DATE: NAME: CLASS:

UNIT 4

Unit 4 Summary

BLM 4-1

Goal • Use this page to review the concepts in Unit 4, Energy Transfer in Natural Systems.

Chapter 10 The kinetic molecular theory explains the transfer of thermal energy.

- Matter has thermal energy due to the kinetic energy of its particles, which are in constant motion. (10.1)
- Temperature is a measure of kinetic energy, and heat is the amount of thermal energy transferred. (10.1)
- Heat can be transferred by conduction, convection, and radiation. (10.1)
- Earth's atmosphere is a complex system with four layers. (10.2)
- Solar radiation transfers heat to Earth, and conduction and convection transfer heat throughout the atmosphere. (10.2)
- Weather is the condition of the atmosphere at a specific time and place. (10.2)
- The Coriolis effect deflects winds due to Earth's rotation. (10.2)
- Differences in atmospheric pressure cause prevailing winds, local winds, and extreme weather. (10.2)

Chapter 11 Climate change occurs by natural and human processes.

- Climate describes long-term weather patterns for a region. (11.1)
- Earth has undergone a number of ice ages and periods of warming. (11.1)
- Earth's atmosphere produces a natural greenhouse effect. (11.1)
- Many natural processes affect climate. (11.1)
- Evidence shows that climates worldwide are changing. (11.2)
- Earth's average global temperature is increasing. (11.2)
- Many human activities contribute to the enhanced greenhouse effect. (11.2)
- Many individuals and nations are making an effort to address climate change. (11.2)

Chapter 12 Thermal energy transfer drives plate tectonics.

- Geologic evidence suggests that at one time the continents were joined as a supercontinent. (12.1)
- The process of sea floor spreading provides a mechanism for continental drift. (12.1)
- Earth's surface is made up of solid but mobile pieces of rock called tectonic plates. (12.1)
- Mantle convection causes tectonic plates to converge, diverge, or slide past one another. (12.2)
- Subduction zones occur where one plate slides beneath another; mountains form where two plates bump together. (12.2)
- Earthquakes and volcanic eruptions can result at the boundaries between tectonic plates. (12.2)