activity 2

- Try this activity yourself beforehand so you can help your students.
- Ask your students to set up the experiment, which will run over five days, described below.



Maize seed experiment

Equipment:

- three saucers, labelled 1, 2, 3
- soil
- three maize seeds
- water
- paraffin

Method: On a Monday, set up three numbered saucers, each with its own maize seed buried in some soil.

Put water on saucers 1 and 2, and paraffin on saucer 3.

Each day for a week, put water on 1, do not put anything more on 2, put paraffin on 3.

Predictions: What do you believe will happen to the seeds over the next five days?

- Then ask each student to write down their predictions of what will happen to each seed over the five days.
- Ask them to check the progress of the three maize seeds every day.
- Students should make a formal record of their daily observations. You should also participate by making and recording observations of your own.
- On the fifth day, hold a detailed discussion with students about whether or not their predictions have been fulfilled. What has happened to each maize seed?



Observations:

	1	2	3
Day 1:			
Day 2:			
Day 3:			
Day 4:			
Day 5:			

Conclusions:

Discuss the implications of the experiment in terms of pollution. Can you and your students think of other experiments to do around pollution?

3 Global Warming

Most students are interested in what is happening around them and using local resources such as newspapers or radio can help to enhance your lessons.

The purpose of **Activity 3** is to encourage students to think about how global weather changes can affect their local context, and to introduce them to the idea of global warming as a possible explanation of changes in the weather. In **Teaching Example 3**, the teacher used local news items as a starting point for teaching about the water cycle.

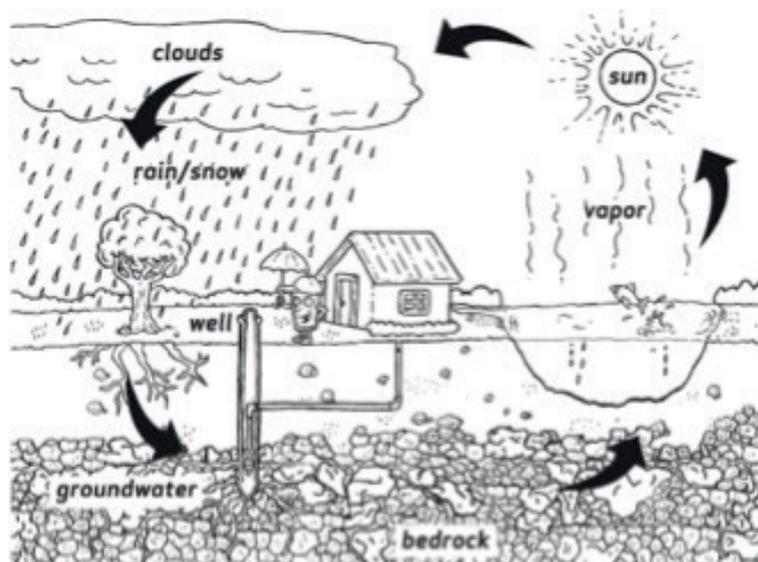
Once students are able to see the links between events, you are beginning to develop their critical thinking skills. Such insights will help them to make sense of the ever-changing world that they live in.

Teaching Example 3

There had been lots of discussion about water in the local newspapers over the past week. Water restrictions had been introduced. The Kanji dam was running dry. There was crop failure in the north of the country.

Idrissu Mahama saw the opportunity to discuss issues about water supply with his class. He wrote this question on the board: 'Where does all the rain go when the ground dries?' and he then asked each group of students to talk about this for ten minutes. During this time, he went around the groups and encouraged everyone in each group to contribute their ideas.

Then Idrissu gathered his class round him and asked them to take turns to share their ideas. Together the class build up the understanding of the water cycle which is illustrated below.



Original source: <http://www.epa.gov/safewater>

Idrissu finished by drawing a diagram of the water cycle on the board and asking students to copy the diagram and label it.

Activity 3

Read the article below before the lesson.

Divide the class into small groups and then read the articles to the class or give each group a copy to read together.

Ask each group to produce a poster or a short play to answer the following:

- What causes global warming?
- What effects will global warming have on the environment?
- What could we do to slow down global warming?

How will you ask students to evaluate their work?

You may want to share your students' work on global warming with the school in an assembly.

Global warming articles

Article 1

Global warming is causing a set of changes to the Earth's climate, or long-term weather patterns, that varies from place to place. As the Earth spins each day, the new heat swirls with it, picking up moisture over the oceans, rising here, settling there. It is changing the rhythms of climate that all living things have come to rely upon.

