

# A Rocky Journey and Talking Rocks

Role play and sorting clues.

## Granite

"I am grey or sometimes pink in colour. I am made up of big coarse particles. I have big crystals in me. People use me for buildings and kerbstones."

Granite can sometimes be pink.

Slate was changed by pressure.

Coal often has fossil plants in it.

I have been stuck inside this big lump of rock for millions of years. It is very quiet and still in here. However, outside I can hear the rush of wind, the swoosh of water and the crunch of ice. I think I am getting nearer and nearer to the surface. Yes! I am being rubbed off the rock by a big lump of ice. I'm free! I'm free!



# Soils and Rocks

Activities that explore geology, and tectonic plate theory. We have used them with years 3 - 8.

The webaddress for these activities is:

<<http://www.collaborativelearning.org/rocks.pdf>>

Last updated 23rd March 2016

Our talk for learning activities are designed to:

...build on prior knowledge.

...move from concrete to abstract thinking.

...ensure everyone works with everyone else.

...extend social language into curriculum language.

...provide motivating ways to go over the same topic more than once.

## COLLABORATIVE LEARNING PROJECT

Project Director: Stuart Scott

We support a network of teaching professionals to develop and disseminate accessible talk-for-learning activities in all subject areas and for all ages.

17, Barford Street, Islington, London N1 0QB UK Phone: 0044 (0)20 7226 8885

Website: <http://www.collaborativelearning.org>

## BRIEF SUMMARY OF BASIC PRINCIPLES BEHIND OUR TEACHING ACTIVITIES:

The project is a teacher network, and a non-profit making educational trust. Our main aim is to develop and disseminate classroom tested examples of effective group strategies that promote talk across all phases and subjects. We hope they will inspire you to develop and use similar strategies in other topics and curriculum areas. We want to encourage you to change them and adapt them to your classroom and students. We run teacher workshops and conferences worldwide but mainly in the UK. The project posts online many activities in all subject areas. An online newsletter is also updated regularly.

\*These activities are influenced by current thinking about the role of language in learning. They are designed to help children learn through talk and active learning in small groups. They work best in non selective classes where children in need of language or learning support are integrated. They are well suited for the development of speaking and listening. They provide teachers ideal opportunities for assessment of spoken language.

\*They provide scaffolding for differentiation by placing a high value on what children can offer to each other on a particular topic, and also give children the chance to respect each other's views and formulate shared opinions which they can disseminate to peers. By helping them to take ideas and abstract concepts, discuss, paraphrase and move them about physically, they help to develop thinking skills. We strongly endorse the principles of the Learning Without Limits group to which we belong.

\*They give children the opportunity to participate in their own words and language in their own time without pressure. Many activities can be tried out in pupils' first languages and afterwards in English. A growing number of activities are available in more than one language, not translated, but mixed, so that you may need more than one language to complete the activity.

\*They encourage study skills in context, and should therefore be used with a range of appropriate information books which are preferably within reach in the classroom.

\*They are generally work effectively over a wide age range because children can bring their own knowledge to an activity and refer to books at an appropriate level. The activities work like catalysts.

\*All project activities were planned and developed by teachers working together, and the main reason they are disseminated is to encourage teachers to work with each other inside and outside the classroom. They have made it possible for mainstream and language and learning support teachers to share an equal role in curriculum delivery. They should be adapted to local conditions. In order to help us keep pace with curriculum changes, please send any new or revised activities back to the project, so that we can add them to our lists of materials.

# Rocks and Soils

## Teachers' Notes

We have been working on some collaborative activities that humanise the impersonal, and which will accompany all the experimental work of examining rocks and sifting soil etc. Although the main emphasis of this unit is on examining and describing, we felt the story of the earth is a powerful one and we wanted to develop activities that helped children explore this. We also thought that this approach would provide a structure for speaking and listening, and have the effect of improving the exploratory talk during the experimental work. We had already quite a lot of ideas already in the project developed in the early 80s at Kingsland School in Hackney for 11-14 year olds with Jan Garen and her colleagues.

Jan is now running an excellent residential field study centre and a rescue centre for animals including chimpanzees in Swansea Valley. She also offers B&B to individuals, and has a vegetarian restaurant. You can find her on centre at:

<http://www.cefn-yr-erw.co.uk>

She can handle school visits or you can just go there on your own.

You can find our Fossils Speak activity online. Here fossils discuss the condition of the earth and their position on the crust to illustrate tectonics, and also to begin to translate geological time into distance. The Talking Rocks activity was originally developed by Steve Cooke and colleagues in Leicester for 10 year olds, but the rocks are now talking a little more about their origins as well as their qualities. We have to do a bit of tweaking since the curriculum has shifted a bit but most collaborative activities adapt well to different years. We could do with more and better descriptions of different rocks, since most schools have a collection, but not necessarily the same ones. Maybe could develop a 'connect four' activity which could consolidate ideas about the main rock types. We also need some activity that follows clues and we could at the same time come up with activities that link in with other other science work.

