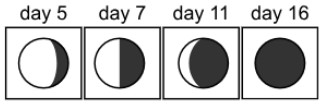
GRADE 5 SCIENCE Online Tools Training (OTT) ANSWER KEY 2024-2025

Question 1: Standard Grade 5 Science E.5.8B.1

A student is studying the partial lunar calendar.
Which sequence of moon phases correctly represents the pattern in the appearance of the Moon and completes the calendar?

(Practice Hint: Eliminate answer choices by using the Cross-Off tool.)

a


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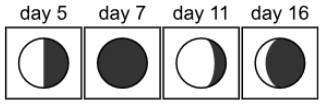

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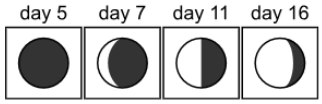
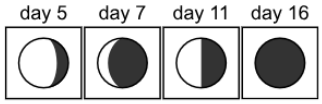
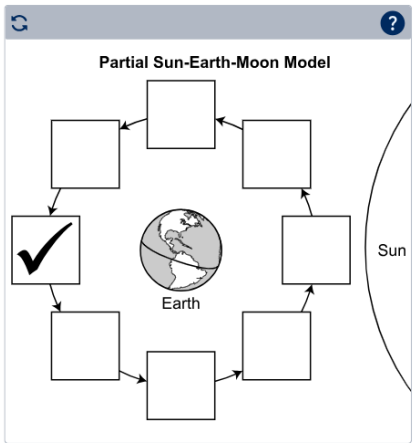


d


Question 2: Standard Grade 5 Science E.5.8B.2

The diagram shows a partial Sun-Earth-Moon model. The boxes represent the position of the Moon at different times. Select the position on the model that represents the day 1 moon phase.

(Practice Hint: Select a box and practice changing your answer.)



Question 3: Standard Grade 5 Science E.5.8A.1

Part A: Drag the information into the correct position in the data table.

(Practice Hint 1: Select and drag the numbers and planet names into the correct position in the data table.)

Outer Planet Information

Planet	Distance from Sun (millions of km)
Jupiter	**778.3**
Saturn	1,427.0
Uranus	**2,871.0**
Neptune	**4,497.1**

Part B: Select **two** words that correctly identify properties of these planets.

*(Practice Hint 2: Highlight **two** words. Practice changing your answer.)*

rocky

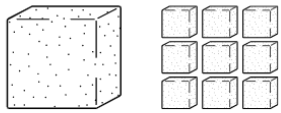
gaseous

large

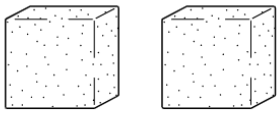
small

Question 4: Standard Grade 5 Science P.5.5B.3

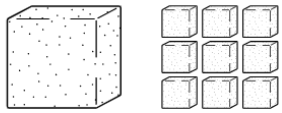
A student wants to investigate how surface area affects the time it takes sugar to dissolve. Which setup allows for a fair test of this variable?

a


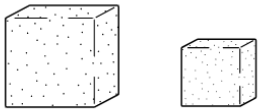
Plan
Place each sugar cube setup in beakers of the same size, with the same amount of water at 20°C.

b


Plan
Place each sugar cube setup in beakers of the same size, with different amounts of water at 20°C.

c


Plan
Place each sugar cube setup in beakers of the same size, with the same amount of water, one at 20°C and the other at 5°C.

d


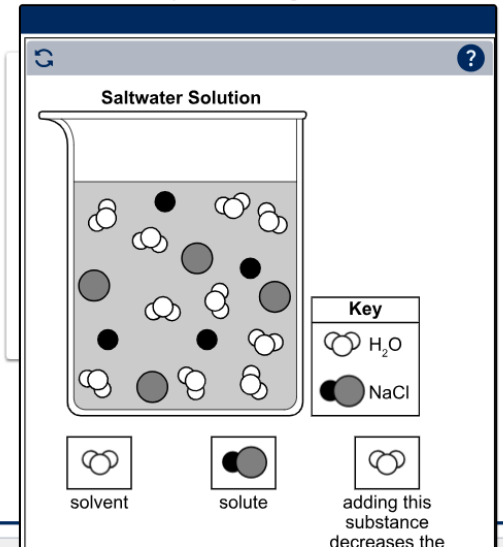
Plan
Place each sugar cube setup in beakers of same size, with the same amount of water at 20°C.

