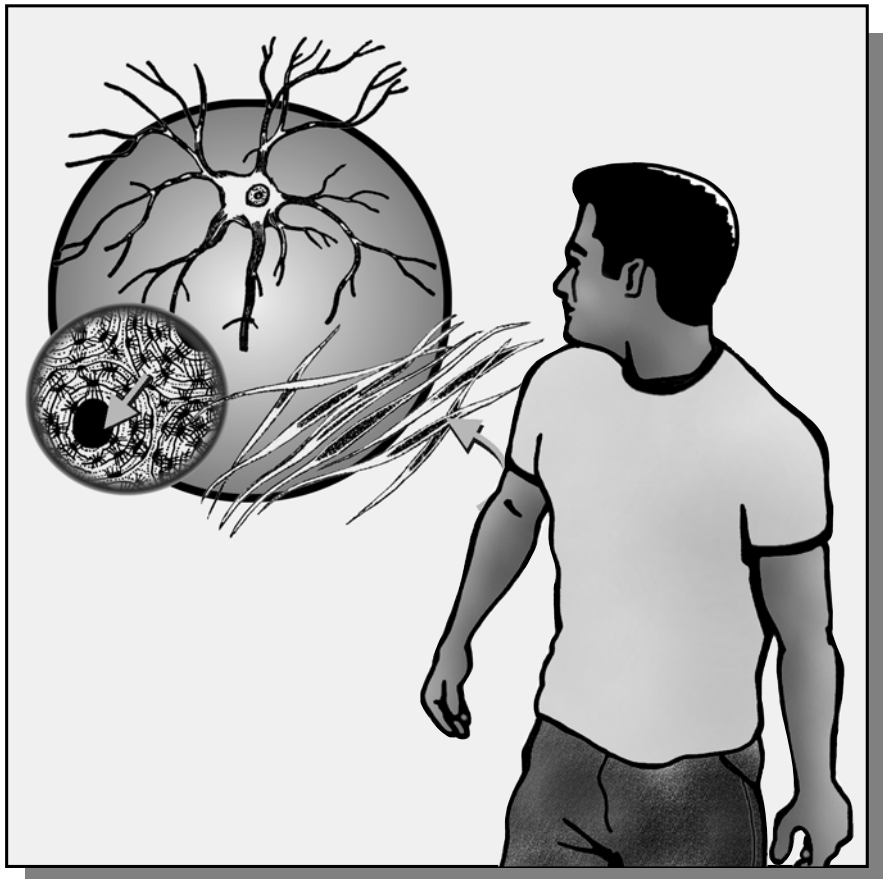
Basic Science Mysteries

Activities



Chapter 5

BSM 62941 Revision: 020905-1

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ACTIVITIES
Lesson 1:
Meteorology

The Weather

You are making progress! ***Answer the following questions. Circle the correct answers or fill in the blanks with words, letters or numbers as each question indicates. Check your answers from the Answer Key. Correct all errors, then complete your next goal.***

1. Weather affects people's lives, including their _____ and _____ activities.
2. Weather is the condition of the _____ at a certain time and place.
3. The elements of weather include temperature, _____, cloudiness, _____, wind and _____.
4. All weather systems have well-defined _____.
5. All weather systems are governed by the laws of heat and motion.
   (a) True or (b) False

Match these answers for questions #6-10.

6. _____ basis of weather	(a) hot air, due to more heat from the Sun
7. _____ tropical regions	(b) cold air, due to less heat from the Sun
8. _____ polar regions	(c) causes changes in the weather to occur
9. _____ moving of air masses	(d) it circulates upward
10. _____ when air is heated	(e) unequal heating of the atmosphere-ocean system

11. _____ is a good way to determine current weather conditions but does not always work to predict what the weather will be like later in the day or week.
12. ***Meteorologists*** are people who study (the): _____.
    (a) planets and solar system
    (b) hazards to the environment
    (c) weather and atmospheric conditions
    (d) past and present life forms of plants and animals
13. How are weather balloons used? _____.
    (a) They are used to study conditions in foreign countries.
    (b) They are used to study conditions in the upper atmosphere.
    (c) They are used to study conditions on mountaintops.
    (d) They are used to study conditions over the ocean.

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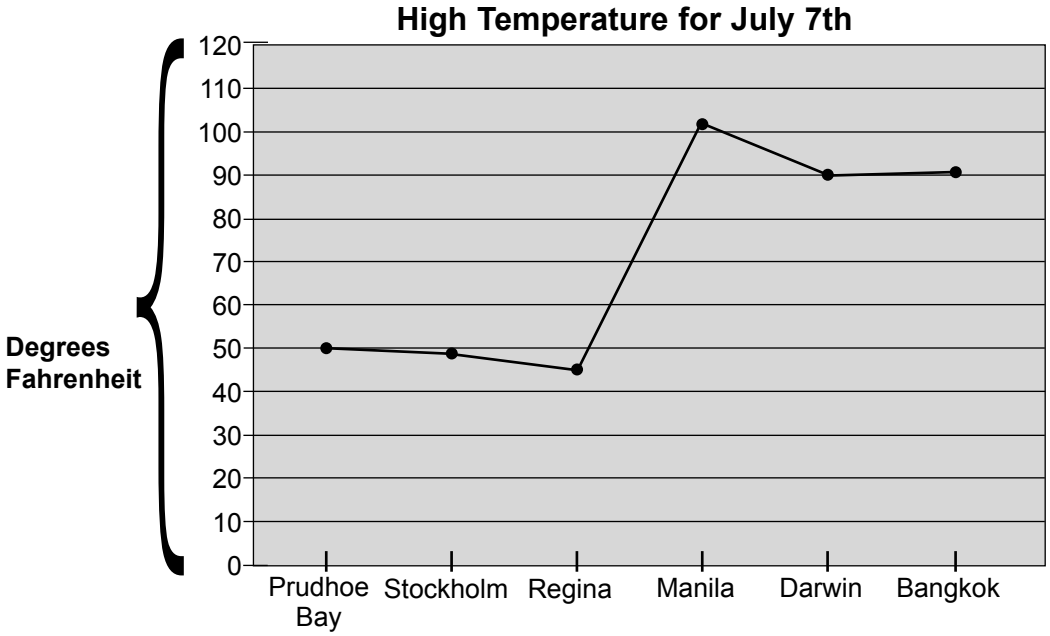
14. How does ***radar*** use radio waves? _____.
    (a) to determine star magnitude
    (b) to record light
    (c) to bounce them off objects
    (d) to fuel weather balloons

15. What orbits the Earth, keeping track of worldwide weather patterns? _____
    (a) weather balloons (b) the Moon (c) a comet (d) satellites

16. According to LaToya (in this lesson's beginning story episode), the only thing that could change the weekend camping plans was: _____.
    (a) the camp director (c) LaToya's parents
    (b) your parents (d) unpredictable weather

17. Write the **Life Principle:** *"*_____
    _____*."*

Use the following graph to answer questions #18-21.



18. Which city has the highest temperature? _____
19. Which city has the lowest temperature? _____

20. Which three cities would you expect to be located near the equator?
    _____, _____, _____

21. Describe the temperature range for Prudhoe Bay, Stockholm and Regina: _____
    (a) between 20 and 40 degrees (c) between 60 and 80 degrees
    (b) between 40 and 60 degrees (d) between 90 and 100 degrees

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Name: _____

Date: _____ Grade: _____



ACTIVITIES
Lesson 2:
Meteorology

Hot and Humid

You are making progress! ***Answer the following questions. Circle the correct answers or fill in the blanks with words, letters or numbers as each question indicates. Check your answers from the Answer Key. Correct all errors, then complete your next goal.***

1. In most cases, which scale is used in each case to measure temperatures?
   (a) United States _____ scale
   (b) most countries _____ or _____ scale
   (c) scientists _____ or _____ scale

2. What is the average temperature reading from all points of Earth? _____
   (a) 15ºK (b) 59ºF (c) 72ºF (d) 59ºC

3. Temperatures on Earth range from a record high of 140ºF to a record low of –130ºF.
   (a) True or (b) False

4. The temperature range on Earth varies according to ***latitude***, _____, season, and _____.

5. Name the three major climate zones: _____,
   _____, _____

6. Zone differences are based mainly on _____.

Match these answers:

7. _____ warmest region — (a) temperate climate zone
8. _____ includes most of the United States — (b) polar climate zone
9. _____ coldest region — (c) tropical climate zone

10. Alaska is in the tropical climate zone. (a) True or (b) False

11. Seasonal variations of temperature are generally more pronounced at higher _____.

12. What provides the energy to ***evaporate*** water from the oceans and other bodies of water? _____
    (a) the Moon (b) tides (c) the Sun (d) gravity

13. When water evaporates, it becomes: _____.
    (a) dew (b) water vapor (c) ocean water (d) rain

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14. Evaporation and _____ are opposite processes.

15. The basis of Earth's weather is formed by thermal Sun energy and: _____ _____.
(a) the air (c) the water cycle
(b) relative humidity (d) the upper atmosphere

16. The amount of ***water vapor*** in the air is called: _____.
(a) humidity (b) clouds (c) dew (d) sleet

17. _____ affects how much water vapor the air can hold.

18. The temperature at which air cannot hold any more vapor and ***condensation*** takes place is called the _____.

19. Weather conditions in this story episode are best **classified** as: _____.
(a) cold/dry (b) hot/dry (c) hot/humid (d) cool/wet

20. Write the **Life Principle:** *"*_____ _____*."*

Use the following table to answer questions #21-23.

Comparison of Area High Temperatures		
Day	**Last Year**	**This Year**
1	102	85
2	96	85
3	98	82
4	99	84
5	98	88
6	101	89
7	101	89
8	100	92
9	98	91
10	99	92

21. What was last year's highest temperature? _____

22. What was this year's highest temperature? _____

23. On what day did this year's lowest temperature occur? _____

You have finished Lesson 2 Activities. Score them now to ensure accuracy.

