

Geology for Kids

*A Biblical Approach to
Earth Science and Earth History*



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

By Patrick Nurre

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Section III - The Rocks and Minerals of the Earth

Part 2: Minerals - the Stuff of Rocks

In our last lesson we discovered that everything is made of atoms. These atoms are specially designed by God to form elements. Elements are specially designed by God to form minerals. Minerals form rocks. An example of a mineral is quartz. An example of a rock is granite.



Quartz is a mineral.



Granite is a rock.

Did you know that there are over 4,000 minerals that have been identified by scientists? It would take many years to learn all the minerals on Earth. But to have fun with the rocks in your back yard, you only have to learn 12!

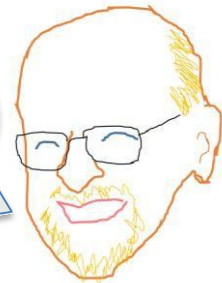
These 12 minerals are responsible for forming most of the rocks we collect. Here they are.

1. Quartz
2. Potassium feldspar
3. Muscovite mica
4. Sodium feldspar
5. Jasper (a colored type of quartz)

6. Calcite
7. Calcium feldspar
8. Pyroxene (pronounced as PEER-ux-seen)
9. Amphibole (pronounce as AM-fi-bole)
10. Magnetite (a form of iron)
11. Biotite mica
12. Olivine (pronounced as AH-li-veen); a form of magnesium

All these minerals are formed from the 8 most abundant elements that God created to make up the very special place we call Earth.

If you can learn the names of these 12 minerals and can identify them, you are well on your way to identifying almost any rock in the field!



These rock-forming minerals can be divided according to **light** and **dark** minerals. The first 6 in your list above are called **light-colored rock-forming minerals**. The next 6 in your list above are called **dark-colored rock-forming minerals**. These **light** and **dark** minerals will help you organize your rocks into light and dark-colored rocks.

The Lighter Colored Minerals	The Darker Colored Minerals
<p>Quartz Jasper (type of quartz) Potassium feldspar Muscovite mica Sodium feldspar Calcite (typically associated with sedimentary rocks)</p>	<p>Olivine Amphibole (Hornblende) Pyroxene (Augite) Biotite mica Calcium feldspar Magnetite (iron)</p>

The rock-forming minerals look like this:



They are: top row (left to right): *quartz, jasper, potassium feldspar, sodium feldspar*; second row: *calcium feldspar, biotite mica, muscovite mica, olivine*; third row: *pyroxene, amphibole, magnetite (iron)*; fourth row: *calcite*

Review

1. What are the 8 most abundant elements that form the earth's crust? You need to memorize these.
2. What are the 12 rock-forming minerals? You need to memorize these.

Write your answers in your notebook.

Activities

1. Using an encyclopedia or Internet resources, look up each of the 12 rock-forming minerals and make a chart listing the elements that make them up. What do you notice about the elements that make up the rock-forming minerals?
2. Take out the bag of rock-forming minerals from your kit and look at each one closely.
3. Organize the minerals into two groups: light-colored minerals and dark-colored minerals. Review these minerals and their two groups until you can recite them without looking at their labels. This activity is very important and it will help you understand rocks.

Quiz

1. Write out the 12 rock-forming minerals.
2. Name the 8 most common

Section V - Dinosaurs and Noah's Flood

Part 2: Kinds of Dinosaurs



During the 1700s a man by the name of Carl Linnaeus (1707-1778), a Swedish botanist (one who studies plants), physician, and zoologist (one who studies living animals), came up with a way to organize plants and animals. His system was called, The Linnaeus Classification System. This system uses one of the science languages, Latin to help him organize plants and animals. His system was used to organize **LIVING** plants and animals. After all, it is hard to classify dead things. You cannot observe their eating or living habits and you cannot observe how they bred.

Carl Linnaeus was a Christian and believed in the Bible. He believed that God had created everything and therefore we could study it and, like Adam, organize God's creation.

During this time a change began to happen in our world. Man began to stop believing in God and His Bible and started to trust his own ideas. Linnaeus' classification system began to be used to organize the fossils and dinosaurs. But because these things were dead and turned to stone, the results were based on man's ideas. And because they are the opinions of men, they have changed time and time again through the years.

So, it is time to go back to *Genesis*. In *Genesis* 1 God uses the word, *kind* to describe living things. And then God describes what He means. The kinds were to *reproduce after their kind*. So, a good definition of *kind* might be that plants and animals be able to reproduce. But since no one has described just how dinosaurs did that, we must guess. Scientists think that they know, but they are just guessing. They don't tell you they are guessing. And so we can be fooled by what they say.

I think there are some things that might allow us to guess as to the kinds of dinosaurs that God had created. Of course we don't know for sure but we can guess. And I am telling you that I am guessing so you won't be fooled.

When I was a kid, my favorite dinosaur was triceratops (pronounced *tri-SAIR-uh-tops*). Do you have a favorite dinosaur? Triceratops had a shield of bone that covered his head and he had three horns. His skeleton looks like this.



Triceratops

Triceratops' name in the *Greek* language means, *three horned face*. If you take away the *tri*, then you have *ceratops*, meaning, *horned-face*. There are other dinosaurs that share part of triceratops'

name. For example, protoceratops (*pronounced, pro-toe-SAIR-uh-tops*). His skeleton looks like this.



Protoceratops

Notice that protoceratops has a bony shield covering his head, but no horns. Yet, he still has the word, *ceratops* in his name. But since we cannot know much about protoceratops, we have to guess. But let's guess based on *God's Bible*. That would be the safest thing to do because we do not know for sure. Scientists think they know for sure, but they are just guessing. They do not tell you they are just guessing. What do scientists think? The word protoceratops means, *first horned face* or *before the horned face*. Scientists think that the first *ceratops* had no horns at first and then he changed over millions of years to having three horns. But again, they are just guessing. And their guess is based on an idea that is not found in *God's Bible*. *God* did not create things to evolve or change into completely different things. He created them to reproduce after their kind.....