

# Rocks and Minerals for Little Eyes



By Patrick Nurre

The Northwest Treasures Curriculum Project  
*Building Faith for a Lifetime of Faith*

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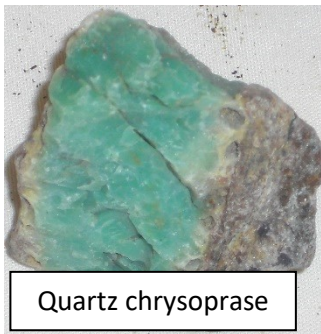
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# Rocks and Minerals for Little Eyes



## Lesson III: What is the Earth Made of?

Why talk about this in a rocks and minerals class? The phrase, "In the beginning, God..." tells us what took place at the beginning of time and Earth and why. The center of God's focus in this first chapter of *Genesis* was creating and forming a very special planet for man - Earth. And therefore we want to know what the Earth was made of in the beginning. Even the creation of the sun, moon and stars, on Day four of Creation week, were to help fulfill this purpose. The sun, moon and stars were



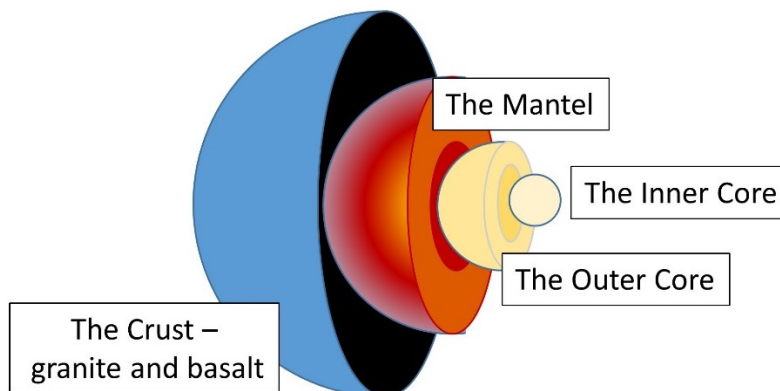
Quartz chrysoprase

to give light on the Earth and to mark seasons, days and years. This would only be important if it was for the sake of man, however. There is no other explanation for "seasons, days, months and years." Think about it: do animals count seasons, days, months and years? NO! Man does!

Secular scientists always start their history of the Earth with, *in the beginning, 15 billion years ago, the Big Bang, etc.* As God made a very special place in all of His creation, called Earth, it is important that we know a little about the composition of the Earth. What is it made of?

Geologists know quite a bit about the *crust* of the Earth. But no one has ever seen the inside of the Earth. Geologists think the Earth has a *crust*, a *mantle* and a *core*. Geologists have not drilled all the way through the crust of the Earth, so they don't know for sure what is below the crust! Geologists just guess at what might be there. They use sound waves to try and determine what is there. They also look at certain rocks that are different from those found in the crust. Some rocks are heavier than what is found in the crust. And this gives them the idea that perhaps the inside of the Earth is made of heavier rocks. That might be, but we don't know for sure. **Take out the sample of a heavy rock and a light rock from your kit. What do you notice?**

Geologists think the Earth may look like this:



**Do Activity #3.**

## Lesson VI: What are the Differences Between the Rocks?

Once you start collecting rocks, you will notice some basic differences among them. Here is a list of some of those basic differences.

- Some rocks you find will be **coarse-grained** rocks; rocks in which you can see the mineral grains. *Examples are:*



Gabbro and Granite

- Some rocks you find will be **fine-grained** rocks; rocks in which you cannot see the mineral grains. *Examples are:*



Basalt and rhyolite

- Some rocks you find will look like they have been deformed in some way. *Examples are:*



### Gneiss, phyllite and slate

- Some rocks you find will look like they have been stacked like pancakes. Some of these will be very fragile. *Examples are:*



Shale and sandstone

- All these rocks can also be grouped according to whether they are **light colored** or **dark colored**. Generally, the **minerals** pictured earlier form all the light and dark colored rocks. Take a look at the basalt and rhyolite in the above pictures. One is dark colored - the basalt; and one is light colored - the rhyolite. That is because the **dark colored minerals** form the basalt and the **light colored minerals** form the rhyolite. *Look at the chart of rock-forming minerals above and say the name of each mineral and whether it is dark or light.* This will be another way you can identify the rocks all around you.
- The different variations in the colors in the rocks are all due to the addition of other different **elements**. For example, iron causes things to turn brown or orange. Copper causes things to turn brassy or even green and blue.

**Do Activities 7, 8 and/or 9.**

## Activities

*For all activities, keep an **activity notebook** to make appropriate comments, pictures or notes as needed. Some observations may need to be notated by an adult. Simply ask your child what they observe, and write what they say.*

### Activity #1 - Density Column

This project is to help you to understand how watery sediments layer. This should give some insight into what happened during and after the Flood.

