Components of Activity

Earth 22& Earth 23

WHAT THIS ACTIVITY IS ABOUT: This activity is about cross-cutting concepts in science.

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INSTRUCTIONS:

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3. **Carefully read the 2nd paragraph. Underline and/or circle key ideas and words.**

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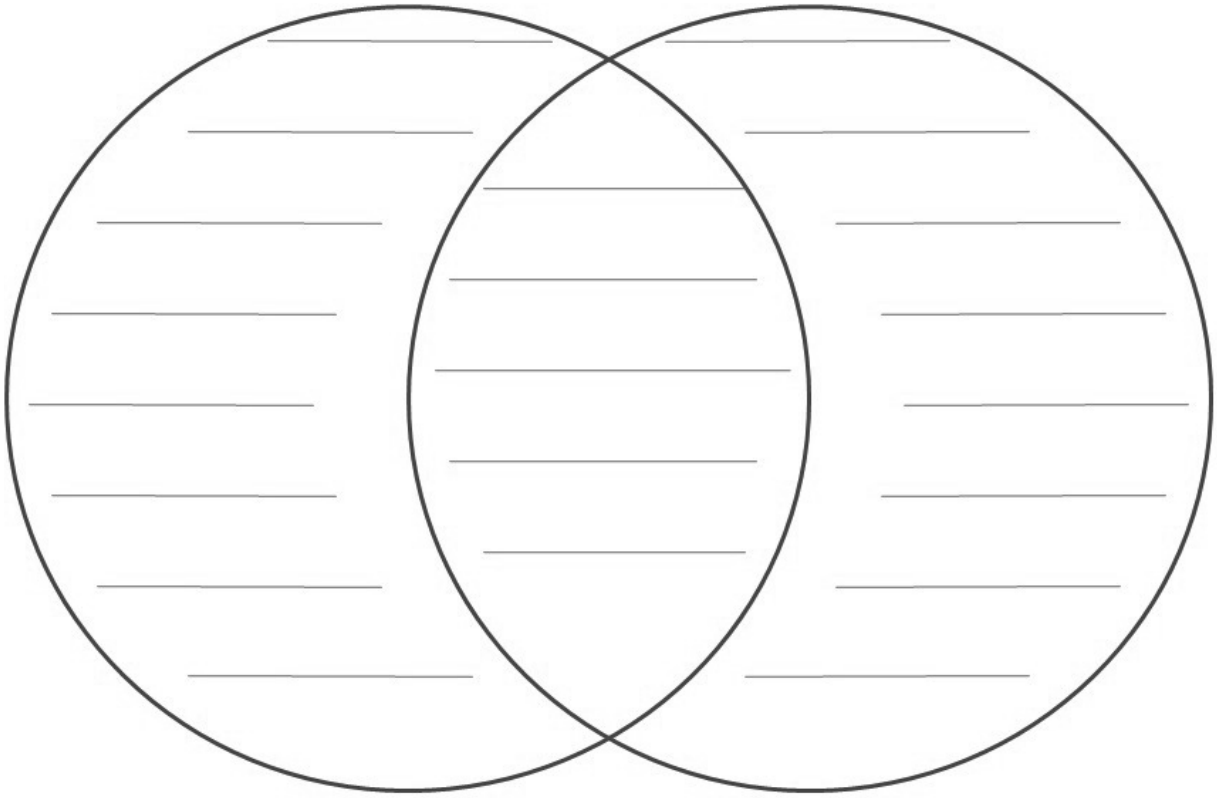
   At bottom of page, circle the number of the cross-cutting concept which BEST fits the paragraph.
5. **Return to the 2nd paragraph. Write a brief response for each cross cutting concept marked YES.**

   At bottom of page, circle the number of the cross-cutting concept which BEST fits the paragraph.
6. **At the bottom of each page, describe WHY you selected that cross-cutting concept as the BEST fit.**
7. **Complete a VENN diagram on the back page for the two topic paragraphs.**
8. **Write a 50 word essay. Summarizing your discoveries, ideas, and conclusions about the paragraphs.**

