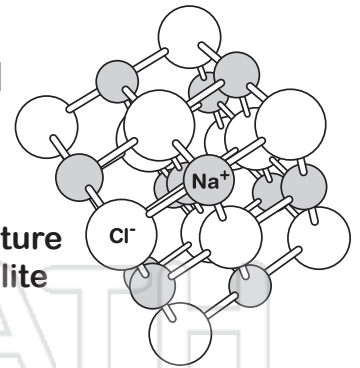




# Minerals

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

A **mineral**, by definition, must meet four criteria. It must be a naturally occurring, solid substance that has an internal **crystal structure** and is formed by **inorganic processes**.



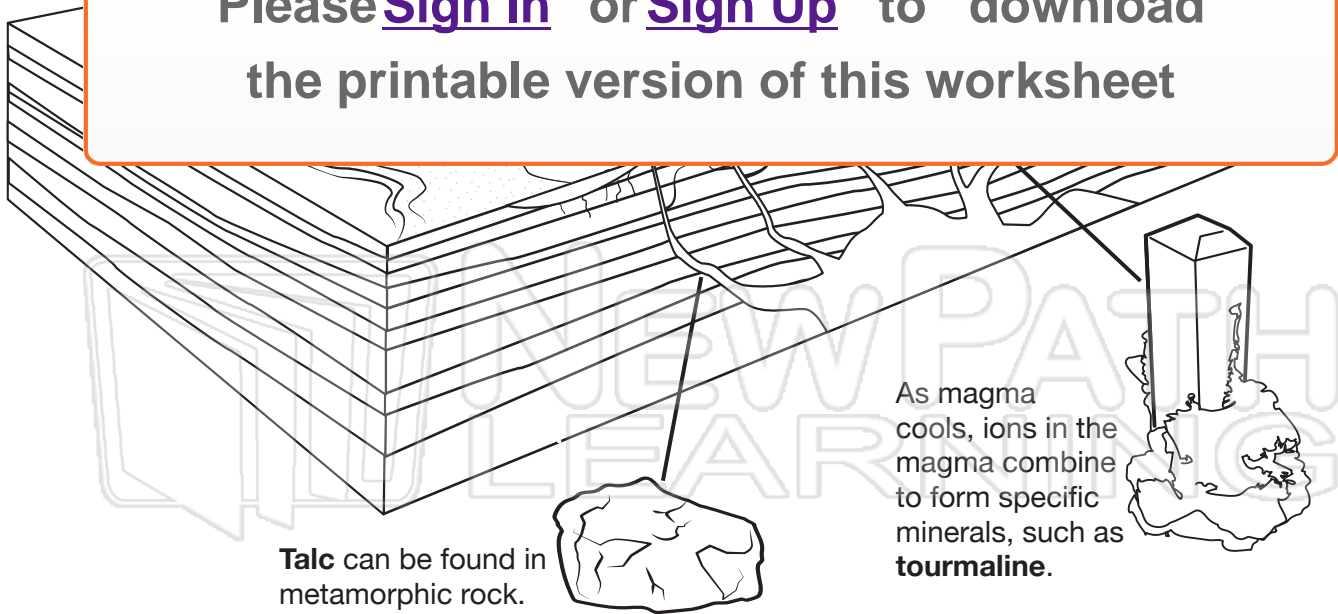
crystal structure (NaCl) in halite

## How Do Minerals Form?

**Minerals** form in a wide variety of geologic environments. Some form as a result of intense heat and pressure created during **metamorphism**. Some minerals form from **hot-water solutions** created when ground water is heated by magma. Yet a

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**Talc** can be found in metamorphic rock.

As magma cools, ions in the magma combine to form specific minerals, such as **tourmaline**.



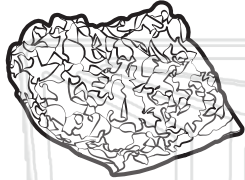
# Minerals

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

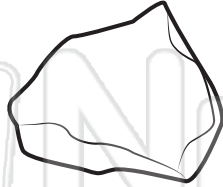
**Minerals** are identified based on their **physical properties**.

