Science – Year 3/4B Autumn 1

Rocks

This Planet Rocks

Session 6

Resource Pack

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Session 6 Teacher's Notes

Assessment

The Quiz PowerPoint will give you the opportunity to assess children's knowledge and understanding of the learning throughout this block. If you wish to use it as an assessment activity, give the children individual quiz sheets and ask them not to discuss their answers with one another. It is suggested that each question is read aloud including the choices of answer since the assessment is of the child's scientific knowledge and not their reading ability. If you do not wish the quiz to form part of an assessment, the children could participate in pairs to stimulate discussion around the questions and answers. If this is the case, give out one answer sheet between two children. At the end of the quiz, collect the papers in to mark later if you are doing an assessment (an answer sheet is provided in the session resources), but if not, show the Answers PowerPoint so children can mark their own or swap and mark – this will help to reinforce the learning of the block.

Pilot Programme Outcome

Throughout this block of learning the children have been helping Mr Crag, the Head of Children's Programming at Highcliff TV studios by helping to gather material for a series of children's science programmes called This Planet Rocks! Over the previous sessions the children have become experts in rocks, fossils and soil so that they can present information for the pilot programmes. During today's session they will work in mixed groups to present one aspect of the learning they have already covered. The children will need to work as a team, taking on the roles of presenter, camera operator, director and producer, making their own decisions on how to convey knowledge and understanding to the viewers. Hopefully this final outcome will provide a highly motivating and creative finale to the block. At the same time it will serve to embed their own understanding more deeply since teaching another is a high-level learning task in itself.

You will need several digital cameras that can record video. You may have used these already in the block, in which case your children will already be familiar with the use of them. If not, spend a few minutes teaching the technical aspects before beginning on the group tasks.

Make Your Outcome Real

If you have time and the necessary editing skills why not use the children's footage to create your own Rocks and Fossils programme? You could hold your own premiere event for other classes or parents. Remember to take photos for the Hamilton Blog – we love to see the enthusiasm and creativity of teachers and children and you will inspire others to do the same!

Quiz on Rocks, Fossils and Soil

On each slide there is a question and some possible answers. Each answer has a letter. Choose the letter that is above the right answer and write it on your sheet.

Some are quite easy, others are a bit harder. If you're not sure, give it your best guess.

1. When magma from the Earth's core cools down, it turns into rock. This type of rock is called …

A
Igneous Rock

B
Metamorphic Rock

C
Sedimentary Rock

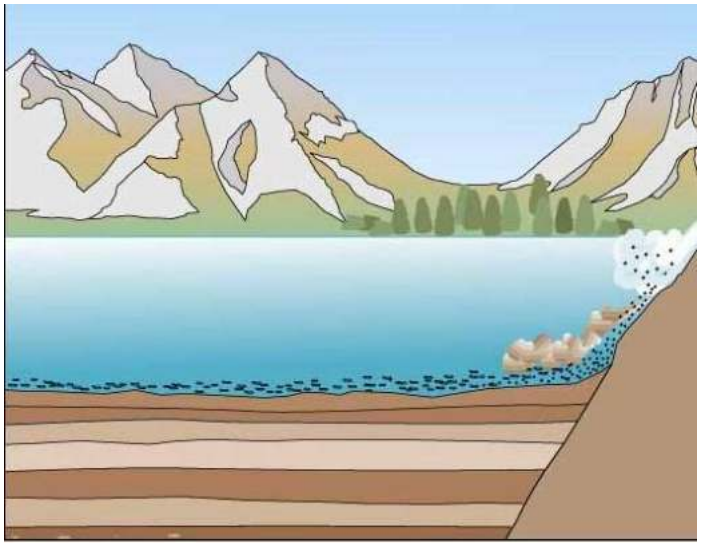
2. Rocks made in this way are usually …

A
Soft and crumbly

B
Hard and strong

C
Made of layers

3. A different type of rock is made when layers of mud and dead creatures sink to the bottom of the sea and build up over millions of years. This type of rock is called …



A
Igneous Rock

B
Metamorphic Rock

C
Sedimentary Rock

4. Rocks made in this way sometimes contain …

A
Large crystals

B
Fossils

C
Diamonds

5. A third type of rock is made when extreme heat and pressure from the Earth changes existing rock of other types. This rock is known as …

A
Igneous Rock

B
Metamorphic Rock

C
Sedimentary Rock

6. Many old buildings are made of natural rocks but often newer buildings are constructed of man-made materials.

Three of these are man-made materials. Which is made of natural rock?

