

ROCK LESSONS

Science and Technology K-6 Outcomes and Indicators -

ES S3.6 - Recognises that the Earth is the source of most materials and resources, and describes phenomena and processes, both natural and human, that form and change the Earth over time

UT S3.9 Evaluates, selects and uses a range of equipment, computer-based technology, materials and other resources to meet the requirements and constraints of investigation and design tasks.

ROCK - a collection of mineral grains solidified together

MINERALS - naturally formed materials with a defined chemical composition and distinctive physical properties, such as colour and hardness.

ROCK ACTIVITIES

1. Collect a variety of rock samples from the school grounds or your back yard to study in the classroom. Look at them closely and discuss similarities and differences between them. What colour are they? What do their surface's look and feel like? Can you see interesting or unusual patterns, designs or markings on the rocks? Pick them up and compare their weights.
2. A rock is like a cake and minerals are like the ingredients used in the cake. Make a cake in class and use this analogy to help students understand the relationship between rocks and minerals.
3. Use the Rock Key to classify rocks as Igneous, Sedimentary or Metamorphic.

IGNEOUS ROCKS - rocks formed from the cooling of molten magma, either at the earth's surface or underground. Magma that cools on the surface cools quickly forming igneous rocks with small crystals. Magma that cools underground cools slowly forming igneous rocks with large crystals. E.g. granite

ACTIVITY

An igneous rock is like toffee. Make some toffee in class and cool some quickly and cool some slowly. Compare the size of the crystals formed in the two toffees. Which one has the larger crystals? Examine some real igneous rocks and determine their rate of cooling from their crystal size.

SEDIMENTARY ROCKS - rocks formed by the accumulation of mineral grains, animal shells and/or plant material, transported by water, wind or ice.
E.g. sandstone

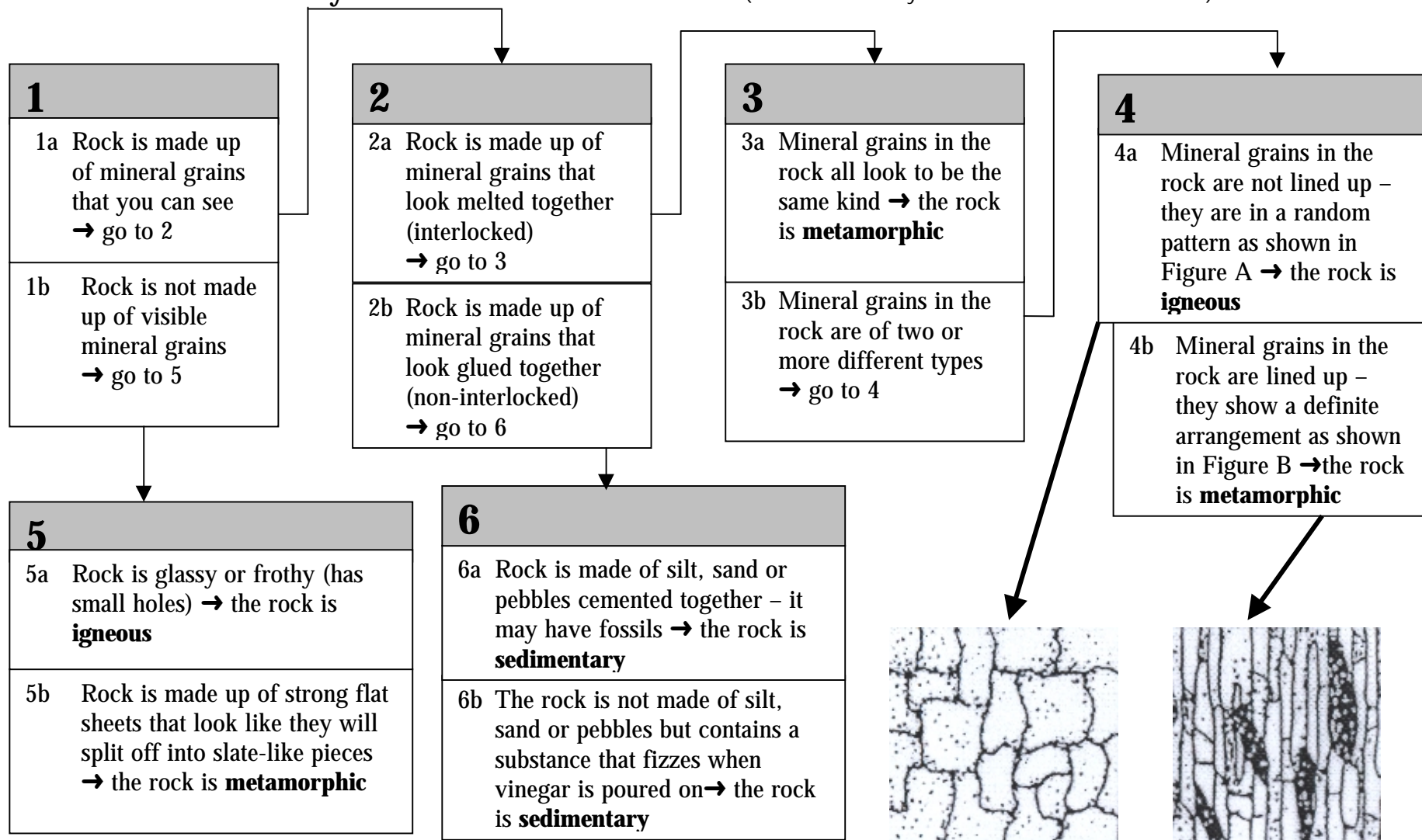
ACTIVITIES

1. Make a sedimentary rock by mixing sand and pebbles in a paper cup or milk carton. Pour in a cementing solution of 2 parts water to one part Epsom salt. (Plaster of Paris can also be used) Place in a warm place until it dries. Peel off the paper and examine with a hand lens. Compare this rock to a real sedimentary rock like sandstone or conglomerate.
2. Conglomerate (a sedimentary rock) is like Rocky Road. Make some Rocky Road using melted chocolate, coconut, chopped nuts and marshmallows to show how sand and pebbles can be cemented together on the bottom of a stream.

METAMORPHIC ROCKS - rocks that have been changed by heat and pressure. E.g. marble

Rock Key Refer Footnote ⁶

(the more the key is used the easier it becomes)



⁶ Adapted from *Science Is*. 1991