Section 17-1

Energy in the Atmosphere

Energy in the Atmosphere

SCIENCE EXPLORER

Predict what would happen if you were to hold a cup filled with warm tap water.

Write down your prediction.

Hold in your hand a cup filled with warm tap water and slowly count to ten.

Write down your observation.

Compare your prediction with your observation.

Energy in the Atmosphere

SCIENCE EXPLORER

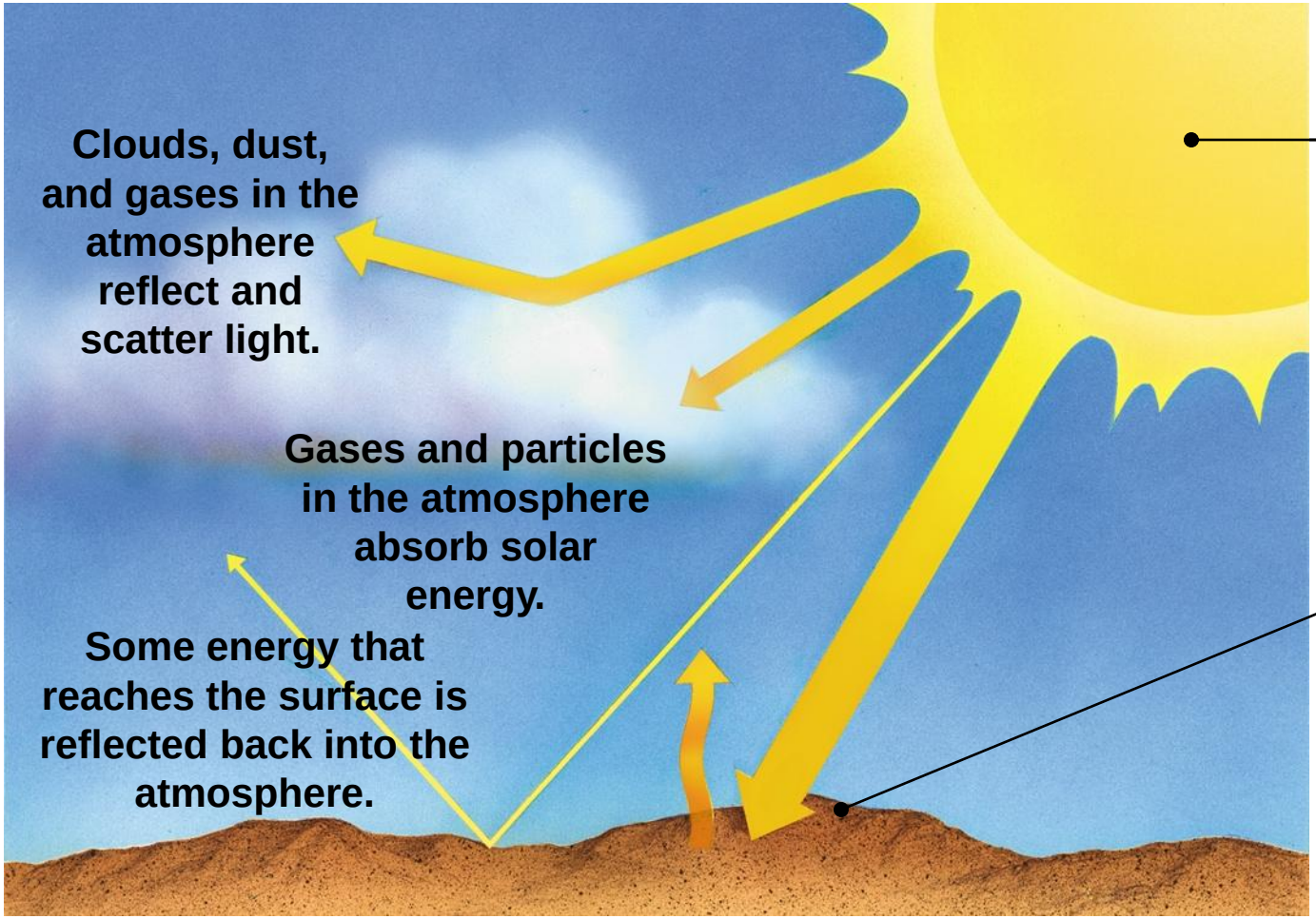
- Most of the energy from the sun reaches Earth in the form of visible light and infrared radiation, and a small amount of ultraviolet radiation.

- Infrared is longer wavelengths and ultraviolet is shorter wavelengths

- What is the greenhouse effect?

