



## ROCK DETECTIVES MINERAL MISSION

[www.MiniMeGeology.com](http://www.MiniMeGeology.com)

### Hey there Mini Me Geologists!

Today we are on a Mineral Mission. To complete your mission, you must follow the clues and complete the activities on this printable disk.

- **First**, read about each of the samples in your kit in our Mineral Information section.
- **Then**, print out and follow each of the Identification "ID" Activities.



Mineral Information



Identification Activities

Once you know what your samples are, move on to games, puzzles and experiments in any order you wish. Don't forget to take the "What I Learned" quiz at the end and print your Mineral Mission geologist's certificate to show everyone what a smart geologist you have become!



Experiments & Fun



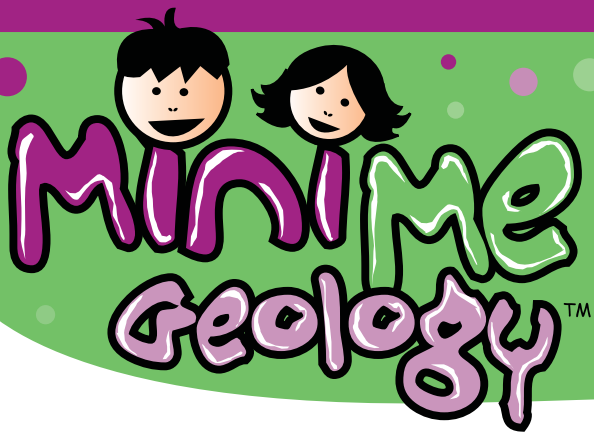
Games and Puzzles

**Parents Note:** The information on this disk is designed to be read on-screen and/or printed using adobe Adobe® Acrobat Reader which is a free program available at [www.adobe.com](http://www.adobe.com).



## Mineral Mission Samples

	<p><b>LEPIDOLITE</b>  <b>Color:</b> Purple. Also colorless, yellow or gray  <b>Hardness:</b> 2½ to 4 on Mohs Hardness Scale  <b>Streak:</b> Colorless  <b>Luster:</b> Glassy to Pearly</p>		<p><b>TOURMALINE</b>  <b>Color:</b> Black (also green, brown, red, blue, yellow or pink)  <b>Hardness:</b> 7 on Mohs Hardness Scale  <b>Streak:</b> Colorless</p>
<p><b>Locations:</b> United States, Brazil, Germany, Madagascar, Australia, Canada, Japan  <b>Uses:</b> Lepidolite mica is a source of lithium which has many uses including medicine and atomic energy.  <b>Features:</b> Mica minerals are found mostly in pegmatite rocks and form as a "book" with super thin crystal pages. Your fingernail can be used to flake apart the individual layers of the book. The lithium in lepidolite causes the purple color.</p>		<p><b>Luster:</b> Glassy to pearly  <b>Locations:</b> United States, Brazil, Italy, Russia  <b>Uses:</b> Gemstones, high-pressure gauges  <b>Features:</b> Tourmaline is a member of a family of minerals. Tourmaline, which often occurs in igneous rocks, does not degrade and therefore, is often found in gravel or other sedimentary rocks.</p>	
	<p><b>RHODONITE</b>  <b>Color:</b> Pink (rosy-red)  <b>Hardness:</b> 5½ to 6½ on Mohs Hardness Scale  <b>Streak:</b> White  <b>Luster:</b> Glassy</p>		<p><b>EPIDOTE</b>  <b>Color:</b> Green (the color of pistachio nuts)  <b>Hardness:</b> 6 to 7 on Mohs Hardness Scale  <b>Streak:</b> Colorless to gray  <b>Luster:</b> Glassy</p>
<p><b>Locations:</b> United States, Australia, Brazil, Russia, Canada, Sweden, England  <b>Uses:</b> Gemstones for jewelry  <b>Features:</b> Found in metamorphic rocks and typically has black mineral veins running through the pink grains. Rhodonite does not often form perfect crystals. It usually forms as many grains clumped together called a "mass."</p>		<p><b>Locations:</b> United States, Italy, Austria, Norway, Canada, France, Australia  <b>Uses:</b> Gemstones, collections  <b>Features:</b> Epidote is most commonly found in metamorphic rocks and can be the altered form of plagioclase feldspar. Often forms beautiful crystal shapes.</p>	
	<p><b>LIMONITE</b>  <b>Color:</b> Yellow-Brown  <b>Hardness:</b> 5 to 5½ on Mohs Hardness Scale  <b>Streak:</b> Yellow-brown</p>		<p><b>AMAZONITE</b>  <b>Color:</b> Blue-Green  <b>Hardness:</b> 6 to 6½ on Mohs Hardness Scale  <b>Streak:</b> White  <b>Luster:</b> Glassy</p>
<p><b>Luster:</b> Earthy  <b>Locations:</b> United States  <b>Uses:</b> Used for dyes and pigments  <b>Features:</b> Limonite does not form distinct crystal shapes.</p>		<p><b>Locations:</b> United States, Russia, Brazil  <b>Uses:</b> Jewelry, collections  <b>Features:</b> Amazonite is a very popular form of microcline feldspar although it is more rare than other forms of the mineral. Amazonite can be identified because it often has lines on a flat side that look like scratches.</p>	



