Cycle 1 Week 23 –

ROCKS

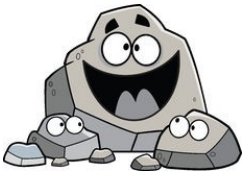
Introduction

-We have been talking a lot about minerals these past few weeks!

-What do you think happens when pieces of many different minerals get pressed together? What would THAT be called??

-ROCKS! It depends on HOW they were put together, but they would one of these three types:

- Igneous
- Sedimentary
- Metamorphic



Geologist Detectives!

-What is the name of a person who studies minerals and rocks? A ***geologist***!

-We are going to use our sleuthing skills and find out how these three kinds of rocks are different!

Igneous –

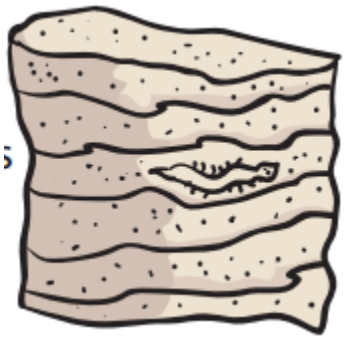
-Igneous rocks **are formed from melted rock that has cooled and solidified**.

-When rocks are buried deep within the Earth, they melt because of the **HIGH pressure and temperature**; the molten rock (called **magma**) can then flow upward or even be erupted from a volcano onto the Earth's surface.

-When magma **cools slowly**, deep under the surface, crystals grow from the molten liquid, and a coarse-grained rock forms.

-When magma **cools rapidly**, usually at or near the Earth's surface, the crystals are extremely small, and a fine-grained rock results.

Sedimentary –



-Sedimentary rocks are formed at the surface of the Earth, either in water or on land. They are **layered accumulations of fragments of rocks, minerals, or animal or plant material**.

-The layers are normally parallel or nearly parallel to the Earth's surface; if they are at high angles to the surface or are twisted or broken, some kind of Earth movement has occurred since the rock was formed. Sedimentary rocks are forming around us all the time!

Metamorphic –

Sometimes **sedimentary and igneous rocks are subjected to pressures so intense or heat so high that they are completely changed**.

-They become metamorphic rocks, which form while deeply buried within the Earth's crust.

-This does not melt the rocks, but instead transforms them into more compact rocks. Granite is a type of metamorphic rock.

Conclusion

You are now going to classify the rocks in this kit into one of the three types we discussed. Here are some good clues when trying to solve the identity of our mysterious rocks:

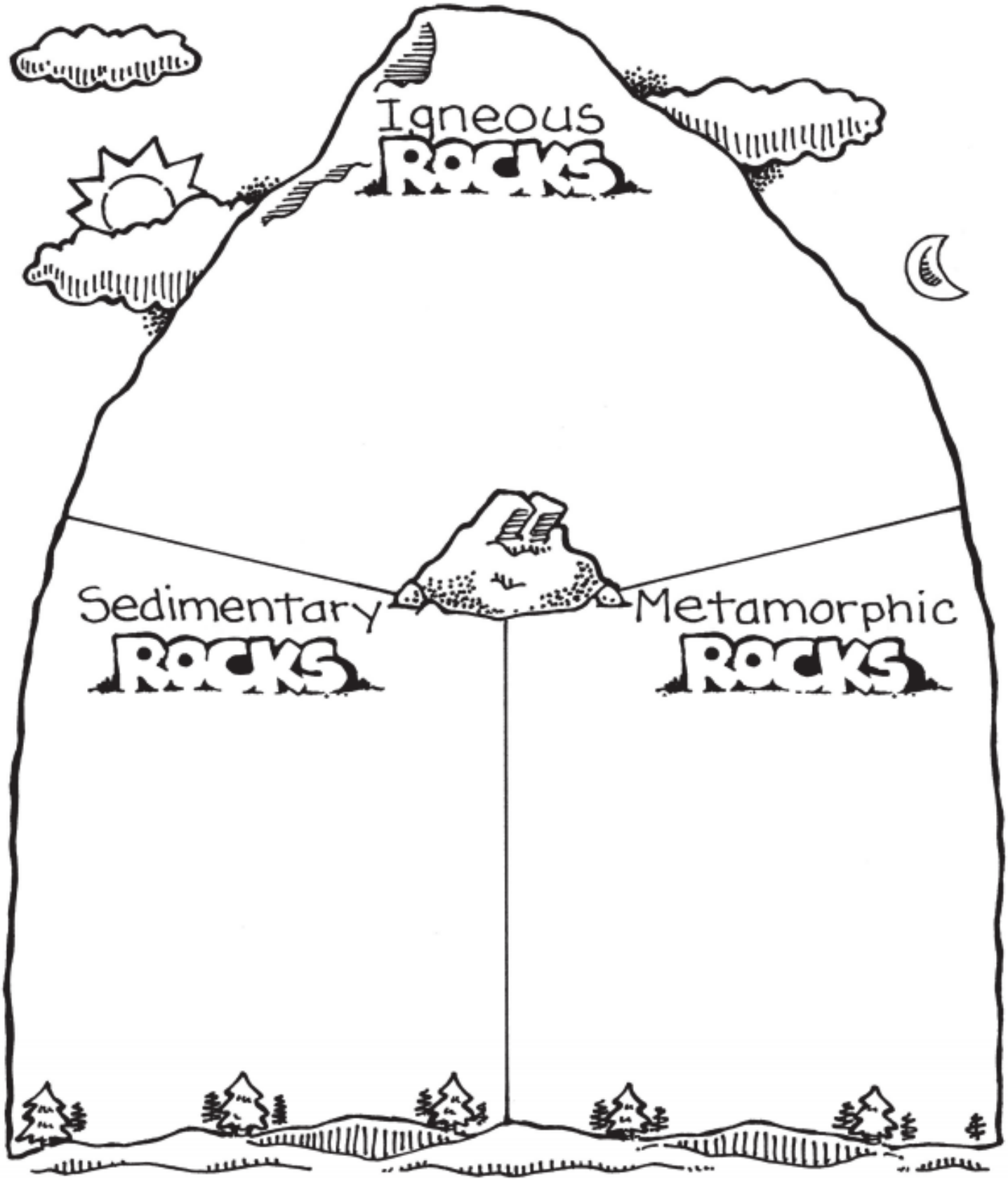
Igneous - Igneous rocks are formed from cooled lava. They may have **crystals**, **air bubbles** or a **glassy surface**. They can also appear **hard** and **dense.**

