Georgia Milestones

5TH GRADE PRE-TEST

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1. **Students identified the nucleus in an animal cell and a plant cell.**
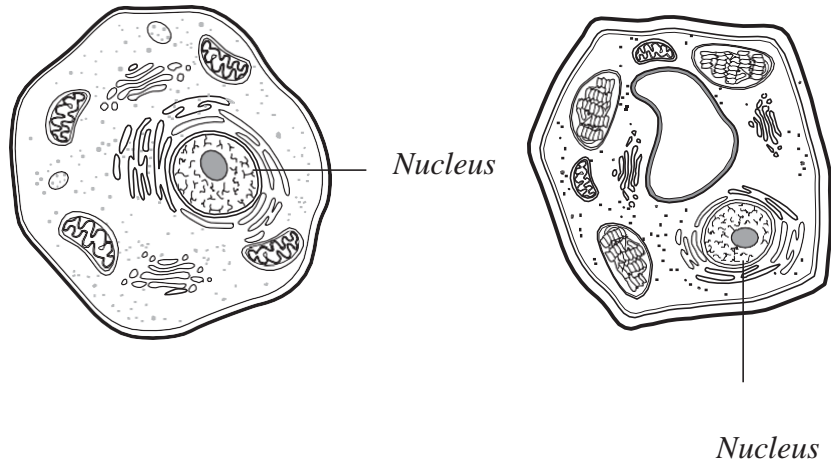
Nucleus

Nucleus

**How is the function of the nucleus the same in both kinds of cell?**

A. It protects the parts of the cell.
B. It gives the cell a rigid structure.
C. It controls the activities of the cell.
D. It regulates what enters and exits the cell.

2. **In the 1670s, Antony Leeuwenhoek discovered microorganisms in the human mouth. Later these microorganisms were determined to cause dental plaque, which is harmful to teeth.**
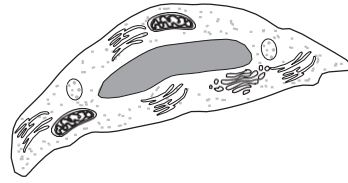
Which of these describes another way microorganisms can be harmful?

A. Microorganisms act on milk to make yogurt.
B. Microorganisms break down dead organisms.
C. Microorganisms break down meat before it is eaten.
D. Microorganisms break down sugars in your digestive system.

**Students drew sketches of a microorganism and a muscle cell.**
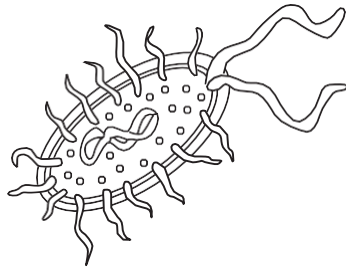
Microorganism   Muscle cell

3. **How are these two cells different in function?**

   A. The microorganism contains several different organelles surrounded by membranes, while the muscle cell does not.
   B. The muscle cell has a rigid cell wall that gives structure to the cell, but the microorganism only has a cell membrane.
   C. The muscle cell is able to reproduce by itself, but the microorganism needs to have another cell in order to reproduce.
   D. The microorganism performs all functions within a single cell, while the muscle cell performs a certain function within an organism.

4. **A teacher shows her class a drawing of a plant cell.**
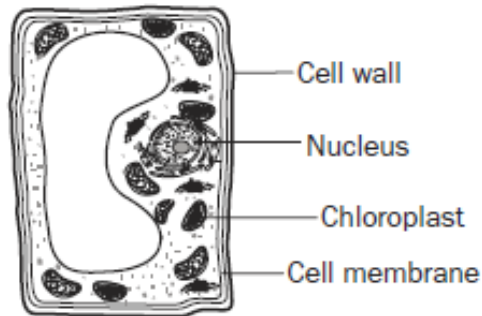
   A student states that the function of the cell membrane is to maintain the cell's shape. The teacher states that this is incorrect.

   Which description provides the correct function for the cell membrane?