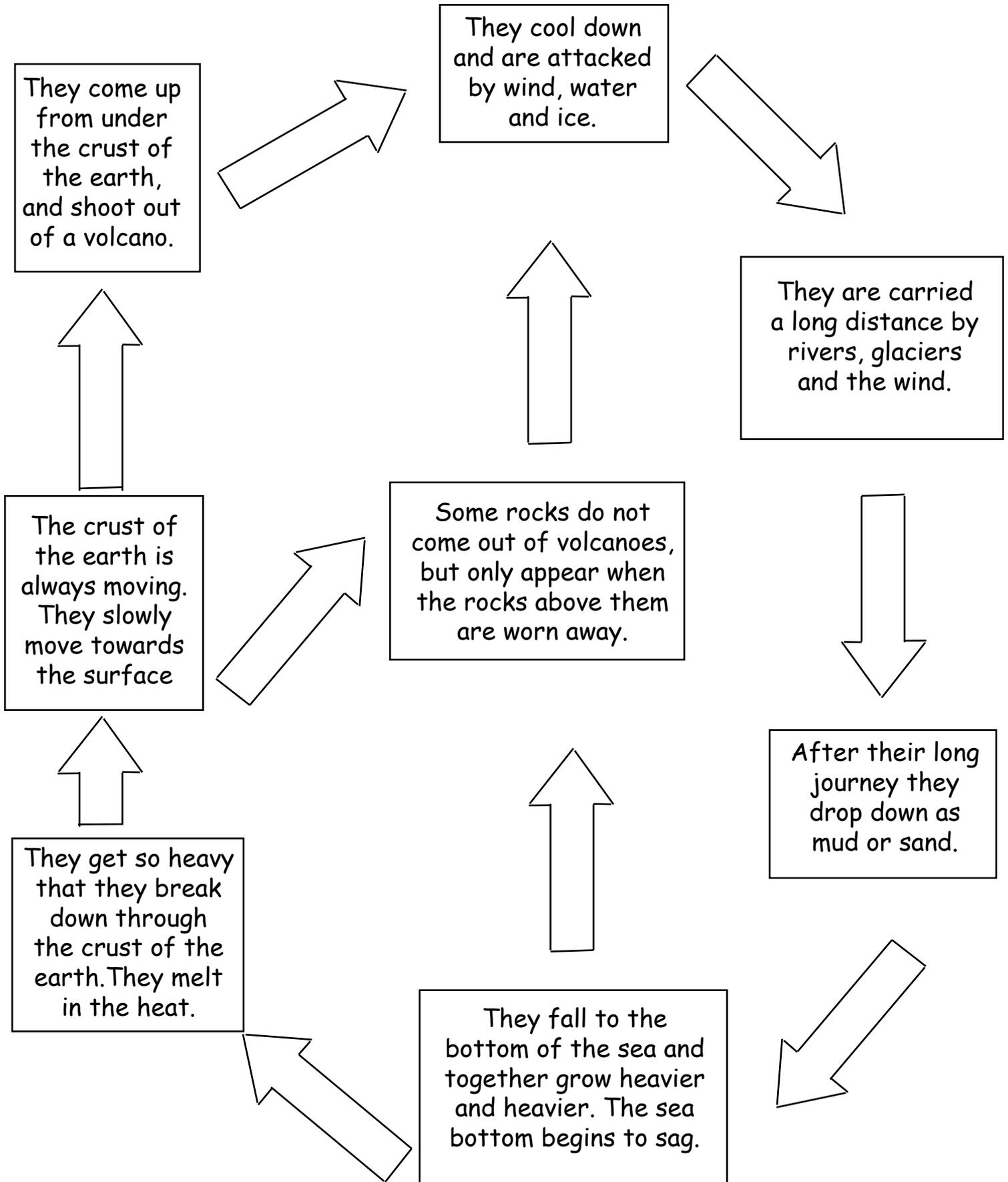
Points to note:

The Rocky Journey contains a cycle chart and a series of cards where different rocks are talking about where they are and what is going on around them. The cards can be distributed to groups of six and they can use the cycle and the information to prepare a dramatic presentation to the rest of the class: in mime or with sound effects!

After we developed the Rocky Journey a colleague mentioned a poem by Adrian Mitchell called "A Speck Speaks" which is a lengthy narrative covering ten million years and which could have been our inspiration to produce the activity. It begins: "About ten million years ago I was a speck of rock in a vast black rock. My address was: Vast Black Rock, Near Italy, Twelve Metres Under, The Mediterranean Sea....." and is well worth seeking out. You can find it in the Oxford Book of Story Poems.

# A Rocky Journey

Round and round go the particles of rock.



# A Rocky Journey



## Extrusion

I am a tiny particle of rock. I am deep inside the earth. It is very hot here. I am being pushed up and up, faster and faster.

All the rocks around me have melted. Now we are out in the open air. I'm flying higher and higher. Now I'm falling, falling.

I have landed on the ground and am beginning to get cooler. I am becoming solid, and am stuck fast in a large rock with lots of other particles

## Erosion

I have been stuck inside this big lump of rock for millions of years. It is very quiet and still in here. However, outside I can hear the rush of wind, the swoosh of water and the crunch of ice. I think I am getting nearer and nearer to the surface. Yes! I am being rubbed off the rock by a big lump of ice. I'm free! I'm free!

