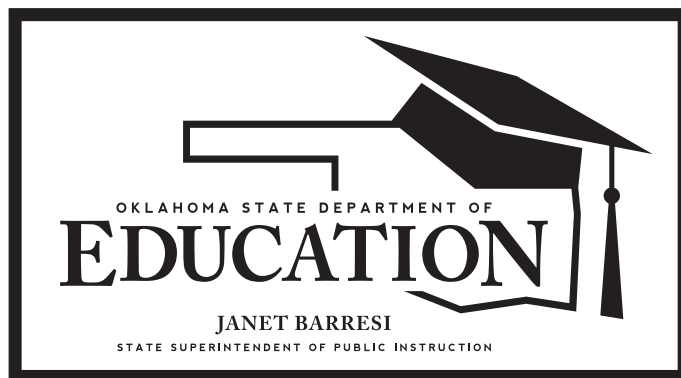


Oklahoma School Testing Program



Oklahoma Core Curriculum Tests

2014–2015
Released Items
Aligned to PASS 2011/OAS

Grade 8
Science

Oklahoma State Department of Education
Oklahoma City, Oklahoma



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Web Version

Science



Directions

Read each question and choose the best answer.

- 1** A student wants to grow an organic vegetable garden. He wants to use beneficial insects to control pests instead of a harmful pesticide.

Insects

| | |
|--------------------|--|
| Grasshopper | eats plants; dry, arid environment |
| Aphid | eats plants; supplies ants with honeydew; warm environment |
| Ladybug | eats aphids, leafhoppers, mealy bugs; moist, humid environment |
| Honeybee | eats nectar; pollinates; dry environment |

Based on the data in the chart, which type of insect would the student most likely choose to put in his garden and why?

- A** grasshoppers because they eat plants
- B** aphids because they supply food to other insects
- C** ladybugs because they eat insects that eat plants
- D** honeybees because they pollinate plants



- 2** Students performed four different procedures while investigating chemical reactions.

Chemical Reaction Investigation

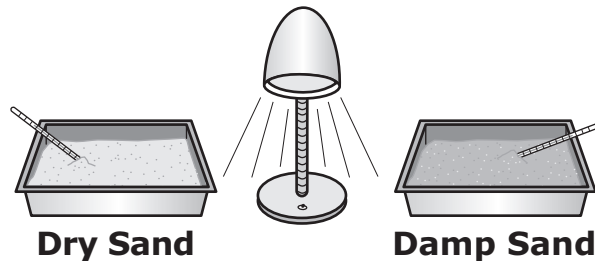
| Investigation | Procedure | Observation |
|---------------|---|---------------------------------------|
| 1 | heat a clear liquid | liquid is clear and warm with bubbles |
| 2 | mix red liquid with solid white pellet | mixture is a pink liquid that is hot |
| 3 | mix two green liquids | mixture is green with bubbles |
| 4 | mix blue liquid with solid white pellet | mixture is green and cold |

Based on the procedures and observations, which investigations resulted in chemical reactions?

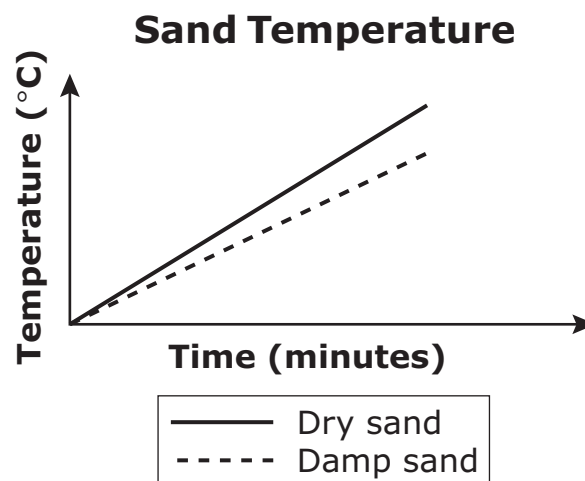
- A** Investigations 1 and 2 because liquids were observed
- B** Investigations 1 and 3 because bubbles were observed
- C** Investigations 3 and 4 because the observed mixtures were green
- D** Investigations 2 and 4 because a temperature change was observed



- 3** Students performed an experiment to compare temperature changes in damp and dry sand. They filled two aluminum pans halfway with sand. They added water to one of the pans until the sand was damp. They placed a heat lamp halfway between the two pans.



They graphed the temperature of the sand in each pan every two minutes for 20 minutes.

