

# 17.1 Minerals of the Earth's Crust



Summarize main points from each video.

Video Title / topic \_\_\_\_\_

Video Title / topic \_\_\_\_\_

Video Title / topic \_\_\_\_\_

# Topic Introduction



**Summarize your understanding of each paragraph.**

A reasonable question students might ask is “Aren’t rocks and minerals the same thing?” And the answer is ... well, there is a lot of similarity, but the word “rock” and the word “mineral” are describing two categories of similar things.

The first difference is that a mineral is an inorganic solid. Sometimes rocks include organic remains of plants or animals. Many rocks are also inorganic – but minerals are always inorganic.

Minerals have a definite chemical composition and a crystalline structure formed by geological processes. In contrast, a rock is often an aggregate (“mixed together, mixture”) of one or more minerals.

The simplest answer is that rocks are made up of minerals, but minerals are not made out of rocks. Minerals are the building blocks of rocks, and are comprised of small crystals of chemical compounds.

# Read/Summarize Text



1. Read the passage.
2. Underline key expressions in each sentence.
3. Re-write each word (or expression) you underlined.
4. Summarize the passage.

## *Minerals and Mohs Hardness Scale*

You can identify a mineral by its appearance and other properties. The color and luster describe the appearance of a mineral, and streak describes the color of the powdered mineral. Mohs hardness scale is used to compare the hardness of minerals.

Mohs' scale of mineral hardness is named after Friedrich Mohs, a mineralogist who invented a scale of hardness based on the ability of one mineral to scratch another. Rocks are made up of one or more minerals. According to the scale, Talc is the softest: it can be scratched by all other materials.

[https://en.wikibooks.org/wiki/High\\_School\\_Earth\\_Science/Identification\\_of\\_Minerals](https://en.wikibooks.org/wiki/High_School_Earth_Science/Identification_of_Minerals)

## *Re-write words you underlined*

\_\_\_\_\_

\_\_\_\_\_

## *Using a complete sentence, summarize or rephrase the passage*

\_\_\_\_\_

# Read Text for Comprehension

Read this article for deeper understanding. No summary is required, although you may want to circle, underline, or mark key ideas and words.

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## Basics about minerals:

- You can identify a mineral by its appearance and other properties.
  - The color and luster describe the appearance of a mineral, and streak describes the color of the powdered mineral.
  - A mineral has a characteristic density.
  - Mohs hardness scale is used to compare the hardness of minerals.
  - The way a mineral cleaves or fractures depends on the crystal structure of the mineral.
  - Some minerals have special properties that can be used to help identify the mineral.
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Luster describes the way light reflects off of the surface of the mineral. You might describe diamonds as sparkly or pyrite as shiny, but mineralogists have special terms to describe the luster of a mineral.

They first divide minerals into metallic and non-metallic luster. If it is non-metallic, the words used are: adamantine, earthy, pearly, resinous, silky, and vitreous.

### Minerals with Non-Metallic Luster

Non-Metallic Luster	Appearance
Adamantine	Sparkly
Earthy	Dry, clay-like
Pearly	Pearl-like
Resinous	Like resins, such as tree sap
Silky	Soft-looking with long fibers
Vitreous	Glassy

For example, diamond has an adamantine luster. Quartz is not sparkly like a diamond is. Quartz has a vitreous, or glassy, luster.

*Other properties of a mineral are its color, streak, (luster), density, hardness, cleavage and fracture, fluorescence, magnetism, radioactivity, reactivity, and smell.*

# Draw Illustration



Copy and Label the Illustration in the Space Provided

Mohs Scale of Hardness		
Mineral	Scale Number	Common Objects
Talc	1	
Gypsum	2	
Calcite	3	Fingernail Copper Penny
Fluorite	4	
Apatite	5	Steel Nail Glass Plate
Orthoclase	6	
Quartz	7	
Topaz	8	Streak Plate
Corundum	9	
Diamond	10	

