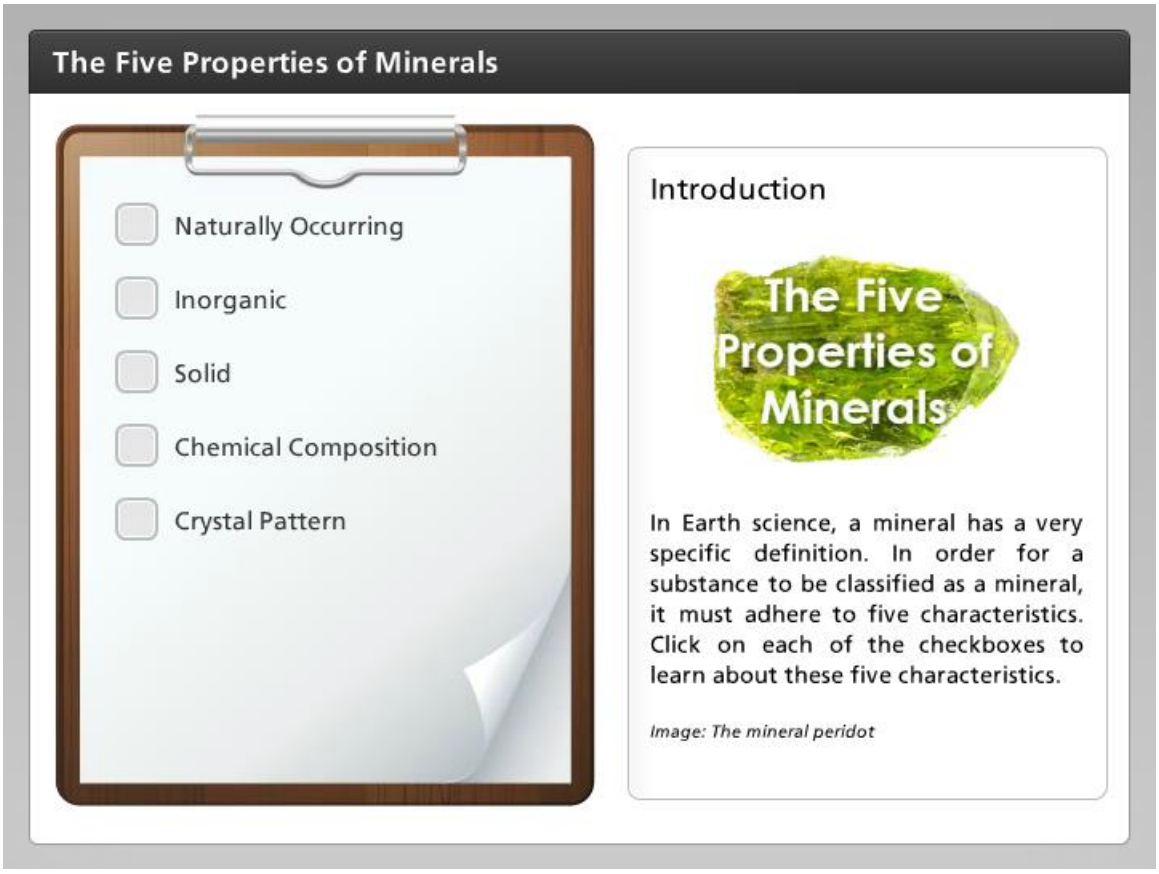
Module 5: Minerals
Topic 2 Content: The Five Properties of Minerals Notes

Introduction



In Earth science, a mineral has a very specific definition. In order for a substance to be classified as a mineral, it must adhere to five characteristics. Click on each of the checkboxes to learn about these five characteristics.