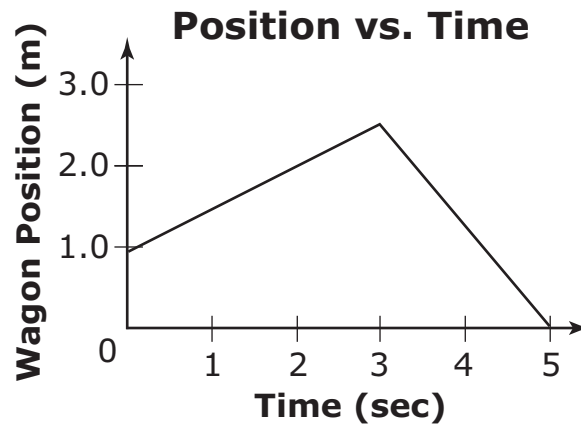


Which of the following conclusions can the students make about their experimental results?

- A** Dry sand heats up faster than damp sand.
- B** Damp sand and dry sand heat up at the same rate.
- C** Damp sand reaches a higher temperature than dry sand.
- D** Dry sand takes longer than damp sand to reach a constant temperature.



- 4 A student graphs the position of a wagon during a 5-second time interval.



What is the approximate change in position between the 1-second and 3-second time intervals?

- A 0.0 m
- B 1.0 m
- C 2.0 m
- D 3.0 m



- 5** The table shows how four students plan to investigate a fossil in order to learn about the animal from which the fossil was made.

Fossil Information

| Student | Fossil | Tool | How the Fossil Might be Used |
|---------|---------------|---------------------|---|
| 1 | mammoth tusk | triple-beam balance | to determine the variety of foods in the mammoth's diet |
| 2 | shark tooth | metric ruler | to estimate the size of the shark |
| 3 | fish imprint | spring scale | to study the environmental conditions of the fish's habitat |
| 4 | dinosaur bone | graduated cylinder | to establish the dinosaur's cause of death |

Which student correctly matches the fossil with the tool used to measure it and the way in which the fossil might be used?

- A** Student 1
- B** Student 2
- C** Student 3
- D** Student 4



6 Which object is least likely to be heated during a laboratory activity?

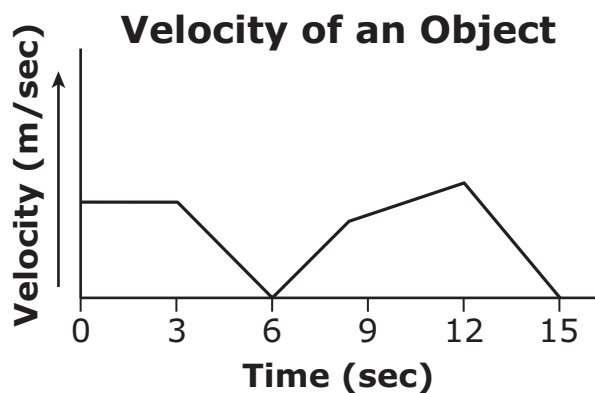
- A** a glass flask
- B** a glass beaker
- C** an open container
- D** a closed container

7 Which would most likely happen if precipitation near glaciers increased and global temperatures decreased?

- A** Glacier size would increase, and sea levels would decrease.
- B** Glacier size would decrease, and sea levels would decrease.
- C** Glacier size would increase, and sea levels would increase.
- D** Glacier size would decrease, and sea levels would increase.



- 8** The velocity of an object over time is recorded and then displayed on a graph.

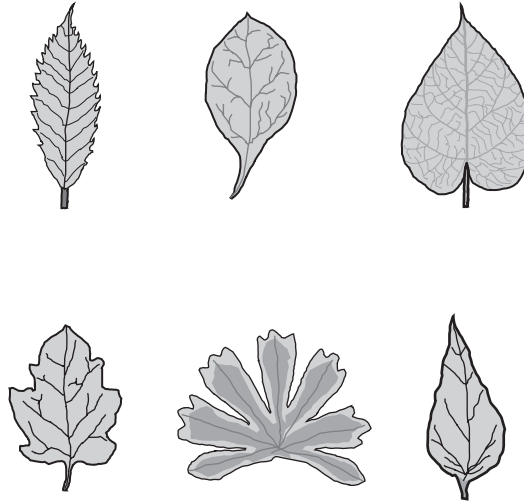


During which time interval were the forces on the object balanced?