The Rock Record **Earth's Past**



Write a 50 Word Essay about the topic paragraphs here …

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Earth 22 Earth's Past

Beginning with the Precambrian period, Earth's past is a vast series of time-periods – chronological dating that relates geological strata to time. The geologic time scale (GTS) is used by geologists, paleontologists, and other Earth scientists to describe the timing and relationships of events that have occurred during Earth's history. The Precambrian started with the origin of the earth about 4.5 billion years ago and ended 570 million years ago. The timeline is grouped into eons, eras, and periods (each successively smaller units of time). (topic) *Does this paragraph mention, describe, imply, refer to, or convey:*

1. (YES) (NO) any **patterns**?
   in what way >> _____
   _____
2. (YES) (NO) any **cause and effect**?
   in what way >> _____
   _____
3. (YES) (NO) a **quantity, numeric scale, or proportion**?
   in what way >> _____
   _____
4. (YES) (NO) a **system, or organized structure**?
   in what way >> _____
   _____
5. (YES) (NO) about **energy or matter?** (*Especially flows, cycles, and conservation*)?
   in what way >> _____
   _____
6. (YES) (NO) the **structure or function** of something?
   in what way >> _____
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7. (YES) (NO) concepts of **stability and/or change**?
   in what way >> _____
   _____

Circle the number which BEST represents the paragraph? (1) (2) (3) (4) (5) (6) (7).

Why did you choose this number? >> _____
_____

Earth 21 The Rock Record

The rock record is nothing more than the rocks that currently exist. The rock record does not show a tidy, orderly progression of geologic events. Rock formations are eroded, buried, torn apart, melted, squashed together, even turned upside down. This geologic record is the history of Earth as recorded in the rocks that make up its crust. Rocks have been forming and wearing away since Earth first started to form, creating sediment that accumulates in layers of rock called strata. (topic) *Does this paragraph mention, describe, imply, refer to, or convey:*

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   in what way >> _____
   _____
2. (YES) (NO) any **cause and effect**?
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Why did you choose this number? >> _____
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Components of Activity

Earth 21& Earth 22

WHAT THIS ACTIVITY IS ABOUT: This activity is about cross-cutting concepts in science.

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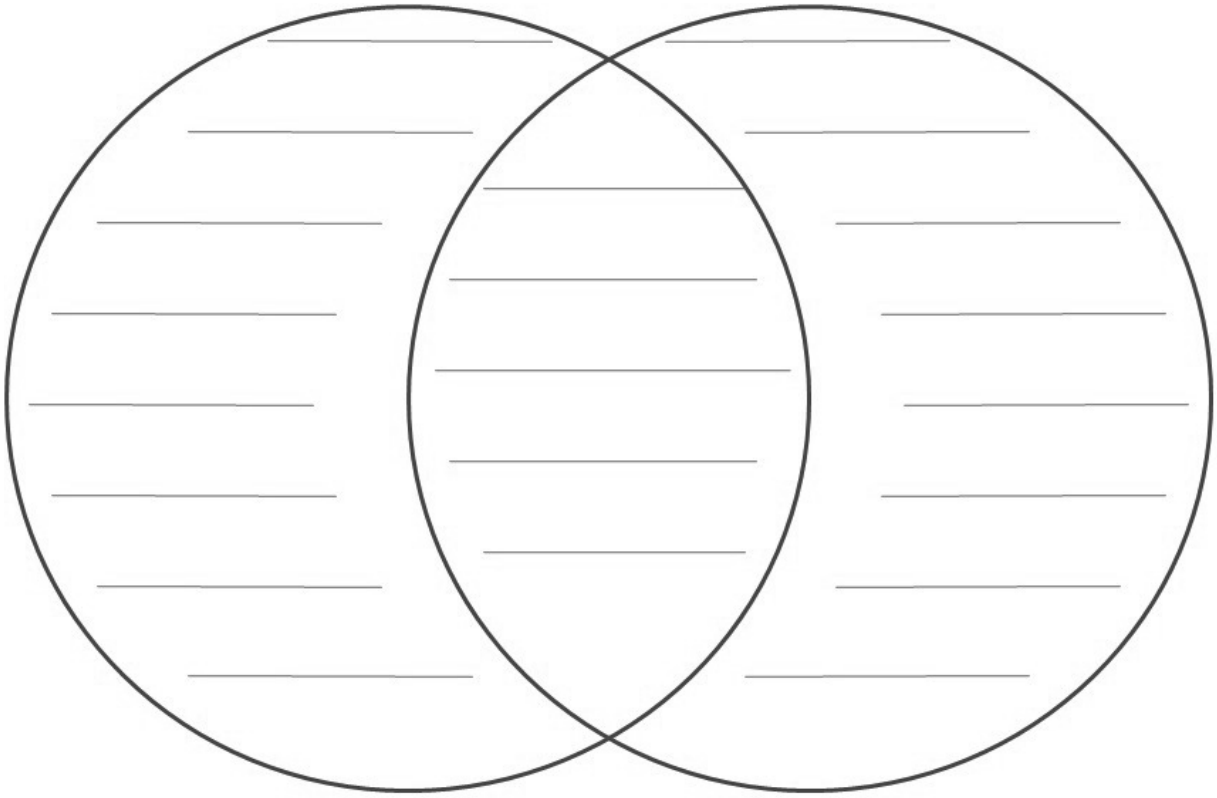
7. **Complete a VENN diagram on the back page for the two topic paragraphs.**
8. **Write a 50 word essay. Summarizing your discoveries, ideas, and conclusions about the paragraphs.**