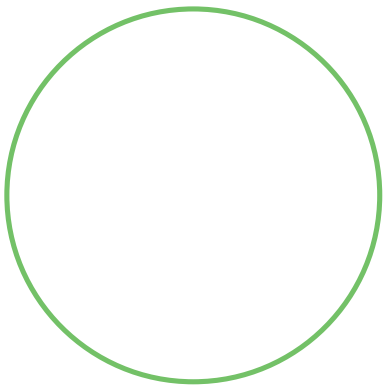
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## What I Learned

You have almost completed your Mineral Mission! Try these question to see what a great Mini Me Geologist you have become!



**My Favorite Mineral** (Draw and color a picture of your favorite mineral)

I love it because:

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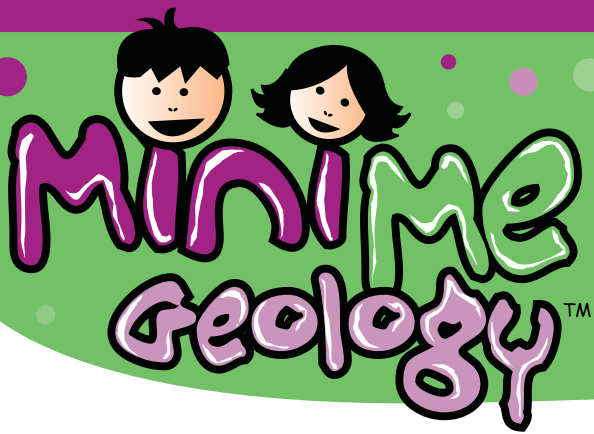
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1. Streak is the color of a mineral in its powdered form. TRUE FALSE
2. All minerals have a streak color. TRUE FALSE
3. The most common mineral luster is \_\_\_\_\_.  
A. Glassy B. Pearly C. Earthy D. Silky
4. Lepidolite is a purple, mica mineral. TRUE FALSE
5. Rhodonite is green. TRUE FALSE
6. Limonite is used to make: A. Jewelry B. Dyes C. Glass D. Soap
7. Epidote is the same green color as:  
A. Leaves B. Grass C. Pistachio Nuts D. Apples
8. Tourmaline is part of a \_\_\_\_\_ of minerals.  
A. Gaggle B. Family C. Class D. Team
9. Amazonite is a feldspar mineral that can have \_\_\_\_\_ that look like scratches on its flat side. A. Pictures B. Lines C. Letters D. Tattoos
10. I am a great Geologist! TRUE TRUE



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### Streak Test Experiment

We love the streak test because it can be really fun to see the different colors show up on the porcelain tile streak plate and is a great test to help identify your minerals. Some minerals can even show you their streak on a piece of paper. **Let's try!**

**! SAFETY FIRST!** A good geologist is always safe. Wear goggles to protect your eyes when scratching the samples and be careful because minerals and rocks can have sharp edges.

#### You will need:

- 1 piece of white paper
- 1 piece of black paper
- Mineral samples from your kit
- Pencil (Your pencil lead is actually the mineral graphite. Graphite is very soft and great for a streak test)

Optional: You can perform this test following the same methods using white and black geologists streak plates or an unglazed tile from the hardware shop.

**To perform the test:** Place each piece of paper on a hard surface. Scratch each mineral and your pencil on both sheets of paper.

Record the color of the streak below. Remember, some minerals will have a colorless streak and others will be too hard to make a streak. Record your findings as the streak color, colorless, or too hard to streak.