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ACTIVITIES
Lesson 3:
Meteorology

Rainy Days

You are making progress! ***Answer the following questions. Circle the correct answers or fill in the blanks with words, letters or numbers as each question indicates. Check your answers from the Answer Key. Correct all errors, then complete your next goal.***

1. Clouds are really collections of tiny water droplets or ice crystals that vary in size from 0.002 to 0.1 millimeters in diameter.
   (a) True or (b) False
2. Clouds form when the water vapor in the air evaporates.
   (a) True or (b) False
3. The system for naming and identifying clouds originated with NASA and the space program. (a) True or (b) False

Use the following table to answer questions #4-7.

Types of Clouds

Cloud name	Description	Latin Origination
Cirrus	high wispy clouds of ice crystals	from the latin word for “curl of hair”
Stratus	sheet-like clouds	from the latin word for “layer”
Cumulus	billowing, puffy clouds	from the latin word for “heap”
Nimbus	rain-producing clouds	from the latin word for “rain”

4. Which cloud is described as billowing and puffy? _____
5. Which cloud is from the ***Latin*** word for rain? _____
6. Which cloud is described as high and wispy? _____
7. Which cloud has a layered appearance? _____
8. From the **context** of both chart and text, the reader can tell that by attaching “nimbus” or “nimbo” as a prefix or suffix to either *cumulus* or *stratus,* cloud names change their meanings from fair weather clouds to _____ producing clouds.

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9. Identify the process in which cloud droplets collide and merge with smaller drops.

   _____

   (a) photosynthesis (c) coalescence
   (b) nimbus translucence (d) precipitation

10. When droplets become too heavy to remain suspended in the atmosphere, what happens to them?

    _____

    (a) They fall out of the clouds as precipitation.
    (b) They form a cumulus cloud.
    (c) They produce lightning.
    (d) They form dew.

11. The rapid upward movement of warm, moist air forms _____.

12. What kind of cloud reaches to heights of 5 miles and is usually associated with thunderstorms? _____

Use the following table to answer questions #13-16.

Types of Precipitation

Name of Precipitation	Description
Rain	falling drops of liquid water with diameters that are 0.5 mm or greater
Drizzle	falling drops of water smaller than rain
Sleet	tiny ice pellets that form when the temperature of the air near the ground is cold
Hail	larger ice particles made up of many layers
Snow	translucent ice crystals which fall in the form of soft white flakes

13. Hail is made up of many _____.

14. Drizzle is falling drops of water larger than rain. (a) True or (b) False

15. What are translucent ice crystals which fall in the form of soft white flakes?

    _____

16. Sleet develops from tiny ice pellets that form when the temperature of the air near the ground is warm. (a) True or (b) False

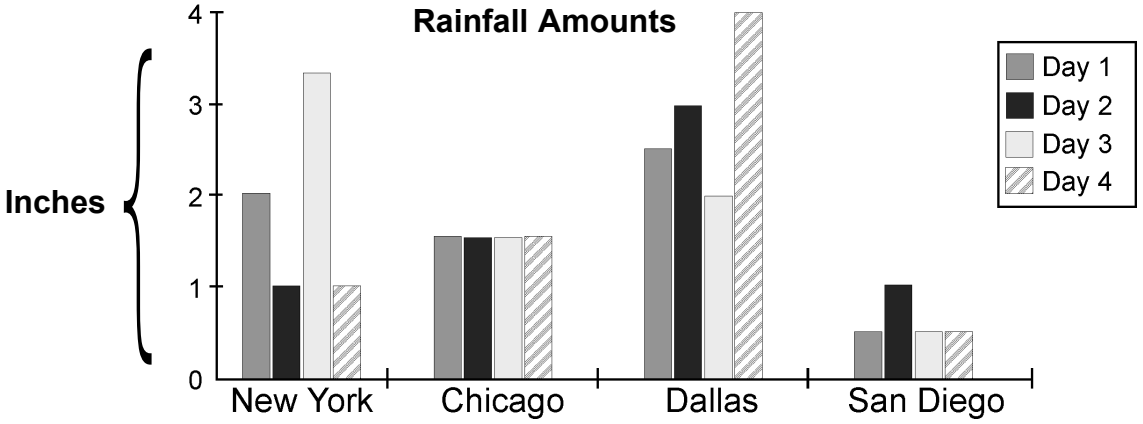
17. What results from the rapid heating of the air around a lightning bolt, forming a sound wave? _____

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18. In the story episode for this lesson the reader can **infer** that you were looking forward to everything **EXCEPT** which of the following? _____
    (a) hiking (c) fossil hunting
    (b) horseback riding (d) rainy weather

19. Write the **Life Principle:** *"*_____
    _____*."*

Use the following chart to answer questions #20-23.



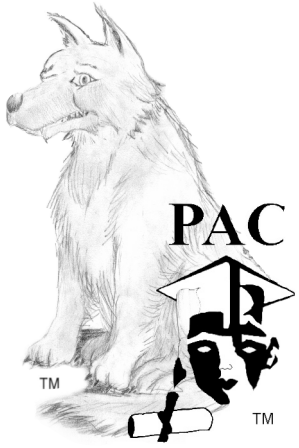
20. Which city got the least amount of rain during the four days? _____

21. Which city got the same amount of rain on all four days? _____

22. Which city got the most amount of rain during the four days? _____

23. How much rain fell in Chicago on each day? _____
    (a) between one and two inches (c) between three and four inches
    (b) between two and three inches (d) between four and five inches

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ACTIVITIES
Lesson 4:
Meteorology

Wind and Pressure

You are making progress! ***Answer the following questions. Circle the correct answers or fill in the blanks with words, letters or numbers as each question indicates. Check your answers from the Answer Key. Correct all errors, then complete your next goal.***

1. Wind is air in motion. (a) True or (b) False

2. A north wind can be described as wind that blows: _____.
   (a) from the north
   (b) toward the north
   (c) from north to east
   (d) from west to north

3. The properties of an air mass are determined by the: _____
   _____.
   (a) season in which it forms
   (b) Earth's surface over which it forms
   (c) surrounding bodies of water
   (d) conditions in the upper atmosphere

Match these concepts:

4. _____ ***moist*** air mass
5. _____ cold air mass
6. _____ dry air mass
7. _____ warm air mass

   (a) develops over land
   (b) develops over water
   (c) develops over the tropics
   (d) develops over the poles

8. Wind belts are wind _____, produced by the _____ of Earth's surface.

9. According to the diagram, wind belt patterns run from _____.
   (a) north to south, south to north
   (b) east to west, west to east
   (c) northeast to southwest, northwest to southeast
   (d) all of these

10. The reader could **infer** that wind belt patterns are designed to help equalize areas of extreme heat or cold. (a) True or (b) False

11. Air masses: _____.
    (a) move over the surface of the Earth
    (b) break apart to cause storms
    (c) rise to become part of the upper atmosphere
    (d) stay in the region over which they formed until they dissipate

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12. What is the boundary between two air masses called? _____

13. _____ is the study of weather.

14. Air has mass but it does not take up space. (a) True or (b) False

15. Pressure at any point on Earth's surface from the weight of the air above is called: _____.
    (a) weather pressure (c) a low pressure system
    (b) air pressure (d) a high pressure system

16. Air pushes on all the surfaces that it touches. (a) True or (b) False

17. Air pressure _____ at higher altitudes.

18. **Effect:** Warm air rises be**cause** molecules spread out and air pressure _____.

19. **Effect:** Cool air sinks be**cause** molecules crowd together and air pressure _____.

Use the following table to answer questions #20-22.

High/Low Pressure Properties

Properties	Low Pressure System	High Pressure System
Air temperature	warm	cold
Density	less dense	denser
Air movement	rising, unstable	sinking, stable

20. Is cold air denser than warm air? _____
    (a) Yes or (b) No

21. A ***low pressure system*** means rising, unstable air. (a) True or (b) False

22. What is the air temperature associated with a ***high pressure system***? _____

23. What instrument do meteorologists use to measure ***air pressure***? _____
    (a) thermometer (c) barometer
    (b) wind gauge (d) weather vane

24. *Prevailing winds*, also known as "_____," help sailing ships reach their destinations because the winds blow from the same direction over long distances.

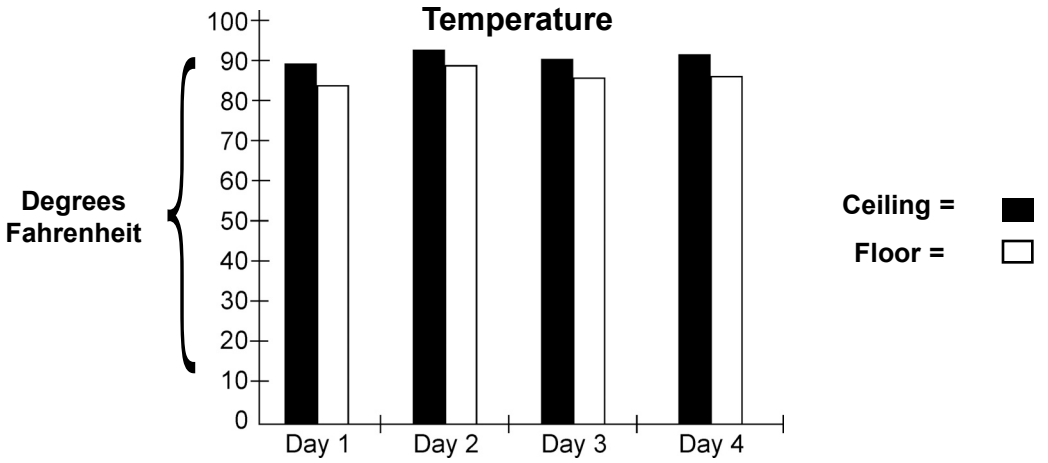
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25. The doldrums and horse latitudes are regions where: _____
_____.
(a) Spaniards doled out drums and horses to the natives at those latitudes
(b) weather systems from north and south meet, creating great storms
(c) tidal waves capsized Spanish ships full of horses bound for the New World
(d) many ships were stranded for long periods due to little or no wind to fill their sails

26. In the story, you and LaToya were "camping" in LaToya's back yard.
(a) True or (b) False

27. Write the **Life Principle:** *"*_____
_____.*"*

An experiment was conducted to determine what effect temperature has on the movement of air. Thermometers were placed at the ceiling and on the floor of a 15-foot high room and the temperatures were recorded for four days. Data from the experiment is recorded in the following bar graph. Answer questions #28-29 based on that data.

