

Released Items

**Grade 5
Science**

**North Carolina
End-of-Grade
Assessment**



Public Schools of North Carolina

Department of Public Instruction | State Board of Education

Division of Accountability Services/North Carolina Testing Program



Sample Questions

- S1 What is the first thing a student should do if an accident happens during a science experiment?
- A report to the teacher
 - B clean the laboratory station
 - C locate the nearest exit
 - D put on safety goggles
- S2 Which device is used to determine the volume of a liquid?
- A anemometer
 - B graduated cylinder
 - C test tube
 - D thermometer

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- 1 A wagon is pushed in a straight line. How would an increase in friction on the wagon wheels affect the wagon?
- A It would cause the wagon to move faster.
 - B It would cause the wagon to change mass.
 - C It would cause the wagon to change direction.
 - D It would cause the wagon to slow down.
- 2 A runner measured the time it took him to run 5 km. What can he calculate from the distance and time measurements?
- A direction
 - B mass
 - C speed
 - D force
- 3 Which **best** explains why a bicycle slows down when its brakes are applied?
- A The brakes heat the rubber on the bicycle tires.
 - B The brakes add energy to the bicycle.
 - C The brakes increase the force of gravity on the bicycle.
 - D The brakes cause frictional forces on the wheels of the bicycle.





- 4 When the sun warms water, which resulting process occurs?
- A precipitation
 - B runoff
 - C evaporation
 - D condensation
- 5 Students observed a piece of iron change from shiny to rusty. What caused this change?
- A a chemical reaction
 - B a heat reaction
 - C a cold reaction
 - D a physical reaction
- 6 Which is the **best** example of the transfer of heat by radiation?
- A water boiling
 - B ice melting
 - C a hot air balloon rising
 - D a lightbulb glowing





- 7 Jason fills a glass container completely with water and screws the lid on tightly. He places the container in a freezer. Which will **most likely** result?
- A The container will prevent the water from freezing.
 - B The water will freeze and take up less space in the container.
 - C The water in the container will expand when it freezes and cause the container to crack.
 - D The container will absorb heat from the water, causing it to crack.
- 8 Which is **most** responsible for the changes in seasons?
- A the jet stream
 - B the ocean currents
 - C the distance from Earth to the sun
 - D the tilt of Earth on its axis
- 9 Which type of animal usually eats both producers and consumers?
- A an omnivore
 - B a carnivore
 - C a herbivore
 - D a predator





- 10 In North Carolina, the wind is blowing from the north. If the wind changes direction and begins to blow from the south, what will **most likely** result?
- A The temperatures will increase.
 - B The temperatures will decrease.
 - C The air pressure will increase.
 - D The wind speeds will decrease.
- 11 Which **best** explains why a storm that affects an area in the western United States may affect an area in the eastern United States a few days later?
- A The jet stream winds blow storms from east to west.
 - B The jet stream winds blow storms from west to east.
 - C Cool Gulf Stream water causes storms to form in the east.
 - D Warm Gulf Stream water causes storms to form in the west.
- 12 Which is a characteristic of **most** single-celled organisms?
- A They have a complex nervous system.
 - B They contain several different types of cells.
 - C They perform all life processes.
 - D They have a circulatory and a respiratory system.





- 13 Which statement **best** describes how a multicellular organism survives?
- A Every cell carries out the same functions for the survival of the organism.
 - B The cells all have the same structures that allow the organism to survive.
 - C All life processes are performed by each cell for the survival of the organism.
 - D The cells have different functions, and together they are essential for the survival of the organism.
- 14 What is the relationship between the respiratory system and the circulatory system?
- A The respiratory system exchanges oxygen and carbon dioxide with the circulatory system.
 - B The respiratory system exchanges oxygen and carbon monoxide with the circulatory system.
 - C The respiratory system exchanges oxygen and sugar with the circulatory system.
 - D The respiratory system exchanges oxygen and nitrogen with the circulatory system.
- 15 In what way are the digestive and circulatory systems alike?
- A Both protect organs in the body.
 - B Both control movement of the body.
 - C Both absorb gases or nutrients into the body.
 - D Both provide structural support for the body.