What will we do to slow this warming? How will we cope with the changes we've already set into motion? While we struggle to figure it all out, the face of the Earth as we know it – coasts, forests, farms and snow-capped mountains – hangs in the balance.

Greenhouse effect

The 'greenhouse effect' is the warming that happens when certain gases in the Earth's atmosphere trap heat. These gases let in light but, like the glass walls of a greenhouse, keep heat from escaping.

First, sunlight shines onto the Earth's surface, where it is absorbed and then radiates back into the atmosphere as heat. In the atmosphere, greenhouse gases (GHGs) trap some of this heat, and the rest escapes into space. The more GHGs there are in the atmosphere, the more heat gets trapped.

Scientists have known about the greenhouse effect since 1824, and have calculated that the Earth would be much colder if it had no atmosphere. This greenhouse effect is what keeps the Earth's climate habitable. Without it, the Earth's surface would be an average of about 60 °F/ 16C cooler. Humans can enhance the greenhouse effect by making carbon dioxide, a GHG.

Levels of GHGs have gone up and down over the Earth's history, but they have been fairly constant for the past few thousand years. Global average temperatures have stayed fairly constant over that time as well, until recently. Through the burning of fossil fuels and other GHG emissions, humans are enhancing the greenhouse effect and warming Earth.

Scientists often use the term 'climate change' instead of global warming. This is because as the Earth's average temperature climbs, winds and ocean currents move heat around the globe in ways that can cool some areas, warm others, and change the amount of rain and snow falling. As a result, the climate changes differently in different areas.

Aren't temperature changes natural?

The average global temperature and concentrations of carbon dioxide (one of the major GHGs) have fluctuated on a cycle of hundreds of thousands of years as the Earth's position relative to the sun has varied. As a result, ice ages have come and gone.

However, for thousands of years now, emissions of GHGs to the atmosphere have been balanced out by GHGs that are naturally absorbed. As a result, GHG concentrations and temperature have been fairly stable. This stability has allowed human civilisation to develop within a consistent climate.

Occasionally, other factors briefly influence global temperatures. Volcanic eruptions, for example, emit particles that temporarily cool the Earth's surface. But these have no lasting effect beyond a few years.

Now, humans have increased the amount of carbon dioxide in the atmosphere by more than a third since the industrial revolution. Changes this large have historically taken thousands of years, but are now happening over the course of decades.

Why is this a concern?

The rapid rise in GHGs is a problem because it is changing the climate faster than some living things may be able to adapt. Also, a new and more unpredictable climate poses unique challenges to all life.

Historically, Earth's climate has regularly shifted back and forth between temperatures like those we see today and temperatures cold enough that large sheets of ice covered much of North America and Europe. The difference between average global temperatures today and during those ice ages is only about 5 °C (9 °F), and these swings happen slowly, over hundreds of thousands of years.

Now, with concentrations of GHGs rising, Earth's remaining ice sheets (such as Greenland and Antarctica) are starting to melt too. The extra water could potentially raise sea levels significantly.

The climate can change in unexpected ways. In addition to sea levels rising, weather can become more extreme. This means more intense major storms, more rain followed by longer and drier droughts (a challenge for growing crops), changes in the ranges in which plants and animals can live, and loss of water supplies that have historically come from glaciers.

Scientists are already seeing some of these changes occurring more quickly than they had expected. 11 of the 12 hottest years since records became available occurred between 1995 and 2006.

Article 2 looks at the impact of global warming in Africa.

The African continent is a rich mosaic of ecosystems, ranging from the snow and ice fields of Kilimanjaro to tropical rainforests to the Saharan desert.

Although it has the lowest per capita fossil energy use of any major world region, Africa may be the most vulnerable continent to climate change because widespread poverty limits countries' capabilities to adapt.

Signs of a changing climate in Africa have already emerged: spreading disease and melting glaciers in the mountains, warming temperatures in drought-prone areas, and sea-level rise and coral bleaching along the coastlines.

The following show some related events:

Cairo, Egypt – Warmest August on record, 1998.

Temperatures reached 41°C (105.8°F) on August 6, 1998.

Southern Africa – Warmest and driest decade on record, 1985–1995.

Average temperature increased almost 0.56°C (1°F) over the past century.

Senegal – Sea-level rise.

Sea-level rise is causing the loss of coastal land at Rufisque, on the south coast of Senegal.

Kenya – Mt Kenya's largest glacier disappearing.

92% of the Lewis Glacier has melted in the past 100 years.

World's oceans – Warming water.