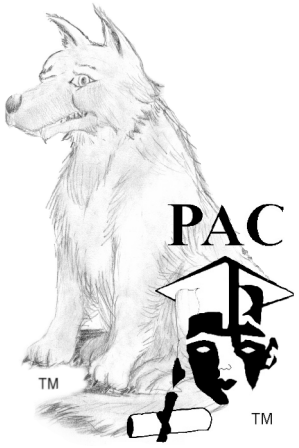


28. Which temperatures are higher? _____
(a) ceiling (b) floor

29. From this data, what can you **conclude** about the effect of temperature on the movement of air? _____
(a) Cold air rises. (c) Warm air rises.
(b) Cold air remains temperate. (d) Warm air sinks.

You have finished Lesson 4 Activities.
Score your work and correct any wrong answers.

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ACTIVITIES
Lesson 5:
Geology

The Mountains

You are making progress! ***Answer the following questions. Circle the correct answers or fill in the blanks with words, letters or numbers as each question indicates. Check your answers from the Answer Key. Correct all errors, then complete your next goal.***

1. Mountains affect the local climate in a region because they change the movement of _____ and _____ patterns.

2. On which side of a mountain does most of the precipitation fall? _____
   _____
   (a) on the side where the air is rising (windward side)
   (b) on the side where the air is descending (leeward side)
   (c) on the side facing north or east
   (d) on the side facing south or west

3. What is the meaning of the word "***elevation***" in reference to a mountain? _____
   (a) its rock composition (c) its height
   (b) how it was formed (d) its location

4. The term ***mountain range*** is given to a group of mountains that are in the same region and have: _____.
   (a) similar shape and structure (c) fault-block structure
   (b) a variety of structures (d) volcanic structures

5. Scientists who study land formations are called _____.

6. Geologists believe that _____ in the Earth's crust formed most mountains.

7. Mountains can be classified into groups according to shape and structure.
   (a) True or (b) False

8. The Sierra Nevadas are an example of a _____ mountain range.

9. Mt. Everest is an example of a _____ mountain.

10. _____, the highest mountain in the world, is in the _____, the highest mountain range in the world.

11. The highest mountain in the United States and North America is _____.

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12. Which type of mountain is formed from molten rock material that reaches the Earth's surface and falls back on itself? _____
(a) fault-block (b) folded (c) volcanic (d) dome

13. Mt. Kileaua is an example of a _____ mountain.

14. The island state of Hawaii was formed by _____ action and is extremely mountainous.
(a) fault-block (b) folded (c) volcanic (d) dome

15. The Black Hills are an example of a _____ mountain.

Use the following table and what you already know to answer questions #16-21.

Mountains

Name	Location	Elevation in Meters
Mount McKinley	Alaska	6,197
Mount Rainier	Washington	4,392
Pikes Peak	Colorado	4,301
Grand Teton	Wyoming	4,197
Mount St. Helens	Washington	2,549

16. Which mountain has the lowest elevation? _____

17. Which mountain has the highest elevation? _____

18. Which two mountains are found in the same state? _____,
_____

19. What is the name of the mountain located in Wyoming? _____

20. On what continent and in which country are these mountains located?
_____
(a) North America, Canada (c) North America, United States
(b) Asia, India (d) South America, Mexico

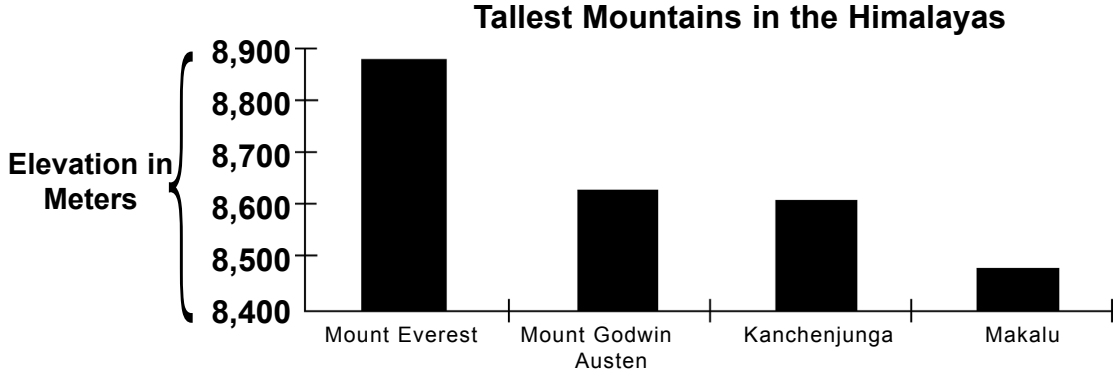
21. Which statement best describes this table? _____
_____
(a) The mountains are listed in alphabetical order.
(b) The mountains are listed according to height, in order of tallest to shortest.
(c) The mountains are listed according to height, in order of shortest to tallest.
(d) The mountains are not listed according to any particular pattern.

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22. During the drive to the mountains you heard a radio report that (a) _____ had ripped through several tents near your destination.
(a) storm (b) vandals (c) cougar (d) bear

23. Write the **Life Principle:** *"*_____
_____*."*

The Himalayas, a folded-mountain range between India and China, form the Earth's highest mountain region, containing nine of the fourteen highest peaks in the world. Using that information, plus the data from the following bar graph, answer questions #24-27.



24. What is the elevation of Mount Everest? _____
(a) between 8,400 and 8,500 meters
(b) between 8,500 and 8,600 meters
(c) between 8,700 and 8,800 meters
(d) between 8,800 and 8,900 meters

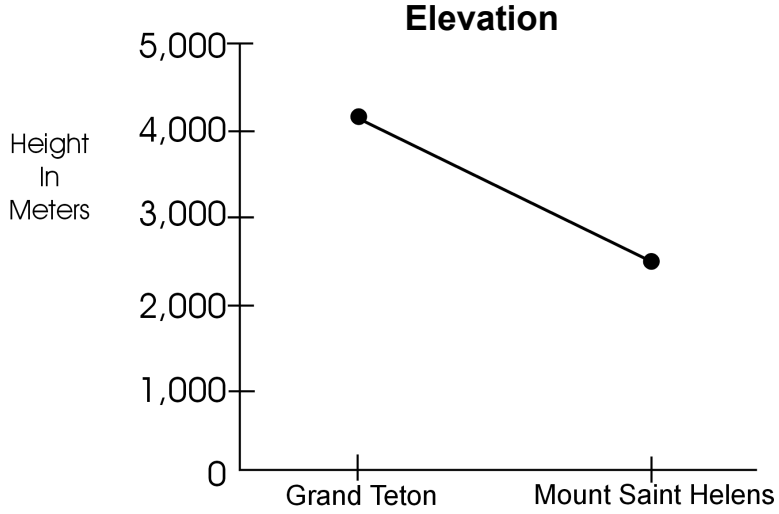
25. Which mountain is the shortest? _____
(a) Mount Everest (c) Kanchenjunga
(b) Mount Godwin Austen (d) Makalu

26. What is the highest mountain range in the world? _____

27. Which two mountains are approximately 8,600 meters in height? _____
_____
(a) Mount Everest and Makalu
(b) Mount Godwin Austen and Makalu
(c) Mount Godwin Austen and Kanchenjunga
(d) Makalu and Kanchenjunga

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Compare the elevation of a fault-block mountain, Grand Teton, with the elevation of a volcano, Mount St. Helens, in the following chart. Use that data to answer questions #28-29.



28. Which is taller? _____
    (a) the volcanic mountain (b) the fault-block mountain

29. What do you need before you can draw a reasonable conclusion about the elevation of fault-block mountains in comparison to volcanic mountains? _____
    _____
    (a) Your comparison is not broad enough. You need to include the heights of folded mountains and dome mountains.
    (b) Your data is incomplete. You need to include the locations of fault-block mountains and volcanic mountains.
    (c) Your sample is too small. You need to include the heights of more volcanic mountains and more fault-block mountains.
    (d) Your unit of measure is too narrow. You need to include the heights of the mountains in both feet and meters.

Note: Ask your teacher for the quiz over topics 1-5 before proceeding to the next section. Reminder: If you score 85% or higher on the three section quizzes, you may be exempt from the chapter test!



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ACTIVITIES
Lesson 6:
Geology

Volcanoes

You are making progress! ***Answer the following questions. Circle the correct answers or fill in the blanks with words, letters or numbers as each question indicates. Check your answers from the Answer Key. Correct all errors, then complete your next goal.***

1. Once the ***magma*** reaches the Earth's surface, what is it called? _____

2. Magma consists of melted _____ materials and _____.

3. Volcanic eruptions vary according to _____ thickness and the types of _____.

Use the following table to answer questions #4-5.

