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Student Booklet

Student Name: _____

Spring 2013
North Carolina
Measures of Student Learning:
NC's Common Exams

Grade 6 Science—Form A

RELEASED

READY

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

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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.

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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

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7 The diagram below shows two pure iron magnets.

Magnet 1 **Magnet 2**

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.

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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.

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Go to the next page.

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.

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Go to the next page.

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.

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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.

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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

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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

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Go to the next page.

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.

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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.

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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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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

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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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