MINERAL MADNESS

Activate Prior Knowledge

- Talk at your tables about what you ALREADY know about this topic.
  - What are minerals?
  - How are they made and used?
  - How did the title slide or anything else in life inform you? Etc.
- Be ready to report out!

What We Already Know…

What is a Mineral?

A naturally occurring,
inorganic
solid with a
definite chemical composition
and a crystal structure.

What does that mean?

naturally occurring

=

found in the Earth; not man-made

THINK: What does this mean to us?
PAIR: Talk to a partner about your thoughts.
SHARE: Report out to the group!

What does that mean?

inorganic

=

not from materials that were once part of living things

Can you think of a mineral you use or are exposed to on a regular basis?

What does that mean?

solid

=

has a definite shape and volume that doesn't change

Think about it: Based on this characteristic, is lava a mineral? Why or why not?

What does that mean?

Definite chemical composition

=

Always have the same elements in the same proportions

(Ex: Water is ALWAYS H_2O. That means water has 2 Hydrogen atoms and 1 Oxygen atoms. If that changes, you no longer have water! The same is true of minerals….the ratio of their elements don't change!)

What does that mean?

Crystal structure

=

Have a unique, repeating pattern

What do you think of?

Tessellations?

Tiles?

Give us an example!

SO….

A mineral is a naturally occurring, inorganic solid with a definite chemical composition and a crystal structure.

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This means…..a mineral MUST:

- Be found in the Earth; not man-made
- Not be from materials that were once part of living things
- Have a definite shape and volume
- Always have the same elements in the same proportions
- Have a unique, repeating pattern
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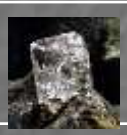
Talk With Your Group!

- Where have you seen examples of minerals before?

What are the properties of minerals?

Hardness- how hard it is compared to others (Mohs scale)

Mohs Hardness Scale

Mineral	Rating	Testing Method
 Talc	1	Softest known mineral. It flakes easily when scratched by a fingernail.
 Gypsum	2	A fingernail can easily scratch it.
 Calcite	3	A fingernail cannot scratch it, but a copper penny can.
 Fluorite	4	A steel knife can easily scratch it.
 Apatite	5	A steel knife can scratch it.
 Feldspar	6	Cannot be scratched by a steel knife, but it can scratch window glass.
 Quartz	7	Can scratch steel and hard glass easily.
 Topaz	8	Can scratch quartz.
 Corundum	9	Can scratch topaz
 Diamond	10	Hardest known mineral. It can cut hard glass.

What are the properties of minerals?

Hardness- how hard it is compared to others (Mohs scale)

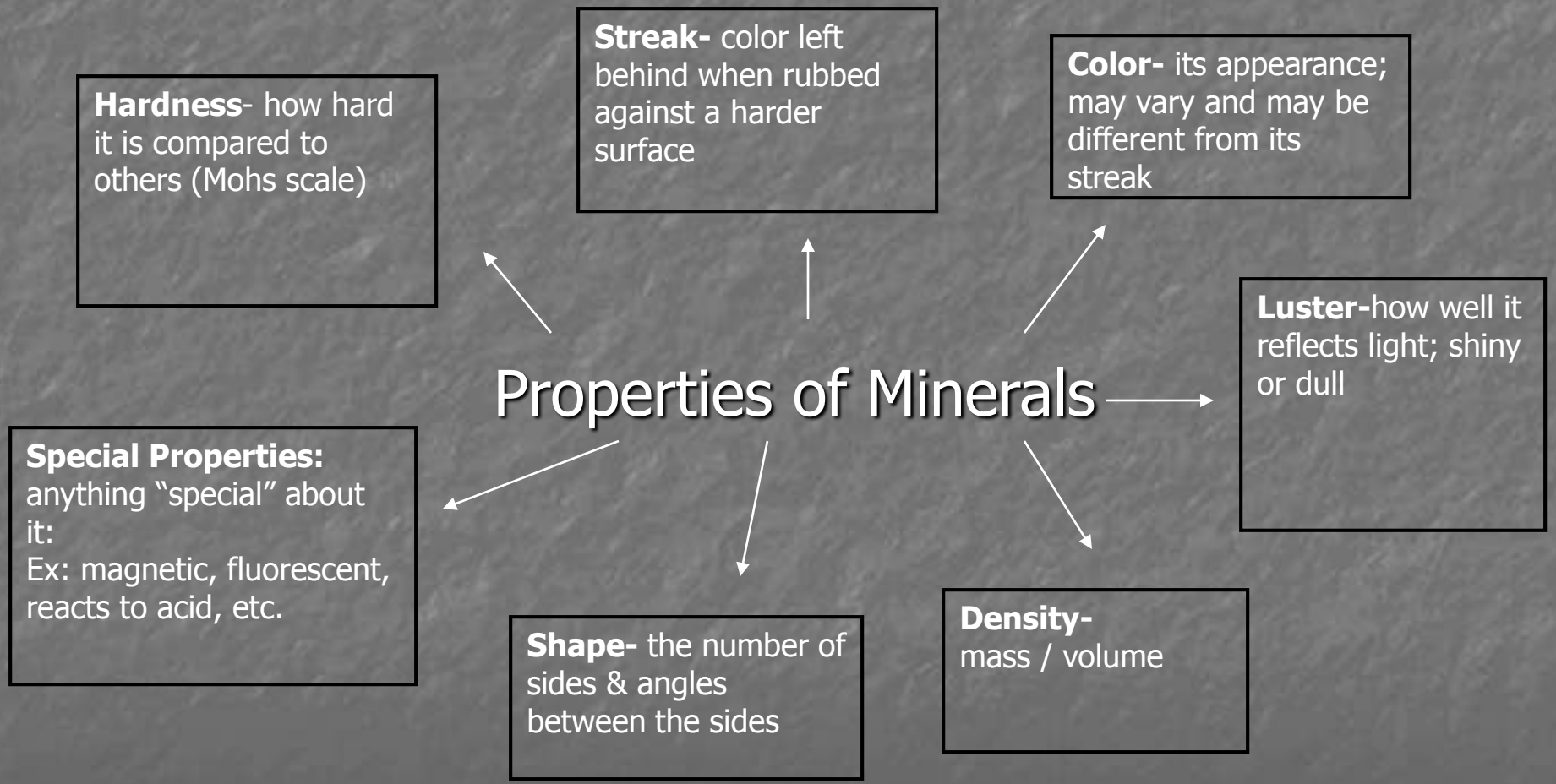
Streak- color left behind when rubbed against a harder surface

Color- its appearance; may vary and may be different from its streak

Talk With Your Group!

- Compare and contrast the similarities and differences between color and streak.

What are the properties of minerals?



Let's look at some special properties of minerals!

Fluorescent! ☺

Rate Your Learning…

- Where are you on the generic learning scale (0-4) with:
  - Understanding what a mineral is?
  - Understanding the properties of minerals?
  - The difference between the color and the streak of a mineral?

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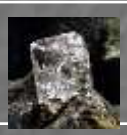 Quartz	7	Can scratch steel and hard glass easily.
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