Volcano Data	
Definition	**A volcano is a geological landform that consists of an opening in the Earth's crust (called a vent) through which molten rock material reaches the surface.**
Description	**All volcanoes originate when magma (hot, melted rock material mixed with gas) is forced upward by denser surrounding rock.**

4. What is the volcanic opening in the Earth's crust called? _____

5. Is magma denser or less dense than the surrounding rock? _____

Use the following table to answer questions #6-9.

Eruptions and Formations	
Description of Eruption	**Description of Form**
quiet	shield volcano (gently sloping sides)
explosive	cinder cone volcano (steep sides, loosely packed)
alternating quiet and explosive	composite (sides formed of layers of lava alternated with layers of cinder and ash

6. Which statement is correct? _____
   (a) The form of a volcano is produced by the nature of its eruption.
   (b) The form of a volcano is not related to the nature of its eruption.

7. Which form of volcano has steep sides with loosely packed material? _____

8. Which form of volcano can be described as having gently sloping sides? _____

9. Which is the best description of the eruption of a composite volcano? _____
   (a) quiet (b) explosive (c) alternating quiet and explosive

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10. Most of the volcanoes on Earth today are active. (a) True or (b) False

Match the terms:

11. _____ dormant (a) erupted in the past, could erupt again
12. _____ active (b) never erupted in recorded history and probably never will
13. _____ extinct (c) emits lava, smoke, ash, etc.

14. What is unusual about the volcano of Paricutin? _____
_____
(a) It is located in Italy. (c) Geologists saw how it formed.
(b) It has never erupted. (d) It buried the city of Rome.

Use the following information to answer questions #15-16:
A meter is equal to 39.37 U.S. inches, or a little more than 3 feet.

15. Paricutin grew 8 meters high in 24 hours, which would be: _____.
(a) between 12 and 13 feet
(b) between 10 and 12 feet
(c) between 30 and 40 feet
(d) between 25 and 45 feet

16. Within a week, Paricutin's height had jumped to 168 meters or between _____ feet.
(a) 550-625 (b) 500-575 (c) 480-525 (d) 400-500

17. After 8 months the volcano had reached a height of nearly _____ feet, above ground level.
(a) 1,000 (b) 1,500 (c) 2,000 (d) 2,500

18. Which volcano buried the city of Pompeii in the year 79 A.D.? _____
(a) Mount St. Helens (c) Mount Everest
(b) Mount Vesuvius (d) Pikes Peak

19. Archaeologists discovered 2,000 fossilized people in the ruins of Pompeii.
(a) True or (b) False

20. Where is the world's most active volcano located? _____
(a) the state of Washington (b) Italy (c) Mexico (d) Hawaii

21. Which statement is the best **conclusion** about Mount St. Helens-related data? _____
_____
(a) Canyons can be formed and sediments deposited over millions of years of slow erosion.
(b) Canyons can be formed and sediments deposited by massive forces in a short time.
(c) Canyons can be formed and sediments deposited by strong forces over a long time.
(d) all of these

22. In this lesson's story episodes, your attitude could best be described as: _____
(a) appreciative (b) irritated (c) discontent (d) fearful

23. Write the **Life Principle:** *"*_____
_____*."*

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Use the following table to answer questions #24-28.

Volcano	Type	Eruptive Force	Magma Silica Content
Krakatoa, Indonesia	cinder	high	high
Mauna Loa, Hawaii	shield	low	low
St. Helens, USA	composite	high	high
Tamboro, Indonesia	cinder	high	high
Pelee, Martinique	cinder	high	high
Kilauea Iki, Hawaii	shield	low	low
Vesuvius, Italy	composite	moderate	high

24. What was the ***silica*** content in the magma contained in the Krakatoa volcano?
_____

25. Describe the eruptive force of the Krakatoa volcano. _____

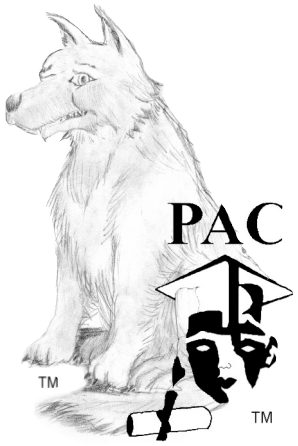
26. What was the silica content in the magma contained in the Mauna Loa volcano?
_____

27. Describe the eruptive force of the Mauna Loa volcano. _____

28. Which is a true statement about the relationship between the silica content in the magma and the eruptive force of a volcano? _____
_____

(a) The higher the silica content, the lower the force.
(b) The higher the silica content, the higher the force.
(c) There is no relationship between the silica content and the eruptive force.
(d) The lower the silica content, the higher the force.

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ACTIVITIES
Lesson 7:
Geology

Earthquakes

You are making progress! ***Answer the following questions. Circle the correct answers or fill in the blanks with words, letters or numbers as each question indicates. Check your answers from the Answer Key. Correct all errors, then complete your next goal.***

1. Which phrase is associated with an ***earthquake***? _____
   (a) eruption (b) sudden shifting (c) explosion (d) wind speed

2. All earthquakes are felt at the surface. (a) True or (b) False

3. What is a ***fault***? _____
   (a) a large section of rock (c) a fracture in the Earth's crust
   (b) the strength of an earthquake (d) an earthquake wave

4. What does the sudden shifting of the Earth's ***plates*** cause? _____
   (a) vibrations (b) hurricanes (c) cloud formation (d) evaporation

5. What type of wave is specifically associated with an earthquake? _____
   (a) light wave (b) radio wave (c) seismic wave (d) water wave

Match these terms for questions #6-9.

6. _____ ***Focus*** (a) where seismic waves originate in Earth's interior

7. _____ ***Epicenter*** (b) strength of an earthquake

8. _____ ***Seismograph*** (c) an instrument used to record and measure earthquake waves

9. _____ ***Magnitude*** (d) on Earth's surface, directly above focus

Use the following table to answer questions #10-12.

Magnitude	
Richter Scale	**Description**
2.5	generally not felt, but recorded on seismograph
3.5	felt by many people
4.5	some local damage may occur
5	moderate
6	destructive
7	major
8 and up	great

10. "Some local damage" describes an earthquake measuring _____ on the Richter Scale.

11. What is the Richter Scale measurement for a moderate earthquake? _____

12. What is the Richter Scale measurement for a major earthquake? _____

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13. What type of design advice have architects recommended for a building's foundation to help it withstand an earthquake? _____
    (a) Keep the foundation at ground level.
    (b) Extend the foundation well below ground level.
    (c) Imbed the foundation in sand.
    (d) Make the foundation a little below ground level.

14. Nearly _____ earthquakes happen yearly.

15. In this story episode, (**effect:**) you were panicky be**cause:** _____
    _____.
    (a) of the earthquake (c) of the vine on your ankle
    (b) of being lost (d) both b and c

16. Write the **Life Principle:** *"*_____,
    _____.*"*

Use the following table to answer questions #17-22.

Earthquake Destruction			
Date	**Location**	**Magnitude**	**Loss of Lives**
1906	San Francisco	8.3	700
1985	Mexico City	8.1	7,000
1994	Los Angeles	6.7	57
1995	Kobe, Japan	7.2	4,000
1995	Russia	7.5	2,000

17. What was the location of the earthquake where 7,000 lives were lost? _____

18. What was the magnitude of the Los Angeles earthquake? _____

19. In what year did the earthquake occur in Kobe, Japan? _____

20. What was the date of the earthquake in San Francisco? _____

21. What was the location of the earthquake where 2,000 lives were lost? _____

22. Where did the earthquake with the greatest magnitude occur? _____

Congratulations! You have finished Lesson 7 Activities. Score your work.

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ACTIVITIES
Lesson 8:
Meterology

Hurricanes

You are making progress! ***Answer the following questions. Circle the correct answers or fill in the blanks with words, letters or numbers as each question indicates. Check your answers from the Answer Key. Correct all errors, then complete your next goal.***

1. ***Hurricanes*** consist of high-velocity winds blowing around a high-pressure center.
   (a) True or (b) False

2. The center of a hurricane is called its _____.

3. Which is an accurate description of a hurricane? _____
   _____
   (a) a high-pressure storm
   (b) a huge storm that forms over mountains
   (c) the largest storm that occurs on Earth
   (d) a small storm that forms over oceans

4. For a storm to be called a hurricane, it must have winds that blow at least 120 kilometers (74 miles) per hour. (a) True or (b) False

5. What ***spirals*** upward in a hurricane? _____
   (a) warm, moist ocean air
   (b) cold, moist ocean air
   (c) warm water from rivers and streams
   (d) cold polar air

6. What fuels a hurricane? _____
   (a) cold polar air (c) high pressure
   (b) heat energy (d) air masses over land

7. Generally, what happens to hurricanes as they strike land? _____
   (a) They get stronger. (b) They get weaker.

8. Meteorologists can track hurricanes over water or land. (a) True or (b) False

9. Hurricane type storms are classified according to where they _____.

Match the terms for #10-12.

10. _____ hurricanes (a) violent, swirling storms over South Pacific Ocean

11. _____ ***typhoons*** (b) violent, swirling storms over oceans with winds over 74 mph

12. _____ ***cyclones*** (c) hurricane systems in the northern/western Pacific Ocean and Philippines

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13. What did the U.S. National Weather Service do to lessen confusion when communication about hurricanes was released? _____
(a) numbered them (b) named them (c) secretly coded them

Use the chart in your text to answer #14-15.