The world's oceans have experienced a net warming of 0.06°C (0.11°F) from the sea surface to a depth of 10,000 feet (3,000 m) over the past 35–45 years. More than half of the increase in heat content has occurred in the upper 1,000 feet (300 m), which has warmed by 0.31°C (0.56°F). Warming is occurring in all ocean basins and at much deeper depths than previously thought.

Rwenzori Mountains, Uganda – Disappearing glaciers.

Since the 1990s, glacier area has decreased by about 75%. The continent of Africa warmed by 0.5°C (0.9°F) during the past century, and the five warmest years in Africa have all occurred since 1988.

Kenya – Deadly malaria outbreak, summer 1997.

Hundreds of people died from malaria in the Kenyan highlands where the population had previously been unexposed.

Tanzania – Malaria expands in mountains.

Higher annual temperatures in the Usamabara Mountains have been linked to expanding malaria transmission.

Indian Ocean, Persian Gulf, Seychelles Islands – Coral Reef bleaching.

Includes Seychelles; Kenya; Reunion; Mauritius; Somalia; Madagascar; Maldives; Indonesia; Sri Lanka; Gulf of Thailand [Siam]; Andaman Islands; Malaysia; Oman; India; Cambodia.

Kenya – Worst drought in 60 years, 2001.

Over four million people were affected by a severely reduced harvest, weakened livestock and poor sanitary conditions.



Lake Chad – Disappearing lake.

The surface area of the lake has decreased from 9,650 sq mi (25,000 km²) in 1963 to 521 sq mi (1,350 km²) today. Modelling studies indicate the severe reduction results from a combination of reduced rainfall and increased demand for water for agricultural irrigation and other human needs.

South Africa – Burning shores, January 2000.

One of the driest Decembers on record and temperatures over 40°C (104°F) fuelled extensive fires along the coast in the Western Cape Province. The intensity of the fires was exacerbated by the presence of invasive vegetation species, some of which give off 300% more heat when burned compared to natural vegetation.

Adapted from original source: <http://www.climatehotmap.org>

Life Skills: Ways of managing conflict

1. Family Conflict
2. Resolving conflict
3. Community conflicts

Key question for the teacher:

How can you manage conflict in your classroom and help students to manage disagreements?

Keywords: pair work; problem solving; family; managing conflict; community

Learning Outcomes for Teachers:

By the end of this section, you will have:

- Developed strategies for managing conflict within the classroom;
- Used pair work to identify different causes of conflicts and ways of resolving them;
- Used problem solving to resolve conflicts

Overview

Being able to manage differences of opinion and conflict effectively is important for us all. This section introduces the idea of conflict as it might be experienced within:

- the family in the home;
- the school and the classroom;
- the wider community.

We identify some causes of conflict and explore ways to manage it, as well as thinking about ways to avoid conflict in the first place.

As conflict in the class can have a negative effect on learning, you need to develop strategies to reduce conflict in the classroom and maintain an environment that is supportive of all your students.

1 Family Conflict

It is possible that your students will come across conflict within their families. They may have had disagreements with their brothers or sisters, or arguments with their parents. They may have witnessed arguments between other members of their family, including between their mother and father, and these may also be more than just arguments and have a physical aspect to them.

They may not be involved directly, but if students encounter conflict within the home, it can affect their schooling in several ways. It can damage their confidence and self-esteem, stop them from concentrating on their work and make them unhappy and depressed.

It is important for you to recognise this and offer support to your students. It might not always be appropriate for you to get involved in a family situation but, as their teacher, there are several things you can do to help the student cope in the classroom.

Firstly, you can make your classroom a conflict-free environment where students feel secure and confident. By establishing rules of behaviour to minimise conflict, students will feel happy and safe.

Secondly, you can provide emotional support to those students who come across conflict at home. This involves you being sensitive to their feelings and making sure they are surrounded by friends.

Thirdly, you can provide students with the skills to avoid conflict with each other, and to negotiate and stop conflicts between others. This can be a challenging task, but it is one that will help them in later life.

Teaching Example 1

Mr Okitiki in South Africa decided to discuss the issue of family conflict with his students. He told a story similar to the one below.

A family conflict

In the Kisongo family, the husband provided money for the family's needs each week. One day, Father had to explain to Mother that he did not have enough money to meet her needs. She did not want to listen. She stormed out of the room and slammed the door behind her.

The next morning, the atmosphere at home was tense, as Mother would not listen to Father's explanations. Father kept trying to explain to Mother why he did not have enough money, but she wouldn't listen.

After some time, Father urged the children to talk to Mother. This they did, asking her to be patient. She listened to them and agreed.

Mother listened carefully and came to understand why this week Father had not had enough money – he had needed to lend some to his brother to pay for his children's school fees.

