Form	**BA - 2, Science, Grade 5, SY 24-25**
Identifier	F-7ZWBC5_C26985

Item	**BA-2_Grade 5_01**
Identifier	I-SCI-F-S000026_C44699
Standards	SCI.5.5-PS1-4

A student conducted two trials with glasses of milk during an experiment. In Trial 1, the student added water to a glass of milk. In Trial 2, the student added vinegar to the other glass of milk. The student's observations are shown in the table.

Student's Observations of Milk

Trial	Liquid Mixed with Milk	Observation of Milk Before Mixing	Observation of Milk After Mixing
1	Water	Smooth white liquid	Sooth white liquid. Milk is thinner than it was before. 
2	Vinegar	Smooth white liquid	White liquid with white solid parts. Milk is thicker than it was before. 

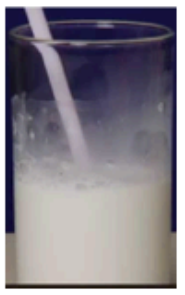
In Trial 1, adding water to milk causes a physical change. The **BEST** evidence for this is that:

- A the glass weighs more than it did before.
- B the milk is thinner that it was before.
- C two liquids have been mixed.
- D the milk is a different color than it was before.

Item	BA-2_Grade 5_02
Identifier	I-SCI-F-S000026_C80093
Standards	SCI.5.5-PS1-4

A student conducted two trials with glasses of milk during an experiment. In Trial 1, the student added water to a glass of milk. In Trial 2, the student added vinegar to the other glass of milk. The student's observations are shown in the table.

Student's Observations of Milk

Trial	Liquid Mixed with Milk	Observation of Milk Before Mixing	Observation of Milk After Mixing
1	Water	Smooth white liquid	Sooth white liquid. Milk is thinner than it was before. 
2	Vinegar	Smooth white liquid	White liquid with white solid parts. Milk is thicker than it was before. 

In Trial 2, adding vinegar to milk causes a chemical change. The **BEST** evidence for this is that:

A the milk is still white.

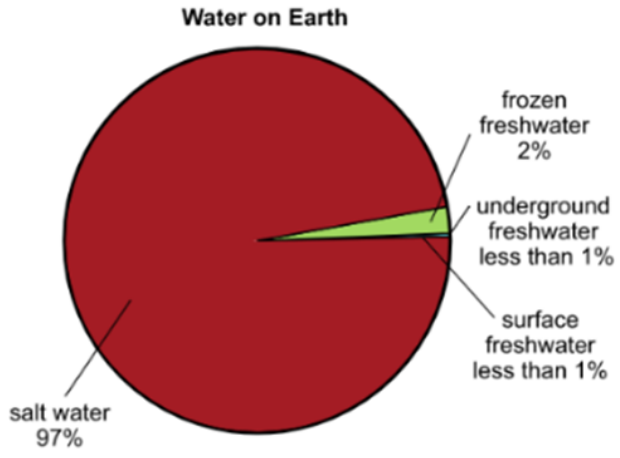
B there is a greater volume of liquid in the glass than there was before.

C the milk was mixed with a different liquid.

D the milk has solid parts in it.

Item	BA-2_Grade 5_03
Identifier	I-SCI-F-S000026_C18132
Standards	SCI.5.5-ESS2-2

A group of students created a circle graph that shows the distribution of water on Earth.



Which statement **BEST** describes the distribution of water on Earth?

A Most of Earth’s water is stored in the oceans.

B Most of Earth’s water is frozen in the polar ice caps.

C Most of Earth’s water is flowing in streams and rivers.

D Most of Earth’s water is trapped in underground aquifers.

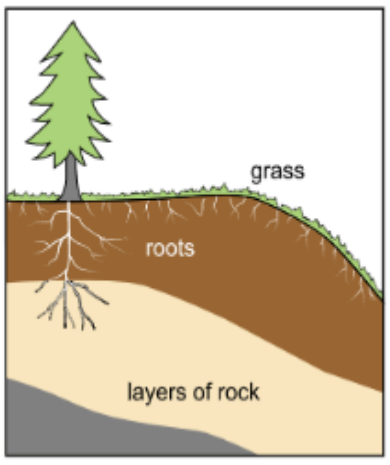
Item	BA-2_Grade 5_04
Identifier	I-SCI-F-S000026_C01040
Standards	SCI.5.5-ESS2-1

Use the information about landslides and your knowledge of science to answer the question.

