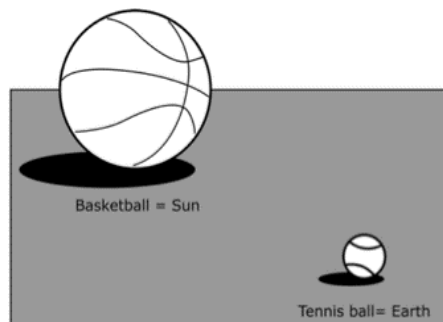


Name: _____

Date: _____

Grade 4 Middle-of-Year Science Assessment

- Anita likes to wake up early in the morning to watch the sunrise. She notices that the Sun appears to move across the sky during the day. What is the reason the Sun appears to move across the sky each day?
 - Earth's orbit
 - Earth's seasons
 - Earth's revolution
 - Earth's rotation
- Hector's birthday is on September 2. This year Hector saw a full moon on his birthday. What is the best guess of the next time Hector will see a full moon?
 - September 16
 - October 1
 - October 17
 - November 3
- How is Earth's rotation on its axis different from its revolution around the Sun?
 - Earth's rotation on its axis takes 1 day and its revolution around the Sun takes 24 days.
 - Earth's rotation on its axis takes 24 hours and its revolution around the Sun takes 12 months.
 - Earth's rotation on its axis takes 24 days and its revolution around the Sun takes 1 year.
 - Earth's rotation on its axis takes 1 month and its revolution around the Sun takes 365 days.
- Inez and Kelli are modeling Earth, the Sun, and their relative motions. A basketball is used to represent the Sun and a tennis ball is used to represent Earth.



What should the boys do to best show why Earth has a day and a night?

- Rotate the basketball on its axis
- Rotate the tennis ball on its axis
- Move the basketball in a circle around the tennis ball
- Move the basketball closer and farther from the tennis ball

5. What kind of impact does space research and exploration have on the economy and culture of Florida?
 - A. Fewer visitors per year
 - B. Decreases the number of scientists that live in Florida
 - C. Increases tourism
 - D. Increases hurricanes and other storms

6. Which of the following best describes how metamorphic rocks are formed?
 - A. Rock changed by heat and pressure
 - B. Melted rock that cools
 - C. Tiny pieces of rock cementing together
 - D. Layered rock splitting apart

7. Samuel took a hammer and broke open several mineral samples. He wanted to see if any mineral would break in right angles. What property of minerals was Samuel investigating?
 - A. Luster
 - B. Color
 - C. Cleavage
 - D. Hardness

8. Some forms of energy include wind and solar. These types of energy are called renewable resources. Why are wind and solar energy considered renewable resources?
 - A. They can be replaced quickly.
 - B. They require expensive equipment.
 - C. They can be found all over Earth's surface.
 - D. They provide much of the energy we use.

9. How are physical weathering and erosion different?
 - A. Physical weathering moves rocks by gravity or ice. Erosion breaks down rocks by wind and plants.
 - B. Physical weathering breaks down rocks by water only. Erosion moves rocks by gravity or water.
 - C. Physical weathering breaks down rocks by wind, water, ice, temperature change, or plants. Erosion moves rocks by gravity, wind, water, or ice.
 - D. Physical weathering breaks down rocks by wind, water, ice, temperature change, or plants. Erosion moves rocks by water only.

10. The Pacific Ocean is the largest ocean in the world. A scientist wants to study how the ocean is changing its shape over time. Which approach would give the scientist the best information for her to study?
- A. Read books about the Pacific Ocean
 - B. Take a boat across the ocean
 - C. View photographs of the ocean taken by a space telescope
 - D. Take water samples from the ocean
11. Adrian created a list of many common resources available in Florida. She included water, phosphate, oil, diamonds, limestone, silicon, wind energy, and solar energy. Which resource did Adrian incorrectly list?
- A. Limestone
 - B. Phosphate
 - C. Diamonds
 - D. Silicon
12. A seed that is buried beneath the ground will begin to absorb water. This activates the seed and it will soon send down a root. What is the name of this process?
- A. Germination
 - B. Oxidation
 - C. Fertilization
 - D. Transpiration
13. The table provided here shows characteristics of a rabbit and divides them into those that are inherited and those that are the result of the environment.

Inherited	Result of Environment
Brown fur Long ears	Chipped tooth ?