14. Which name was assigned to the first hurricane of the season in the year 2000.
_____
(a) Alberto (b) Beryl (c) Chris (d) Debby

15. Reading the columns from top to bottom in consecutive order, what (if any) pattern is evident?
(a) boy, girl (b) boy, girl, boy (c) girl, boy (d) no special pattern

16. Hurricane warnings do not need to be taken seriously because little damage results from being in the path of a hurricane. (a) True or (b) False

17. In this lesson's beginning story episode, you had to deal with several problems. Which of the following was your greatest concern? _____
(a) your encounter with poison ivy
(b) ignoring the ranger's warning (and getting lost)
(c) experiencing an earthquake
(d) encouraging LaToya to disobey instructions

18. In the closing episode, LaToya was able to find the pathway again by means of:
_____
(a) a compass (c) tissue markers
(b) watching the sun (d) the North Star

19. Write the **Life Principle:** "_____
_____."

Use the following table to answer questions #20-22.

Staffir-Simpson Hurricane Scale	
Category	**Wind Speed**
1	74-95 mph
2	96-110 mph
3	111-130 mph
4	131-155 mph
5	above 155 mph

20. Which category indicates the strongest possible hurricane? _____

21. What is the wind speed of a Category 2 hurricane? _____

22. What category records wind speeds of 131-155 mph? _____

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Use the following table to answer questions #23-25.

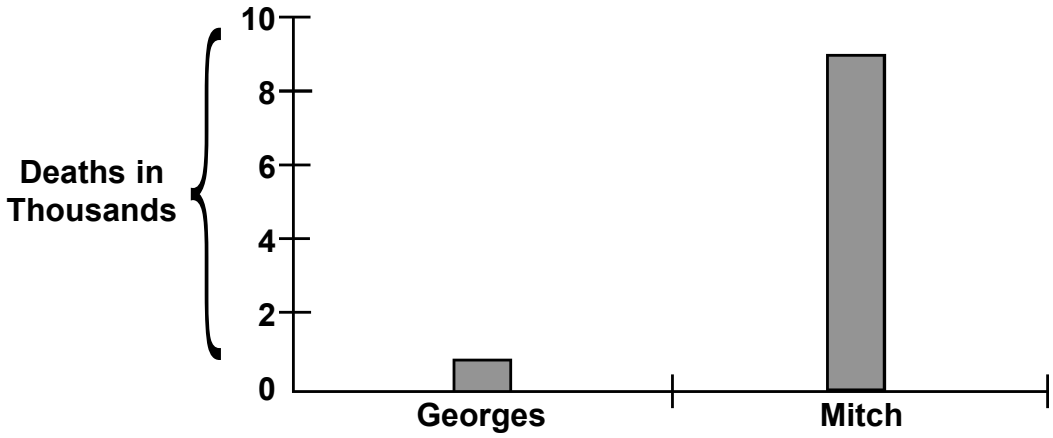
Examples of Destruction from Hurricanes in the USA			
Hurricane	**Date**	**Damage**	**Deaths**
Agnes	1972	$3 billion	134
Hugo	1989	$4 billion	50
Andrew	1992	$20 billion	50

23. Which hurricane occurred in 1989? _____

24. How much damage did Hurricane Andrew cause? _____

25. Which hurricane caused 134 deaths? _____

Use the following chart to answer questions #26-27.

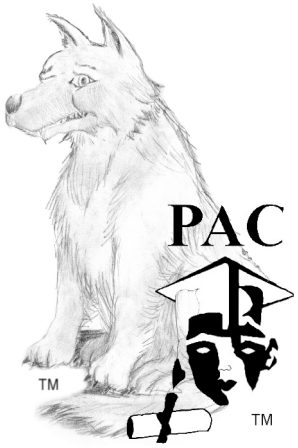


26. Which hurricane caused the least amount of deaths? _____

27. How many deaths did Hurricane Mitch cause? _____

(a) about 2,000 (c) about 9,000
(b) about 5,000 (d) about 12,000

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ACTIVITIES
Lesson 9:
Meteorology

Tornadoes

You are making progress! ***Answer the following questions. Circle the correct answers or fill in the blanks with words, letters or numbers as each question indicates. Check your answers from the Answer Key. Correct all errors, then complete your next goal.***

1. Lightning strikes can cause loss of human life. (a) True or (b) False

2. Which is an example of a precaution that should be taken during a thunderstorm?

   _____

   (a) Take shelter under a big tree.
   (b) Move indoors to avoid being struck by lightning.
   (c) Do not look directly at the lightning.
   (d) Always seek the highest ground and lay flat.

3. _____ charges rainwater with _____, which charges the soil with nitrogen for healthier vegetation.

4. ***Tornadoes*** develop within high-pressure areas of low winds.
   (a) True or (b) False

5. Tornadoes forming within an area of strong rotation produce a _____ cloud.
   (a) cumulus (b) funnel-shaped (c) cirrus (d) nimbus

6. A tornado is described as a powerful ***vortex***. What is the best meaning of *vortex*?

   _____

   (a) a powerful engine
   (b) a loud sound like a jet engine
   (c) a powerful whirling mass of air
   (d) a destructive machine

Use the following table to answer questions #7-9.

Fujita Scale for Tornadoes

F-scale number	Intensity phrase	Wind speed
F-0	Gale tornado	40-72 mph
F-1	Moderate tornado	73-112 mph
F-2	Significant tornado	113-157 mph
F-3	Severe tornado	158-206 mph
F-4	Devastating tornado	207-260 mph
F-5	Incredible tornado	261-318 mph

7. What is the wind speed range of an F-2 tornado? _____

8. What is the F-scale ranking of a severe tornado? _____

9. What is the intensity phrase used to describe an F-5 tornado? _____

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10. Most tornadoes occur during the winter months. (a) True or (b) False

11. "Tornado alley," where tornados are most common is in the _____ United States.
(a) Eastern/Western (b) Northern/Southern (c) Midwestern (d) Southwestern

12. What causes a tornado to turn dark? _____
(a) storm clouds (c) hot air
(b) dust and debris (d) cool air

13. A tornado's forward travel is always in a straight line. (a) True or (b) False

14. Tornadoes have definite wind _____. Tornadoes in the Northern Hemisphere rotate _____, while those in the Southern Hemisphere spin _____.

15. A *Tornado Watch* means that conditions in the _____ are suitable for the formation or tornadoes. What action should you take? _____
_____

16. A *Tornado Warning* means a tornado has been "sighted" on the ground or approaching the _____. What action should you take? _____

17. As you discovered in this story episode, the best thing to do when you do something wrong is to: _____.
(a) ignore it and go on (c) defend it
(b) hide it or lie about it (d) admit it, apologize and correct it

18. Write the **Life Principle:** "_____
_____."

Use the following table to answer questions #19-21.

F-scale number	Number of Tornadoes
F-0	698
F-1	263
F-2	80
F-3	30
F-4	5
F-5	0

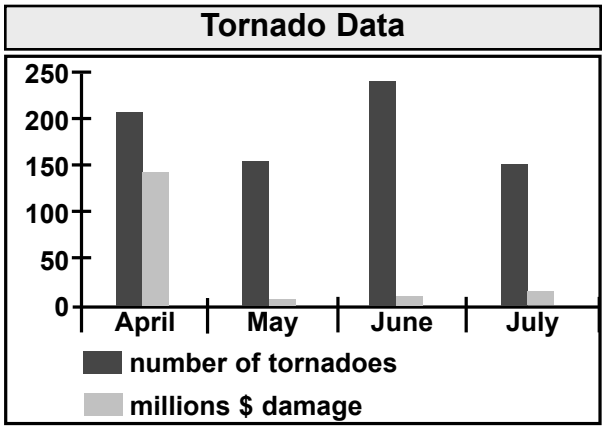
19. How many F-1 tornadoes occurred? _____

20. Name the F-scale number in which 5 tornadoes occurred. _____

21. Name the F-scale number in which the most tornadoes occurred. _____

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Use the following bar graph to answer questions #22-25.



22. How many tornadoes occurred during the month of April? _____
    (a) about 100 (b) about 150 (c) about 200 (d) about 300

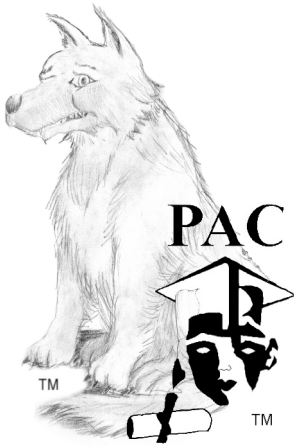
23. In which month did the most tornadoes occur? _____

24. In which month did the most damage occur? _____

25. How many millions of dollars worth of damage occurred in May? _____
    (a) about 10 million (c) about 150 million
    (b) about 50 million (d) about 200 million

Not every lesson will be this difficult! Continue diligently to Lesson 10.

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ACTIVITIES
Lesson 10:
Paleontology



Fossils

You are making progress! ***Answer the following questions. Circle the correct answers or fill in the blanks with words, letters or numbers as each question indicates. Check your answers from the Answer Key. Correct all errors, then complete your next goal.***

1. What are the remains of once-living things? _____
   (a) organisms (b) fossils (c) marine creatures (d) sediment

2. Most ***fossils*** are the remains of the soft parts of an organism. (a) True or (b) False

3. The remains of most ***organisms decay*** before they can become fossils. What does the word *decay* mean? _____
   (a) settle to the bottom (c) rot
   (b) harden (d) be eaten

4. Where are most fossils found? _____
   (a) in ice (c) in the desert
   (b) in sand (d) in rock

5. What are ***invertebrates***? _____
   (a) animals with backbones (c) retrieved fossils
   (b) animals without backbones (d) a classification of reptiles

6. Fossils are found in all parts of the world. (a) True or (b) False

7. What type of scientist specializes in the study of the forms of life existing in prehistoric or geologic times? _____
   (a) archaeologist (c) geologist
   (b) biologist (d) paleontologist

8. What type of scientist specializes in the recovery and study of material evidence remaining from past human cultures? _____
   (a) archaeologist (c) geologist
   (b) biologist (d) paleontologist

9. Where do ***marine creatures*** live? _____
   (a) in the tropics (c) in polar regions
   (b) in the ocean or sea (d) near the equator

10. ***Extinct*** animal's are those which: _____.
    (a) stink due to the process of decay (c) no longer exist
    (b) used to be more numerous than they are now (d) never existed

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11. Be**cause** the _____ of Darwin's time did not support his _____, (**effect:**) Darwin was fearful he had devoted himself to something that did not really exist.