Landslides

Big Sur, California, is located right next to the Pacific Ocean. The area of Big Sur has many steep cliffs and slopes. Major landslides happened there in 1998, 2000, and 2017. Landslides take place when rocks and soil move downward. Roads can be covered with rock, and parts of a road can fall into the ocean. People cannot drive through the area until soil and rocks are removed, or the road is replaced. Landslides are less likely to happen on stable slopes. On stable slopes, the upper layers of rock are connected to and supported by the bottom layers of rock, as shown in Figure 1. Slopes become unstable when layers of rock become separated from one another. This can happen when water fills the cracks between rocks.

Figure 1. Stable Slope



A student claims that landslides are caused by the downward force of gravity. Which statements provide evidence to support the student's claim? **Select the TWO correct answers.**

- [ ] A Big Sur has very steep cliffs.
- [ ] B Falling rocks can cover a road.
- [ ] C Rocks and soil can block traffic.
- [ ] D Rock layers push against each other.
- [ ] E Parts of a road may fall into the ocean.

Item	BA-2_Grade 5_05
Identifier	I-SCI-F-S000026_C28948
Standards	SCI.5.5-ESS2-1

A landslide can happen when a slope becomes unstable. One way the slope can become unstable is if burrowing animals in the biosphere cause the rocks and soil that make up the geosphere to become loose and easy to move. Another way the slope can become unstable is if heavy rainfall or freezing ice pushes rocks and soil apart.

This shows an interaction between parts of the:

A biosphere and geosphere.

B atmosphere and geosphere.

C geosphere and hydrosphere.

D atmosphere and hydrosphere.

Item	BA-2_Grade 5_06
Identifier	I-SCI-F-S000026_C48163
Standards	SCI.5.5-ESS2-2

Let us look at the distribution of water on Earth. Water is found in various locations such as oceans, lakes, rivers, polar ice caps, and even underground. The table below shows the estimated amounts of salt water and fresh water in different reservoirs on our planet:

Reservoir	Salt Water (in cubic miles)	Fresh Water (in cubic miles)
Oceans	321,000	3,100
Ice Caps and Glaciers	0	5,773
Groundwater	2,526	2.5
Lakes	0	42.3
Rivers	0.006	0.002

What is the main difference between the water in oceans and the water in rivers?

A Oceans have salt water, while rivers have much more fresh water.

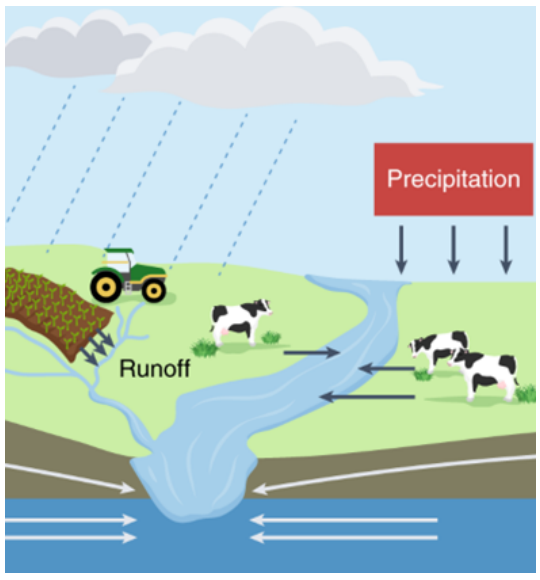
B Rivers have salt water, while oceans have fresh water.

C Both rivers and oceans have the same type of water.

D Oceans have much more fresh water than rivers.

Item	BA-2_Grade 5_07
Identifier	I-SCI-F-S000026_C22826
Standards	SCI.5.5-ESS3-1

People living in a small town can no longer use a river for swimming and fishing. Scientists have discovered high levels of nutrients called nitrogen and phosphorus in the river. These nutrients can be harmful to humans. The scientists find out that the nitrogen and phosphorus come from a farm that borders the river. The picture shows the area where the farm is located.



The scientists know that:

- The farmers use fertilizer and animal waste that contain phosphorus and nitrogen.
- Crops absorb phosphorus and nitrogen. These nutrients help the plants grow.
- The crops cannot absorb all the phosphorus and nitrogen.
- The phosphorus and nitrogen that are not absorbed can get into the river.

How can the farm lower the amount of nitrogen and phosphorus entering the river while keeping crops healthy?

A Reduce the amount of crop farming being done on the land.

B Plant trees, shrubs, and other plants near the water.

