

Vocabulary and Section Summary B

The Study of Earth’s History

VOCABULARY

After you finish reading the section, try this puzzle! Use the clues given to fill in the blanks below. Then, copy the numbered letters into the corresponding boxes below to answer the bonus question.

1. the remains of organisms preserved by geologic processes

_____ 6 _____

2. the study of past life

_____10_____2_____5_____16_____7_____

3. the theory that today’s geologic processes have been at work throughout Earth’s history

_____ 8 _____ 14 _____ 13 _____

4. the theory that geologic change happens suddenly

_____9_____11_____17_____1_____

5. scientists who study past life

_____ 12 _____ 15 _____ 3 _____ 4 _____

6. What do modern geologists believe shaped Earth’s surface?

_____1_____2_____3_____W_____4_____5_____6_____7_____3_____4_____8_____9

_____10_____11_____3_____9_____12_____13_____1_____12_____13_____ D_____14_____15

_____9_____14_____16_____14_____1_____16_____11_____6_____10_____17_____8_____9

_____V_____ 12_____ 5_____ 15_____ 16_____ 1

Vocabulary and Section Summary B

Relative Dating

VOCABULARY

After you finish reading the section, try this puzzle! The underlined words below are missing all their vowels. Write the completed words in the spaces provided.

1. According to the LW F CRSSCTTNG RLTNSHPS, a fault or body of rock is younger than any other body of rock it cuts through.

2. SDMNTY RCK forms from compressed or cemented fragments of other rocks.

3. SPRPSTN states that older rocks lie below younger rocks in undisturbed sequences.

4. Scientists use RLTV DTNG to determine whether objects are older or younger than other objects.

5. A(n) NCNFRMTY is created when deposition stops or erosion occurs.

SECTION SUMMARY

Read the following section summary.

- Geologists use relative dating to determine the order in which events happen.
- The rock cycle describes processes that form and recycle rock on Earth.
- Sedimentary rock forms when layers of sediment are lithified. Fossils may be preserved in sedimentary rock.
- The principle of superposition states that in undisturbed rock sequences, younger sedimentary rock layers lie above older layers.
- Folding and tilting are two events that disturb rock layers. Faults and intrusions are two features that cut across rock layers.
- Unconformities occur when rock layers are eroded or when sediment is not deposited for a long time.
- The law of crosscutting relationships states that structures and features that cut across rock layers are younger than the rock layers.
- Superposition and crosscutting relationships allow geologists to determine the order in which rock layers and features form but not the age in years of rock layers and features.

Vocabulary and Section Summary B

Absolute Dating

VOCABULARY

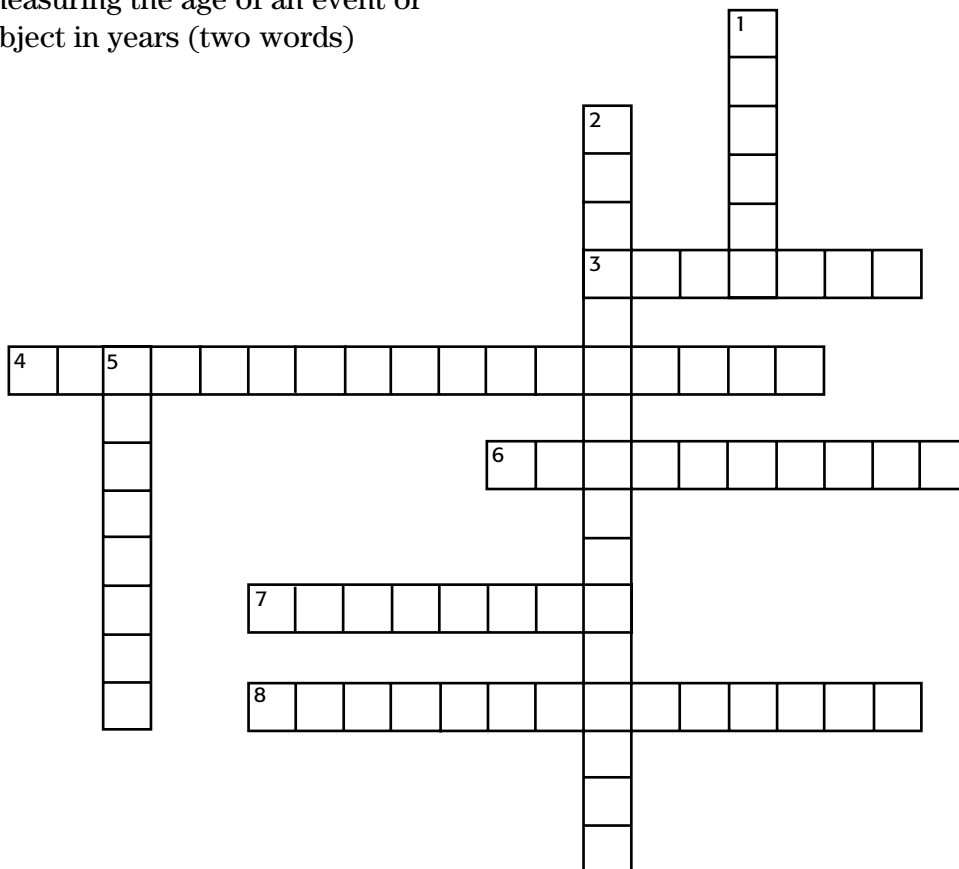
After you finish reading the section, try this puzzle! Use the clues below to solve the crossword puzzle.