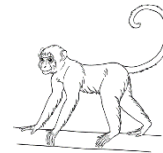
Which characteristic below should be placed in the column labeled “Result of Environment”?

- A. Two round eyes
- B. One leg shorter than the others
- C. Very small head
- D. Infected ears

14. A lot of plants that grow in the northern United States will lose their leaves in the fall. Many of the plants that grow in South Florida do not lose their leaves in the fall. What is the best reason for this seasonal change?
- A. Florida’s climate is warm and sunny all year.
 - B. Florida has a lot of freshwater lakes.
 - C. Florida has only a few very large trees.
 - D. Florida has a lot of invasive species.
15. Joe is a monkey who was brought to a wildlife refuge after being injured at a zoo. Some of Joe’s behaviors are listed next to his picture.

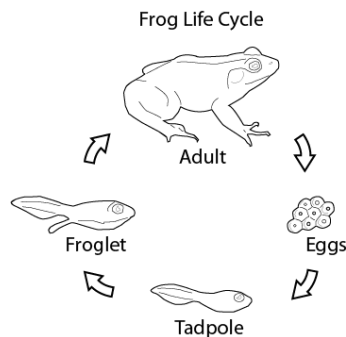
Joe the Monkey

- Swings from trees
- Uses a stick as a tool
- Eats bananas
- Uses his feet like hands



Which one of Joe’s behaviors is **not** inherited?

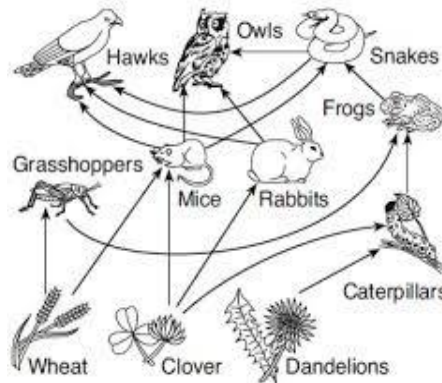
- A. Swings from trees
 - B. Uses a stick as a tool
 - C. Eats bananas
 - D. Uses his feet like hands
16. Some plants are called flowering plants. A diagram of a frog life cycle is provided. Which stage in a frog’s life cycle is most similar to the flowering stage of a plant?



- A. Eggs
- B. Tadpole
- C. Froglet
- D. Adult

17. Consumers can be predators, prey, scavengers, herbivores, omnivores, or carnivores. What is the common characteristic of all consumers?
- A. Create their own food
 - B. Must eat to get energy
 - C. Hunt for live animals
 - D. Will eat anything

18. The provided diagram below shows a forest food web. All food webs begin with the Sun as the source of energy.



Which of the following correctly describes the flow of energy through the food web?

- A. Sun → caterpillar → frog → snakes
 - B. Sun → wheat → mice → owl
 - C. Sun → clover → grasshopper → hawk
 - D. Sun → dandelion → caterpillar → rabbit
19. Squirrels will bury acorns in the fall so that they have a food source in the winter months. Squirrels burying seeds affect their environment in many ways. Which of the following is **not** a way that burying seeds affects a forest environment?
- A. More oak trees will grow
 - B. The land becomes eroded
 - C. More food for other animals
 - D. Less oak trees in the forest
20. Ms. Waverly’s class was walking around the school and observed that although the oak trees dropped a lot of acorns, the acorns would not sprout under the adult tree. They decided to investigate. Which of the following questions is Ms. Waverly’s class trying to answer?
- A. Where do seeds grow?
 - B. Will seeds grow in sand?
 - C. What’s wrong with the acorns?
 - D. What do acorns grow into?

21. When water is in its' gaseous state it can be used for which of the following?
- A. Power gas burning cars
 - B. Wash dirt off your hands
 - C. Boil an egg
 - D. Add humidity to a room
22. Mr. William's class wanted to measure the amount of rainfall that lands at their school for each month of the school year. He divided the class into 4 groups to design and perform their own investigations. At the end of November, the groups compared their data. Two of the groups had similar data, one group measured more, and one group measured less. What could the groups do to figure out why their data is different?
- A. Compare the people in their groups
 - B. Compare their procedures
 - C. Try using different rain gauges
 - D. Measure in inches instead of centimeters
23. Dr. John's class noticed that the river by the school was almost dry. His students wanted to learn more about this. The chart below shows what each group of students did. The first group researched the history of the river. The second group built a model of the river. The third group collected data about the river's current height, took pictures, and kept track of the weather over several days. What can be said about these different approaches?