## Color

**Color** is sometimes used to help identify a certain mineral.



amethyst (purple)



sulfur (yellow)

## Streak

**Streak** is the color of a mineral when it is crushed to a **powder**. This is found by rubbing the specimen on a piece of unglazed porcelain (streak plate).



streak plate

## Luster

**Luster** is a description of **how light reflects** off of a mineral. Some luster descriptions are metallic, glassy, earthy, adamantine (diamond).

## Specific Gravity

**Specific gravity** is a measure of the **density** of a mineral. The density is determined by comparing the **mass** of the mineral with the mass of an equal amount of water.



**Cleavage**  
break  
descr  
curve

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mica (cleavage)

## Hardness

A mineral's hardness is determined by comparing it to the known hardness of the minerals in the **Mohs Hardness Scale**.



talc - 1  
softest mineral



diamond - 10  
hardest mineral

of the molecules in the mineral.

## Special Properties

There are interesting physical properties that are **unique** to some minerals. For example, magnetite is **magnetic**.



magnetite



# Minerals

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

A physical property that can be used to help identify a mineral is **hardness**. A mineral's **hardness** is determined by comparing it to the known hardness of the minerals in the **Mohs Hardness Scale**.

## Mohs Hardness Scale

① talc - softest mineral



⑥ feldspar



②



③

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④ fluorite



⑨ corundum



⑤ apatite



⑩ diamond - hardest mineral





# Minerals

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

A **mineral**, by definition, must meet four criteria. List the criteria:

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## How Do Minerals Form?

**Minerals** form in a wide variety of geologic environments. Describe how minerals can form in different areas. Name some examples.



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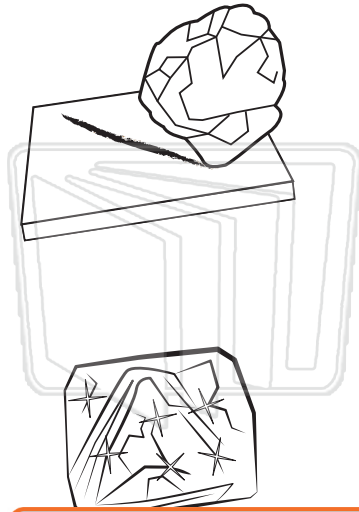


# Minerals

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

Describe some of the **physical properties** used to identify minerals.

## Streak



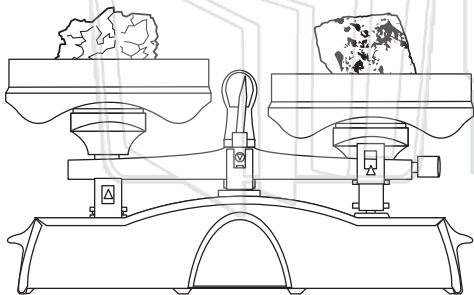
NEW PATH  
LEARNING

## Luster

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## Specific Gravity





# Minerals

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

Complete **Mohs Hardness Scale**. Research and list more minerals that are similar in hardness.

## Mohs Hardness Scale

1



6



2



3

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4



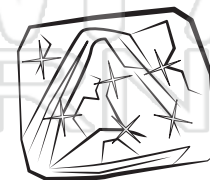
9



5



10





# Minerals

## Answer Key

A **mineral**, by definition, must meet four criteria. List the criteria:

