

Released Form

Student Name: _____

Spring 2013
North Carolina
Measures of Student Learning:
NC's Common Exams
Grade 6 Science—Form A



Public Schools of North Carolina
State Board of Education
Department of Public Instruction
Raleigh, North Carolina 27699-6314

Student Booklet



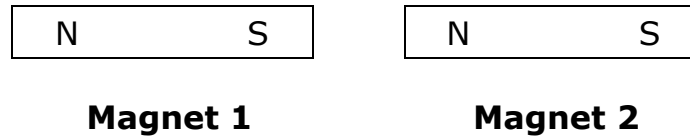
- 1 How are earthquakes, sound, and light waves alike?
- A They transmit energy.
 - B They carry matter.
 - C They travel in space.
 - D They can be seen.
- 2 What is the relationship between eyesight and light?
- A Light shines on all objects, allowing people to see them.
 - B Light shines through all objects, allowing people to see them.
 - C Light enters the eye before striking an object, allowing people to see the object.
 - D Light reflects off an object and then enters the eye, allowing people to see the object.
- 3 Which **best** explains the relationship between the electromagnetic spectrum and sight?
- A Visible light is the part of the electromagnetic spectrum that can be seen with the eye.
 - B Ultraviolet light is the part of the electromagnetic spectrum that can be seen with the eye.
 - C Visible light and infrared light are the parts of the electromagnetic spectrum that can be seen with the eye.
 - D Ultraviolet light and infrared light are the parts of the electromagnetic spectrum that can be seen with the eye.



- 4 Which **best** explains the relationship between the speed of sound and the medium through which it passes?
- A Sound travels faster in solids because of the increased distance between solid particles.
 - B Sound travels faster in air because of the decreased distance between air particles.
 - C Sound travels slower in air because of the increased distance between air particles.
 - D Sound travels slower in solids because of the decreased distance between solid particles.
- 5 Josephine adds thicker strings to her guitar. What does that do?
- A It prevents the guitar from using air particles to transfer the sound.
 - B It changes the number of strings on the guitar.
 - C It changes the vibrations made by the guitar.
 - D It prevents the guitar from making sounds.
- 6 Which is composed of matter?
- A electricity
 - B an atom
 - C light
 - D heat

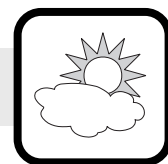


7 The diagram below shows two pure iron magnets.



Which is true about these two magnets?

- A They contain different types of atoms but the same elements.
 - B They contain the same types of atoms but different elements.
 - C They contain the same types of atoms and elements.
 - D They contain different types of atoms and elements.
- 8 How are the atoms in an object affected when the temperature of the object increases?
- A They join together.
 - B They vibrate faster.
 - C They vibrate slower.
 - D They split apart.
- 9 In which situation would the atoms in an object begin to move closer together during a phase change?
- A Heat is removed as a gas turns into a liquid.
 - B Heat is removed as a liquid turns into a gas.
 - C Heat is added as a solid turns into a gas.
 - D Heat is added as a liquid turns into a solid.



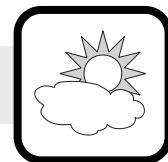
- 10 Sarah has 100 g of each element listed in the chart below, which also provides the melting point for each element.

Melting Point for Elements

Element	Melting Point
copper	1,084°C
gold	1,064°C
lead	327°C
silver	961°C

What would happen if she melted only 50 g of each element?

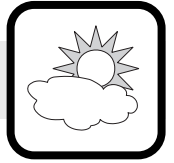
- A The melting point for each element would double because the mass was changed.
- B The melting point for each element would decrease by half because the mass was changed.
- C The melting process would occur more quickly, but the melting points would remain the same.
- D The melting process would occur more quickly, but the melting points would be decreased by half.
- 11 How does 250 mL of water compare to 500 mL of water?
- A They have the same melting point but different boiling points.
- B They have the same boiling point but different melting points.
- C They have the same volume but different densities.
- D They have the same density but different volumes.