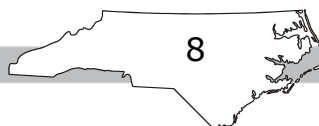


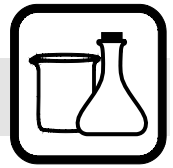
- 16 Which has the **greatest** effect on the amount of salt in a salt marsh?
- A the number of animals living in the marsh
 - B the closeness of the marsh to the ocean
 - C the depth of the water in the marsh
 - D the temperature of the water in the marsh
- 17 Which classification **best** describes herbivores?
- A producers
 - B consumers
 - C predators
 - D decomposers
- 18 What will be **most** affected if the decomposers in an ecosystem are removed?
- A the spread of disease
 - B the availability of water
 - C the quality of soil
 - D the distribution of organisms





- 19 A mother rabbit has a litter. One of the babies is born with one long ear and one short ear. What **most likely** caused this one rabbit to be born with one short ear?
- A The mother rabbit had previously lost an ear in an accident.
 - B The mother rabbit became sick before she gave birth.
 - C A mutation occurred during the development of this one rabbit.
 - D This one rabbit received less nutrition than the other rabbits before it was born.
- 20 Which is an example of a trait that is inherited?
- A dimples
 - B intelligence
 - C weight
 - D favorite color
- 21 A ball is kicked and rolls along a level field until it comes to a stop. What is **most** responsible for the ball coming to a stop?
- A air
 - B gravity
 - C mass
 - D friction





- 22 If a car is moving backward along a road, can its speed be measured?
- A Yes, it can, because the car does not have friction acting on it.
 - B Yes, it can, because the car travels a distance in a certain amount of time.
 - C No, it cannot, because speed can only be measured if the car is moving forward.
 - D No, it cannot, because the distance traveled backward by a car cannot be measured.
- 23 Scientists discover an asteroid that is moving through space. What information is needed to determine the average speed of the asteroid?
- A the mass and size of the asteroid
 - B the distance the asteroid is from Earth
 - C the direction the asteroid is moving and its distance from Earth
 - D how far the asteroid has moved in 24 hours
- 24 One morning, a student notices that the grass in the area is wet, although it had not rained during the night. What could have caused the grass to be wet?
- A During the night, water had evaporated from the trees in the area.
 - B The air above the ground became warmer during the night and caused precipitation.
 - C When the air cooled above ground during the night, water vapor condensed on the grass.
 - D The grass soaked up water from the ground during the night.





- 25 Two liquids are poured together, and a solid substance forms with no liquid remaining. Liquid 1 has a mass of 200 grams, and liquid 2 has a mass of 100 grams. What would be the total mass of the solid substance formed?
- A 100 grams
 - B 150 grams
 - C 250 grams
 - D 300 grams
- 26 Which is the **best** example of a new substance forming?
- A lighting a match
 - B cutting a piece of paper
 - C popping a balloon
 - D hitting a nail with a hammer
- 27 Stirring a cup of hot tea causes a metal spoon to get warm. Which statement **best** explains why the spoon gets warm?
- A Heat energy transfers from the metal spoon to the hot liquid.
 - B Heat energy transfers from the hot tea to the spoon.
 - C Heat energy transfers from the air to the hot liquid, and then to the spoon.
 - D Heat energy transfers from the hot liquid to the cup, and then to the spoon.



- 28 Which material is **best** used to keep cold drinks from getting warm too quickly?
- A glass, because it is a good conductor of heat
 - B foam, because it is a poor conductor of heat
 - C metal, because it radiates heat
 - D paper, because it conducts heat
- 29 Which **best** describes the cause of day-to-day weather changes?
- A the rotation of Earth
 - B the size of Earth
 - C moving air masses
 - D action of the winds
- 30 Students report that the sky in their area has mostly cirrus clouds. What are **most likely** the weather conditions in the area?
- A rainy
 - B cold
 - C windy
 - D fair

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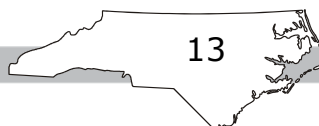


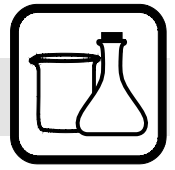


- 31 Which **best** describes a hurricane?
- A a low-pressure weather system
 - B a high-pressure weather system
 - C a cold front
 - D a stationary front
- 32 Which statement **best** explains how a bacterial cell is capable of surviving as a single-celled organism?
- A It is able to create new cells more slowly than other kinds of cells.
 - B It is large enough to capture the food it needs for growth.
 - C It is so small, it can survive in almost any place.
 - D It has the ability to carry out all of its life functions.
- 33 Which instrument is **best** used to predict weather changes?
- A a hygrometer
 - B an anemometer
 - C a thermometer
 - D a barometer



- 34 In what way are the circulatory system and the nervous system similar?
- A They both perform the same function.
 - B They are both structural systems.
 - C They are both transport systems.
 - D They both involve the same organs.
- 35 Which system in the human body includes the heart, blood, arteries, and veins?
- A cardiovascular
 - B digestive
 - C muscular
 - D respiratory
- 36 How does the energy from the sun influence the water cycle?
- A by trapping water particles in clouds
 - B by turning liquid water into water vapor
 - C by causing water to precipitate
 - D by creating winds in the atmosphere





37 This is a food chain that includes grass, a grasshopper, and a bird.

grass → grasshopper → bird

How is the grass in this food chain **best** described?