When she heard this, she understood the problem. But in return, she asked that the family's food money be put to one side before anything be lent to others, and topped up a little to meet the rising cost of foodstuffs. Father agreed.

The tense atmosphere at home became relaxed and everyone left home for the day's activities feeling happy. Mother gave Father a hug and kiss. Father returned with a smile. Normal relations returned to the family.

He asked his students to think about this story and identify what was the cause of the argument. He asked them to discuss, in groups, how the argument was resolved.

After a few minutes, they talked about it in class. The students said the causes were:

- the habit of lending money being a problem;
- that Father didn't have enough money;
- that Mother wouldn't listen to him;
- that they were not communicating well with each other.

They decided that the solutions were found through:

- the children mediating between the parents;
- Mother listening to Father and hearing his explanations;
- Father listening to Mother and hearing her concerns;
- both hearing and understanding the other point of view.

After this, Mr Okitiki organised the children into groups of three to role-play negotiating in conflict situations. He was pleased with their role plays when each group presented them over the next week. Each role play was discussed by the class, and they learned a lot about ways to resolve conflicts.

Activity 1

To find out what your students already know about conflict, brainstorm their ideas onto the board or a piece of newsprint. (See the resource on **Using mind maps and brainstorming to explore ideas.**)

Ask them to think of conflict situations they have found themselves in and, with a partner, think about the following questions:

- What do people quarrel about?
- What are the causes of quarrels?
- Do you fight sometimes?
- Who do you fight with?

- What do you fight about? Why?
- How does it make you feel? Why?
- How do you resolve your quarrels?

Encourage them to think about their own situations and behaviour. Ask the pairs to list different things they could do to avoid conflicts with friends or family.

Ask each pair in turn for one of their ideas and write these on the board. Go round each pair until all answers have been recorded.

Ask them: Which are the best ideas? How could they use them to avoid or resolve conflict?

When you have large groups of students together, you are going to have some conflicts between them occasionally. However, you can reduce the likelihood of conflict by working hard to provide a supportive environment for all students. If conflict does occur, it is best to tackle it as soon as possible. This is your responsibility as a teacher. Left unresolved, it can:

- cause a bad atmosphere;
- disrupt the studies of everybody in the room;
- make the classroom an unpleasant place to be.

Most of the time, any conflicts will be between your students, but you should also recognise that there may be a conflict between you and a student. Because of this, you need to make sure that the rules of good behaviour apply to you, too. How you discipline a student must be done with respect for the student as it is the behaviour that is not liked and not the individual student.

2 Resolving Conflict

To reduce the likelihood of conflict, you must establish clear rules of behaviour in the classroom, covering social interaction as well as studying. If the students know to treat each other well, then they are less likely to fight.

You should also recognise the difference between students debating a point and actually quarrelling or fighting.

The easiest way to deal quickly with conflict is by separating those involved to different parts of the room. But you must also get to the bottom of any conflict. Ask the students to explain the reasons to you. Negotiate a solution between them.



Teaching Example 2

Mrs Kweli has a class of Standard V students. One day, she had organised them into groups of five to do a reading and writing exercise.

She noticed that two children in one group were pushing each other. They did eventually stop, but they also stopped working together. This meant that the others in their group couldn't work properly either, as it was a group task. Also, children in the surrounding groups were distracted by the situation.

Mrs Kweli quickly finished the exercise and checked everybody's answers. Then she asked everybody to stand up, move around the class and make a new group. This way, she separated them without making a big fuss.

At the end of the class, she asked the two students to talk to her about their fight. She discovered that it was a problem over who should read the book. She referred them to the class rules about sharing, and explained why this was important for everybody.

She also said that they had disturbed other students, and that they should be careful. She asked them to make friends again, and to remember why they needed to share.

Activity 2

Help your students explore more about conflicts at school.

Ask them, in groups, to list the different types of conflict at school and to give an example of each.

Gather one example from each group and write it up on the board.

Ask each group to talk about one type of conflict, identifying:

- what causes it;
- how it could be avoided;
- how it could be settled.

Ask them to give a presentation of their ideas in front of the class. After each presentation, ask the other groups to add their own suggestions of ways to resolve the conflict.

Finally, ask each group to write down on a card the best way to avoid their type of conflict. Collect these in and make a display.

3 Community conflicts

Developing an awareness of what can cause conflicts and how to avoid them is important for groups and individuals working together.

A school is a central part of any community, and the teachers and children should represent all parts of that community. As such, the school could play an important role in avoiding or negotiating a solution for wider community conflicts.