A
Bricks

B
Concrete steps

C
Slate tiles

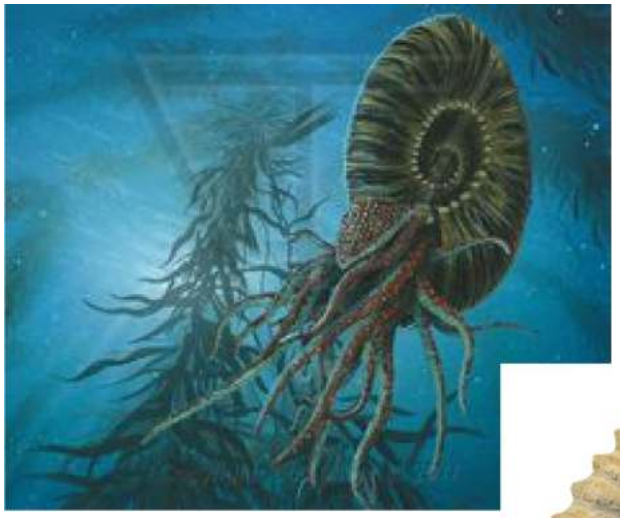
D
Breeze Blocks

7. Sometimes rocks can be worn away by hundreds of years of use or by weather (e.g. frost, wind and rain).
This wearing away
Is called …

A
Explosion

B
Erosion

C
Exclusion



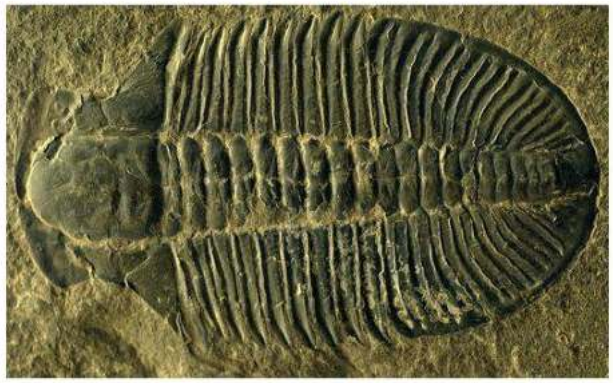
8. Sometimes a plant or animal that lived long ago sinks to the bottom of the sea and is buried in …

A
Concrete

B
A cave

C
Sediment

9. Usually the soft parts are eaten by other creatures or they rot away and only hard parts are left behind like the shell or the …

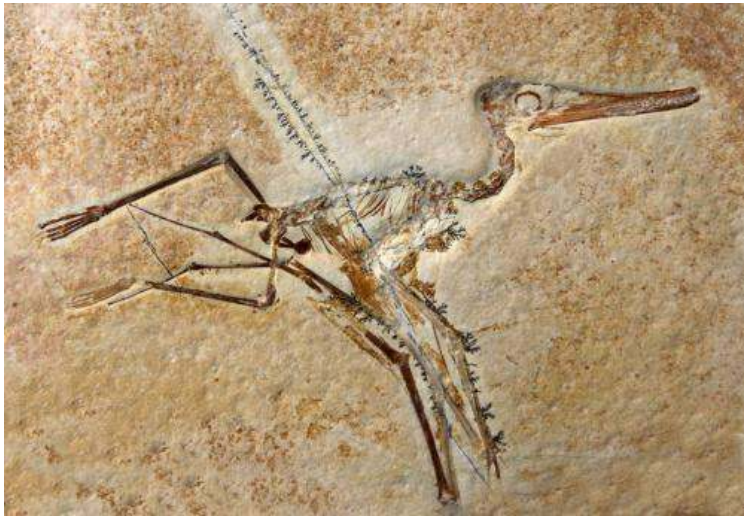


A
Toe nails

B
Skeleton

C
Brain

10. Gradually more and more layers build up over millions of years and the sediment turns to …



A
Rock

B
Soil

C
Magma

11. Water trickles through the rock and gradually the skeleton is washed away leaving an empty space the same shape as the skeleton. This is called a …