Group One	Group Two	Group Three
Researched the history of the river.	Created a simulation model of the river and recorded their observations.	Collected data on river height, took pictures, tracked weather over several days.

- A. All the groups are doing science because they are all asking a question and using evidence to support their thinking.
 - B. Only group 2 is doing science because they are following the scientific method.
 - C. None of the groups are doing science because they are not doing every step of the scientific method.
 - D. Only groups 2 and 3 are doing science because they are asking questions and making observations.
24. Davien set up a rectangular box of soil near his classroom window. He planted six sunflower seeds and placed a heat lamp at one end of the box. After two months Davien concluded that sunflowers like warm temperatures more than cool ones. What evidence do you think he collected to come to that conclusion?
- A. The number of leaves on the plants
 - B. The temperature of the window
 - C. The temperature of the heat lamp
 - D. The amount of sunlight the plants received

25. You should never turn your headphones all the way up to their maximum volume. This can damage your ears. What kind of energy from headphones can damage your ears?
- A. Mechanical
 - B. Sound
 - C. Electrical
 - D. Chemical
26. Wanda and Sanjay wanted to test the effect of different soils on bean plants growing in their classroom. Wanda is using loam and Sanjay is using humus, but they are both using the same kind of plant. Wanda placed her plant close to a classroom window. Sanjay placed his plant in a dark corner of the room. The data they collected showed very different results. Which of the following is **not** a reason why their results were different?
- A. The type of soil affected the growth of the plant.
 - B. The sunlight from the window affected the growth of the plant.
 - C. Wanda used a different kind of plant than Sanjay.
 - D. The amount of water each plant received.
27. Jarvis is learning about renewable and non-renewable resources in his science class. He decides to take a nature walk and make notes of all the renewable resources that he sees. Which of the following is an inference that Jarvis could have made on his walk?
- A. The seeds on the ground are going to grow into new trees.
 - B. The tallest trees had the most seeds around their base.
 - C. Decomposers like mushrooms break down dead wood.
 - D. Renewable resources will never run out.
28. Scientists believe that some mountains were once under water. What evidence could they gather to best support this conclusion?
- A. History books about the mountains
 - B. Fossils of fish found on the mountains
 - C. Pictures of the mountains from a thousand years ago
 - D. Interviews with locals
29. A coffee cup manufacturer claims that their cup is the best. It will keep coffee hotter for a longer amount of time. How could evidence be collected to test this claim?
- A. Measure the temperature of the coffee every five minutes.
 - B. Interview people who own the cup to see if they think the same way.
 - C. Test how the coffee cup feels every ten minutes.
 - D. Design an experiment using this coffee cup and one from another company.

30. Which of the following is the best example of something a scientist would do?
- A. Design a new crayon
 - B. Observe and record data about soil erosion
 - C. Build a bridge to lessen traffic
 - D. Write a poem about birds
31. For homework, Isabella's teacher told students to create a model of the water cycle. Which of the following should Isabella turn in for her homework?
- A. A drawing of the water cycle with the parts labeled.
 - B. A water bottle with some saltwater at the bottom and a warm lamp.
 - C. A computer program that allows students to click through the water cycle.
 - D. Any of the above
32. Lily cooks soup every day after school. Which of the following observations does **not** provide evidence that Lily's stove is providing energy?
- A. The soup is boiling.
 - B. The stove got hot.
 - C. The soup is delicious.
 - D. The stove has a temperature knob.
33. Michelle claimed that a cat's meow is a higher pitch than a dog's bark. How could she test whether this is true or not?
- A. Measure the volume of each sound.
 - B. Measure the speed of vibrations for each sound.
 - C. Record the sounds from both animals.
 - D. Observe the animals in a house.
34. Elina and Keith went outdoors looking for examples of water energy. Which of the following should they add to their list?
- A. A rock getting warm in the sun
 - B. A leaf blown across the playground
 - C. A small stick floating in a stream
 - D. A ball rolling down a hill
35. Objects can be affected by forces in a few ways. Which of the following correctly describes how an object can be affected by a force?
- A. The object's mass increases.
 - B. The object's temperature decreases.
 - C. The object's volume changes.
 - D. The object's direction changes.