Resources and Energy **The Rock Record**



Write a 50 Word Essay about the topic paragraphs here …

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Circle the number which BEST represents the paragraph? (1) (2) (3) (4) (5) (6) (7).

Why did you choose this number? >> _____
_____

Earth 19 Resources and Energy

A natural resource is something that is found in nature and can be used by people.Earth's natural resources include light, air, water, plants, animals, soil, stone, minerals, and fossil fuels. People need some natural resources to stay alive. Water resources are useful to humans – needed for life to exist. A renewable resource is a resource which can be used repeatedly and replaced naturally. Examples include oxygen, fresh water, solar energy and biomass. Hydrocarbon resources are often known as fossil fuel resources as hydrocarbons are the primary constituent of natural gas, oil, and coal. (topic) *Does this paragraph mention, describe, imply, refer to, or convey:*

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   in what way >> _____
   _____
2. (YES) (NO) any **cause and effect**?
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Why did you choose this number? >> _____
_____

Components of Activity

Earth 19& Earth 21

WHAT THIS ACTIVITY IS ABOUT: This activity is about cross-cutting concepts in science.

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INSTRUCTIONS:

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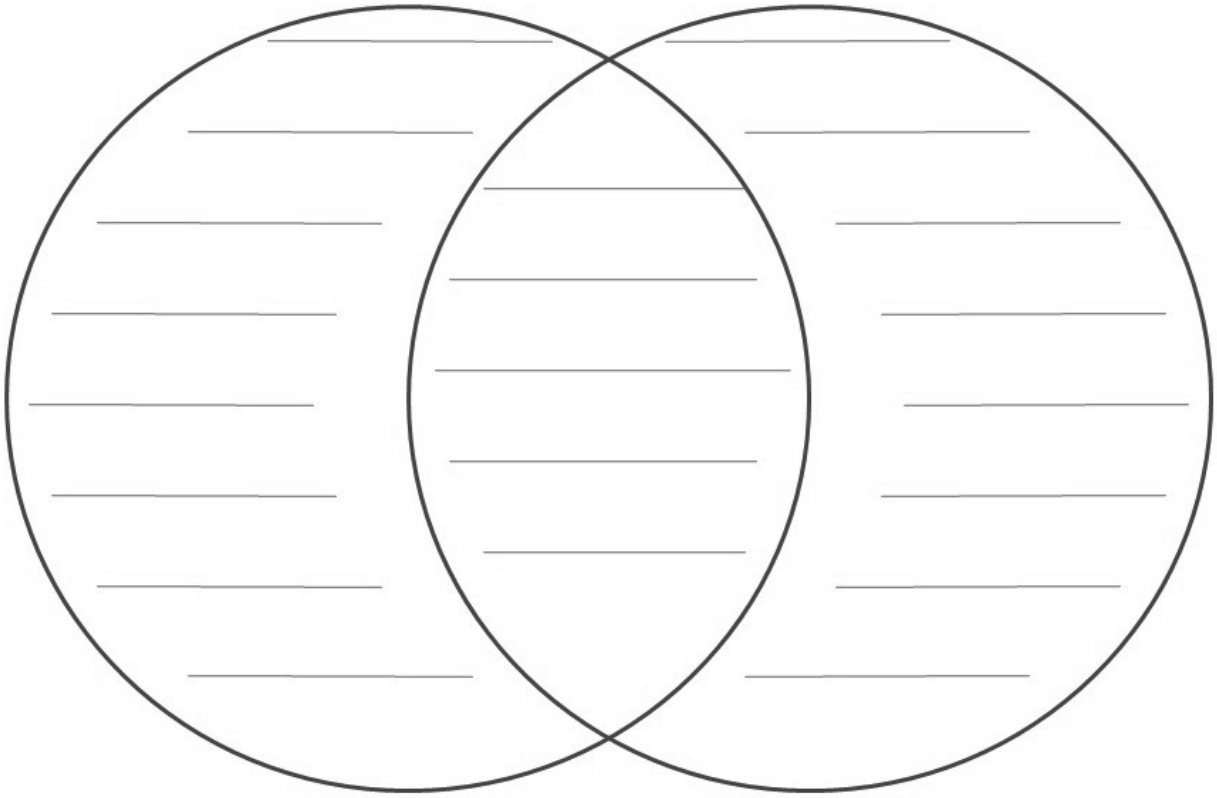
Rocks and Rock Types **Resources and Energy**