<https://mandminerals.wordpress.com/mohs-hardness-scale/>

Draw (Copy) the Illustration Here

# Interpret a Graph



Write the title of the graph \_\_\_\_\_

Circle the type of chart this represents

*Bar Chart   Line Chart   Pie Chart   Other*

If applicable,

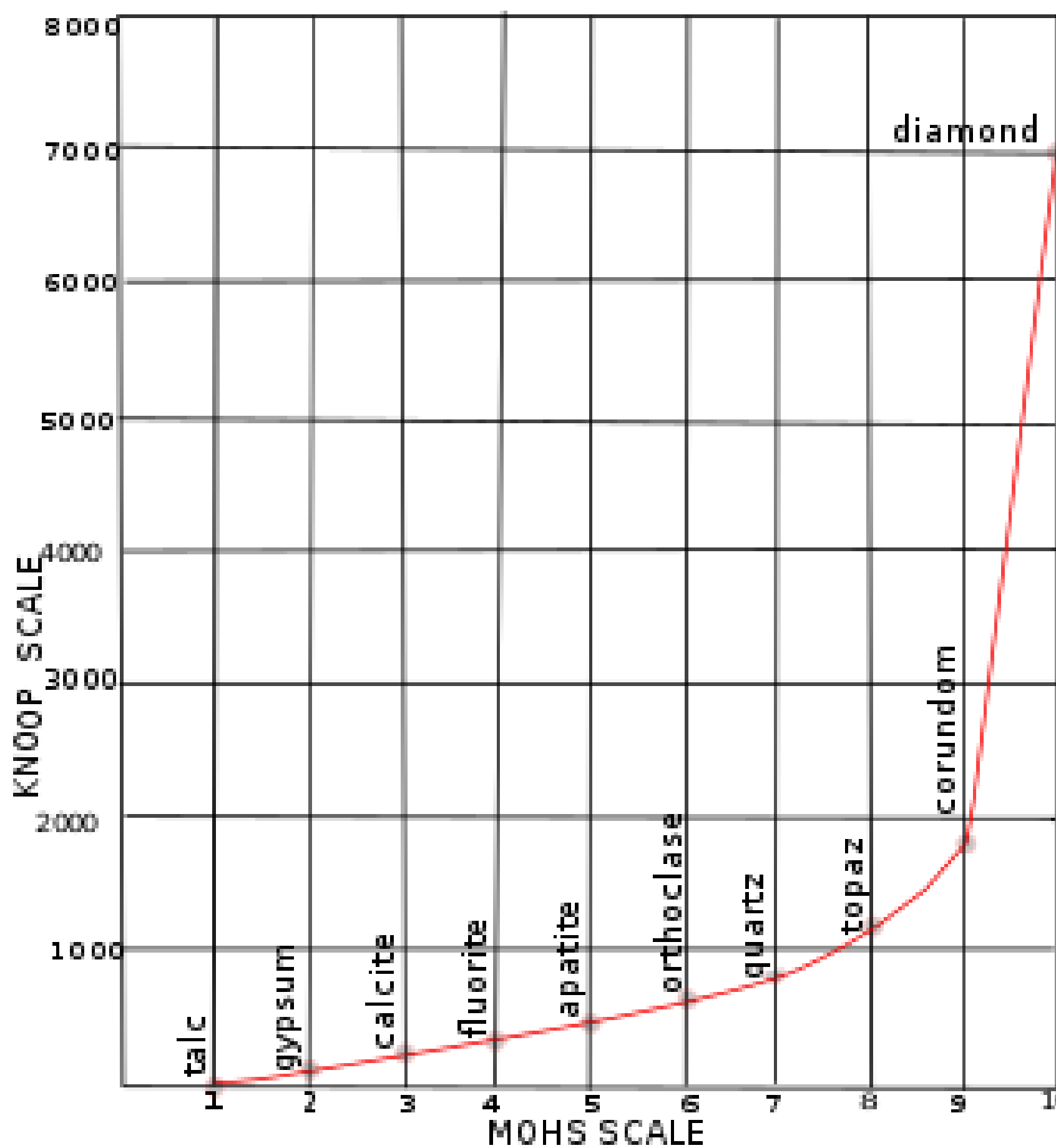
What does the X-axis represent \_\_\_\_\_

What does the Y-axis imply \_\_\_\_\_

Summarize what this graph represents or conveys

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[https://simple.wikipedia.org/wiki/Mohs\\_scale\\_of\\_mineral\\_hardness](https://simple.wikipedia.org/wiki/Mohs_scale_of_mineral_hardness)



# Show-Off Your Smarts!



## Instructions

- Complete as an individual or small group.
- Discuss your ideas/answers/responses in a small group.
- Select one person to present your responses to the class.