- A** 0–3 seconds
- B** 3–6 seconds
- C** 9–12 seconds
- D** 12–15 seconds



9 The simple leaves shown have unique shapes.

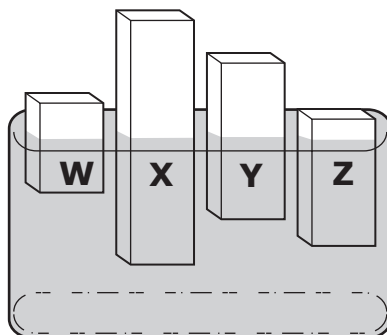


How can the shapes of the leaves be used by scientists?

- A** to determine the size of the tree
- B** to identify the species of the tree
- C** to predict the life span of the tree
- D** to calculate the rate of photosynthesis of the tree



10 The diagram shows four blocks floating in water.

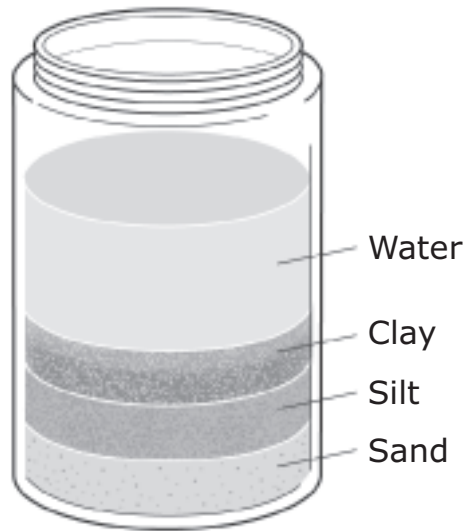


Based on the diagram, which block is the most dense?

- A** block W
- B** block X
- C** block Y
- D** block Z



- 11** The picture shows the results of an experiment designed to observe how different types of sediment are deposited at the bottom of a lake. A soil sample from a hillside was placed into a jar of water and shaken. The sample was then allowed to settle.



What is the result of sediment deposition and which action would most change the results of the experiment?

- A** land formation; changing the quantity of the soil sample
- B** crust deformation; changing the temperature of the water
- C** crust deformation; changing the amount of water in the mixture
- D** land formation; changing the location from which the soil sample is taken

-
- Oklahoma Rainfall**
- | Season | Rainfall (cm) |
|----------|---------------|
| Summer 1 | 10 |
| Autumn 1 | 9 |
| Winter | -17 |
| Spring | -17 |
| Summer 2 | -17 |
| Autumn 2 | 20 |

A Spring and Summer 1 rainfall was near average.

B Spring and Summer 2 rainfall was below average.

C Summer 1 and Autumn 1 rainfall was near average.

D Summer 1 and Autumn 2 rainfall was above average.



13 The data table shows the results of three different chemical reactions.

Examples of Chemical Reactions

| Substance | Cause of Reaction | Evidence of Reaction |
|-------------|----------------------|--|
| iron nail | exposed to moist air | red solid forms on surface of nail and the nail's mass increases |
| baking soda | vinegar added | a gas and a solid with new properties form |
| candle | heated by flame | black soot forms and the candle's mass decreases |

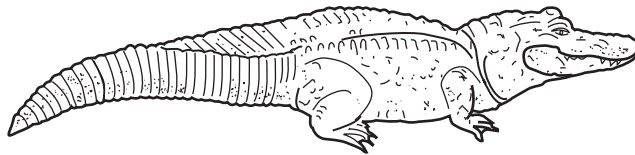
Based on the data, which of these is also a chemical reaction?

- A** Water bubbles and changes phase when heated.
- B** A green solid appears white after being crushed.
- C** Sugar turns black and changes mass when heated.
- D** A liquid changes color when mixed with a solid powder.



Dichotomous Key

- 1a. Body covered with hair.....go to 2
1b. Body not covered with hair.....go to 3
- 2a. Has horns on head.....Species U
2b. Does not have horns on head.....Species V
- 3a. Body covered with scales.....go to 4
3b. Body covered with feathers.....go to 5
- 4a. Breathes with gills.....Species W
4b. Breathes with lungs.....Species X
- 5a. Able to fly.....Species Y
5b. Not able to fly.....Species Z



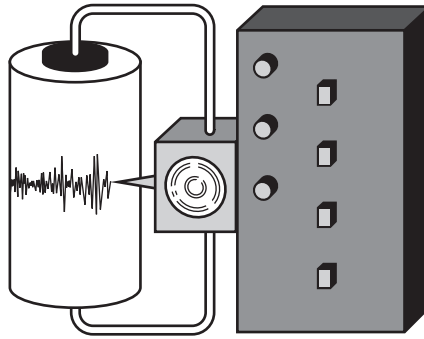
Using the dichotomous key, this animal is most likely which species?

