

Yellowstone Creation Adventure

Junior Geologist Activity Book
Grizzly Level

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NorthwestRockAndFossil.com

Using the map below:

- Find the location of Yellowstone National Park and mark it with a star.
- Find the state or province that you live in, and color it orange.
- Find the state of Louisiana, and color it green.
- Find the state of Nebraska, and color it purple.



Rocks of Yellowstone

There are many different rock types in Yellowstone National Park. We are going to look at a few of the most abundant ones. But before we do that, it is important to know this:

Rocks are made up of minerals. And minerals have different colors. These colors are what give the rocks their colors.

Color the boxes below with the colors of the basic light-colored, rock-forming minerals.

Quartz	Muscovite mica	Potassium feldspar	Sodium feldspar	jasper	calcite
White or clear	Silver-gray	Pink	White	Reddish-orange	White or clear

And there are six basic dark-colored, rock-forming minerals.
Color these.

Amphibole or Hornblende	Pyroxene	Calcium feldspar	Biotite mica	Iron	Olivine
Black or dark greenish	Black or dark greenish	gray	black	black	Light to dark green

Types of Rocks in Yellowstone

Volcanic

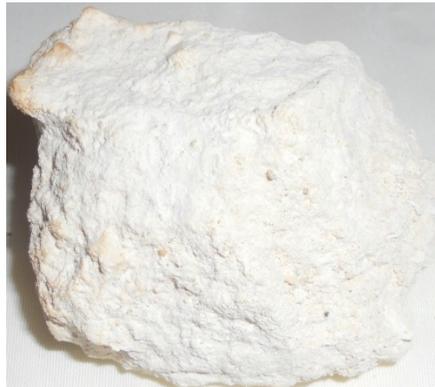
Lava is a type of volcanic or igneous rock. It was formed by fire.



Basalt lava



Rhyolite lava



Rhyolite lava

Look at these examples of two kinds of lava in Yellowstone. These lavas have one thing in common - it is almost impossible to see any kind of individual mineral in the rock. What you see is a general color. Basalt (*buh-salt*) lava is grayish or black, and is colored mostly by

iron, which is black. Rhyolite (*rye-uh-lite*) lava can be gray, pink or white in appearance. That is because it has more quartz in it than basalt has. Remember, quartz is a light-colored mineral, so rhyolite is light-colored.

You will see lots of rhyolite lava at the Grand Canyon of the Yellowstone. And Sheepstealer Cliff (below) is made of basalt lava. Here the lava cools into columns. It is a magnificent sight!



Another special kind of lava is *obsidian*.



There is a whole mountain made of obsidian near Mammoth Hot Springs. Obsidian is a glassy rock. It is

most often black, but it can be clear or even red! When it splits, it leaves circular marks, which we call by a fancy name - conchoidal (*con-koi-dle*) fracture.

Your assignment: Find samples of the following rocks. After you have found them, confirm your find with your guide. Check off the boxes when confirmed.

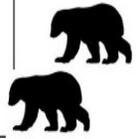
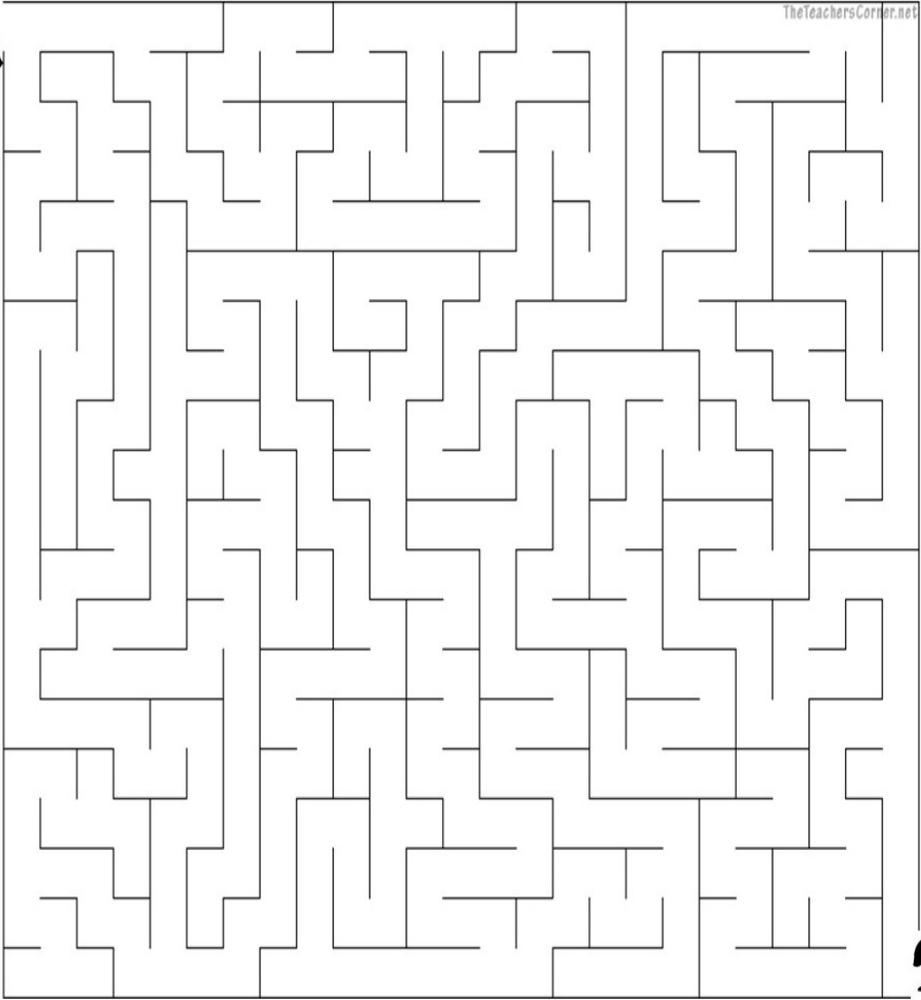
- Basalt lava
- Rhyolite lava
- Obsidian

*Remember that you must not keep what you collect. This is the law in the National Parks.

Help the mother grizzly find her cubs!



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Yellowstone Geology Worksheet

Instructions: During your *Yellowstone Creation Adventure*, you will hear answers to the following questions. Your job will be to listen carefully to the talks and fill in the missing words below. Stay alert! (If you are not a part of a *Yellowstone Creation Adventure*, you will need to do a little research to find the answers. But just in case you have trouble, the answers are at the end of the journal.)

1. Rocks and minerals do not reveal dates as to how old they are. The age of the rock must be determined by a person's _____.
2. Amphibolite is a dark-colored _____ rock made of the mineral amphibole.
3. Basalt is a type of dark _____, frequently seen in Yellowstone in the shape of columns.
4. Rhyolite is a type of light-colored _____ made of _____ and _____ feldspar.
5. The volcanic range of mountains that border Yellowstone to the east are called the _____.