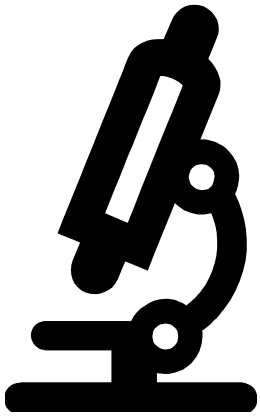
W.R. Thomas Middle School

6th Grade

Comprehensive Science

Summer Packet

2017



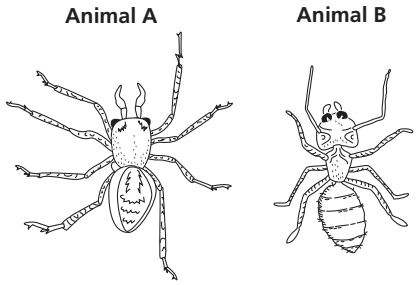
Name:_____

Elementary School:_____

Name _____ Date_____ Class_____

SCREENING TEST 1

Directions: *Use the diagram below to answer questions 1 and 2.*



1. Which of the following statements is a quantitative observation you can make about the animals shown in the diagram?

A Both animals are invertebrates that live on land.

B Animal A has a narrow body with a pattern on its back and extremely long legs.

C Animal B has a body with three main sections, two antennae on its head, and three pairs of legs.

D Both animals have a similar appearance, but Animal A appears bigger than Animal B.

2. Insects are animals that have three main body parts and six legs. Given that information, how would you classify the animals in the diagram?

A Both animals are insects.

B Animal A is an insect, but Animal B is not.

C Animal B is an insect, but Animal A is not.

D Neither animal is an insect.

3. The islands of Hawaii have formed as hot magma from inside Earth comes to the surface and cools. Many years after it erupts, the hardened magma becomes home to plants, animals, and other living things. Which of the following is the most logical prediction about newly erupted magma?

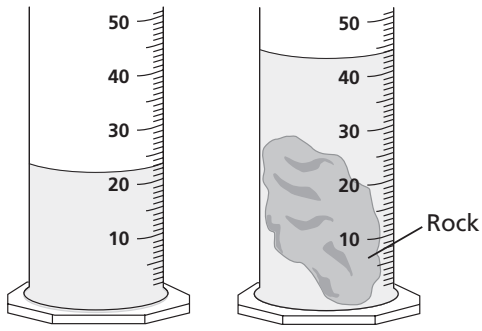
A More magma will erupt in the future, increasing the total area of the islands.

B People will need to establish farms and villages to make the newly-cooled magma useful.

C In the past, living things always moved in to live on the cooled magma.

D Although the cooled magma has no life on it at first, it will eventually support a variety of living things.

Directions: *Use the diagram below to answer question 4.*



4. The diagram above shows one way to measure the volume of an irregular object. Which of the following measurements gives the correct volume of the rock?

A 14 mL

B 21 mL

C 29 mL

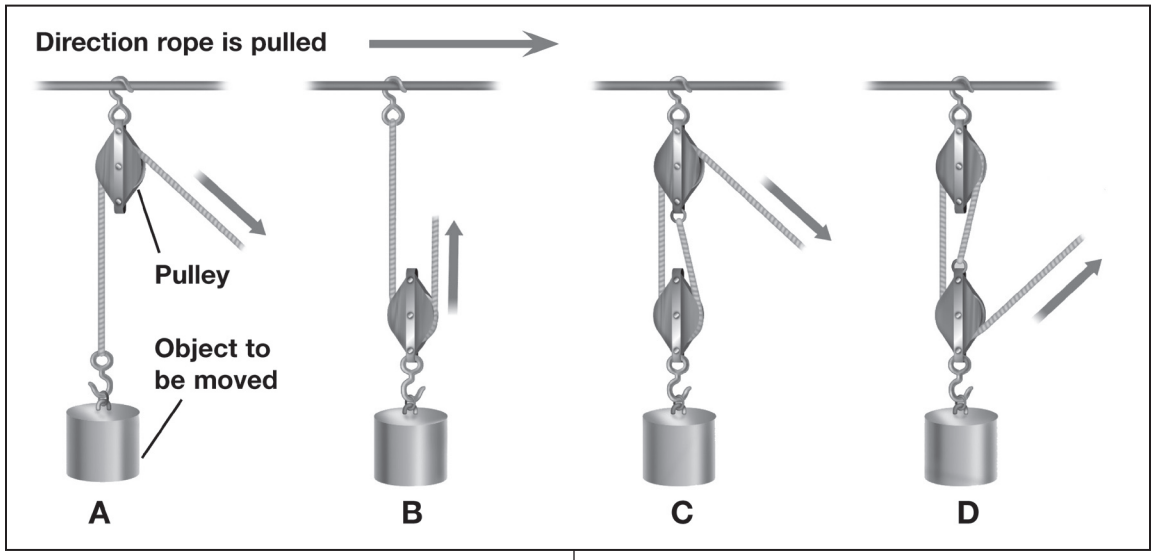
D 43 mL

GO ON

Name _____ Date_____ Class_____

SCREENING TEST 1 *(continued)*

Directions: *Use the diagram below to answer questions 5 and 6.*



5. Pulleys are one type of simple machine. A pulley is a grooved wheel with a rope or cable wrapped around it. Which statement is an accurate observation about the pulleys shown in the diagram?