   A. It provides the cell's energy.
   B. It directs the cell's activities.
   C. It stores water and nutrients for the cell.
   D. It controls what enters and leaves the cell

5. **A teacher showed her students a picture of a tree that does not lose all its leaves every year.**
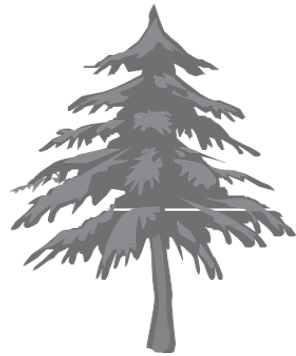
How should the tree be classified?

A. Flowering
B. Fruit bearing
C. Non-flowering
D. Non-seed bearing

6. **A biologist made a table to show the characteristics of six organisms.**

|	Habitat	Food Source	Internal Structure	Presence of Scales
Sea Stars	Water	Mostly animals	No backbone	No
Jellyfish	Water	Mostly animals	No backbone	No
Earthworms	Land	Mostly plants	No backbone	No
Birds	Land	Plants and animals	Backbone	Yes
Frogs	Land and water	Mostly animals	Backbone	No
Sharks	Water	Mostly animals	Backbone	Yes

She wanted to classify the organisms into two groups.

Which characteristic should be used to classify the organisms as vertebrates or invertebrates?

A. Habitat
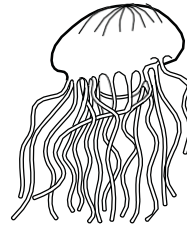B. Food source
C. Internal structure
D. Presence of scales

4

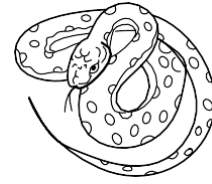7. **Ms. Lee asked her students to draw pictures of invertebrates.**
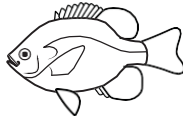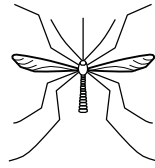
| Student A | Student B | Student C | Student D |

Which students correctly identified invertebrates?

A. Students A and C, because both organisms live in water
B. Students B and D, because both organisms live on land
C. Students B and C, because both organisms lack backbones
D. Students A and D, because both organisms have backbones

8. **A group of science students were asked to draw pictures of animals they observed on a field trip to a zoo.**
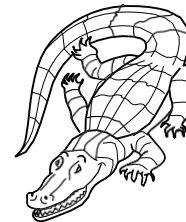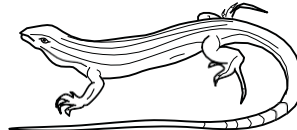
In which group would all these animals be classified?

A. Fish because they all need water
B. Mammals because they all have legs
C. Amphibia because they all have scales
D. Vertebrates because they all have backbones

9. **Which of these is an inherited trait?**

A. Throwing a ball
B. Getting wrinkles
C. Having blue eyes
D. Playing the piano

10. A girl observed her younger brother and listed the behaviors she saw. Which of these was a learned behavior?

A. Blinking
B. Reading
C. Sleeping
D. Swallowing

11. Gregor Mendel was a scientist who lived in the 1800s. He studied inherited traits in pea plants.

Which of these could have been one of the observations about inherited traits that he recorded?

A. The plants with purple flowers grew in the shade.
B. The plants with yellow pods received more water.
C. The plants with shriveled pods were growing in sandy soil.
D. The plants with green seeds came from parents with green seeds.

12. Sickle cell anemia is a disease caused by the presence of a trait that changes the shape of the red blood cells.

What information would BEST help a researcher understand if this is an inherited trait?