## Transportation

The ice has melted and I am now being carried along in a fast stream. I am rushing down a mountain. Lots of other particles are travelling with me. We are jumping in the air, when the stream goes down a waterfall. We are rubbing against other particles and setting them free.

## Deposition

Now the stream has joined a river and we are not travelling so fast. Bigger particles are falling to the bottom, but because I am small I am still travelling along. Now the river is going much more slowly. I am slowing down too, and sinking to the bottom. I have reached the river bed. I have a feeling that I am going to be here for a long time.

## Sedimentation

More and more particles of rock are landing on me now. I am slowly being buried. The weight of all the grains above me are pressing on me. I am slowly being crushed together with other particles of rock. Some are like me and some are different. I am getting deeper and deeper below the surface.

## Downwarping

I am still sinking. There are soft places underneath, and I am pushing down through them. It is getting hotter. I think I am returning to the hot place where I started this journey. I am beginning to melt, and mix with the other particles. The rock I am part of is changing.

# Talking Rocks

## Instructions

You have a set of cards with the names of rocks. You also have a set of cards where these rocks are talking about themselves. They have got mixed up. Can you match the speeches to the correct rock names. You have a set of clues to help you.

When you have finished go to look at the real rocks (these ones are not so talkative), and see whether you can discover which rocks have been talking.

---

# Talking Rocks

## Instructions

You have a set of cards with the names of rocks. You also have a set of cards where these rocks are talking about themselves. They have got mixed up. Can you match the speeches to the correct rock names. You have a set of clues to help you.

When you have finished go to look at the real rocks (these ones are not so talkative), and see whether you can discover which rocks have been talking.

**Obsidian**

"I came out of a volcano, and went from very hot to very cold quickly. I look a bit like glass. I am dark green or black. I have sharp edges. People have made arrowheads from me."

**Limestone**

"I used to be chalk and have lain for millions of years on a seabed. I have been squeezed by pressure from above. I sometimes have fossils in me."

# Coal

"I am black or sometimes brown. I am shiny and quite light. I sometimes have fossils of plants in me. People dig me up, and use me for fuel."

# Clay

"I am made up of very fine grains. I am usually red or brown in colour. I often have fossils in me. I am usually found in layers. People make bricks out of me."

# Granite

"I am grey or sometimes pink in colour. I am made up of big coarse particles. I have big crystals in me. People use me for buildings and kerbstones."

# Marble

"I am shiny, and white or grey in colour. I sometimes have dark streaks of colour in me. You can scratch me with a knife. I used to be limestone, but I was changed by heat. People use me for statues and floors."

# Chalk

"I am white, and I am made up of very fine particles. I am made out of the skeletons of sea creatures I am usually rather soft and crumbly. I am found in layers, and I often have fossils in me."

## Slate

"I am black or dark grey in colour. I am very hard, but I can be sliced into thin sheets. I used to be a crumbly rock called shale, but I was changed by pressure. People use me for roof tiles."

## Pumice

" I am usually grey. I am very light and full of holes. I can float in water. I came out of an exploding volcano and the holes were once full of gas. I feel quite rough to touch. People use me for rubbing off hard skin on their feet."

## Red Sandstone

"I am made up of medium sized particles, and I am reddish brown in colour. I am found in layers. I sometimes have fossils in me."

## Basalt

"I am usually very dark or almost black. I am very heavy. I came from a volcano. I am made up of fine particles. The crystals in me are usually very tiny, and too small to see with the naked eye."

## Shale

" I used to be mud. I have been pressed together in layers. I am usually brown. I am made of very small particles."

# Schist

"I am black and contain small white flakes. I used to be sandstone and was changed by being buried deep under the earth. It was very hot there and that changed me."

# Quartzite

"I am light grey in colour. I am hard, but I am rather brittle. I am made up of interlocking (not separate) crystals. I am harder than marble. I used to be sandstone."

# Granite Gneiss

"I am made up of coarse grains. I am usually dark with light grey stripes. I used to be granite but I was changed by heat."

# Conglomerate

"I used to be on a seashore. The sea turned my bigger particles into pebbles. Then I was pressed down into the crust of the earth and all the sand and pebbles stuck together. I am sometimes called pudding stone"

# Dolerite

"I am dark coloured and I am made up of medium size particles. I have small crystals in me which you can see in a magnifying glass"

# Rock Clues

Marble isn't as hard  
as quartzite.

Granite can sometimes  
be pink.

Chalk crumbles  
easily.

Slate was changed  
by pressure.

Coal often has  
fossil plants in it.

Igneous rocks have crystals  
in them or are glassy.

Gneiss is made up of  
coarse grains, and was  
changed by heat.

Metamorphic rocks are made  
when other rocks are changed  
by heat or pressure.

Basalt has crystals  
that are too small  
to see with the  
naked eye.

Sandstone is made up of  
medium sized grains.

Obsidian has very sharp edges.

Sedimentary rock have fossils in them.

Dolerite has small crystals