A
Mould

B
Stone

C
Curiosity

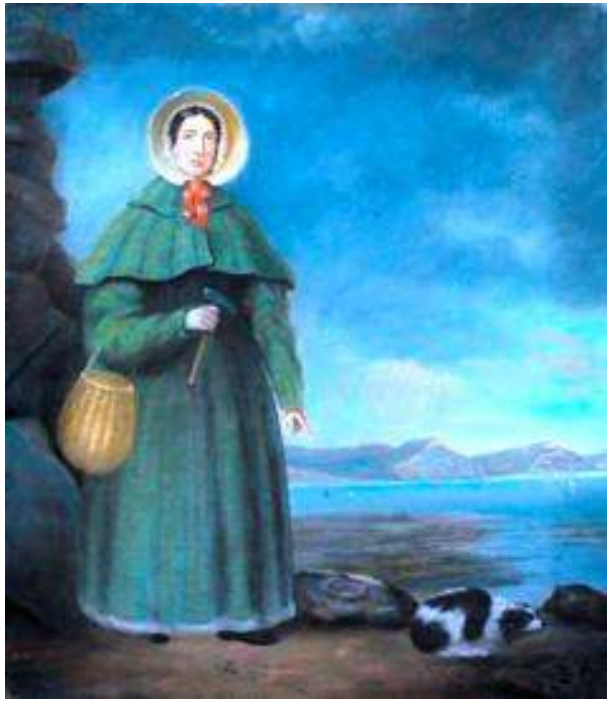
12. Later, minerals from the water collect inside the space and these gradually become rock. This rock is the same size and shape as the creature that made the mould. It is now a …

A
Pebble

B
Mineral

C
Fossil

13. In the 1800s scientists became interested in these curious rocks but they did not really understand what they were. People began to collect them and study them. One of the greatest fossil hunters was a woman called Mary…



A
Armstrong

B
Anning

C
Atkins

14. Soil is made of a lot of different ingredients but a large part of it is small pieces of worn down rock for example small stones, grit and…

A
Sand

B
Brick dust

C
Glass

15. As well as worn down bits of rock, soil also contains millions of micro-organisms. They have a very important job in the soil as they …

A
Make soil soft

B
Give the soil its brown colour

C
Break down bits of dead plants and animals

16. Soil is also home to a large number of living creatures. Which one of these does not live in soil?

A	**B**	**C**	**D**	**E**
worms	honey bees	moles	ants	woodlice

17. How long does it take to make 2cm of soil?

A
500 years

B
50 years

C
5 years

18. Without soil there would be…

A
A shortage of fruit and vegetables

B
High prices for food in shops

C
No life on Earth

Name or Group Name……

Quiz on Rocks, Fossils and Soil

Question number	Answer
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

Answers

for

Quiz on Rocks, Fossils and Soil

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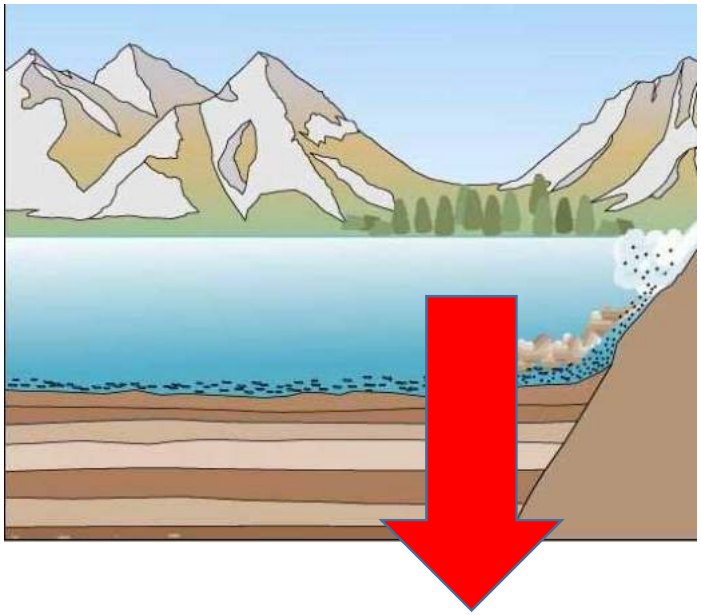