Image: The mineral peridot

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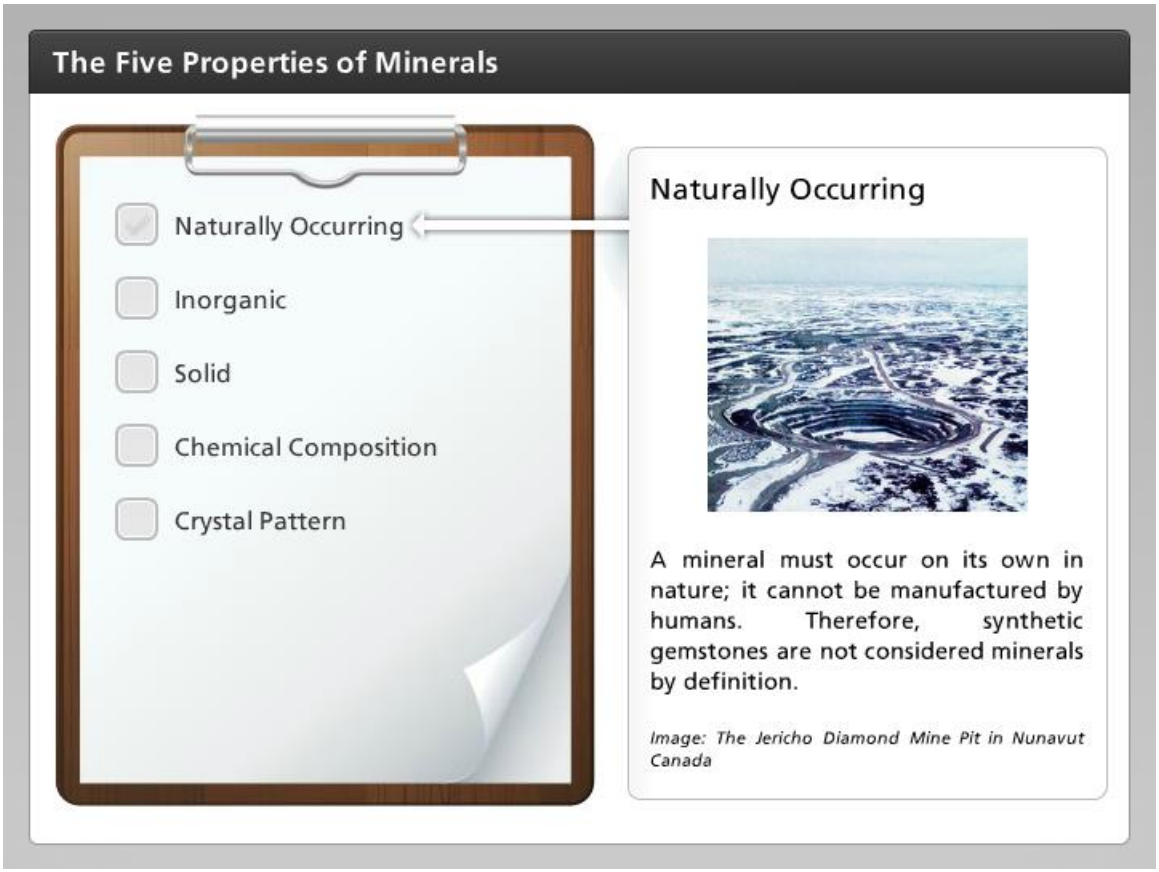
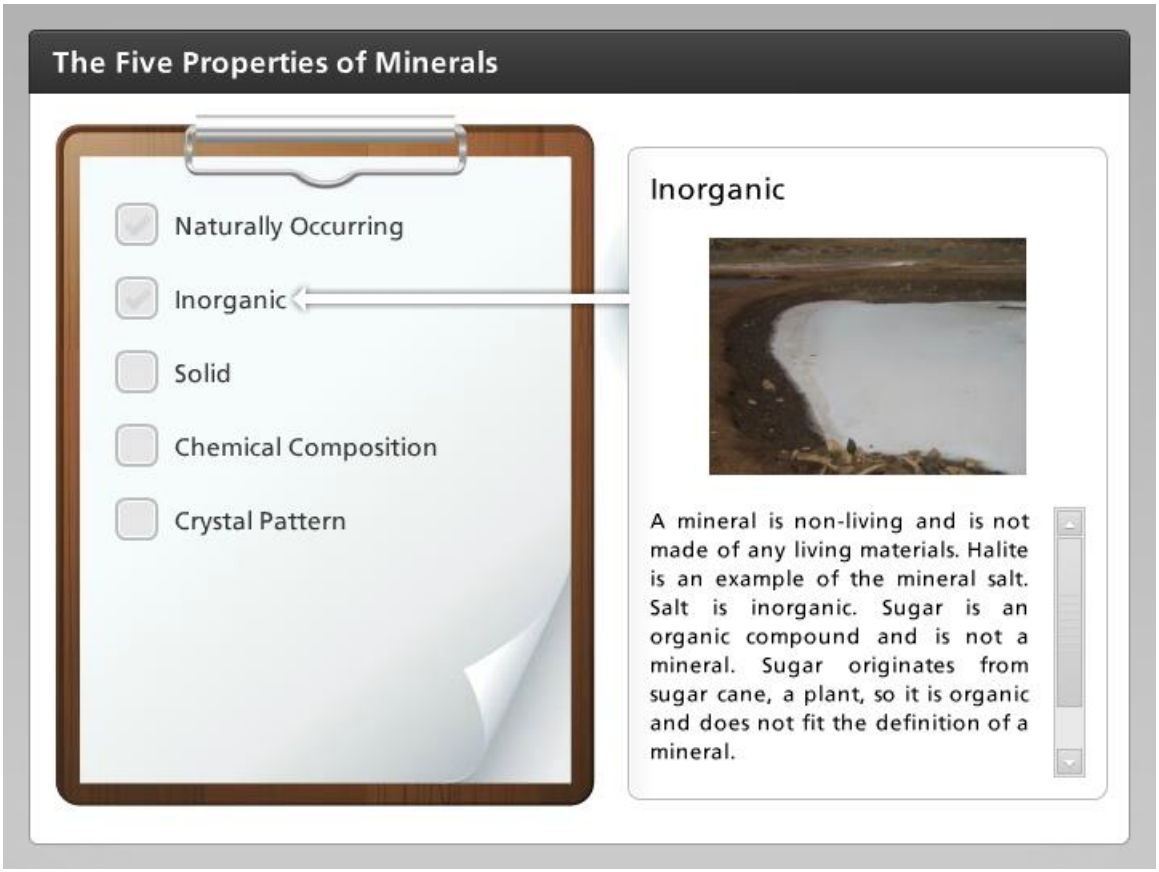
Naturally Occurring