Write a 50 Word Essay about the topic paragraphs here …

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Circle the number which BEST represents the paragraph? (1) (2) (3) (4) (5) (6) (7).

Why did you choose this number? >> _____
_____

Earth 18 Rocks and Rock Types

The previous topic introduced minerals. Here we explore rocks and rock types. A rock is a naturally occurring aggregate of minerals and/or mineraloids. The three categories are igneous, sedimentary, and metamorphic. Example of each are as follows: Igneous Rocks (Basalt. Gabbro. Granite. Obsidian. Volcanic Ash and Tuff); Sedimentary Rocks. (Clays, Mudstones and Shales. Limestones. Sandstone); Metamorphic Rocks (Gneiss. Marble. Quartzite. Schist. Slate). (topic) *Does this paragraph mention, describe, imply, refer to, or convey:*

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_____

Components of Activity

Earth 18& Earth 19

WHAT THIS ACTIVITY IS ABOUT: This activity is about cross-cutting concepts in science.

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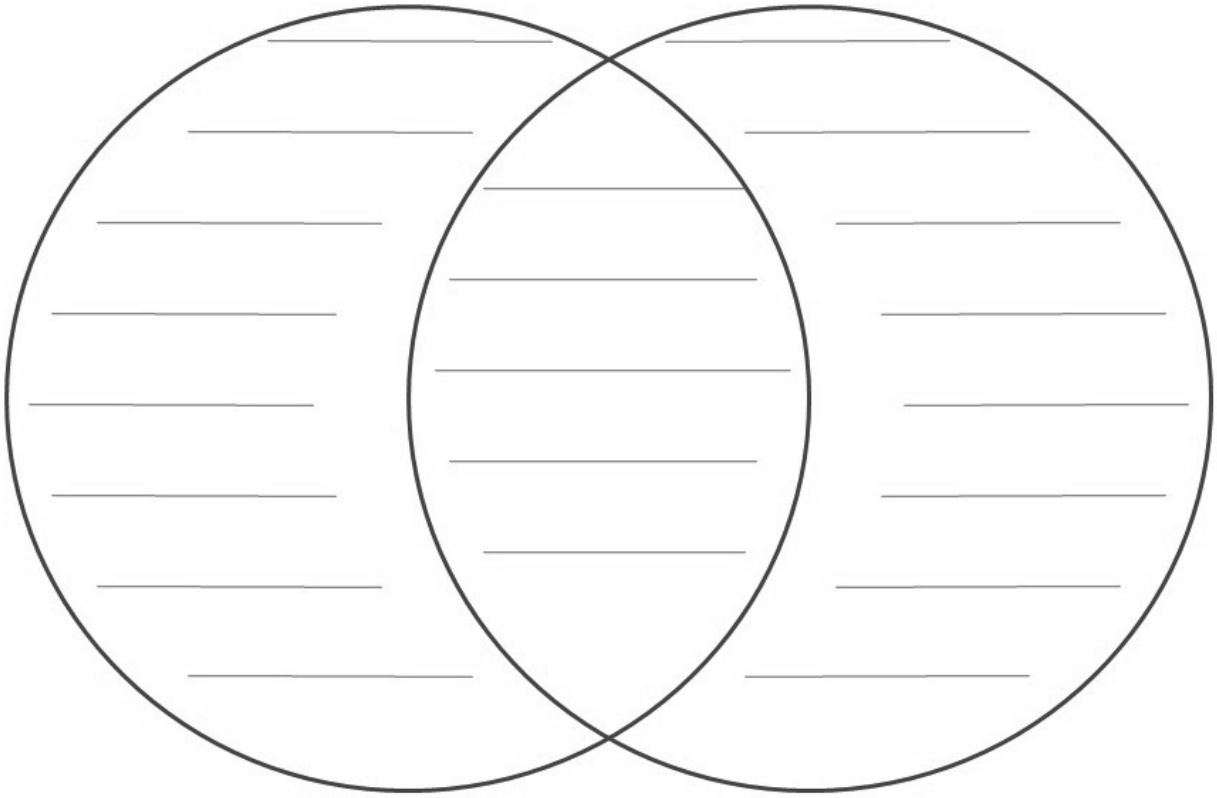
Minerals of the Earth's Crust **Rocks and Rock Types**