- A Species V
- B Species W
- C Species X
- D Species Z



15

Seismograph



Which event can destroy existing landforms or create new landforms, and is measured using a seismograph?

- A** erosion from water
- B** weathering from wind
- C** a mudslide on a hillside
- D** an earthquake on a fault line

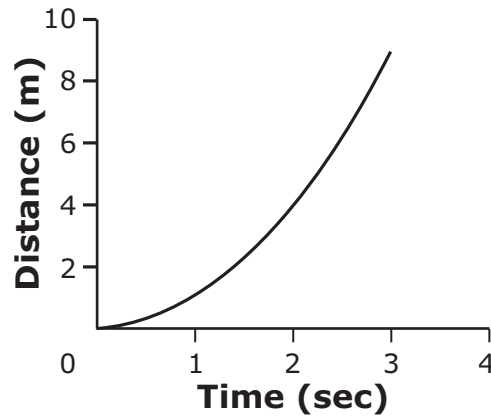


- 16** Data for an object in motion was recorded in a data table and displayed in a graph.

Motion Data

| Time (sec) | Distance (m) |
|-----------------------|-------------------------|
| 1 | 1 |
| 2 | 4 |
| 3 | 9 |

Distance vs. Time

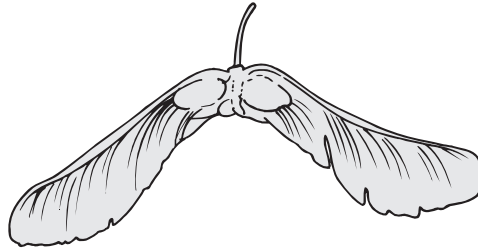


Which statement best describes the data?

- A** The object is increasing in speed, and the dependent variable is the time interval.
- B** The object is increasing in speed, and the dependent variable is the distance traveled.
- C** The object is moving at a constant speed, and the dependent variable is the time interval.
- D** The object is moving at a constant speed, and the dependent variable is the distance traveled.



- 17** Maple seeds are located in a structure that allows them to twirl like a helicopter blade as they fall to the ground.



A student plans to investigate the role of the blade-like portion of the structure using the following steps.

- Step 1. Determine the average distance the seed traveled under each condition.

Step 2. Toss all the seeds into the air.

Step 3. Trim part of the helicopters on half of the seeds.

Step 4. Obtain several maple seeds with helicopters intact.

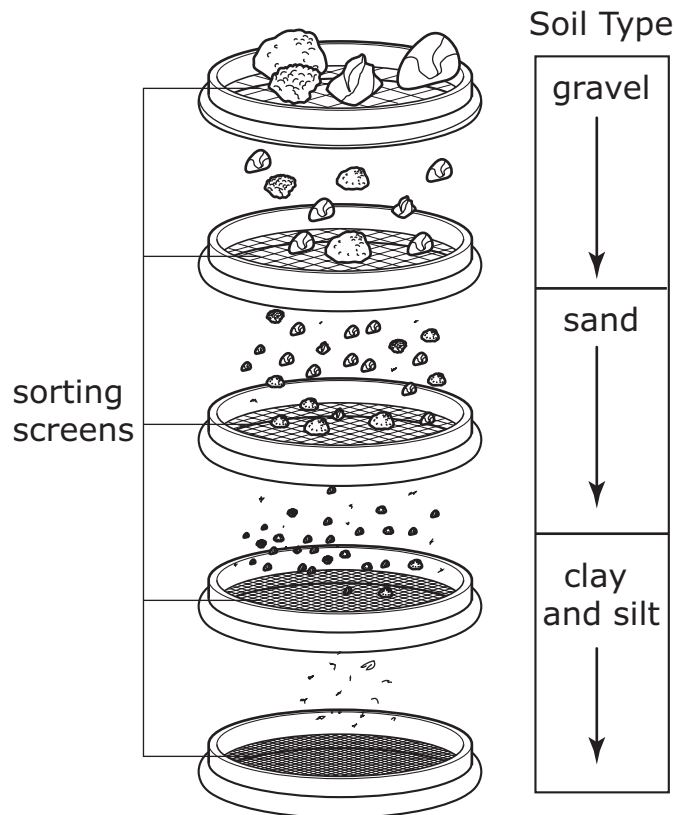
In which order should the steps be performed and what is the most likely role of the structure?

- A** 4, 1, 3, 2; to carry seeds far from their source using air currents
- B** 4, 3, 2, 1; to carry seeds far from their source using air currents
- C** 4, 1, 3, 2; to attract animals that can carry seeds far from their source
- D** 4, 3, 2, 1; to attract animals that can carry seeds far from their source



- 18** Scientists can classify particles in a soil sample by using different sorting screens.