12. What did Darwin say needed to be found in the fossil record in the future to support his evolutionary theory? _____
    (a) transitional forms (c) marine fossils
    (b) more invertebrate fossils (d) more vertebrate fossils

13. The reader could **infer** from the text that the transitional form or "missing link" still sought by evolutionists would be: _____ _____.
    (a) a fossil showing a simple organism changing into a more complicated organism
    (b) a fossil showing a complicated organism changing into a simpler organism

14. **Effect:** Flood conditions are best for _____ be**cause** rapid burial by _____ preserves _____ from predators or decomposition by bacteria.

15. Fossil graveyards lend support to the: _____.
    (a) Theory of Evolution (c) theory of a global flood
    (b) Theory of Intelligent Design (d) theory of fossil mutations

16. All scientists interpret data from the fossil record to mean the same thing.
    (a) True or (b) False

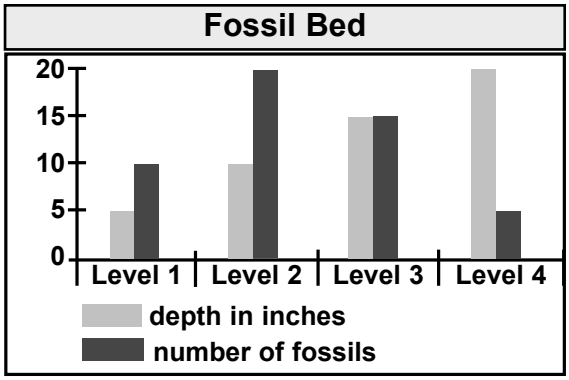
17. **Effect:** Intelligent design scientists claim that fossils are similar be**cause** the same _____ designed all _____.

18. In this story episode, Professor Parker had discovered: _____.
    (a) fossilized sea shells (c) fossil records supporting evolution
    (b) fresh dinosaur footprints (d) fossilized dinosaur tracks beside human footprints

19. Write the **Life Principle:** *"*_____ _____*."*

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Use the following graph to answer questions #20-23.

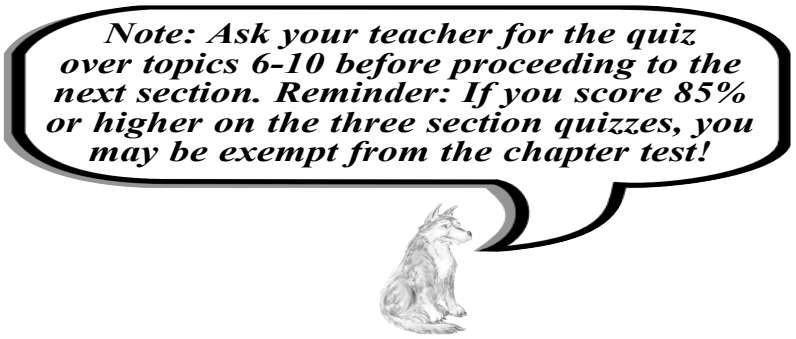


20. How many fossils were discovered at Level 1? _____

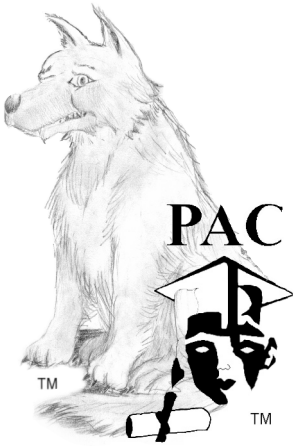
21. How deep is Level 2? _____

22. Which level is the deepest? _____

23. At which level were the most fossils found? _____



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ACTIVITIES
Lesson 11:
Geology

Layers

You are making progress! ***Answer the following questions. Circle the correct answers or fill in the blanks with words, letters or numbers as each question indicates. Check your answers from the Answer Key. Correct all errors, then complete your next goal.***

1. Scientists disagree concerning the age of fossils and the age of the rock layers.
   (a) True or (b) False

2. According to evolutionary theory, you would expect to find fossils of simple life forms in:
   _____
   (a) an upper layer of rock
   (b) a lower layer of rock
   (c) middle rock layers
   (d) all of these

3. The ***geologic column*** is: _____
   (a) a calendar of geologic events
   (b) a specific event in history
   (c) a tower that has a significant place in history
   (d) a suggested vertical arrangement of rock layers

4. What is the ***geologic time scale***? _____
   _____
   (a) a scale for determining weights and measures
   (b) an organization of the geologic column into four divisions of time
   (c) a calendar of geologic events
   (d) a type of clock

5. The *geologic column* and *geologic time scale* are basically two names for the same theory.
   (a) True or (b) False

6. According to evolutionary theory, some fish became _____, some of which became _____, some of which became _____, while others became _____, including man.

7. Select the fossil location that best supports the Theory of Evolution and the geologic time scale. _____
   (a) A fossil of a fish would be buried above a fossil of a mammal.
   (b) A fossil of a fish would be buried in the same layer as a mammal.
   (c) A fossil of a fish would be buried below a fossil of a mammal.
   (d) A fossil of a fish would be buried close to the surface of the Earth.

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8. In a process called _____, an evolutionist dates the rock layers by the fossils within them, and dates fossils by the rock layers in which they occur.

9. What presents a problem for the theory that dates rock layers by the fossils, and fossils by the rock layers? _____
_____
(a) Fossils of simple as well as complex organisms are often found in the same layers.
(b) Sometimes you cannot find any fossils.
(c) Sometimes you do not have the proper equipment or supplies you need.
(d) Fossils are hard to distinguish and identify.

10. Some scientists who oppose dating fossils by the rock layer and the rock layer by the fossils say that fossils are buried _____ they lived, not when they lived.

11. The ***Law of Superposition*** states: In rock layers, the oldest layers are at the bottom, and the youngest layers are at the top if the layers _____
_____.

12. Name three things that could disturb rock layers. _____,
_____, _____

Use the chart in your text to answer #13-15.

13. List the eras of the geologic time scale in chronological order from youngest to oldest:
_____, _____, _____,
_____.

14. In which era was the Earth presumably formed? _____

15. Man presumably emerged during the _____ era.

16. The _____ Theory holds that Earth is less than 10,000 years old.

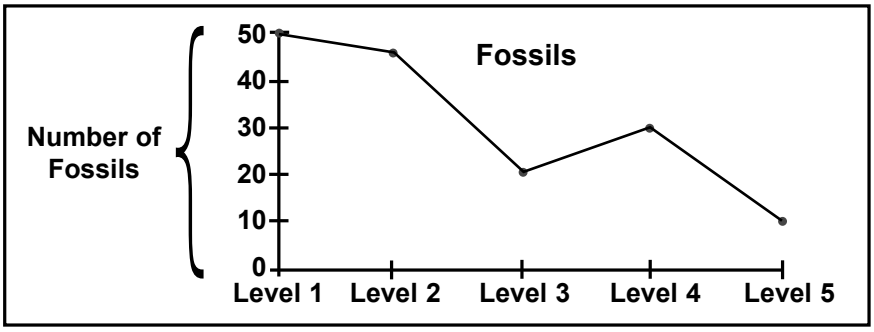
17. If you place several materials in a container and shake it up, which item will settle to the bottom first? _____
(a) the material you placed in the container first
(b) the lightest material
(c) the heaviest material
(d) the material with the darker color

18. In this beginning story episode, dark clouds warned you that _____
_____.

19. Write the **Life Principle:** *"*_____
_____*."*

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Use the following graph to answer questions #20-23.



20. At which level were 20 fossils discovered? _____

21. At which level were the least amount of fossils discovered? _____

22. How many fossils were discovered at Level 4? _____

23. Which level is the deepest into the Earth's surface? _____
    (a) Level 1
    (b) Level 5
    (c) There is not enough data on the graph to determine that information.

Use the following table to answer questions #24-26.

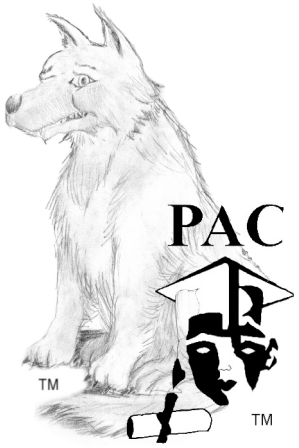
Fossil Data		
Location	**Depth**	**Fossils Found**
Site 1	5 feet	10
Site 2	10 feet	20
Site 3	15 feet	50

24. What is the depth of Site 3? _____

25. How many fossils were found at a depth of 5 feet? _____

26. Which site is at the greatest depth? _____

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ACTIVITIES
Lesson 12:
Paleontology



Dinosaurs

You are making progress! ***Answer the following questions. Circle the correct answers or fill in the blanks with words, letters or numbers as each question indicates. Check your answers from the Answer Key. Correct all errors, then complete your next goal.***

1. Fossils of ***dinosaurs*** have been found in just about every place in the world.
   _____ (a) True or (b) False
2. Scientists have been analyzing dinosaur fossils for over _____ years.
3. In 1822, Dr. Mantell studied a fossilized tooth that resembled a tooth from an _____.
4. What important discovery was made deep in a coal mine in southwest Belgium?
   _____
   (a) fossilized dinosaur eggs
   (b) fossilized skeletons of more than 30 Iguanodons
   (c) a nest of fossilized baby dinosaurs
   (d) 30 fossilized iguanas
5. In _____, Sir Richard Owen gave the new classification of creatures represented by these fossils: the name *dinosaur*, which means "_____."
6. What do museums do with the dinosaur bones that are discovered? _____
   _____
   (a) reconstruct the skeletons
   (b) decompose the skeletons
   (c) remove the skeletons
   (d) disintegrate the skeletons
7. Which dinosaur was a case of mistaken reconstruction? _____
8. The reader can **infer** that museums and textbooks can always be relied upon to feature the most recent, accurate scientific information. _____
   (a) True or (b) False
9. What was the name of the dinosaur meaning "good mother lizard" associated with the discovery of fossilized dinosaur eggs in Montana? _____

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Use the following table to answer questions #10-13.