Write a 50 Word Essay about the topic paragraphs here …

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   _____
7. (YES) (NO) concepts of **stability and/or change**?
   in what way >> _____
   _____

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Why did you choose this number? >> _____
_____

Earth 17 Minerals of the Earth's Crust

A mineral is a naturally occurring inorganic solid, with a definite chemical composition, and an ordered atomic arrangement. Minerals are naturally occurring. They are not made by humans. Minerals are inorganic. Minerals have specific properties that can be measured and compared: color, streak, hardness, cleavage, crystalline structure, transparency, tenacity, and magnetism. (topic) *Does this paragraph mention, describe, imply, refer to, or convey:*

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Components of Activity

Earth 17& Earth 18

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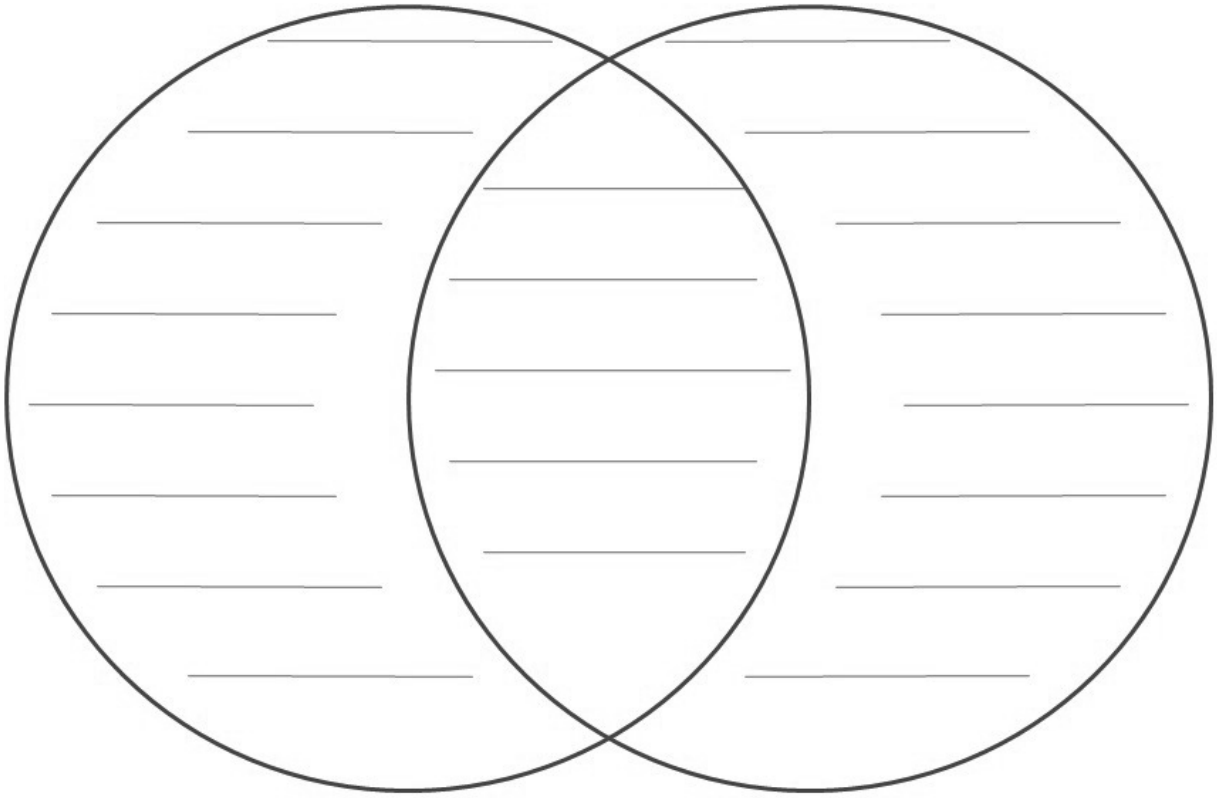
Earth Chemistry **Minerals of the Earth's Crust**