must be a solid substance

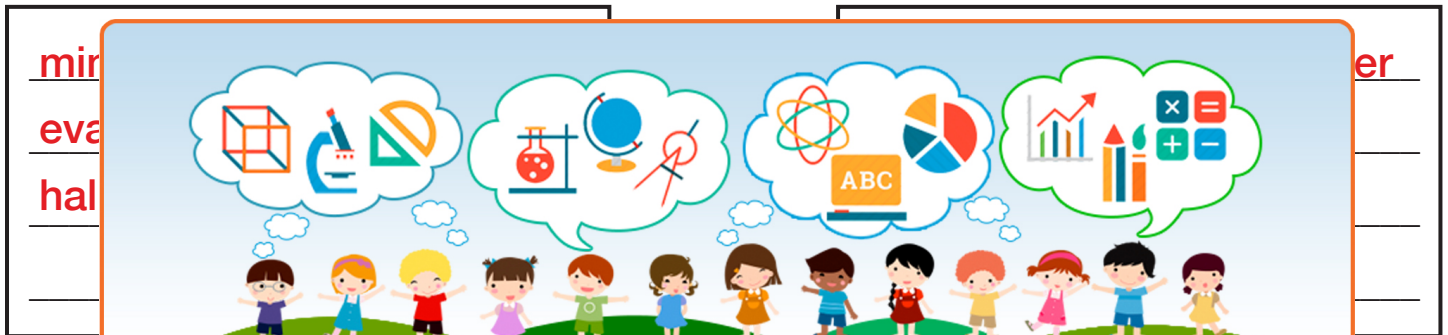
must be naturally occurring

has an internal crystal structure

formed by inorganic processes

## How Do Minerals Form?

**Minerals** form in a wide variety of geologic environments. Describe how minerals can form in different areas. Name some examples.



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during metamorphism, heat and pressure can cause minerals to form in rocks;  
talc

when magma (liquid rock) cools, ions in magma can combine to form minerals;  
tourmaline, topaz

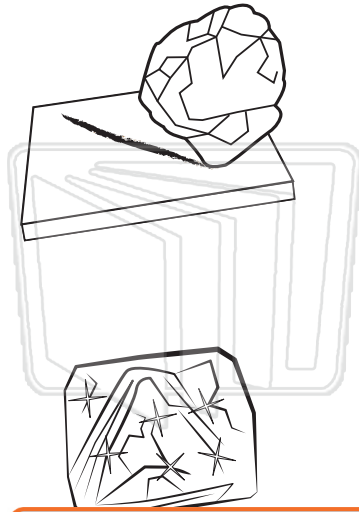


# Minerals

## Answer Key

Describe some of the **physical properties** used to identify minerals.

### Streak



Minerals can be crushed into powder by rubbing it on a streak plate. Different minerals have different color streaks.

### Luster

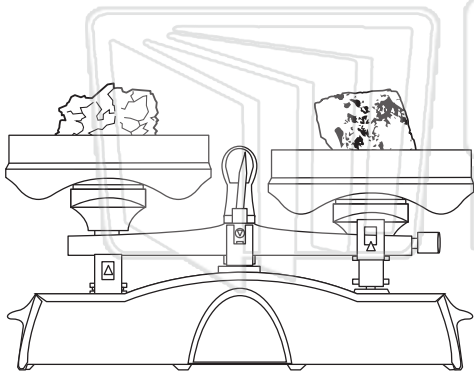
Different minerals reflect light in different ways giving them different lusters such as metallic, greasy, glassy, dull and earthy.



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irregular surfaces (fracture).



### Specific Gravity

Minerals have different densities that can be determined by comparing the mass of a mineral to the mass of an equal amount of water.







# Minerals

## Answer Key

Complete **Mohs Hardness Scale**. Research and list more minerals that are similar in hardness.

### Mohs Hardness Scale

<p>① </p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>⑥ </p> <p>_____</p> <p>_____</p> <p>_____</p>
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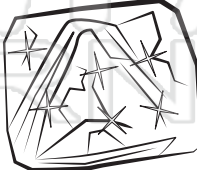
<p>② </p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>③ </p> <p>_____</p> <p>_____</p> <p>_____</p>
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<p>④ </p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>⑨ </p> <p>_____</p> <p>_____</p> <p>_____</p>
---	--

<p>⑤ </p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>⑩ </p> <p>_____</p> <p>_____</p> <p>_____</p>
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