A. The age of the parents of a child with sickle cell anemia
B. The genes of the parents of a child with sickle cell anemia
C. The health of the parents of a child with sickle cell anemia
D. The heights of the parents of a child with sickle cell anemia

13. Students conducted an investigation with balloons and made the notes shown.

Balloon Observations

Action	Observation
Placed Balloon A and Balloon B next to each other	No movement
Rubbed Balloon A with a wool cloth	Balloons moved toward each other
Rubbed both balloons with a wool cloth	Balloons moved away from each other

What can explain the movement of the balloons?
A. Static electricity
B. Gravitational pull
C. Current electricity
D. Magnetic attraction

14. A student in science class made this circuit, but the bulb did not light.
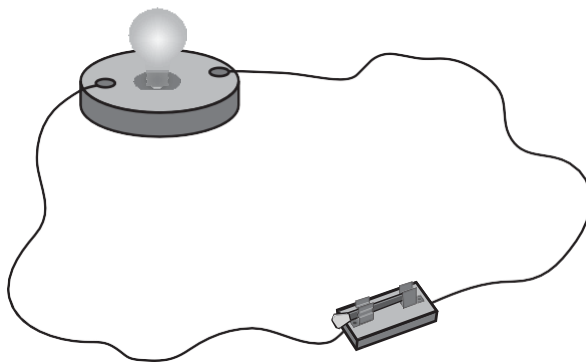
What did his teacher explain he should have done to make the bulb light?

A. Use a power source.
B. Use a second switch.
C. Make both of the wires longer.
D. Connect the bulb to only one wire.

15. **A class is gathering materials to make a circuit that will light a bulb.**

   Which material will be the BEST conductor of electricity for the circuit?

   A. Glass
   B. Metal
   C. Rubber
   D. Wood

16. **On a field trip to a recycling center, a class sees this magnet in use.**

   The class debates if it is a bar magnet or an electromagnet. What is the BEST evidence to explain which it is?

   A. An electromagnet is larger than a bar magnet.
   B. An electromagnet cannot be used outside when it is raining.
   C. An electromagnet must be plugged into an electrical outlet to operate.
   D. An electromagnet is a temporary magnet allowing it to release the objects.

17. A science teacher shows his students a mixture of plastic beads and metal beads. He then uses a magnet for a demonstration.

What is the teacher MOST LIKELY demonstrating?

A. Making a solution
B. Separating a mixture
C. Creating a chemical change
D. Changing the state of matter

18. A group of students place a beaker of liquid water outside. They measure the temperature of the water at different times and record its state.

Time	Temperature	Appearance
8:00	50°C	Liquid
10:00	43°C	Liquid
12:00	39°C	Liquid
2:00		Solid

Which BEST predicts the temperature of the water at 2:00?

A. Lower than 39°C.
B. Higher than 50°C.
C. Between 39°C and 43°C.
D. Between 43°C and 50°C.

19. A science teacher lit a candle and described to his students that some of the wax is burning while some of the wax is melting. Student A states that these are both physical changes. Student B states that these are both chemical changes.
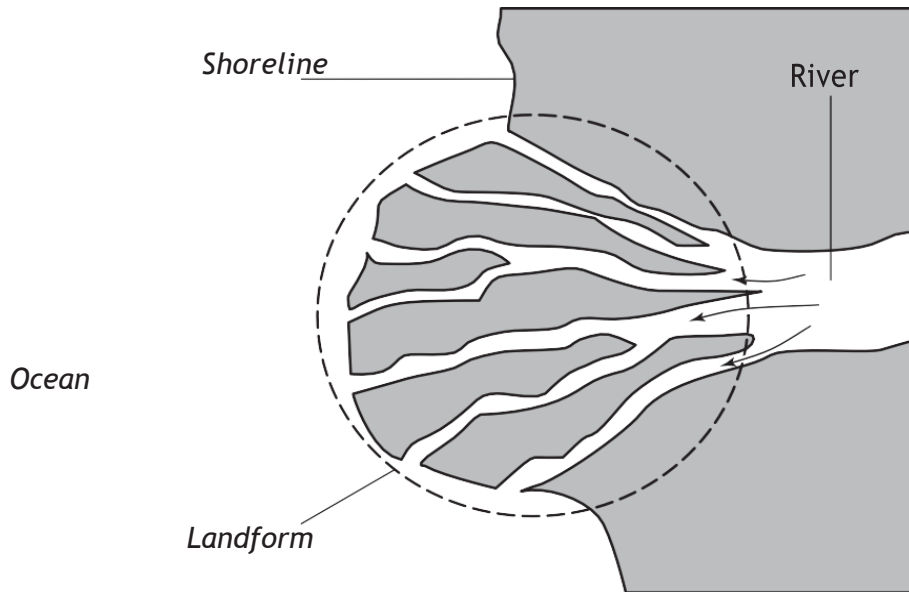
Which statement BEST describes the students' conclusions?