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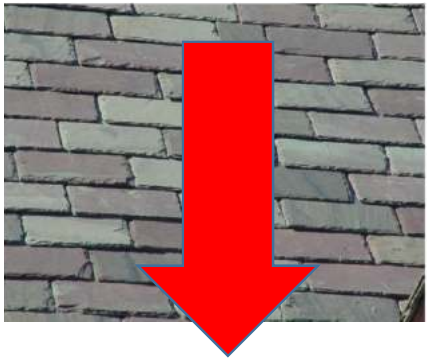

C
Slate tiles

D
Breeze Blocks

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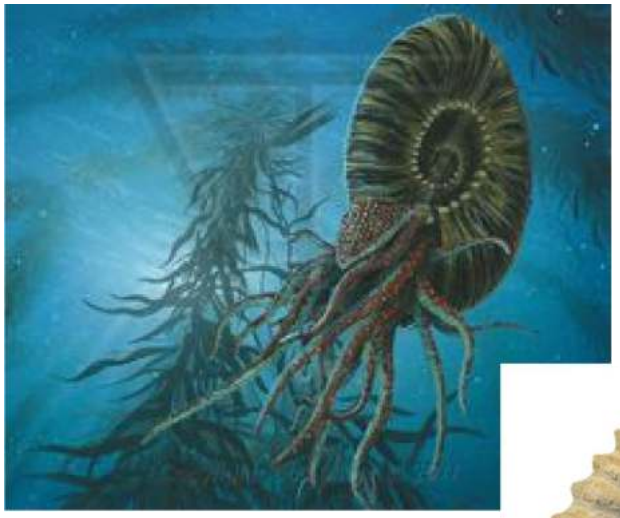

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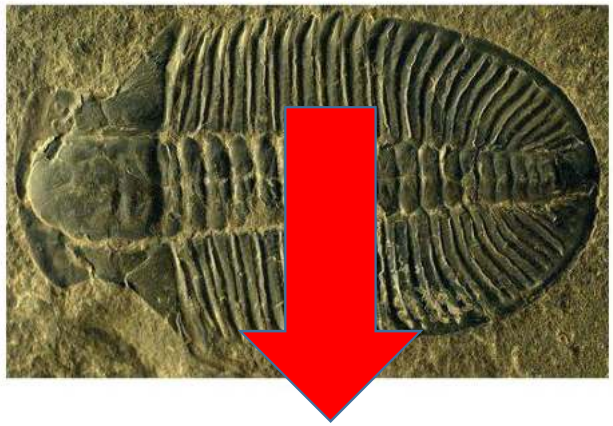

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Brain

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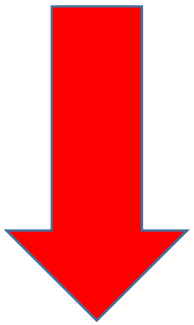