#### *Materials:*

*Honey*

*Corn syrup*

*Molasses*

*Milk*

*Oil*

*Dish soap*

*Pancake syrup*

*Any other liquids you like*

*Tray*

*A glass jar (holds 1 -2 C.)*

*Small pitcher*

*A few small items, like marbles, paper clip, eraser, piece of rock, sand, etc.*

#### **Procedure:**

You are going to pour the liquids in, one at a time, into the jar. They are going to settle to different levels. Can you predict which ones will settle on the bottom? Middle? Top? Go ahead, now, and pour each



liquid into the jar, one at a time. Watch carefully for movement of the liquids. A great way to add to this project is to add items and predict and observe whether the items sink or float and into which layers. Record your predictions about which items will settle on the bottom, middle, top. What predictions might you make about how sediments would have settled during/after the Great Flood? Record what thoughts you have about how sediments (and plants/animals) might have settled during and after the Flood,



## **Activity #2 - Splitting Rocks...with Water**

In addition to volcanoes and great flooding, ice played a large role in sculpting and shaping our world in the aftermath of the flood. This experiment hi-lights the power of ice to change things.

**Materials:**

*Balloon*

*Plastic container or aluminum pie plate*

*Plaster of Paris*

**Procedure:**

Fill a balloon with a small amount of water and then cover with plaster. Allow it to dry. Put it all in a container and put in the freezer. The ice will break the plaster apart.

The freeze/thaw cycle causes rocks to crumble and break down into little rocks. When water gets into cracks in the rocks, this water expands during the freeze cycle, making the cracks bigger. Then when cracks fill up with water in the thaw period, this allows water to go deeper into the rock. Each time the water freezes, the crack gets deeper, and in time, the rock will split. The power of frozen water expanding can also be seen when you leave a glass bottle filled with liquid or an unopened soda can in the freezer. (If you have a spare bottle or soda, you might try this!)

Record your observations.

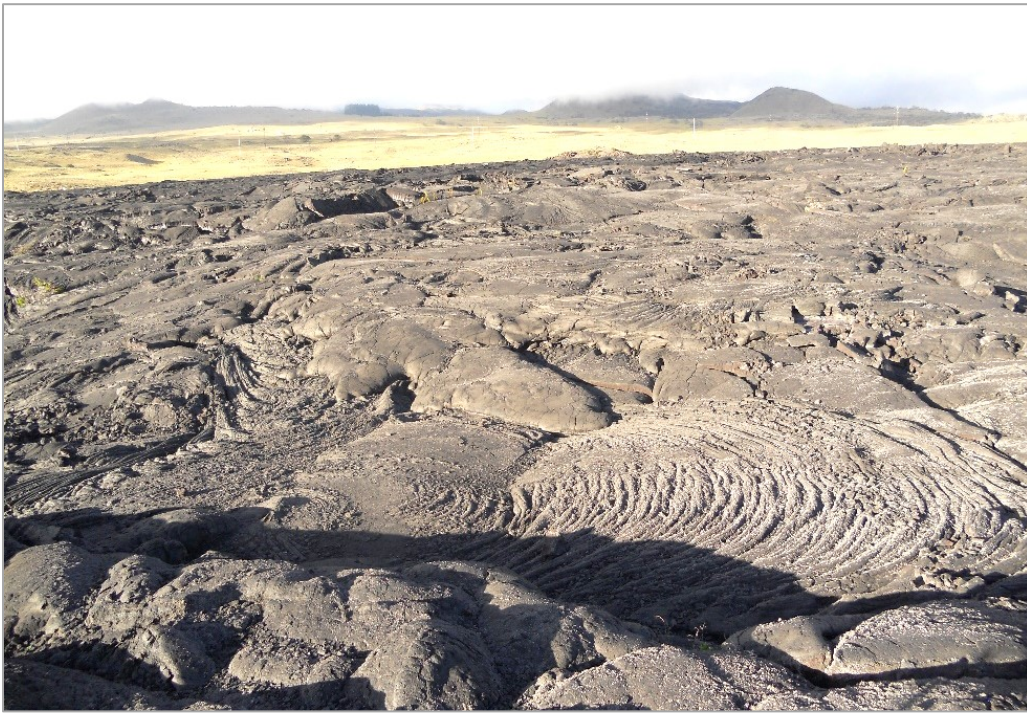
**Activity #3 - Earth Model**

**Materials:**

*4 colors of modeling clay*

**Procedure:**

Make a model of the earth's layers, using the picture in the text as a model.



Pahoehoe lava, Hawaii