

Science - Year 3

Rocks – Block 3R

Rocks and Fossils

Session 1

Resource Pack

Teacher's guide to *The Hard Rock Challenge*

Resources

A small rock sample for each child (chalk, slate, sandstone, granite, limestone, marble, flint, basalt, pumice, etc.) a tambourine.

Study your rock sample. Get to know how it looks and feels; its colour, its texture (roughness/smoothness), its hardness or crumbliness, any speckles or glittering. You will need to know its qualities well to succeed at the Hard Rock Challenge!

Move around the room calmly and sensibly; between the tables and around the edges as I shimmer the tambourine (demonstrate). Stop still and silent when I strike it loudly, like this (demonstrate). I will then give you a challenge. Once you have done the challenge, sit down quietly together so I can see you are ready. After every challenge I shall award points to people who used good scientific skills. After each challenge, I shall shimmer the tambourine again as before. Keep your point score in your head. Let's give it a try!

Challenges

- Find one or more people with the same rock as you (*award a point to everyone who is successful*)
- Make a group of 4 people, each with a different rock (*award a point to everyone in a group that sits down quickly with no fuss - good scientists focus on the task!*)
- Find someone with a different rock that has something in common with your rock e.g. both rocks are crumbly or both rocks are glittery or speckled (*award points to anyone who can give a shared quality or feature – but not for similarities in the size or shape of the sample – explain that we are only interested in the type of rock*) Share the successful common features with the class
- Make a group of 3 or more different rocks that share a common feature (*award a point to everyone who is successful*)

Praise the children for their scientific skills in observation. You were all able to spot lots of different features in the rocks and group them in different ways. Scientists call this skill **classification**.

Who got more than one point? Wow!

Who got 3 points? Very impressive!

Did anyone get a massive 4 points? Pure genius! Clap the winners!

Rock Detectives Help Sheet

1. Use pastel or wax crayons to draw each mystery rock sample in the box that has the same number as the plate you took it from. Look very closely at the rock using a magnifying lens. Blend colours together to make your drawing as realistic as possible.



2. Label your drawing with any interesting features, e.g. crystals, speckles, lines or anything else you can spot.
3. Write a description of each rock underneath your drawing. Here are some useful words to help you but you may think of even better words to describe it!

Texture: rough, smooth, bumpy, knobby, layers, layered, holey, pitted, grainy, crumbly, hard, soft

Colour: dark, light, white, greyish, bluish, pink, black, brown, rusty, greenish

Appearance: shiny, dull, dusty, glittery, crystallised, speckled

Here is an example of a good description of a mystery rock

*This rock is mostly grey with patches of tiny white crystals.
It has a rough and dusty texture.*

Chalk

A bright white rock which is quite soft. It can be crushed to make small white grains or powder.

Limestone

A light coloured rock (often pale grey or cream). It has a grainy texture and may feel crumbly.

Sandstone

A brown or golden coloured rock with grains inside. If rubbed, sand grains may come away.

Granite

A very hard, strong rock containing different coloured crystals.

Marble

A hard, attractive rock that comes in many different colours. It may have lines (veins) running through it.

Slate

A blue-grey rock that seems to be made of thin layers. It feels hard but can be easily snapped.

Teacher's Guide: Rock Stars

Resources

A strong drawstring cloth bag containing one sample of each of the 6 rocks that have been studied (chalk, limestone, granite, sandstone, slate and marble), per group. For example if there are 5 groups, the bag would contain 5 samples of chalk, 5 samples of limestone, etc.

A cardboard 6 pointed star per group (cut from the template provided),

A set of rock labels (as used in the plenary matching activity)

Setting up the game

Ensure each group has a cardboard star and a set of labels. They should place the star on their table and place each label at the end of a different point. The teacher should have the cloth bag of rock samples. The group members should number themselves 1, 2, 3, 4, etc.

The object of the game

The winner of the game will be the first group that collects 6 different rock samples and places each one on a star point beside the correct label.

Playing the game

1. When everyone is ready, the teacher will start the game with the word: "Go!"
2. Child number 1 from each group will approach the teacher and without looking into the bag, they will remove a rock sample and return to their group with it
3. The group will agree what type of rock it is and place it on the corresponding point of the star
4. Child number 2 will then go to the bag and remove a rock sample in the same way. If the rock sample is different, they will place it on the star in the correct place as before.
5. If the sample is the same as one they already have they will need to approach other groups to make a swap. They should say "I have slate" for example. When they find someone else wanting to make a swap with a rock they do not have, an exchange can be made. The swapped rock should then be correctly placed before the next child goes to the bag.
6. Child number 3 cannot collect a rock from the bag until child number 2 has placed their rock on the star. In this way, there will only ever be one child away from the group at a time.
7. Rocks cannot be removed from another group's star, but only exchanged from other children who have two of a kind and want to swap. Sometimes children may have to wait for another group to be ready to swap.
8. If the group is smaller than 6, some children may go to collect a rock twice.
9. When a group has placed 6 different rocks on their star, they should shout out "Rock Stars!"
10. Play continues until every group has finished and groups should try to remember the order in which they finished.
11. When all the groups have placed 6 different rocks, the teacher will check the naming of the rocks in the order they competed the task. The first group finished and all correct gets 3 points, the 2nd, 2 points and the 3rd, 1 point.
12. Play a few rounds and total the scores to find a winner. If more than one round is played, renumber the group members. Notice how competent the children become at naming the rocks.

Rock Star Template