Soil Sample Classification



Which statement best describes the soil sample?

- A** Particles in the soil sample were sorted by size, and the different-size particles were formed by weathering and erosion.
- B** Particles in the soil sample were sorted by color, and the different-color particles were formed by lava cooling above ground.
- C** Particles in the soil sample were sorted by increasing volume, and the particles with the greatest volume were formed by weathering and erosion.
- D** Particles in the soil sample were sorted by decreasing mass, and the particles with the least mass were formed by lava cooling above ground.



- 19** A student pushed a smooth metal disk across a glass surface and then released the disk. The student measured the speed of the metal disk for three seconds.

Metal Disk Data

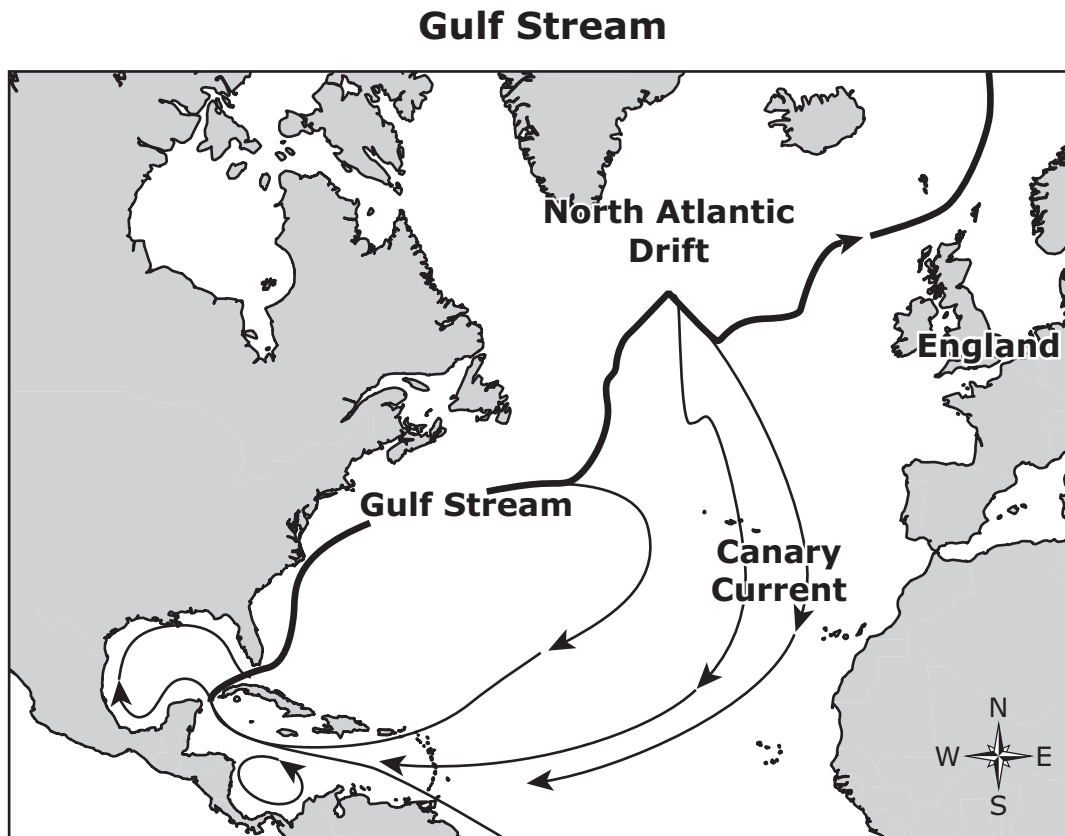
| Time (seconds) | Speed (meters/second) |
|---------------------------|----------------------------------|
| 0.0 | 2.2 |
| 1.0 | 1.9 |
| 2.0 | 1.4 |
| 3.0 | 0.9 |

Which statement best explains this data?

- A** The disk gained energy that caused the speed to increase.
- B** The disk gained energy that caused the speed to decrease.
- C** The friction against the glass caused the speed of the disk to increase.
- D** The friction against the glass caused the speed of the disk to decrease.



20 The map shows currents in the Atlantic Ocean.



If the Gulf Stream weakened or ceased to exist, which would most likely be a consequence?

- A** Average temperatures in the eastern United States would increase.
- B** Average temperatures in England and western Europe would increase.
- C** Average temperatures in England and western Europe would decrease.
- D** Average temperatures in the midwestern United States and eastern Canada would decrease.



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