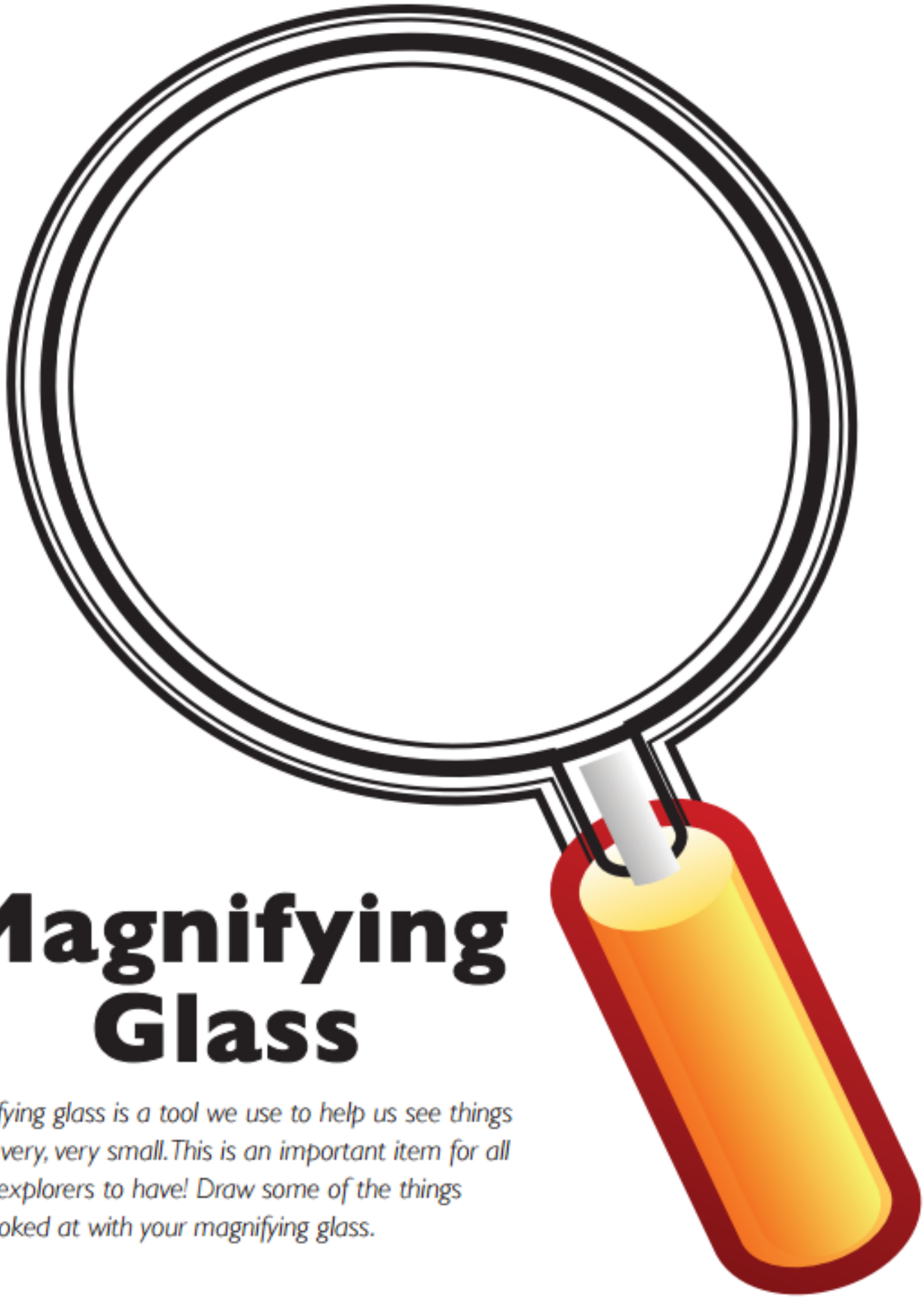
Sedimentary - Often formed from mud or sand settling at the bottom of water. The rock may **contain fossils**, have **wavy horizontal lines**, **layers**, **grains** you can see or be dusty.

Metamorphic - Changed by heat and pressure, sometimes split into **many layers** that look like a stack of pancakes with different **mineral grains** running through the rock.

After you've figured out which is which, draw a picture of each!

ROCK IDENTIFICATION





Magnifying Glass

A magnifying glass is a tool we use to help us see things that are very, very small. This is an important item for all outdoor explorers to have! Draw some of the things you've looked at with your magnifying glass.