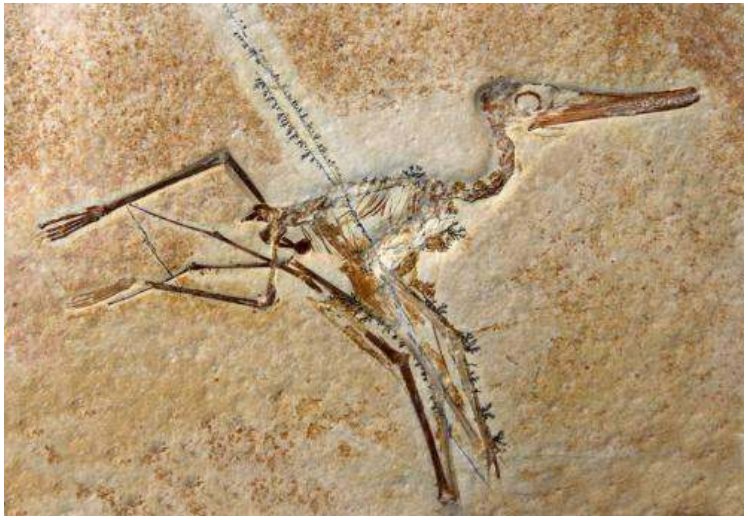

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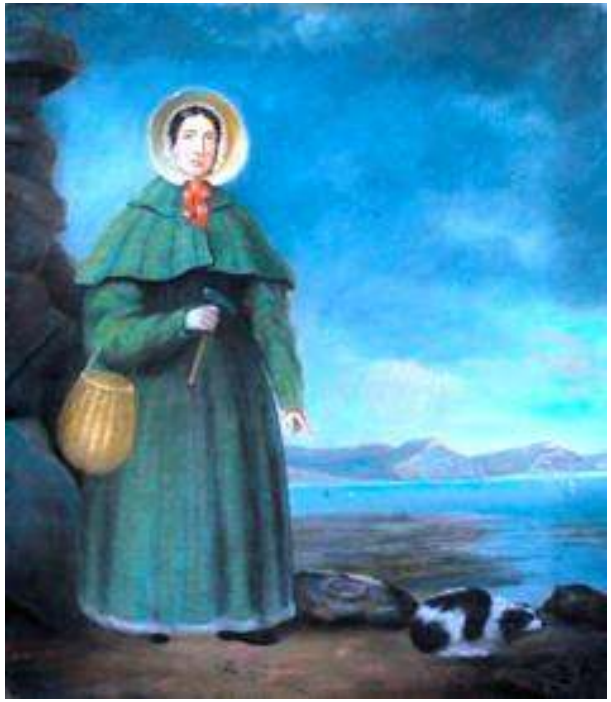

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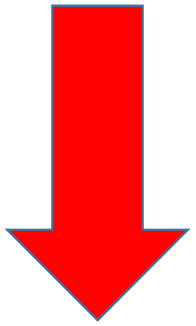

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B
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C
Break down bits of dead plants and animals

16. Soil is also home to a large number of living creatures. Which one of these does not live in soil?

A worms

B honey bees

C moles

D ants

E woodlice

17. How long does it take to make 2cm of soil?

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B
50 years

C
5 years

18. Without soil there would be…

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A shortage of fruit and vegetables

B
High prices for food in shops

C
No life on Earth

Rocks, Fossils and Soil Quiz Answers

Question number	Answer
1	A
2	B
3	C
4	B
5	B
6	C
7	B
8	C
9	B
10	A
11	A
12	C
13	B
14	A
15	C
16	B
17	A
18	C

Message from Jeremy Crag
Head of Children's Programming at Highcliff Television Studios

Thank you everyone for your hard work on this project. You have all become amazing rock and fossil experts

Today your task will be to become TV presenters. You will need to prepare and practise some presentations for camera.

There will be 4 programmes in the series:

Programme 1 – **Understanding Rocks**

Programme 2 – **Rock around the Town**

Programme 3 – **Fantastic Fossils**

Programme 4 – **Super Soil**

Let’s look at these in more detail

Programme 1 – **Understanding Rocks**

This will include :

- An introduction to rocks – I think some of you may have already filmed this
- Looking at, and naming 6 common rocks – you may have already filmed this too
- Explaining the 3 different ways that rocks are formed – using pictures to help
- Explaining how you can get clues about how a rock was formed by looking at it very closely – e.g. looking for crystals or layers
- Showing how to test rocks – a water test, a hardness test and a permeability test

Programme 2 – **Rock around the Town**

- This programme will teach the viewers all about how different types of rock are used in the local environment.
- They will learn how to look for the bedrock in their area

- They will learn how different rocks are suited to different jobs and how manmade rocks are used too.

I think you may have filmed this already

Programme 3 – **Fantastic Fossils**

This programme will include:

- Explaining how fossils are formed
- Showing viewers how to make a plaster cast fossil
- Telling the story of Mary Anning – you could dress up and pretend to be Mary and her brother Joseph to make it more interesting if you wanted to

Programme 4 – **Super Soil**

This programme will include:

- A presentation to explain what soil is made of, its amazing qualities and how important it is for life on Planet Earth
- A demonstration of how viewers can investigate whether different soils are good drainers or soakers
- A demonstration of how different soils can be compared by shaking them up in a jar with water to separate all the different sized particles

Tips on how to be a good presenter

- Do not read your script, instead practise explaining in your own words a few times until you are confident

- Look at the camera as you speak and don't forget to smile. Try to show excitement and enthusiasm for what you are talking about – that way the viewers will find it exciting too

- Use props (real items like rocks, magnifiers, soil samples etc. to help you). Hold them up to show the viewers as you explain

- Think about the presenters of your favourite TV shows and try to copy their confidence and style

Tips on how to be a good camera operator

- Try to keep the camera steady as you film, if this is hard, try standing against a wall or table or you could try propping your elbows on the top of some furniture.