Question 5: Standard Grade 5 Science P.5.5B.2

The diagram below represents a saltwater solution. When salt (NaCl) molecules are added to water (H_2O), they break into one sodium (Na) particle and one chlorine (Cl) particle.

Drag the image of the water molecule or the salt molecule from the key into each of the three empty boxes to identify their roles in the solution.

(Practice Hint: Select the "Select to Respond" button to answer the question. Drag the molecules into the correct position in the diagram. Select "OK" when you are finished.)



Question 6: Standard Grade 5 Science L.5.3B.1

The chart below shows environmental characteristics of four ecosystems.

Ecosystem Characteristics

Ecosystem	Temperature	Water	Sunlight
desert	hot during the day, cold at night	dry, with occasional brief rainfall	abundant
tropical rainforest	hot and humid	large amounts of frequent rain	abundant on the tree canopy with a decreased amount on the forest floor
lakes and ponds	cold to warm (depending on location)	freshwater	abundant near the surface, decreasing with depth
polar tundra	cold	dry, frozen	varies throughout the year

Which statement accurately describes the vegetation or animals that would be **best** supported by the ecosystem?

(a) The desert would support animals that need to remain cool.

(b) The pond would support animals that can survive in saltwater environments.

(c) The tropical rainforest would support plants that are tall and have thin needles.

(d) The polar tundra would support plants that are small and grow close to the ground.

Question 7: Standard Grade 5 Science P.5.6.4

Two students are discussing different ways to move a wagon filled with bricks.

Part A: Select one claim that explains the forces that cause the wagon to move.

Claim

A balanced force is needed to move the wagon.

An unbalanced force is needed to move the wagon.

Part B: Select one plan that will result in the **most** motion of the wagon.

Plan

One student pulls the wagon forward while the other student pushes sideways on the wagon.

One student pulls the wagon forward while the other student pushes the wagon in the opposite direction.

One student pushes the wagon forward while the other student pulls the wagon forward.

One student pushes the wagon forward while the other student pulls the wagon upward from the back of the wagon.

Question 8: Standard Grade 5 Science P.5.6.1

A student studies the following data table.

Number of Moons of Two Planets

Planet	Number of Moons Orbiting Planet
1	2
2	27

Use the drop-down menus to explain how gravity causes moons to orbit planets.

(*Practice Hint: Select the drop-down arrows to see the lists of answer choices. Then, select the answer choices that best complete the statements.*)

Gravity [pulls] each moon [toward] the center of the planet.

Planet 1 is less massive than planet 2 and therefore has [less] gravity than planet 2.

Question 9: Standard Grade 5 Science P.5.5A.2

Students observe a demonstration by their teacher. The teacher places a thermometer and ice water in a beaker and slowly heats the beaker on a hot plate. The students know that water freezes at 0°C and boils at 100°C. At three different times, the teacher reads the temperature on the thermometer while the students describe the spacing and motion of the particles in the beaker.

Which data table correctly represents the spacing and motion of the particles at each temperature?

a

Temperature (°C)	Spacing of Particles	Motion of Particles
20	very far apart	very slow
50	close together	slow
80	very close together	very fast

b

Temperature (°C)	Spacing of Particles	Motion of Particles
20	very close together	very slow
50	close together	slow
80	very far apart	very fast

c

Temperature (°C)	Spacing of Particles	Motion of Particles
20	very far apart	very fast
50	close together	slow
80	very close together	very slow

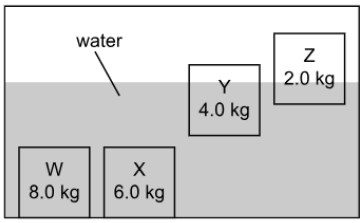
d

Temperature (°C)	Spacing of Particles	Motion of Particles
20	very close together	very fast
50	close together	slow
80	very far apart	very slow

Question 10: Standard Grade 5 Science P.5.5A.4

The diagram shows four blocks of the same size in a water tank. Block Y has the same density as the water.