Write a 50 Word Essay about the topic paragraphs here …

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Circle the number which BEST represents the paragraph? (1) (2) (3) (4) (5) (6) (7).

Why did you choose this number? >> _____
_____

Earth 16 Earth Chemistry

With an atmosphere containing 78% nitrogen and 21%oxygen, the Earth is the only planet in the solar system capable of initiating and sustaining life-forms; the various chemical elements that make up the Earth, from the crust, down to the mantle and core, have a little something to do with that. Eight elements make up 98% of Earth's crust and its core. (topic) *Does this paragraph mention, describe, imply, refer to, or convey:*

1. (YES) (NO) any **patterns**?
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Circle the number which BEST represents the paragraph? (1) (2) (3) (4) (5) (6) (7).
Why did you choose this number? >> _____
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Components of Activity

Earth 16& Earth 17

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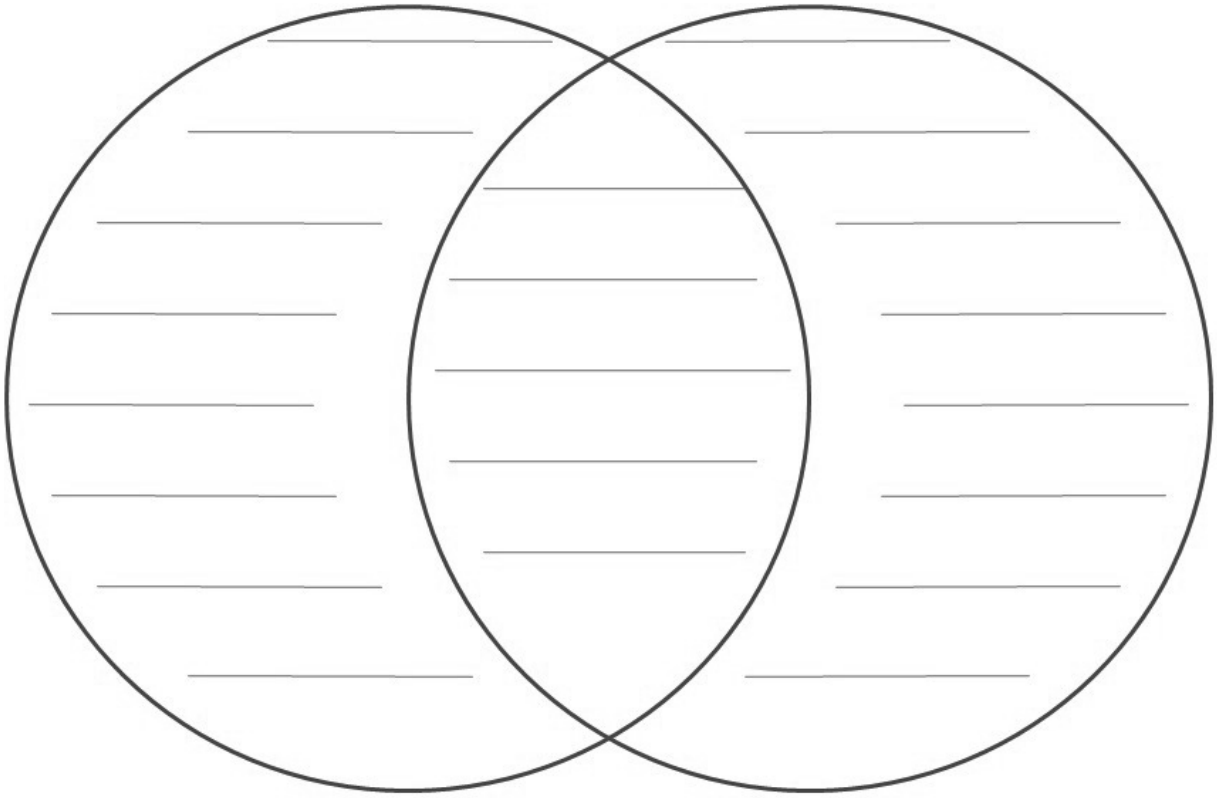
Types of Models **Earth Chemistry**



