Name: _____

Date: _____ Grade: _____

Basic Science Mysteries

CHAPTER 3 TEST

Congratulations on completing this chapter! ***Answer the following questions to test your understanding of the material. When you finish, hand in your test to your teacher for a final grade. Each answer is worth 2.77 points.***

Fill in the blank. Name the cycles and processes that are described below with terms from the Word Bank.

WORD BANK			
respiration	photosynthesis	nitrogen cycle	water cycle
rock cycle	food chain	carbon cycle	oxygen cycle

1. _____: Water and carbon dioxide combine with chlorophyll and sunlight, causing a chemical change that allows plants to produce their own food.
2. _____: Plant roots extract nitrogen from the soil. The nitrogen is changed into nitrates. Nitrates are released into the soil when decomposers break down dead plants and animals. Some nitrates are used by plants; some are absorbed by the soil. Nitrates that are absorbed by the soil are converted to nitrogen gas by bacteria in the soil. Nitrogen gas is released into the air. Nitrogen gas in the air is changed by lightning into nitrates that combine with rainwater that plants can use.
3. _____: Animals absorb oxygen and release carbon dioxide into the air.
4. _____: Gas vapors condense in the clouds and turn to water droplets. The droplets fill clouds with liquid or solid matter that precipitates upon the Earth. The precipitation is absorbed by plants and trees or by bodies of water such as rivers, lakes and oceans. The moisture leaves the trees and plants in a gaseous form called transpiration; or, the moisture leaves the rivers, lakes and oceans in the gaseous form of evaporation.
5. _____: Tiny pieces of rock are pressed together to form sediment. The sediment may undergo intense heat and pressure and form metamorphic rock underground. Volcanos and other upheavals may erupt, causing magma and lava to flow. Igneous rock is formed from the cooled magma and lava.
6. _____: Plants absorb energy from the Sun and produce food. Plants are consumed by animals. Some animals eat other animals. Dead animals that are not eaten are decomposed by fungi and bacteria that return nutrients to the soil. Plants use the nutrients to grow.
7. _____: Oxygen and carbon dioxide are recycled by means of photosynthesis, respiration, ingestion of plant foods and combustion of fossil fuels.

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Multiple Choice: Choose the correct answer.

8. Why are nitrates important to plants? _____
_____
(a) Nitrates help decomposers decay dead plants and animals.
(b) Nitrates are used by plants to make protein so the plants can grow.
(c) Nitrates make plants more tasty to animals such as cows.
(d) Nitrates help form rainwater that falls on the plants and helps them grow.

9. Soil depleted by crops must be replenished with _____ to produce more crops.
(a) nitrogen (b) peanuts and sweet potatoes (c) chlorophyll (d) oxygen

10. The lack of vegetation allows erosion to occur rapidly because: _____
_____.
(a) plants are not present to hold down the soil
(b) plants need soil to grow
(c) erosion occurs only during drought
(d) erosion occurs only in areas like the Dust Bowl

11. Friction is a: _____.
(a) formula for work (b) resistant force (c) type of soil (d) lubricator

12. _____ is created when an object moves.
(a) Erosion (b) Decomposition (c) Friction (d) Work

13. Conduction, convection and radiation are three methods of transferring: _____.
(a) solutions (b) heat (c) head trauma (d) water tables

14. Most of our food selections should be from the _____ groups on the food pyramid.
(a) meat, eggs, nuts
(b) milk, dairy products
(c) vegetable, fruit, grain
(d) fats, sweets

Matching:

15. _____ aquifer
16. _____ solution
17. _____ concussion
18. _____ temperature

(a) the inseparable combination of two substances
(b) trauma to the head that can cause memory loss
(c) an underground source of water that rests upon impermeable rock or soil
(d) the measurement of heat

For questions #19-22, complete the table for temperatures.

Measure/Scale Chart

	Condition	Fahrenheit	Celsius	Kelvin
19.	Boiling	_____	100º	373º
20/21.	Freezing	_____	_____	273º
22.	Absolute Zero	-459º	-273º	_____

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Fill in the blank with words from the Word Bank.

WORD BANK

formula	layers	heat	kinetic	measurement
friction	energy	nutrients	erosion	cycles
rock	potential	temperature		

23. Proteins, fats, carbohydrates, vitamins, minerals, and water are the six main _____ needed to operate the human body.

24. The three _____ of the Earth are the mantle, crust and core.

25. _____ occurs when the wind and water blow or wash away soil.

26. Three factors that determine how much _____ will result from the interaction of two surfaces are force, surface area and surface texture.

27. The formula for _____ is W = F x d.

28. Conduction, convection and radiation are means by which _____ moves.

29. _____ energy is energy in motion.

30. _____ energy is energy not yet in motion.

31. _____ are formed by the roots of plants that contain certain bacteria that extract N_2 from the soil or by lightning that fuses oxygen and nitrogen together.

Write the letter of the statement which gives the best meaning of each Life Principle.

32. *"Waste not, want not."* _____
    (a) The size of your waist line may determine how much you want.
    (b) Responsible use of what we have enables us to have resources during hard times.
    (c) Wasting our resources makes us not want more resources.

33. *"What you do today will affect tomorrow."* _____
    (a) Decisions you make now (today) will determine your success or failure in the future.
    (b) Responsible actions today may lead to a successful future.
    (c) Irresponsible actions today do not matter—the real decisions need to be made when you are an adult.

34. *"Do not let distractions erode your noble plans."* _____
    (a) Noble plans are built by people who never become distracted.
    (b) Distractions can enable you to build noble plans.
    (c) Distractions, like water and wind, can erode your noble plans until little is left to make you successful.

35. *"Eat well to be well."* _____
    (a) If you eat healthfully, you may be able to dig a well.
    (b) Eating nutritious foods will, in turn, provide you with a healthy body.
    (c) Eating expensive foods will help you to be regarded in high esteem by your peers.

36. *"Wise response to pressure can make you; thoughtless response can break you."* _____
    (a) While under pressure, consider the wisest response.
    (b) Pressure can break your bones or make you physically stronger.
    (c) Depending on our responses, pressure can make or break us.

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