Blocks in Water



Four additional blocks are being added to the water as detailed in the table below. The table lists the masses of the additional blocks, which are the same size as blocks W, X, Y, and Z. Select one box in each row of the table below to predict what will happen to blocks J, K, L, and M when they are placed in the water tank.

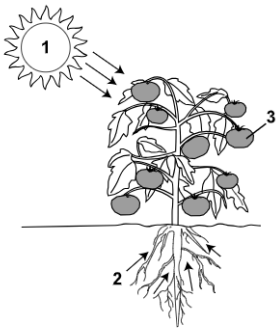
(Practice Hint: Select the blank spaces next to the blocks to add check marks. Select the arrows to start over.)

	Sink	Float
block J: 1 kg	☐	☑
block K: 3 kg	☐	☑
block L: 5 kg	☑	☐
block M: 7 kg	☑	☐

Question 11: Standard Grade 5 Science L.5.3A.1

The model shows a process that occurs in a tomato plant.

A Process Occurring in a Tomato Plant



Which labels correctly complete the model to help describe this process?

(a) 1. water
2. sunlight
3. stored energy

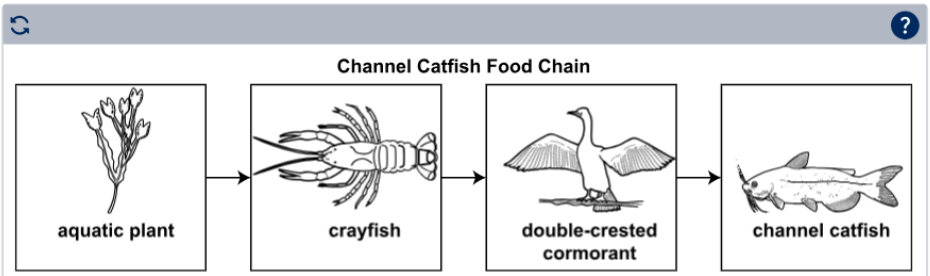
(b) 1. sunlight
2. stored energy
3. water

(c) 1. sunlight
2. water
3. stored energy

(d) 1. stored energy
2. water
3. sunlight

Question 12: Standard Grade 5 Science L.5.3B.2

Part A: Drag the organisms into the boxes to complete the food chain.



Part B: Complete the chart by classifying each organism as a producer or as a consumer.

	Producer	Consumer
channel catfish	☐	☑
crayfish	☐	☑
double-crested cormorant	☐	☑
aquatic plant	☑	☐

Question 13: Standard Grade 5 Science E.5.10.1

Individuals and communities must work together to conserve Earth's natural resources. Select the **two** statements that describe how Earth's natural resources can be conserved.

(a) Build more landfills for trash.

(b) Bury used motor oil in the ground.

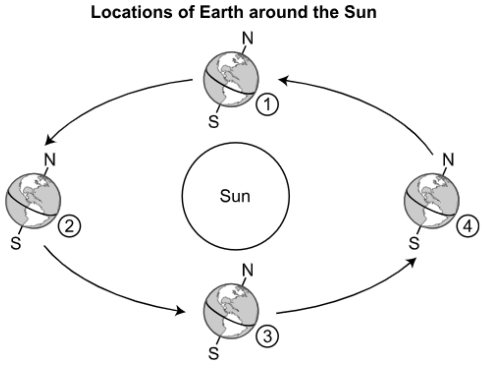
(c) Carpool with friends to school activities.

(d) Drink bottled water instead of using tap water.

(e) Convert food waste into garden soil with a compost bin.