A The diagram shows four different kinds of simple machines, which can be combined in various ways.

B All the ropes should be pulled in the same direction when the pulleys are used.

C Two machines are made up of single pulleys, while the other machines are made up of two pulleys.

D Pulleys make work easier by allowing you to change the amount or direction of the force you exert.

6. Which statement is a logical inference based on the pulleys in the diagram?

A If you pull on each of the ropes, the objects will be lifted upward.

B If you pull on the rope in pulley B, the object will be lowered.

C Because pulley system C has two pulleys, you will need two people to pull on the rope to move the object.

D You need to see more of the ropes before you can make inferences about the pulleys.

GO ON

SCREENING TEST 1 *(continued)*

Directions: *Use the table below to answer questions 7 and 8.*

Title?	
Type of Snake	**Length (m)**
Reticulated python	8
Anaconda	5
Mamba	3.5
King cobra	3.4
Boa constrictor	3.3
Eastern rattlesnake	2.5
Grass snake	1

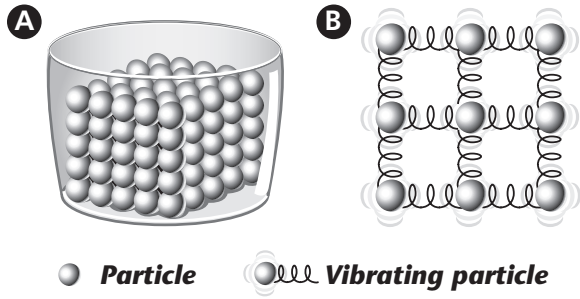
7. Examine the table of data. Which of the following choices would be the best title for the table?

A Lengths of Different Types of Snakes
B Types of Snakes
C Length (m)
D How Snakes Differ

8. Examine the data in the table. Would it be useful to show these data in a circle graph?

A Yes, because the snake lengths make up the parts of a whole.
B Yes, because the graph will then show which percent each type of snake represents.
C No, because the data is made up of averages, and they should be on a line graph.
D No, because the snake lengths do not make up the parts of a whole.

Directions: *Use the diagram below to answer question 9.*



9. There are three common states of matter: gases, liquids, and solids. The diagram shows a model for one state of matter. Which statement below correctly describes what the model shows?

A The particles can move in any direction, so they can fill the entire space of their container.
B The particles are completely free to move, so they take on the shape of their container.
C The particles can vibrate, but they stay in fixed positions, causing them to have a definite shape.
D The particles have a fixed shape because they have no energy related to motion.

10. Over the centuries, people have observed that a red sky early in the morning is typically followed by a stormy day. Which inference(s) can be logically made from that observation?

A The red color is associated with light from the rising sun.
B The red color comes from red molecules in the clouds.
C In nature, a red color is a signal of danger.
D All of the above inferences are logical.

GO ON

SCREENING TEST 1 *(continued)*

11. Viruses are smaller than bacteria. Viruses can cause disease when they invade specific types of living things. Which of the following is a scientific question about viruses?

A Is it right to destroy disease-causing viruses?
B Why do some viruses infect only plants, while other viruses infect only animals?
C How much money should be spent trying to eliminate diseases caused by viruses?
D Should government make rules for the way diseases caused by viruses are treated?

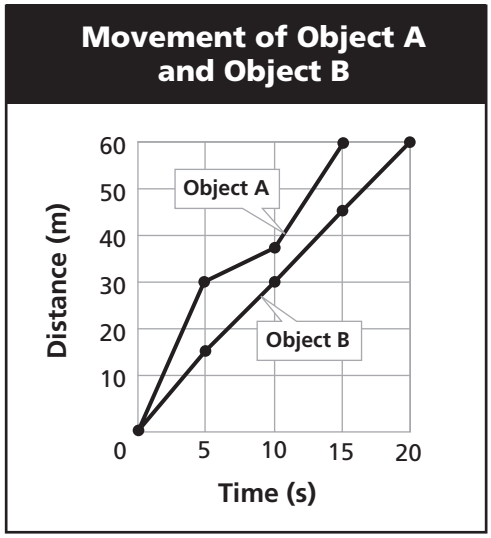
12. One sunny morning, you see blue morning glories growing on a fence. That night, it rains. The next morning, flowers are pink, but they soon change to blue again. You know that acids make blue litmus paper turn red. Which hypothesis would be the most logical explanation for the change in flower color?