A. Student A is correct.
B. Student B is correct.
C. Both are incorrect, because burning wax is a chemical change and melting wax is a physical change.
D. Both are incorrect, because burning wax is a physical change and melting wax is a chemical change.

20. A student is creating a potting soil mix. She combines 100 grams of sand, 200 grams of soil, and 200 grams of pebbles to make her potting soil.

What is the mass of the potting soil?

A. 100 grams
B. 200 grams
C. 300 grams
D. 500 grams

21. A teacher shows her class a sketch of a river flowing out to an ocean.

A student thought that the landform was caused by a volcanic eruption. The teacher said he was incorrect.

Which statement BEST describes what the landform is and how it was created?

A. A fault was formed as the river eroded the beach.
B. An island was formed as the river eroded the beach.
C. A dune was formed as the river deposited sediment from upstream.
D. A delta was formed as the river deposited sediment from upstream.

22. A group of students visit the coast with their science class. A year later the students return to the same spot and observe that the beach is much smaller.

Student 1 says that the coastline was affected by erosion. Student 2 says it was affected by deposition.

Which student is correct and why?

A. Student 1, due to erosion caused by ocean water.
B. Student 2, due to deposition caused by ocean water.
C. Student 1, due to erosion caused by fault movement.
D. Student 2, due to deposition caused by fault movement.

23. A scientist recently sent this e-mail.

Dr. Draper,

I have observed an area of the coastal shoreline for the past five years. My records show that the coastal shoreline is getting narrower by approximately 0.5 meter a year.

I am recommending that we try dredging in these areas.

Sincerely,
Dr. Tran

Why is the scientist recommending dredging?

A. It acts as a flood control measure.
B. It protects the wildlife in the ocean.
C. It reclaims beaches lost to water erosion.
D. It forms a barrier to reduce wind erosion.

24. **For five months, a scientist measured the depth of sand in a certain part of coastal shoreline. She recorded her observations in a table**.

Month	January	February	March	April	May
Depth of Sand	115 cm	131 cm	157 cm	172 cm	191 m

What is the BEST explanation of the data?

A. Water eroding sand to create a gully.
B. Wind depositing sand to form a dune.
C. Rock being deposited by ocean waves.
D. Shells washing ashore from the ocean.

Question	Answer	DOK	Domain	Topic	Indicator
1	C	1	Life Science	Organelle Function	D
2	C	2	Life Science	Microorganisms	D, P
3	D	2	Life Science	Single cell vs. multi-cellular	P
4	D	2	Life Science	Organelle Function	D, P
5	C	2	Life Science	Plant Classification	P
6	C	2	Life Science	Vertebrate Identification	P, Di
7	C	2	Life Science	Classifying Vertebrates	D, P
8	D	2	Life Science	Classifying Animals	D, P
9	C	2	Life Science	Learned Behavior vs. Genetic Trait	D, P
10	B	2	Life Science	Learned Behavior vs. Genetic Trait	D , P
11	D	2	Life Science	Genetics and Heredity	D
12	B	2	Life Science	Genetics and Heredity	P
13	A	3	Physical Science	Static Electricity	B, D, P
14	A	2	Physical Science	Circuits	B, D
15	B	2	Physical Science	Conductors & Insulators	B, D
16	D	3	Physical Science	Bar vs. Electromagnets	P, Di
17	B	2	Physical Science	Separating Mixtures	D, P
18	A	2	Physical Science	Temperature	D, P
19	C	2	Physical Science	Chemical vs. Physical	P, Di
20	D	2	Physical Science	Total Mass	Di
21	D	2	Earth Science	Landforms Processes	D, P
22	A	2	Earth Science	Erosion	D, P
23	C	2	Earth Science	Dredging	P, Di
24	B	2	Earth Science	Constructive Processes	D, P

B = Beginning

D = Developing

P = Proficient

Di = Distinguished