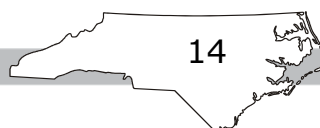
- A It is a producer, because it makes its own food.
- B It is a producer, because it is eaten by consumers.
- C It is a consumer, because it gets energy from producers.
- D It is a decomposer, because it breaks down sunlight.

38 Which would **most likely** cause a decrease in a population of herbivores?

- A an increase in the number of producers
- B a decrease in the types of decomposers
- C an increase in the types of plants
- D an increase in the number of carnivores

39 Which of these traits is **most** influenced by a person's environment?

- A ability to roll the tongue
- B blood type
- C weight
- D eye color

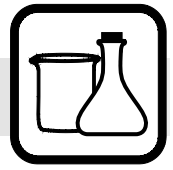




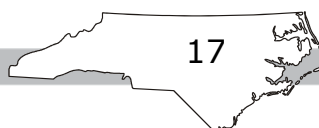
- 40 Which is **most likely** the reason parents and their children have similar physical traits?
- A They live in the same home.
 - B They have similar genetic structures.
 - C They are born in similar environments.
 - D They have similar blood types.
- 41 What causes a wagon to speed up when going down a hill?
- A gravity
 - B friction
 - C air pressure
 - D mass
- 42 A bowling ball moves across a flat surface at 7 feet per second. If a student is asked to calculate the total distance traveled by the ball, what other information does the student need to know?
- A amount of friction between the ball and the surface
 - B amount of force applied to the ball
 - C total time the ball rolled
 - D mass of the ball

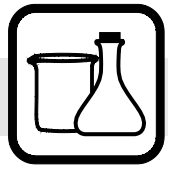


- 43 How do plants return water back into the environment?
- A by evaporation
 - B by condensation
 - C by runoff
 - D by transpiration
- 44 Water droplets forming on the outside of a cold glass of water on a hot, summer day is an example of which part of the water cycle?
- A condensation
 - B evaporation
 - C precipitation
 - D transpiration
- 45 After lake water flows through a dam, which processes are **most** responsible for helping replace the water in the lake?
- A precipitation and runoff
 - B transpiration and condensation
 - C condensation and runoff
 - D transpiration and precipitation

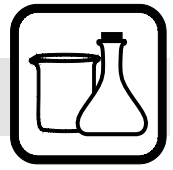


- 46 Which is a trait children **most likely** inherit from their parents?
- A favorite color
 - B food preference
 - C freckles
 - D weight
- 47 Why are liquids sometimes used in a thermometer?
- A because most liquids condense when heated and evaporate when cooled
 - B because most liquids melt when heated and freeze when cooled
 - C because most liquids contract when heated and expand when cooled
 - D because most liquids expand when heated and contract when cooled
- 48 On a June day, a warm, moist air mass slowly passes over a colder air mass in North Carolina. What will **most likely** happen next?
- A Rain will fall.
 - B Cirrus clouds will form.
 - C Skies will clear.
 - D Atmospheric pressure will rise.





- 49 Which is **most** responsible for the movement of weather systems across the United States?
- A the Gulf Stream
 - B the prevailing westerlies
 - C the southeast trade winds
 - D the jet stream
- 50 Which **best** describes how the Gulf Stream affects the areas along the coast of North Carolina?
- A It causes winds to move from north to south during the winter.
 - B It causes winds to move from north to south during the summer.
 - C It causes land temperatures along the coast to be colder in the winter.
 - D It causes land temperatures along the coast to be milder in the winter.
- 51 In what way are insects and humans similar?
- A Both are single-celled organisms.
 - B Both are multicellular organisms.
 - C Both have cells that capture sunlight to make food.
 - D Both have cells that carry out all life functions.



- 52 Which human body systems are located throughout **most** of the body?
- A digestive and respiratory
 - B skeletal and respiratory
 - C nervous and circulatory
 - D respiratory and circulatory
- 53 A mouse eats seeds and insects. Which **best** describes the role of the mouse?
- A consumer
 - B decomposer
 - C herbivore
 - D producer
- 54 What would **most likely** result if all plants in an area were destroyed?
- A Consumer populations would increase because more sunlight would reach the ground.
 - B Decomposer populations would increase because more sunlight would reach the ground.
 - C Consumer populations would decrease because plants provide them with water.
 - D Consumer populations would decrease because plants provide them with energy.