- If the presenter goes wrong, don't delete everything you have filmed because the film can be edited (cut and joined together in a different way). Just film that bit again.

- After you have filmed the presenter, take a few close ups of what they were explaining – these are called "cut aways" and they can be edited into the film later by Mr Crag.

The Director

- It's your job to decide what to film and how to film it. You are in charge of how it looks and how it sounds!

- Think about the shots you want, where the presenter and camera operator should go and what they will show

Take turns to be different roles

The Producer

- You are the organiser. It's your job to get everything ready for the shots including the props, and the space you will film in.

- If your group needs any signs, labels or pictures to help explain, it's your job to get these ready

- Check the set (the space where you are filming) is clear of clutter

As you will see, there is quite a lot to do, so with the help of your teacher, divide into teams and share out the tasks.

Don’t worry if you do not have enough cameras for every group. You will need to practise your presentation a few times to get it right, so you can keep busy while you wait for your turn.

Good luck everyone!

Pilot Programme Planning Sheet

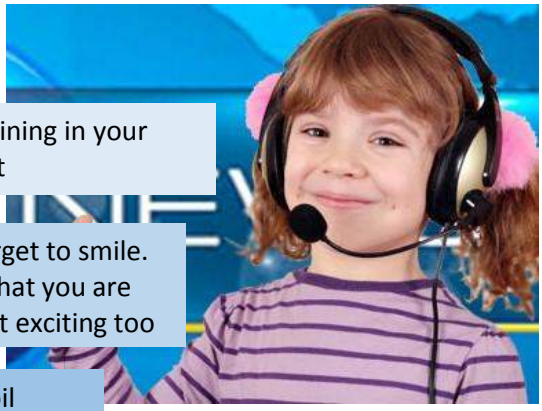
Programme 1 – Understanding Rocks	
Content	**Team**
An introduction to rocks	
Looking at and naming 6 common rocks	
Explain the 3 different ways that rocks are formed – using pictures to help	
Explaining how you can get clues about how a rock was formed by looking at it very closely – e.g. looking for crystals or layers	
Showing how to test rocks – a water test, a hardness test and a permeability test	

Programme 2 – Rock around the Town	
Content	**Team**
Teach the viewers all about how different types of rock are used in the local environment and how you can discover the bedrock in your area	
Show how different rocks are suited to different jobs and how manmade rocks can be used too	

Programme 3 – Fantastic Fossils	
Content	**Team**
Explaining how fossils are formed	
Show the viewers how to make a plaster cast fossil	
Tell the story of Mary Anning – you could dress up if you want to	

Programme 4 – Super Soil	
Content	**Team**
Explain what soil is made of, its amazing qualities and how important it is for life on Planet Earth	
Show viewers how to investigate whether different soils are good drainers or soakers	
Show how soils can be compared by shaking them up in a jar with water to separate the particles	

Tips on how to be a good presenter



- Do not read your script, instead practise explaining in your own words a few times until you are confident
- Look at the camera as you speak and don't forget to smile. Try to show excitement and enthusiasm for what you are talking about – that way the viewers will find it exciting too
- Use props (real items like rocks, magnifiers, soil samples etc. to help you). Hold them up to show the viewers as you explain
- Think about the presenters of your favourite TV shows and try to copy their confidence and style

Tips on how to be a good camera operator

- Try to keep the camera steady as you film, if this is hard, try standing against a wall or table or you could try propping your elbows on the top of some furniture.
- If the presenter goes wrong, don't delete everything you have filmed because the film can be edited (cut and joined together in a different way). Just film that bit again.
- After you have filmed the presenter, take a few close ups of what they were explaining – these are called "cut aways" and they can be edited into the film later by Mr Crag.

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