Write a 50 Word Essay about the topic paragraphs here …

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   in what way >> _____
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Circle the number which BEST represents the paragraph? (1) (2) (3) (4) (5) (6) (7).
Why did you choose this number? >> _____
_____

Earth 15 Types of Models

There are an almost limitless number of types of models. Listed elsewhere at Honeycutt Science, students can discover a variety of model-types used across the natural sciences. In recent years, a robust set of digital and math-based models have been developed to better understand Earth. An example is The Earth System Modeling Framework (ESMF), ESMF is open-source software for building climate, numerical weather prediction, data assimilation, and other Earth science software applications. This topic explores the variety of model-types, and examines specific model opportunities to better understand Earth. (topic) *Does this paragraph mention, describe, imply, refer to, or convey:*

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Components of Activity

Earth 15& Earth 16

WHAT THIS ACTIVITY IS ABOUT: This activity is about cross-cutting concepts in science.

Crosscutting Concepts represent common themes that span across science disciplines. These concepts identify universal properties and processes found in all the science disciplines.

INSTRUCTIONS:

1. **Briefly scan through each paragraph before starting.**
2. **Carefully read the 1st paragraph. Underline and/or circle key ideas and words.**

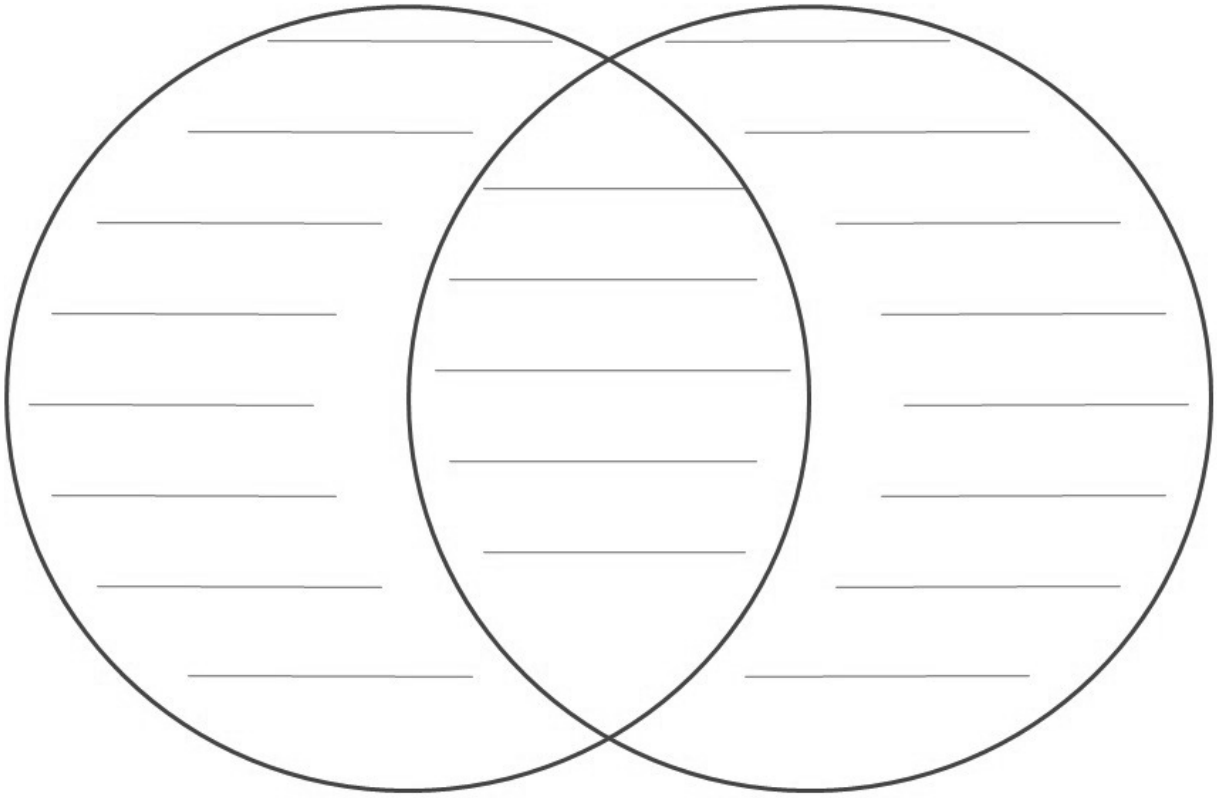
   Circle either YES or NO for each of the cross-cutting concepts on that page that apply.
3. **Carefully read the 2nd paragraph. Underline and/or circle key ideas and words.**