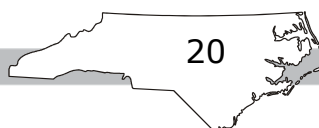


- 55 What would **most likely** happen if all of the decomposers in an ecosystem were removed?
- A The animals in the ecosystem would die because of the spread of disease.
 - B The plants in the ecosystem would eventually die because of a lack of nutrients in the soil.
 - C The plants in the ecosystem would begin to die out because of a decrease in available water.
 - D The animals in the ecosystem would eat other types of food because of a decrease in producers.

- 56 A food chain in an ecosystem includes blackberry bushes, deer, and wolves.
- Deer eat blackberries.
 - Wolves eat deer.

If the population of wolves decreases, how will this affect the population of blackberry bushes?

- A It will decrease because there will be fewer deer.
 - B It will increase because there will be fewer deer.
 - C It will decrease because there will be more deer.
 - D It will increase because there will be more deer.
- 57 Some people have a “hitchhiker’s” thumb that allows them to bend their thumbs more than other people. How do these people **most likely** get this trait?
- A They learn it from friends.
 - B They inherit it from their parents.
 - C They get it as a result of an illness.
 - D They get it as a result of their jobs.





- 58 Which statement **best** describes the relationship between the nervous system and the muscular system?
- A The nervous system controls the muscular system.
 - B The muscular system controls the nervous system.
 - C The nervous system provides nutrients and oxygen for the muscular system.
 - D The muscular system provides nutrients and oxygen for the nervous system.
- 59 Which characteristic is the **best** example of an inherited trait?
- A short hair
 - B eye color
 - C pierced ears
 - D long fingernails
- 60 Which is an example of a noninherited trait?
- A shape of face
 - B hair color
 - C food preference
 - D tongue rolling

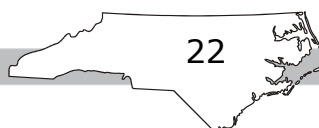


Directions:

This is the end of the science test.

- 1. Look back over your answers for the test questions.**
- 2. Put all of your papers inside your test book and close your test book.**
- 3. Stay quietly in your seat until your teacher tells you that testing is finished.**

RELEASED



**Grade 5 Science
RELEASED Items
2019–2020
Answer Key**

Item Number	Type	Key	Domain
S1	MC	A	
S2	MC	B	

Item Number	Type	Key	Domain
1	MC	D	5.P.1.1
2	MC	C	5.P.1.2
3	MC	D	5.P.1.1
4	MC	C	5.P.2.1
5	MC	A	5.P.2.3
6	MC	D	5.P.3.1
7	MC	C	5.P.3.2
8	MC	D	5.E.1.1
9	MC	A	5.L.2.2
10	MC	A	5.E.1.3
11	MC	B	5.E.1.3
12	MC	C	5.L.1.1
13	MC	D	5.L.1.1
14	MC	A	5.L.1.2
15	MC	C	5.L.1.2

GRADE 5 SCIENCE — RELEASED ITEMS

Item Number	Type	Key	Domain
16	MC	B	5.L.2.1
17	MC	B	5.L.2.2
18	MC	C	5.L.2.3
19	MC	C	5.L.3.1
20	MC	A	5.L.3.2
21	MC	D	5.P.1.1
22	MC	B	5.P.1.2
23	MC	D	5.P.1.2
24	MC	C	5.P.2.1
25	MC	D	5.P.2.2
26	MC	A	5.P.2.3
27	MC	B	5.P.3.1
28	MC	B	5.P.3.2
29	MC	C	5.E.1.1
30	MC	D	5.E.1.2
31	MC	A	5.E.1.3
32	MC	D	5.L.1.1
33	MC	D	5.E.1.2
34	MC	C	5.L.1.2
35	MC	A	5.L.1.2
36	MC	B	5.P.2.1
37	MC	A	5.L.2.2
38	MC	D	5.L.2.3
39	MC	C	5.L.3.1
40	MC	B	5.L.3.2

GRADE 5 SCIENCE — RELEASED ITEMS

Item Number	Type	Key	Domain
41	MC	A	5.P.1.1
42	MC	C	5.P.1.2
43	MC	D	5.P.2.1
44	MC	A	5.P.2.1
45	MC	A	5.P.2.1
46	MC	C	5.L.3.2
47	MC	D	5.P.3.2
48	MC	A	5.E.1.2
49	MC	B	5.E.1.3
50	MC	D	5.E.1.3
51	MC	B	5.L.1.1
52	MC	C	5.L.1.2
53	MC	A	5.L.2.2
54	MC	D	5.L.2.3
55	MC	B	5.L.2.3
56	MC	C	5.L.2.3
57	MC	B	5.L.3.1
58	MC	A	5.L.1.2
59	MC	B	5.L.3.2
60	MC	C	5.L.3.2