36. While on a camping trip, Jake and his family cooked marshmallows over a campfire. Even after the fire had been put out Jake could feel that the air above the rocks surrounding the campfire was warm. Which **best** explains how the heat was transferred to the marshmallow?
- A. From the rocks to the fire to the marshmallow
 - B. From the rocks to the air to the marshmallow
 - C. From the air to the fire to the marshmallow
 - D. From the fire to the air to the marshmallow
37. Marisol wants to make gloves she can wear in the kitchen to protect her hands from the heat of an oven. She knows she needs to choose a material that does not conduct heat well. Which material would be the **worst** for her to choose?
- A. Feathers
 - B. Cotton
 - C. Wool
 - D. Aluminum Foil
38. Mia and Sasha are sisters that live together. They both ride their bikes to school every day. They have the same exact bikes. They leave their house at the same time. Today Mia got to school first. What can we assume?
- A. Mia pedaled faster.
 - B. Sasha pedaled faster.
 - C. Mia and Sasha pedaled at the same speed.
 - D. Sasha got lost.
39. When water is boiled it releases steam. After boiling the liquid water has less mass. The mass of the liquid water and the steam that was released is which of the following?
- A. Greater than the mass of the water after boiling
 - B. Equal to the mass lost by the water during boiling
 - C. Equal to the mass of the water before boiling
 - D. Greater than the mass lost by the water during boiling

40. Ira is moving into a new home. He needs to transport his stuffed animals in a box. He has an empty cardboard box with a volume of 1,728 square inches. His stuffed animals have the following volumes:

Animal	Volume (in ²)
Bear	900
Tiger	700
Dog	550
Cat	300

Which of his stuffed animals could he place in the box at the same time?

- A. All of them
 - B. The bear, tiger, and dog
 - C. The tiger, dog, and cat
 - D. The dog, cat, and bear
41. Heidi left her metal bike outside in the rain all summer long. Now parts of her metal bike are turning into a dirty red color and flaking off. What process is the bike going through?
- A. Decaying
 - B. Rusting
 - C. Burning
 - D. Cooking
42. Mr. Cooper works at the county's recycling plant. He is in charge of separating the garbage that can be reused. His boss says that they should use the physical properties of the materials to help them decide what tool works the best. Which if the following statements is true?
- A. They should use a magnet because all metals are attracted to it.
 - B. They should use a magnet because some metals are attracted to it.
 - C. They should use water because all reusable materials float.
 - D. They should use water because all reusable materials sink.

Answer Key: Grade 4 Middle-of-Year Science Assessment

Question #	Correct Answer	Standard
1	D	SC.4.E.5.1
2	B	SC.4.E.5.2
3	B	SC.4.E.5.3
4	B	SC.4.E.5.4
5	C	SC.4.E.5.5
6	A	SC.4.E.6.1
7	C	SC.4.E.6.2
8	A	SC.4.E.6.3
9	C	SC.4.E.6.4
10	C	SC.4.E.6.5
11	C	SC.4.E.6.6
12	A	SC.4.L.16.1
13	D	SC.4.L.16.2
14	A	SC.4.L.17.1
15	B	SC.4.L.16.3
16	D	SC.4.L.16.4
17	B	SC.4.L.17.2
18	B	SC.4.L.17.3
19	D	SC.4.L.17.4
20	A	SC.4.N.1.1
21	D	SC.4.P.8.2
22	B	SC.4.N.1.2
23	A	SC.4.N.1.3
24	A	SC.4.N.1.4
25	B	SC.4.P.10.1
26	C	SC.4.N.1.5
27	A	SC.4.N.1.6
28	B	SC.4.N.1.7
29	D	SC.4.N.1.8
30	B	SC.4.N.2.1
31	D	SC.4.N.3.1
32	C	SC.4.P.10.2
33	B	SC.4.P.10.3
34	C	SC.4.P.10.4
35	D	SC.4.P.12.1
36	D	SC.4.P.11.1
37	D	SC.4.P.11.2
38	A	SC.4.P.12.2
39	C	SC.4.P.8.3
40	C	SC.4.P.8.1
41	B	SC.4.P.9.1
42	B	SC.4.P.8.4