   Circle either YES or NO for each of the cross-cutting concepts on that page that apply
4. **Return to the 1st paragraph. Write a brief response for each cross cutting concept marked YES.**

   At bottom of page, circle the number of the cross-cutting concept which BEST fits the paragraph.
5. **Return to the 2nd paragraph. Write a brief response for each cross cutting concept marked YES.**

   At bottom of page, circle the number of the cross-cutting concept which BEST fits the paragraph.
6. **At the bottom of each page, describe WHY you selected that cross-cutting concept as the BEST fit.**
7. **Complete a VENN diagram on the back page for the two topic paragraphs.**
8. **Write a 50 word essay. Summarizing your discoveries, ideas, and conclusions about the paragraphs.**

Map Interpretation **Types of Models**



Write a 50 Word Essay about the topic paragraphs here …

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Earth 15 Types of Models

There are an almost limitless number of types of models. Listed elsewhere at Honeycutt Science, students can discover a variety of model-types used across the natural sciences. In recent years, a robust set of digital and math-based models have been developed to better understand Earth. An example is The Earth System Modeling Framework (ESMF), ESMF is open-source software for building climate, numerical weather prediction, data assimilation, and other Earth science software applications. This topic explores the variety of model-types, and examines specific model opportunities to better understand Earth. (topic) *Does this paragraph mention, describe, imply, refer to, or convey:*

1. (YES) (NO) any **patterns**?
   in what way >> _____
   _____
2. (YES) (NO) any **cause and effect**?
   in what way >> _____
   _____
3. (YES) (NO) a **quantity, numeric scale, or proportion**?
   in what way >> _____
   _____
4. (YES) (NO) a **system, or organized structure**?
   in what way >> _____
   _____
5. (YES) (NO) about **energy or matter?** (*Especially flows, cycles, and conservation*)?
   in what way >> _____
   _____
6. (YES) (NO) the **structure or function** of something?
   in what way >> _____
   _____
7. (YES) (NO) concepts of **stability and/or change**?
   in what way >> _____
   _____

Circle the number which BEST represents the paragraph? (1) (2) (3) (4) (5) (6) (7).
Why did you choose this number? >> _____
_____

Earth 14 Map Interpretation

Broadly, map analysis is a study is made regarding map types (which could include geologic maps, isopach maps, contour lines etc.), and the unique physical qualities of a map such as scale, title, and legend. It is also a ways of decoding the message and symbols of map and placing it within its proper context. A map is an image of an area, usually of the Earth or part of the Earth. A map is different from an aerial photograph because it includes interpretation. The word "map" can also be used to talk about a chart or drawing that shows relationships between ideas, people, events, or anything else you can think about. People who make maps are cartographers. (topic) *Does this paragraph mention, describe, imply, refer to, or convey:*

1. (YES) (NO) any **patterns**?
   in what way >> _____
   _____
2. (YES) (NO) any **cause and effect**?
   in what way >> _____
   _____
3. (YES) (NO) a **quantity, numeric scale, or proportion**?
   in what way >> _____
   _____
4. (YES) (NO) a **system, or organized structure**?
   in what way >> _____
   _____
5. (YES) (NO) about **energy or matter?** (*Especially flows, cycles, and conservation*)?
   in what way >> _____
   _____
6. (YES) (NO) the **structure or function** of something?
   in what way >> _____
   _____
7. (YES) (NO) concepts of **stability and/or change**?
   in what way >> _____
   _____

Circle the number which BEST represents the paragraph? (1) (2) (3) (4) (5) (6) (7).

Why did you choose this number? >> _____
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