**Q1. What makes each kind of mineral unique?**

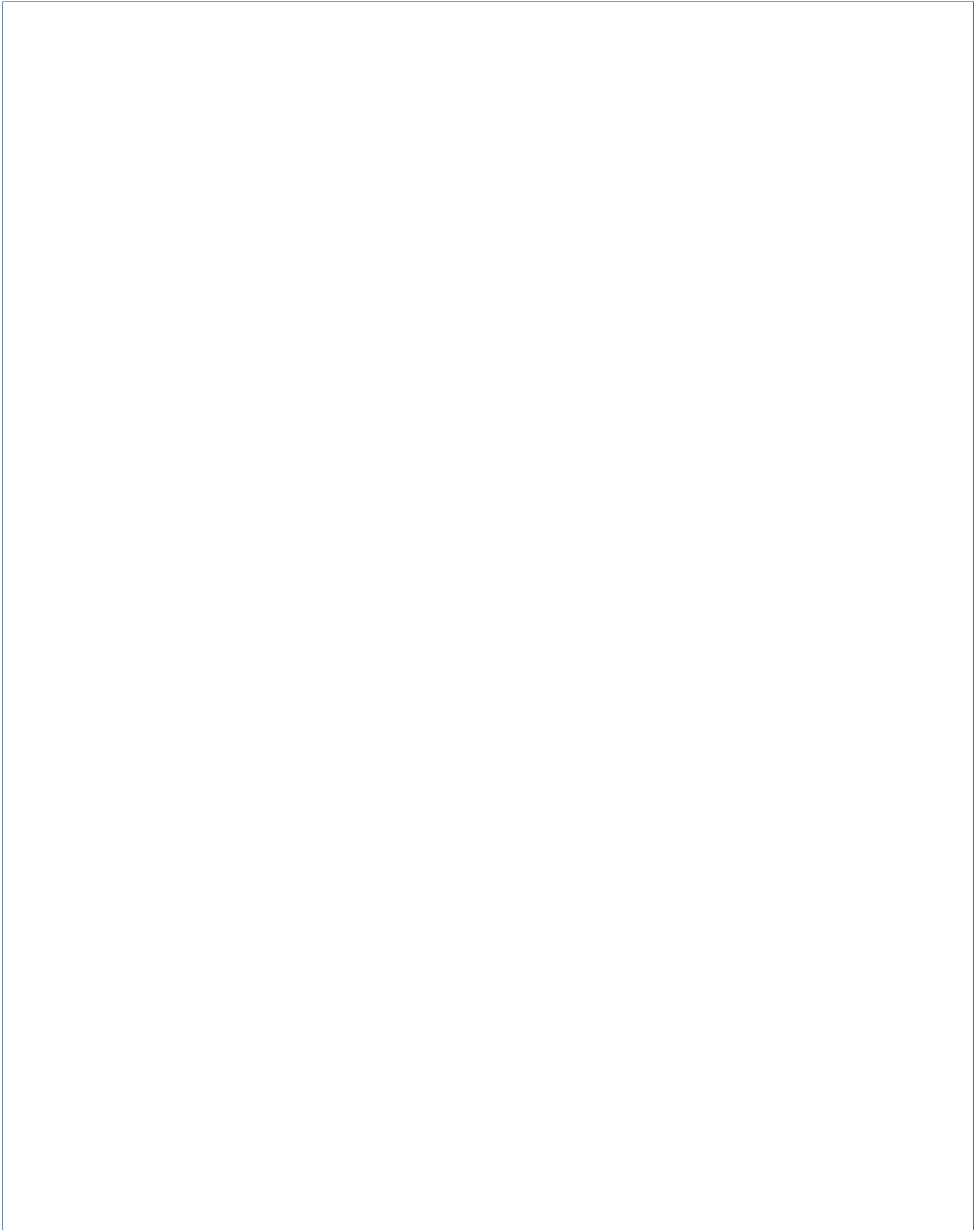
**Q2. A mineral's streak is always the same regardless of the mineral's color. How is this possible – and why is this important?**

**Q3. What makes a mineral deposit worth mining?**

**Q4. Why don't we just use the word "rock" for all rocks and minerals?**

# Make a Poster

In the space provided here, create/draw a poster which conveys the concepts you have learned on this topic.

A large, empty rectangular box with a thin blue border, intended for the student to create a poster. The box occupies most of the page below the instructions.