A mineral must occur on its own in nature; it cannot be manufactured by humans. Therefore, synthetic gemstones are not considered minerals by definition.

Image: The Jericho Diamond Mine Pit in Nunavut Canada

Inorganic



A mineral is non-living and is not made of any living materials. Halite is an example of the mineral salt. Salt is inorganic. Sugar is an organic compound and is not a mineral. Sugar originates from sugar cane, a plant, so it is organic and does not fit the definition of a mineral.

Image: A salt pond at Pedra Lume in the island country of Cape Verde

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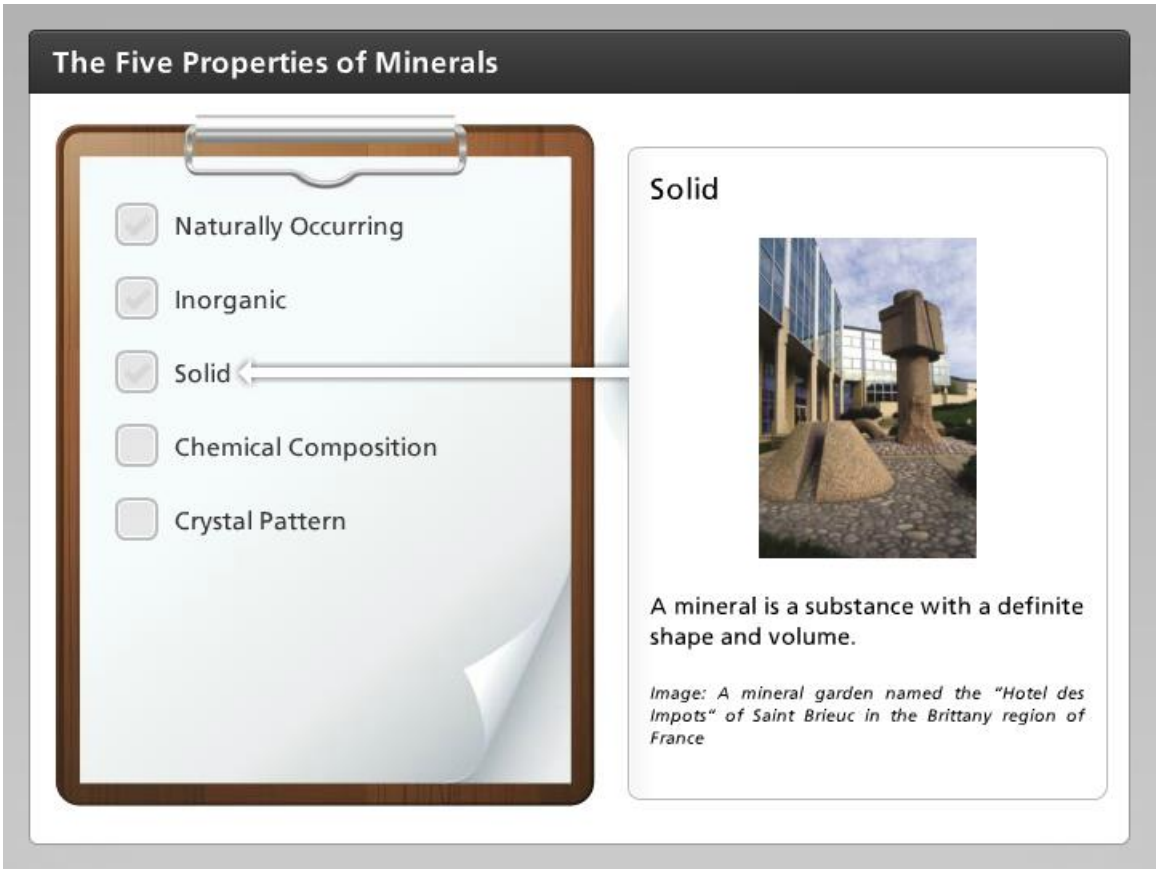
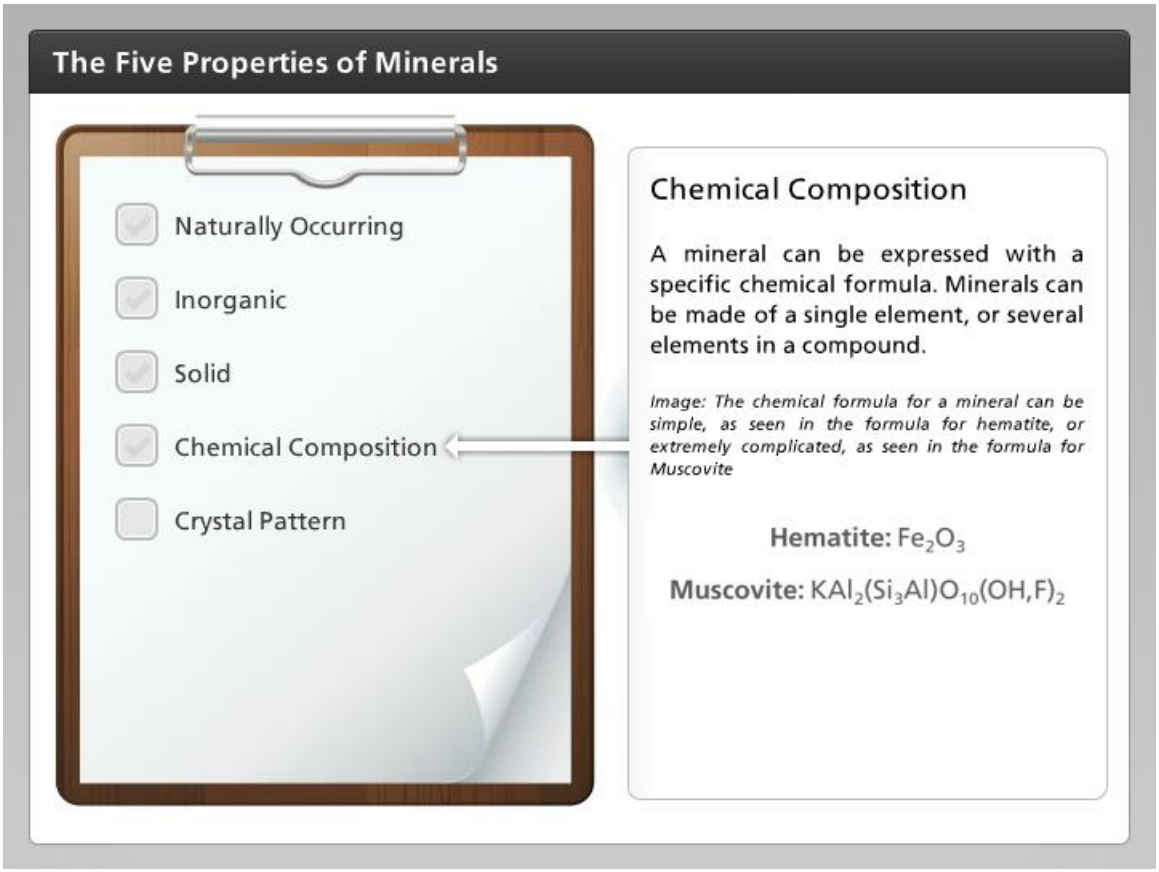
Solid



A mineral is a substance with a definite shape and volume.

Image: A mineral garden named the "Hotel des Impots" of Saint Brieuc in the Brittany region of France

Chemical Composition



A mineral can be expressed with a specific chemical formula. Minerals can be made of a single element, or several elements in a compound.

Image: The chemical formula for a mineral can be simple, as seen in the formula for hematite, or extremely complicated, as seen in the formula for Muscovite

Crystal Pattern

Minerals crystallize or grow in an orderly and repetitive manner. The pattern is easily seen when a mineral is broken into pieces. The mineral halite is cubic.

Image: The cubic crystal pattern of halite is easily seen by inspecting a sample of the mineral