ACROSS

3. same number of protons, different number of neutrons
4. based on the ratio of parent isotopes to daughter isotopes (two words)
6. rocks that have traveled through space to earth
7. time needed for one-half of a radioactive sample to decay
8. measuring the age of an event or object in years (two words)

DOWN

1. an unstable and radioactive isotope
2. breakdown of an unstable isotope into a stable isotope (two words)
5. stable isotope produced through decay



Vocabulary and Section Summary B *continued*

SECTION SUMMARY

Read the following section summary.

- During radioactive decay, an unstable isotope decays and becomes a stable isotope of the same element or a different element.
- Radiometric dating, based on the ratio of parent to daughter material, is used to determine the absolute age of a sample.
- The method of radiometric dating is chosen based on the estimated age of the sample.
- Earth and the solar system are about 4.6 billion years old.

SECTION: ABSOLUTE DATING**Across**

3. isotope
4. radiometric dating
6. meteorites
7. half-life
8. absolute dating

Down

1. parent
2. radioactive decay
5. daughter

Reinforcement**A PUZZLER SANDWICH**

- a. rye bread
- b. pickles
- c. tomatoes
- d. provolone cheese
- e. turkey
- f. mustard
- g. sourdough bread
- h. onions
- i. lettuce
- j. Cheddar cheese
- k. ham
- l. mustard
- m. sourdough bread
- n. relish
- o. provolone cheese
- p. turkey
- q. mayonnaise
- r. sourdough bread
- s. pickles
- t. tomatoes
- u. lettuce
- v. ham
- w. mustard
- x. rye bread

Critical Thinking

1. **a.** Answers may vary. Sample answer: Like one current theory, Dr. Garza's hypothesis states that the extinction of the dinosaurs was due partly to the impact of a huge asteroid.
b. Answers may vary. Sample answer: One current theory states that the asteroid struck the Earth, causing the dinosaurs to die from a lack of sunlight. Dr. Garza's hypothesis states that the asteroid crashed into the ocean, and that the dinosaurs died as a result of the destruction of their habitat.
2. Answers may vary. Sample answers: asteroid impact: tsunamis, debris in the air, blockage of sunlight, forest fires, death of plants and animals; massive earthquake: tsunamis, flooding, destruction of habitat; drought: death of plants and animals
3. Answers may vary. Sample answer: Dr. Garza should look for unconformities in rock layers and extra-thick layers of sediment due to heavy deposition. Sediment layers may contain large numbers of fossilized plants and animals that were buried and preserved in sediment after the flood.
4. Answers may vary. Sample answer: Yes, these discoveries support Dr. Garza's hypothesis. Flowing water could cause dinosaur skeletons in low-lying areas to be disrupted. Skeletons on high ground would not be affected by flooding, so they would probably remain intact.

SciLinks Activity

1. Answers may vary. Sample answer: Granite is an igneous rock that forms when magma slowly cools beneath Earth's surface. Limestone is a sedimentary rock formed from small particles of calcite from evaporated river and sea beds and from shells of sea animals. Marble is a metamorphic rock formed from limestone under intense heat and pressure.