- 12 During the day, the sand at the beach is very warm; while at night, it is cooler. Why does this occur?
- A The sand reflects the sun's energy during the day, causing it to become warmer.
 - B The sand absorbs the sun's energy during the day, causing it to become warmer.
 - C The sand scatters the sun's energy during the day, causing it to become warmer.
 - D The sand refracts the sun's energy during the day, causing it to become warmer.
- 13 A worker for an electrical company is preparing to fix a power line. Why would he put on rubber gloves before working with any power lines?
- A Rubber is a poor conductor of heat but a good conductor of electricity.
 - B Rubber is a good conductor of heat but a poor conductor of electricity.
 - C Rubber is a poor conductor of heat and electricity.
 - D Rubber is a good conductor of heat and electricity.
- 14 Why are some coffee cups composed of ceramic material?
- A Ceramic materials are conductors that limit heat transfer.
 - B Ceramic materials are insulators that limit heat transfer.
 - C Ceramic materials are conductors that aid heat transfer.
 - D Ceramic materials are insulators that aid heat transfer.



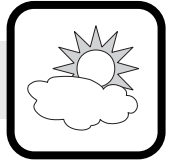
- 15 Why does Earth have different seasons?
- A because of the distance between Earth and the sun
 - B because of the speed of Earth as it rotates on its axis
 - C because of the amount of light blocked by the moon on its axis
 - D because of the tilt of Earth on its axis as it moves around the sun
- 16 Which **best** explains why the moon has phases?
- A The moon's position changes in relation to the sun and Earth.
 - B The sun's position changes in relation to the moon and Earth.
 - C The Earth casts a shadow on the moon as it rotates.
 - D The moon rotates along its axis.
- 17 Which factor makes Earth different from all the other planets in the solar system in its ability to support life?
- A The Earth is exposed to rays from the sun.
 - B The Earth has only one moon that orbits around it.
 - C The Earth rotates in an elliptical orbit around the sun.
 - D The Earth has a breathable atmosphere.



- 18 Which represents information that is gained as a result of space exploration?
- A weather and climate patterns that occur on Earth
 - B existence of the sun and the moon in the solar system
 - C how to use coal and natural gas as energy resources
 - D location of plates found upon Earth's surface
- 19 Which **best** summarizes the composition of Earth's core?
- A It contains a solid outer region surrounding a liquid iron core.
 - B It contains a liquid outer region surrounding a solid iron core.
 - C It contains a semi-liquid rock outer region surrounding a liquid core.
 - D It contains a basalt, semi-liquid outer region surrounding a solid core.
- 20 Which **best** describes Earth's crust?
- A It is stationary and unable to move.
 - B It is thicker than the mantle and the core.
 - C It is located between the outer and the inner core.
 - D It is composed of continental and oceanic plates.



- 21 Which causes the movement of tectonic plates?
- A gravitational pull between Earth and the moon
 - B convection occurring beneath the Earth's crust
 - C energy produced by earthquakes within the Earth
 - D rotation of liquid rock found within the core
- 22 Which **most likely** occurs when two continental plates are pushed into one another?
- A The plates will stop moving.
 - B The plates will form a trench.
 - C The plates will form a mountain.
 - D The plates will break into pieces.
- 23 Which environment would produce soil at a faster rate?
- A an environment located in warm, wet regions
 - B an environment that consists of many slopes
 - C an environment without any vegetation
 - D an environment with high rates of erosion

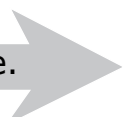


- 24 A class is conducting an experiment on how different types of soil can affect the growth of a plant. Which are the **main** factors the class should consider when designing the experiment?
- A the soil texture and the amount of water it can hold
 - B the types and amounts of sugars found in the soil
 - C the color of the container for the soil and the plant
 - D the shape and color of the seeds planted in the soil
- 25 How does the anther help with reproduction of a flowering plant?
- A It develops into a fruit after fertilization occurs.
 - B It moves pollen to the roots of the plant.
 - C It grows the seeds for the plant.
 - D It produces and stores pollen.
- 26 Which **best** summarizes the order of energy flow in a food chain?
- A sun to decomposers to producers to consumers
 - B sun to consumers to decomposers to producers
 - C sun to producers to consumers to decomposers
 - D sun to producers to decomposers to consumers



- 27 A plant begins to bend when a tall building is built near it. Why does this occur?
- A It is adjusting to changes in the temperature.
 - B It is growing away from the light source.
 - C It is adjusting to changes in the soil.
 - D It is growing toward the light source.
- 28 Why do seeds go through a period of dormancy?
- A It allows time for the right conditions to occur before the seed germinates.
 - B It allows time for dry soil to accumulate before the seed germinates.
 - C It allows time for sunlight to appear before the seed germinates.
 - D It allows time for pollination to occur before the seed germinates.