Schools can also help students become more aware of the causes and issues surrounding conflicts. Some of your students may go on to become important players in helping with community-based conflicts.

To help your students become confident citizens, you need to:

- make sure your classroom is a harmonious environment;
- help your students understand the benefits of this;
- provide them with the skills to resolve conflicts.

Key to this is helping them understand that it is behaviour that is not liked and not the person doing it.

Teaching Example 3

Abraham works in a school in North West Tanzania. There was a conflict between two nearby villages, Kitete and Mbulumbulu, over a piece of land.

This sometimes caused problems at school, because students came from both of those villages and would come to school after hearing the people in their villages arguing.

Abraham decided to address the problem with his students.

First, he helped them identify the different things the people of the two villages shared. These included: going to the same school and the same clinic; using the same transport; shopping in the same marketplace.

Then he asked them to identify what was missing from each village. One thing the students identified was a sports ground for football and running.

He asked them if there was any land to develop a football field. The students suggested some ground midway between the villages.

They prepared a presentation saying why they needed a sports ground, and why this place was the best.

They invited the Parents-Teachers' Association (PTA) and village committees to come and, after the students had made their presentation, everybody discussed the issues.

The committees agreed to the suggestion. The villages both gained a sports ground and the two communities began to cooperate over building it.

Activity 3

For homework, ask your students to each bring in one story about a conflict from the newspaper. The article overleaf is about land conflict in Tanzania, but you could use different examples.

- In groups, students should describe their stories to each other. Ask them to identify the causes of the conflicts.
- Ask them to look again at the stories and suggest what the different solutions might be. Ask them to say who should be responsible for finding the solution.
- Next, ask each group to choose one story and present their ideas for solving the conflict to the class. Ask the students to comment on each other's presentations and say why they think the suggested solution would or wouldn't work.
- Make a list of all the suggestions made, and ask the class to write about which three they are going to remember and use, and why.

What were the key suggestions that were made?

How did you explore them with the students?

'Cattle clash sparks bitter feud in 2001'

Over 400 people fled their homes in the eastern Tanzanian region of Morogoro for fear of being attacked by Maasai pastoralists, after a bloody clash there on 8th December between the pastoralists and farmers left 31 people, mostly women and children, dead.

The clashes between Maasai nomads and farmers in Morogoro had been in progress since the end of October, but worsened during four days of fighting last week, the Associated Press (AP) reported on Tuesday.

The 8 December attack was in revenge for the killing of two Maasai tribesmen and the slaughtering of 35 cows by the farmers, AP said. The combination of revenge and sheer anger at the confiscation of their herds compounded a conflict over land use to which there is no clear solution in sight.

The clashes started after farmers in Kilosa confiscated herds which had strayed into their fields and held them pending receipt of compensation. The practice is not uncommon in Morogoro, one of the few regions in Tanzania relatively spared by the drought, where pastoralists and farmers live side by side. The attraction of pasture land was such that, according to recent research, there were 250,000 head of cattle belonging to the Maasai in the region's Kilosa District, the Tanzanian newspaper the Guardian reported on Tuesday.

The conflict had been ongoing for the past ten years, Dr E de Pauw, land use consultant with the Food and Agricultural Organisation (FAO), told Integrated Regional Information Networks (IRIN). 'There is no proper demarcation between agricultural land and pastoral land,' de Pauw said. Herders in possession of excessive stocks of cattle, by virtue of their concentration in Morogoro, grazed them in farmlands, either knowingly or by accident, thereby arousing hostility on the part of the farmers, he said.



President Benjamin Mkapa's government is injecting a new impetus to the livestock sector, according to the Pan African News Agency (PANA). The government had adopted a policy to demarcate pastoralist areas, but its implementation would be difficult, de Pauw said.

The Maasai follow a semi-nomadic lifestyle, moving from place to place, seeking pasture and water. They would 'always seek after the best land [and] no pastoralists will ever move their animals to semi-arid regions,' de Pauw told IRIN. Competition for the best land is harsh, especially in times of drought.

Political factors are also at play, the Tanzanian media has reported. Villagers claimed that the prime minister's office (PMO) had been aware of the conflict between Maasai pastoralists and the farmers as far back as 1997, when farmer representatives sent an appeal to the PMO, but no action was taken, the Guardian reported on Thursday. The villagers then resorted to forming traditional defence groups, called 'sungusungu'.

'However, the sungusungu were not effective, because they did not get police cooperation,' a farmers' representative told the Guardian. Kilosa District Commissioner Edith Tumbo was suspended on Monday by Prime Minister Frederick Sumaye, according to the Guardian.

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