A The growing plant produces acid that causes the flower color to change.
B The color change occurs when the plants do not get enough water.
C The color change is caused by acid that is present in the rain.
D The color change is caused by plant chemicals that break down as the plant grows older.

13. Scientists often test their hypotheses with controlled experiments. Which of these is a rule for conducting a controlled experiment?

A Change at least two variables at a time.
B Keep all variables constant.
C Change as many variables as possible.
D Change only one variable at a time.

Directions: *Use the graph below to answer questions 14 and 15.*



14. What information does the graph explicitly provide?

A The data points give the speed of the objects at specific times.
B The graph shows where the objects will be at 25 and 30 seconds.
C The graph shows that one object had to be pushed, while the other object moved on its own.
D The data points tell how far the objects have moved from the starting points at specific times.

15. Which statement accurately summarizes what was learned from the graph?

A Objects A and B moved in the same direction.
B Object A moved at a constant speed. Object B's speed changed as it moved.
C Object A moved faster than Object B.
D Statements A, B, and C are all accurate.

GO ON

SCREENING TEST 1 *(continued)*

Directions: *Use the chart below to answer question 16.*

Operational Definition of Monocot and Dicot		
Procedure	Monocot	Dicot
Examine the veins in the leaf.	parallel veins	branching veins
Cut the stem and examine the vascular tissue.	bundles of vascular tissue scattered throughout the stem	bundles of vascular tissues arranged in ring
Count the flower parts, such as the petals and sepals.	flower parts are in threes	flower parts are in fours or fives

16. Seed plants can be classified as either monocots or dicots. The information above can be considered an operational definition of "monocot" and "dicot" because

A it makes a prediction about future events.
B it gives a possible explanation for a set of observations.
C it tells a researcher how to identify monocot and dicot plants.
D it sums up what was learned in an experiment.

17. Suppose you are planning an experiment to determine how adding salt to pure water affects the freezing point of the water. Which of the following would be the most logical manipulated variable for your experiment?

A the concentration of the salt solution
B the freezing temperature of the salt solution
C the volume of the salt solution
D the type of salt used

18. Your class is investigating metals. You are responsible for designing an experiment to determine which metal is the hardest. All the lab groups will use your plan to investigate different metals, and then the class will combine all the results. Which statement describes the most important part of your job?

A You need to make sure each lab group collects the same data and reaches the same conclusion.
B You need to plan a single procedure for all groups to follow, and you need to write an operational definition for hardness.
C You need to create the same data tables and graphs for all the groups so that they can easily compare their results.
D You need to get the class to write as many scientific questions about metals as possible, and then eliminate the questions that cannot be answered by gathering evidence.

SCREENING TEST 1 *(continued)*

19. Which set of decimals is in order from least to greatest?

A 5.23, 5.12, 5.1, 5.09
B 5.23, 5.09, 5.1, 5.12
C 5.1, 5.12, 5.23, 5.09
D 5.09, 5.1, 5.12, 5.23

20. Add.
$\frac{3}{9} + \frac{4}{9} = ?$

A $\frac{7}{18}$
B $\frac{5}{18}$
C $\frac{7}{9}$
D $\frac{11}{14}$

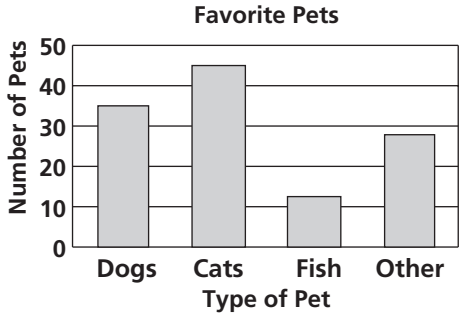
21. There are 252 seats in an auditorium. The auditorium is divided into 3 equal sections. How many seats are in each section?

A 64 seats
B 74 seats
C 84 seats
D 94 seats

22. James and Paolo both swim 2 kilometers a day. Which measuring tool should be used to determine the swimmer with the fastest time?

A a scale
B a clock
C a meter stick
D a thermometer

23. What type of data display is shown below?

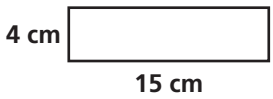


A a table
B a bar graph
C a line graph
D a frequency table

24. Solve.
$x + 16 = 52$

A $x = 36$
B $x = 46$
C $x = 68$
D $x = 78$

25. Use the formula $A = l \times w$ to find the area of the rectangle below.



A 38 square cm
B 60 square cm
C 76 square cm
D 108 square cm