Question 14: Standard Grade 5 Science E.5.8B.3

The model represents Earth as it orbits the Sun.



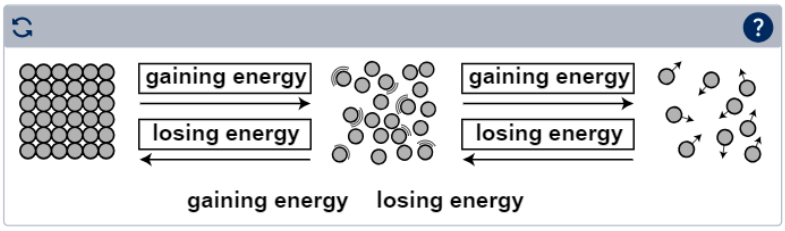
Record the number of the location that represents winter in the Northern Hemisphere.

(*Practice Hint: Select the input response box. Use the keyboard to enter a response.*)

Location: 4

Question 15: Standard Grade 5 Science P.5.5C.2

Drag the labels into the diagram to correctly identify the interactions of matter. Each label will be used **twice**.



Question 16: Standard Grade 5 Science E.5.5B.4

A student made a list of ideas that scientists have had over time about the solar system. Drag each sentence into the list to show the order in which the ideas were accepted by the scientific community.

1st: **Earth is the center of the universe.**

2nd: **The Sun is the center of the solar system.**

3rd: **Earth is just one planet orbiting one star in a vast universe.**

Ideas

Question 17: Standard Grade 5 Science L.5.3B.3

(a) The population of bald eagles may be reduced by humans consuming too many smelt.

(b) Competition among humans, alewife, and smelt decreases food availability for bald eagles.

(c) Humans decrease the populations of phytoplankton and zooplankton by consuming chinook salmon.

(d) Human consumption of coho salmon and chinook salmon may reduce food sources for herring gulls.

Question 18: Standard Grade 5 Science P.5.5A.3

Part A: The students add all three liquids to a clear jar. Use the drop-down menu to explain how the students will be able to identify vegetable oil.

Vegetable oil will [float on top] .

Part B: The students observe that the liquid from container 1 is on top and the liquid from container 3 is on the bottom.

Use the drop-down menus to identify which liquids were originally in which containers.

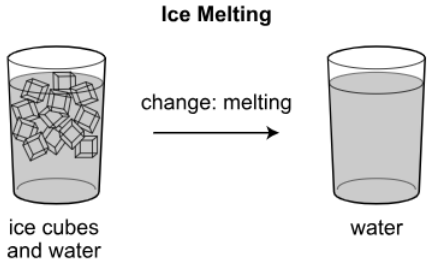
Container 1 had [vegetable oil] in it.

Container 2 had [apple juice] in it.

Container 3 had [corn syrup] in it.

Question 19: Standard Grade 5 Science P.5.5C.3

A student combined ice cubes and water in a glass. The ice cubes melted, leaving only liquid water. The masses of the ice cubes and water before the change are shown in the diagram.



Beginning Mass

ice cubes	50 grams
water	60 grams

Final Mass

water	?

Which statement **best** describes the final mass of the water after the ice has melted?

(a) It is 60 grams because the final mass does not include the ice cubes because they melted.

(b) It is 110 grams because the beginning mass is equal to the final mass in a physical change.

(c) It is 60 grams because the beginning mass is larger than the final mass in a physical change.

(d) It is 110 grams because the final mass does not include the water because it stayed the same.

Question 20: Standard Grade 5 Science P.5.6.3

A student has two boxes. Box 1 has a mass of 10 kg and box 2 has a mass of 20 kg. The student wants to push both boxes the same distance across the floor.

Part A: Use the drop-down menus to compare the forces acting on the boxes.

Less ⌄ contact ⌄ force will be needed to move box 1 than box 2.

Part B: Which pair of forces will be acting on the boxes once the student begins pushing?

(a) friction and applied

(b) spring and electrical

(c) magnetic and friction

(d) applied and magnetic