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- 29 Scientists were completing a six-week study of the number of salmon living in a local stream. During the study, the stream was contaminated with a toxic waste. The chart below shows the weekly number of salmon living in the stream.

Weekly Salmon Number

Week	Salmon Numbers
1	88
2	96
3	74
4	40
5	27
6	27

Which **best** summarizes the situation?

- A The salmon population began to increase after week two.
 - B The contamination of toxic waste occurred after week two.
 - C The contamination of toxic waste occurred before week two.
 - D The salmon population decreased from the first week to week two.
- 30 How could acid rain affect the trees living in a forest?
- A It could strengthen the leaves of the trees in the forest.
 - B It could alter the soil quality, adding toxins that harm the trees.
 - C It could remove chemicals in the soil that harm the trees in the forest.
 - D It could change the soil quality, providing nutrients to the trees.

This is the end of the multiple-choice portion of the test.



The questions you read next will require you to answer in writing.

- 1. Write your answers on separate paper.**
- 2. Be sure to write your name on each page.**

1 Energy can be transferred from one object to another.

- How is heat energy transferred by conduction?
- Provide an example of how heat is transferred by conduction.

2 Farming uses the land and soil to grow crops.

- How can farmers maintain good, healthy soil?
- Why is it important that farmers practice good stewardship of their land?

3 Leaves perform many tasks and are important to the survival of plants.

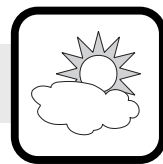
- How is transpiration controlled in the leaves of a plant?
- Explain why transpiration is important to the survival of the plant.



This is the end of the Grade 6 Science test.

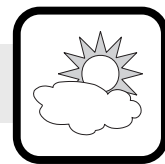
- 1. Look back over your answers.**
- 2. Put all of your papers inside your test book and close the test book.**
- 3. Stay quietly in your seat until your teacher tells you that testing is finished.**

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**Grade 6 Science
RELEASED Form
Spring 2013
Answer Key**

Item number	Type	Key	Unifying Concept
1	MC	A	Forces and Motion
2	MC	D	Forces and Motion
3	MC	A	Forces and Motion
4	MC	C	Forces and Motion
5	MC	C	Forces and Motion
6	MC	B	Matter: Properties and Change
7	MC	C	Matter: Properties and Change
8	MC	B	Matter: Properties and Change
9	MC	A	Matter: Properties and Change
10	MC	C	Matter: Properties and Change
11	MC	D	Matter: Properties and Change
12	MC	B	Energy: Conservation and Transfer
13	MC	C	Energy: Conservation and Transfer
14	MC	B	Energy: Conservation and Transfer
15	MC	D	Earth in the Universe
16	MC	A	Earth in the Universe
17	MC	D	Earth in the Universe
18	MC	A	Earth in the Universe
19	MC	B	Earth Systems, Structures and Processes
20	MC	D	Earth Systems, Structures and Processes
21	MC	B	Earth Systems, Structures and Processes
22	MC	C	Earth Systems, Structures and Processes
23	MC	A	Earth Systems, Structures and Processes



Item number	Type	Key	Unifying Concept
24	MC	A	Earth Systems, Structures and Processes
25	MC	D	Structures and Functions of Living Organisms
26	MC	C	Ecosystems
27	MC	D	Ecosystems
28	MC	A	Ecosystems
29	MC	B	Ecosystems
30	MC	B	Ecosystems
31	CR	Rubric	Energy: Conservation and Transfer
32	CR	Rubric	Earth Systems, Structures and Processes
33	CR	Rubric	Structures and Functions of Living Organisms

Item Types:

MC = multiple choice

CR = constructed response

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