  When the earth's surface is heated some of the energy radiates back into the atmosphere. This infrared radiation is absorbed by water, carbon dioxide, methane and other gases. The energy from the absorbed radiation heats the gases in the air. This process by which gases hold heat in the air is called the greenhouse effect.

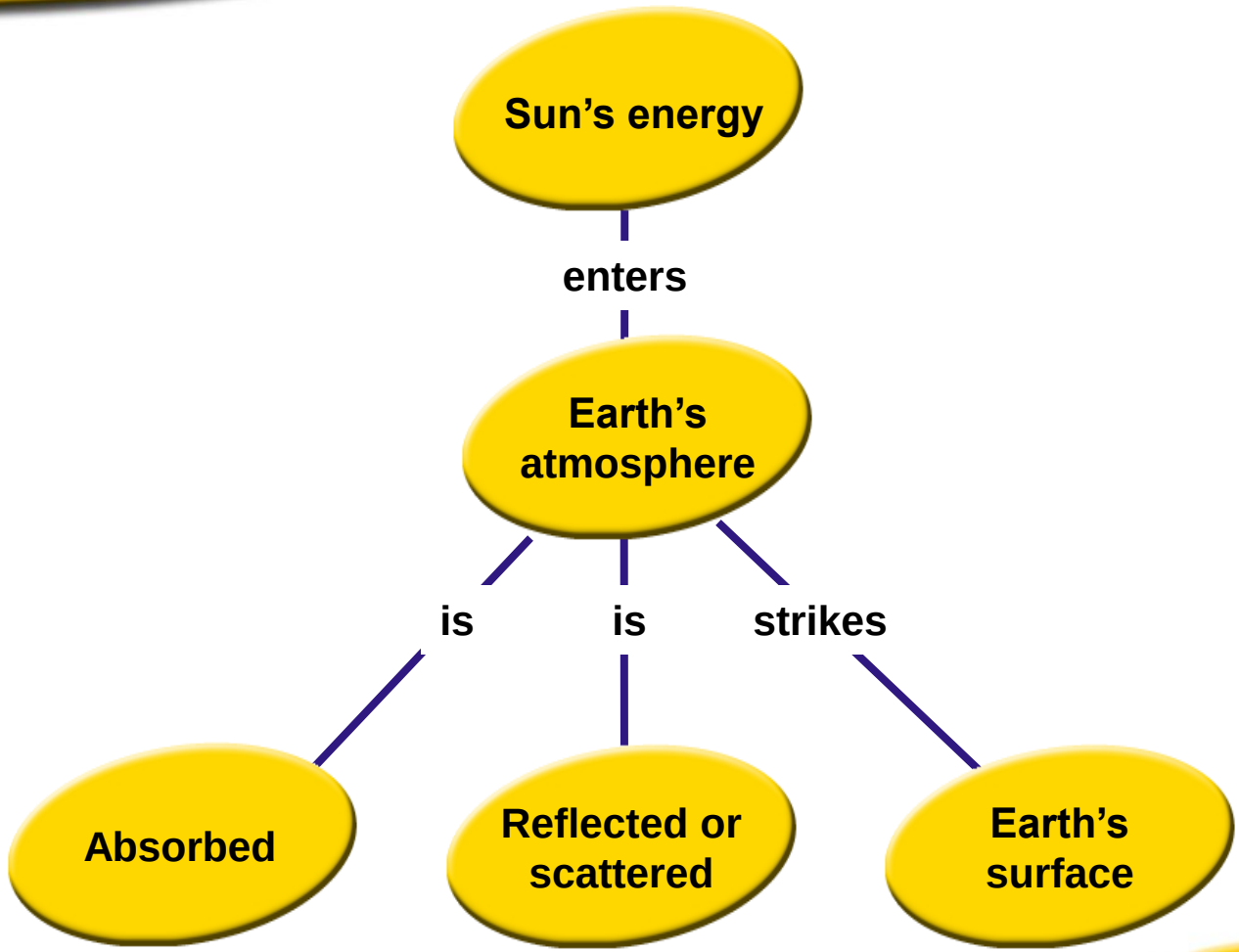
Energy in the Atmosphere



Solar energy is mostly visible light and infrared radiation, with a small amount of ultraviolet radiation.

The Earth's surface absorbs solar energy. This energy heats the land and water.

Energy in the Atmosphere



Section 17-2

Heat Transfer

Energy in the Atmosphere

SCIENCE EXPLORER

- **What is thermal energy?**

  The energy of motion in the molecules of a substance.

- **What is temperature?**

  The average amount of energy of motion of each molecule of a substance.

- **How is heat transferred?**

  Heat is transferred in three ways: radiation, conduction and convection.

Energy in the Atmosphere

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