Lepidolite \_\_\_\_\_ Rhodonite \_\_\_\_\_ Epidote \_\_\_\_\_ Amazonite \_\_\_\_\_

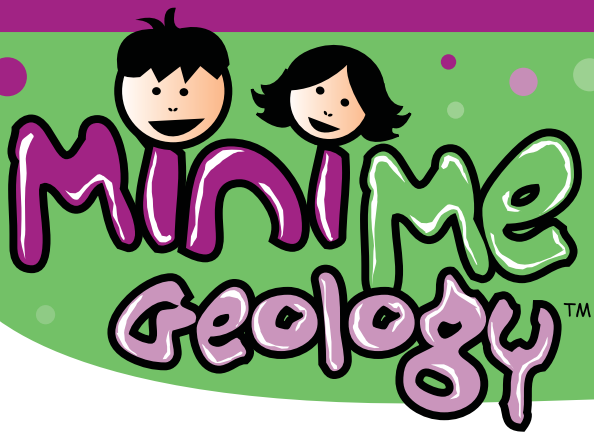
Limonite \_\_\_\_\_ Tourmaline \_\_\_\_\_ Graphite (Pencil) \_\_\_\_\_

Does one color of paper work better for some samples than others? \_\_\_\_\_

Is one streak color the most common? \_\_\_\_\_

Which streak color do you like the best? \_\_\_\_\_

**CONGRATULATIONS! YOU ARE NOW A TRUE MINI ME GEOLOGIST!**



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### Make a Geologists Field Notebook

Geologists use a field notebook to record information about their rocks, minerals, and maps. Create your own notebook with our Field Notebook Pages.

#### You will need:

- 1 copy of the [Notebook Cover](#)
- Several copies of the [Notebook Inside Pages](#)
- Hole punch (have an adult help you)
- String
- Markers, crayons or colored pencils

#### Optional:

- Construction paper and glue
- 3-ring binder

#### To Make Your Geologists Field Notebook:

- Decorate the cover of your Field Notebook with colors or pictures.
- Write your name on the bottom of the cover (where it says "Property of") so everyone knows that the field notebook belongs to you.
- Stack your cover and inside pages together.
- With an adult's help, punch 2 or 3 holes along the left edge of the pages.
- Tie string through the holes to hold your field notebook together.

#### Other ideas:

To make your notebook stronger, glue your cover page to a piece of construction paper and put a second piece of construction paper at the back of the notebook.

**OR** Instead of using string to tie your notebook, you can place the pages in a 3-ring binder.

#### To Use Your Geologists Field Notebook:

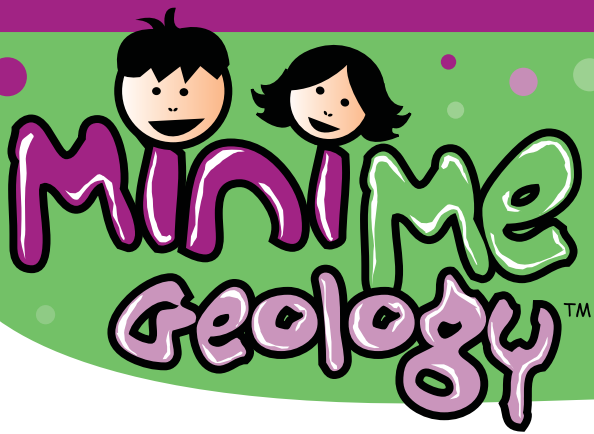
Each time you use your notebook, write the date, page number, and weather on the lines at the top. Give each page a title such as "Salt Growing Experiment" or "Nature Walk." Use the lined area to write notes about your nature walks, samples, or experiments. Use the space at the bottom of each page to draw pictures of your samples, locations and activities.



**For safety, always take an adult with you on a nature walk or if you are rock hunting outdoors.**

**Have fun! The information you record in your book is up to you because you are the geologist!**





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## Mineral Mission Word Scramble

Use the clues to help you unscramble these mineral names and geology words.

**ENARLISM** The substances used to make rocks. \_\_\_\_\_

**OOCL** The outside appearance of a mineral such as pink, green or brown. \_\_\_\_\_

**REAKTS** The color of a mineral in powdered form. \_\_\_\_\_

**HRNSADES** Measured by the Mohs Scale for minerals. \_\_\_\_\_

**RETSUL** The appearance of a mineral when light hits the sample, such as glassy or pearly. \_\_\_\_\_

**LGGGOES** Worn by geologists to keep their eyes safe when performing experiments. \_\_\_\_\_

**LEPAMS** A piece of a mineral or rock that can be easily held and examined by a geologist. \_\_\_\_\_

**NDAH ENLS** Used by geologists to magnify a mineral or rock sample to see it closely. \_\_\_\_\_

**SSOMPAC** Used by geologists to make maps and evaluate the location of rocks and minerals. \_\_\_\_\_

**ERMMAH** Used by geologists to break a rock or mineral sample. \_\_\_\_\_

**Clues:** color, hardness, minerals, goggles, sample, luster, hand lens, hammer, compass, streak



### Mini Me Coloring Page

Color the Mini Me Geologists and help them figure out their rock shapes.