Dinosaur Discoveries			
What	**Where**	**When**	**Dinosaur**
dinosaur eggs	Mongolia	1922	Protoceratops
fossilized babies	Montana	1978	Maiasaura

10. When were the ***Protoceratops*** dinosaur eggs discovered? _____

11. What was discovered in Montana? _____

12. When did the discovery in Montana take place? _____

13. Where were the Protoceratops eggs discovered? _____

14. An accurate **summary** statement on the appearance and behavior of dinosaurs, would be, "If you've seen one, you've seen them all." (a) True or (b) False

15. The ***Mesozoic Era*** of the _____ is believed by many scientists to be the time when _____ appeared on Earth.

16. What do birds have that no other animal has? _____
    (a) a small body (c) feathers
    (b) bulging eyes (d) the ability to fly

17. Before the term "dinosaur" came into being in 1841, the giant reptiles were referred to as "behemoths" or (more commonly) as _____.

18. Use **key words** (as few main words as possible) to list 3 reasons why some scientists believe man and dinosaurs may have coexisted: _____
    _____
    _____

19. The reader can **conclude** that historical references to encounters with "dragons," ancient artifacts depicting dinosaurs and discovery of unfossilized Tyrannosaurus Rex bones containing what appeared to be red blood cells all support the theory that dinosaurs lived millions of years ago.
    (a) True or (b) False

20. Scientists disagree on when dinosaurs lived and what happened to them.
    (a) True or (b) False

21. What question is being asked that would receive answers such as these: a meteorite collided with Earth, dinosaurs had tiny brains, dinosaur eggs were eaten, a worldwide flood occurred? _____
    (a) Why are dinosaurs so large?
    (b) Why did dinosaurs become extinct?
    (c) Why do we find so few complete dinosaur skeletons?
    (d) When did dinosaurs live?

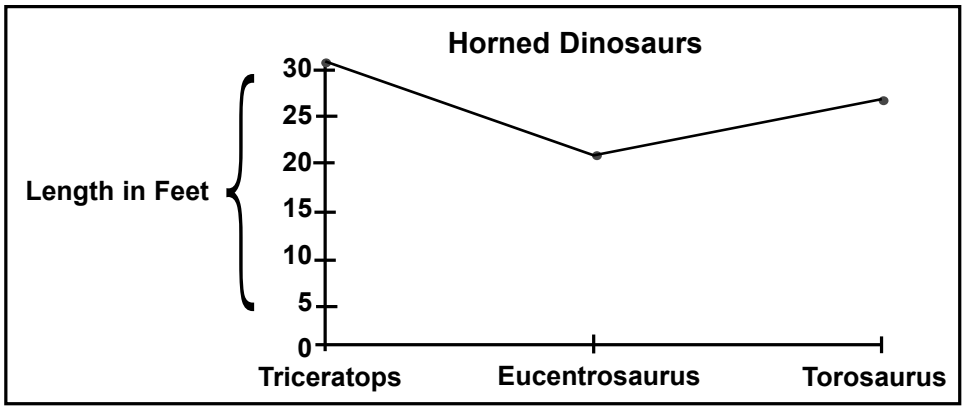
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22. The _____ was a period in which great glaciers covered about _____ of Earth and could well have been responsible for the death of many _____.

23. In the beginning story episode of this lesson, (**effect:**) Mr. Clark secured all food items in an ice chest in his car be**cause** of the ranger's warning about _____.
(a) ants (b) flies (c) vandals (d) bears

24. Write the **Life Principle:** *"*_____ _____*."*

Use the following graph to answer questions #25-27.



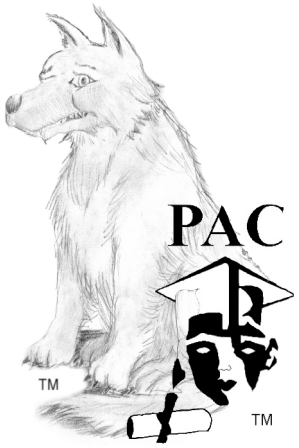
25. How long was the Eucentrosaurus? _____

26. Which dinosaur was the longest? _____

27. Why have these dinosaurs been grouped together? _____
_____
(a) Their names are similar.
(b) They are about the same weight.
(c) They all walk on their back legs.
(d) They all have horns.

Keep working hard! You are nearing the end of Section 3. Continue to Lesson 13.

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Extinct and Endangered Species

ACTIVITIES
Lesson 13:
Biology

You are making progress! ***Answer the following questions. Circle the correct answers or fill in the blanks with words, letters or numbers as each question indicates. Check your answers from the Answer Key. Correct all errors, then complete your next goal.***

1. Many organisms have become _____.

2. Usually, extinction is a natural process. (a) True or (b) False

3. What do these animals have in common: dinosaurs, dodo birds and passenger pigeons?

   _____

   (a) They are all endangered species.
   (b) They are all mammals.
   (c) They are all thought to be extinct.
   (d) They are all meat-eaters.

4. What transportation system added to the demand for passenger pigeons?

   _____

   (a) airlines (b) cars (c) passenger ships (d) railroad

5. The last passenger pigeon was in _____ when it died.
   (a) a zoo
   (b) its natural habitat
   (c) a museum
   (d) the home of its owner

6. The ***Endangered Species*** Act is designed to: _____

   _____.

   (a) protect animals that are extinct
   (b) protect animals that are in danger of becoming extinct
   (c) cause animals to act like endangered species so they will not be killed
   (d) identify animals in danger of becoming extinct

7. Why do many countries ban the sale or trade of elephant-tusk ivory? _____

   _____

   (a) to prevent paying sales tax
   (b) to prevent going through customs
   (c) to prevent the slaughter of elephants
   (d) to prevent the slaughter of rhinoceroses

8. ***Poachers*** are people who hunt legally. (a) True or (b) False

9. Why is the black rhinoceros slaughtered? _____
   (a) for its tusks (b) for its hide (c) for its horn (d) for its meat

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Use the following table to answer questions #10-16.

Some of the Mammals on the "Red List"		
Species	**Location**	**Reasons for Decline**
Cheetah	Africa to India	habitat destruction and fur trade
Elephant, Asian	South Central and Southeast Asia	habitat destruction
Gorilla	Central and Western Africa	habitat destruction
Leopard, Snow	Central Asia	over-hunting for its fur
Panda, Giant	China	restriction habitat
Rhinoceros, Black	South of Sahara in Africa	habitat destruction, over-hunting for horns
Tiger	Temperate and tropical Asia	habit destruction, hunting for sport
Whale, Blue	Oceans	commercial hunting

10. The reader can **conclude** that the chief cause(s) of extinction of thousands of species in recent times is (are): _____
    (a) disease and old age
    (b) habitat destruction and over-hunting
    (c) a global natural disaster
    (d) lack of food

11. Which animal is hunted for sport? _____

12. Which animal lives in Central and Western Africa? _____

13. What is the location of the blue whale? _____

14. What is the location of the snow leopard? _____

15. What is the reason for the decline of the Asian elephant? _____

16. What is the reason for the decline of the blue whale? _____

17. What is putting harmful chemicals into the water, air, or soil called? _____
    (a) dilution (b) pollution (c) poaching (d) chemistry

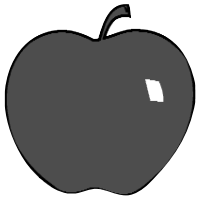
18. If a species is eliminated, what happens? _____
    (a) There is a break in the food chain.
    (b) They are put on the endangered species list
    (c) Guilty persons are prosecuted.
    (d) The ecosystem is replaced.

19. Plants, animals, and humans are all valuable parts of an _____.

20. In the beginning story episode of this lesson, the bears at your campsite were not behaving normally. (a) True or (b) False

21. Write the **Life Principle:** *"*_____
    _____*."*

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ACTIVITIES
Lesson 14:
Health

Pollution Problems

You are making progress! ***Answer the following questions. Circle the correct answers or fill in the blanks with words, letters or numbers as each question indicates. Check your answers from the Answer Key. Correct all errors, then complete your next goal.***

1. When harmful substances are released into the ***environment***, humans are affected by way of _____, _____ and/or _____.

2. When mercury was dumped into the ocean, what happened? _____
_____
(a) Nothing—it does not dissolve in water.
(b) It remained on the bottom doing no harm.
(c) It was absorbed by fish and other sea creatures.
(d) It floated and was carried to other countries by wave action.

3. Birds that try to clean the oil (from an oil spill) from their feathers: _____
_____.
(a) are usually successful
(b) can die from oil poisoning
(c) cannot remove it
(d) are not harmed

4. The Clean Water Act and other pieces of similar legislation are designed to: _____
_____
(a) protect the atmosphere from ozone
(b) protect bodies of water from pollutants
(c) protect outer space from toxic rocket fuel
(d) protect the land from trash pollution

5. _____ is an unhealthy combination of vehicle exhaust and industrial chemical fumes which "hangs" over large cities.

6. **Effect:** _____ forms when (**cause:**) sulfur dioxide and nitrogen oxide from industry and vehicle exhaust fumes react with water droplets in the _____.

7. ***Acid rain*** is harmful to _____, _____ and _____

8. The Clean Air act is designed to: _____.
(a) protect the atmosphere from pollution
(b) protect bodies of water from pollutants
(c) protect outer space from toxic rocket fuel
(d) protect the land from trash pollution

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9. **Contrast** sanitary landfills with the old town dumps. Use **key words** to communicate two major benefits of landfills over dumps. _____, _____

10. ***Incineration*** and ***composting*** are ways of recycling trash.
(a) True or (b) False

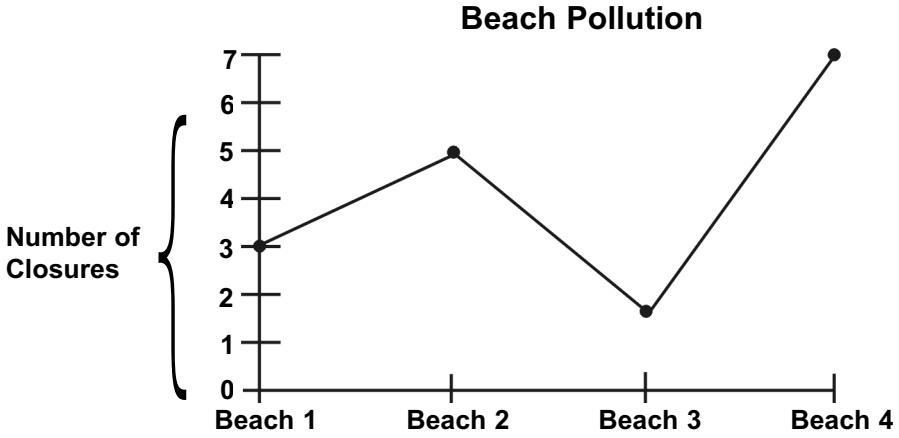
11. The problem with incineration of some wastes is _____ or other airborne hazardous materials.

12. To ***recycle*** something means to reprocess it so it can be used again.
(a) True or (b) False

13. In the beginning story episode in this lesson, the clue that helped solve the bear mystery was: _____
(a) fossilized footprints (c) litter on the ground
(b) disappearance of the scientists (d) none of these

14. Write the **Life Principle:** *"*_____ _____*."*

Use the following graph to answer questions #15-17.



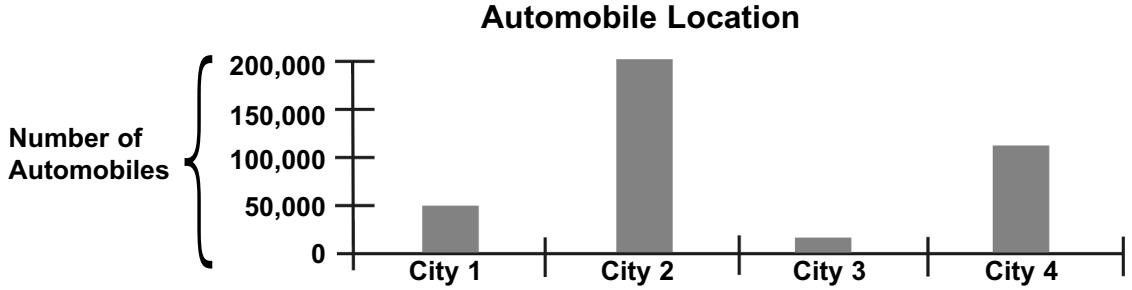
15. How many times was Beach #1 closed because of pollution? _____

16. Which beach was closed at least six times? _____

17. Which beach was closed the least amount of times? _____

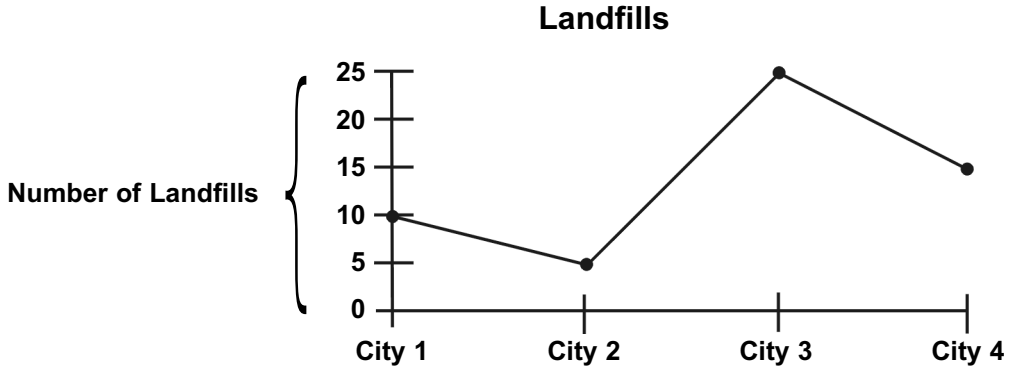
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Use the following bar graph to answer questions #18-21.



18. How many automobiles are located in City #1? _____
19. Which city has the most automobiles? _____
20. Which city should have the most problem with ***smog***? _____
21. Which city should have the least problem with smog? _____

Use the following graph to answer questions #22-25.



22. How many landfills does City #1 have? _____
23. Which city has 15 landfills? _____
24. Which city should have the largest population? _____
25. Which city should have the smallest population? _____

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Use the following table to answer questions #26-29.

Recycling Project		
School	**Aluminum Cans**	**Newspapers**
#1	**20 pounds**	**75 pounds**
#2	**30 pounds**	**40 pounds**
#3	**15 pounds**	**25 pounds**
#4	**10 pounds**	**40 pounds**

26. Which school brought in the most aluminum cans? _____

27. Which school brought in 75 pounds of newspapers? _____

28. How many pounds of aluminum cans did school #4 bring? _____

29. Which two schools brought in the same amount of newspapers?
_____, _____

Congratulations! You have completed another lesson.
Continue working diligently.

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ACTIVITIES
Lesson 15:
Physics

Running Waters

You are making progress! ***Answer the following questions. Circle the correct answers or fill in the blanks with words, letters or numbers as each question indicates. Check your answers from the Answer Key. Correct all errors, then complete your next goal.***

1. _____ is the tendency of an object to float in a liquid.

2. Who documented the concept that a ***submerged*** object is subject to a ***buoyancy*** force that is equal to the weight of the fluid ***displaced*** by that object? _____
   (a) Aristotle (c) Archimedes
   (b) Neil Armstrong (d) Sir Isaac Newton

3. ***Archimedes' Principle*** documents the relationship between: _____
   _____.
   (a) an object and the air it displaces
   (b) an object and the water it displaces
   (c) rivers and oceans
   (d) rivers and streams

4. Earth materials like small rocks, gravel and sand are picked up and transported by rivers.
   (a) True or (b) False

5. ***Sediment*** in moving water can wear away at the banks of the river to create _____ and _____ by way of a small amount of water over a long time period or a _____ time frame with _____ water.

Match these terms:

6. _____ Sediment — (a) a large, triangular-shaped sediment deposit at the mouth of a river
7. _____ ***Drainage basin*** — (b) the process in which rivers eventually deposit their sediments
8. _____ ***Deposition*** — (c) small rocks, gravel and sand that are carried by a river
9. _____ ***Delta*** — (d) the land area that contributes water to the stream

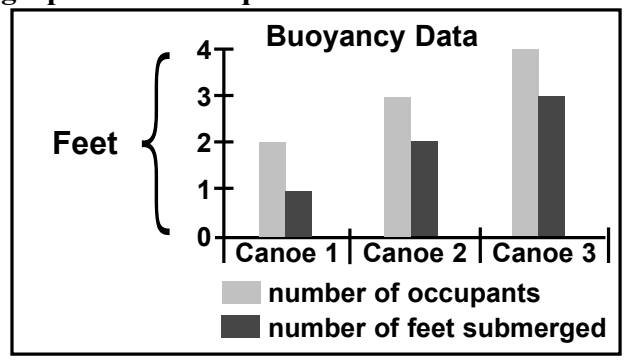
10. The city of New Orleans is built on a delta. (a) True or (b) False

11. In the story episode at the beginning of this lesson, the clue that helped solve the mystery was directly related to : _____.
    (a) river deltas (c) Archimedes Principle
    (b) drainage basins (d) the number of people in a canoe

12. Write the **Life Principle:** *"*_____
    _____*."*

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Use the following graph to answer questions #13-21.



13. How many occupants are in Canoe #1? _____

14. Which canoe has the most occupants? _____

15. Which canoe has the least number of occupants? _____

16. Which canoe is submerged the least? _____

17. Which canoe is submerged the most? _____

18. What conclusion can you draw regarding the number of occupants and the level the canoes are submerged? _____
    (a) The heavier the load, the lower the canoe sits in the water.
    (b) The heavier the load, the higher the canoe sits in the water.
    (c) The lighter the load, the lower the canoe sits in the water.

19. With this data, what are you assuming about the occupants? _____
    (a) They are all about the same weight.
    (b) There is a great range in weight.
    (c) Their weight range could capsize the canoe.

20. What additional variable could have made this experiment more valid? _____
    _____
    (a) To know the temperature of the water.
    (b) To know the weight of the load in each canoe.
    (c) To know the maximum occupancy of each canoe.
    (d) To know whether the water is a river or a stream.

21. With this data, what are you assuming about the canoes? _____
    (a) They are the same size.
    (b) They are not the same size.
    (c) They have flat bottoms.

Note: Ask your teacher for the quiz over topics 10-15 before proceeding to the next section. Reminder: If you score 85% or higher on the three section quizzes, you may be exempt from the chapter test!



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