C No longer use any kind of chemical fertilizers for the crops.

D Bring in more animals to the farm.

Item	BA-2_Grade 5_08
Identifier	I-SCI-F-S000026_C47679
Standards	SCI.5.5-ESS3-1

Scientists in a large town in the Northeast annually evaluate their air quality. They noticed that over the past few years, as the population of the town has increased, so has the air pollution. To prevent air pollution from getting to an unsafe level, the town formed a committee to propose changes. They produced the following ideas:

- Shop and building owners can receive a tax credit for installing solar panels to provide electricity.
- Recycling bins can be provided to homeowners to prevent the burning of trash.
- Bike paths can be created to allow people to bike instead of drive cars.
- The town bus system can be expanded to allow more people to commute instead of drive.
- Small compost bins can be provided to homeowners, which can be collected for composting in a central location.

Which one of the following ideas would be the **BEST** way the town can help places of business in the community to reduce air pollution in their town?

A Ride a bike, jog, or carpool to work rather than driving alone in the car.

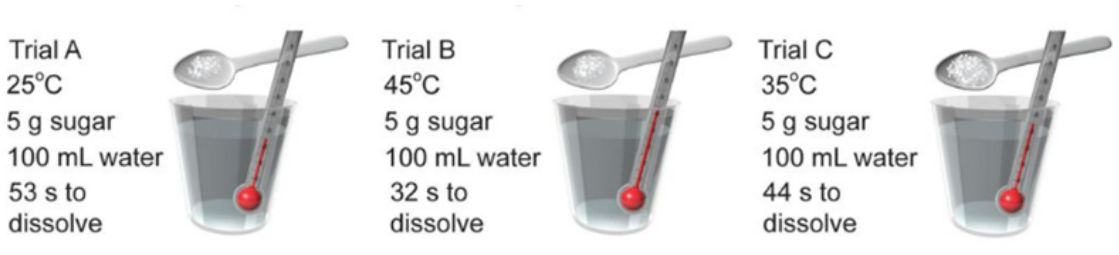
B Do not throw away trash, burn it out in the yard so waste is reduced.

C Install solar panels on rooftops of building and homes for electricity needs.

D Stop all food deliveries so there is no food waster that needs to be composted.

Item	BA-2_Grade 5_09
Identifier	I-SCI-F-S000026_C60803
Standards	SCI.5.5-PS1-1

Sarah sets up an experiment where she mixes a spoonful of sugar in three different cups of water with different temperatures. She adds a spoonful of sugar to each different temperature cup of water, stirs the mixture and times how long it takes the sugar to no longer be seen.



Why is Sarah unable to see the sugar after she mixes it with the water?

A The sugar changes from a solid to a gas state of matter which can’t be seen.

B The sugar evaporates and leaves the water.

C The sugar clumps together at the bottom of the cup where it can be seen.

D The sugar dissolves in the water into smaller pieces which can’t be seen.

Item	BA-2_Grade 5_10
Identifier	I-SCI-F-S000026_C77753
Standards	SCI.5.5-PS1-1

A teacher takes a blue paper napkin, wads it up, and then places the wadded-up napkin in the bottom of a glass. The teacher then turns the glass upside down and pushes the glass into a bowl of water until the glass is completely under water. The students notice that while the water level in the bow rises, no water enters the glass, and the napkin stays dry.

Which statement explains why the water did not enter the glass?

- A The water was blocked from entering the glass by air particles which were trapped in the glass but are too small to be seen.
- B The teacher put the glass in the bowl too quickly and the water did not have time to enter.
- C The glass opening was too small for water to go in.
- D There wasn’t enough water in the bowl to go into the glass.

Item	BA-2_Grade 5_11
Identifier	I-SCI-F-S000026_C07124
Standards	SCI.5.5-PS1-2

A class designs an experiment to test the effect that melting and freezing may have on substances. They use an ice cube, a bowl of ice cream, and a stick of butter. They weigh all the items to begin the experiment and then set them on a heating plate to melt them. After they melt each substance, they weigh and record their measurements and then place each substance in a freezer. After each item was frozen, they then weigh and record their data.

	Weight at the Beginning (ounces)	Weight after Melting (ounces)	Weight after Freezing (ounces)
Ice Cube	2	2	2
Ice Cream	8	8	8
Stick of Butter	4	4	4

Which claim is **BEST** supported by the evidence from the three experiments?

A. Changing the state of matter will always change the weight of the sample.

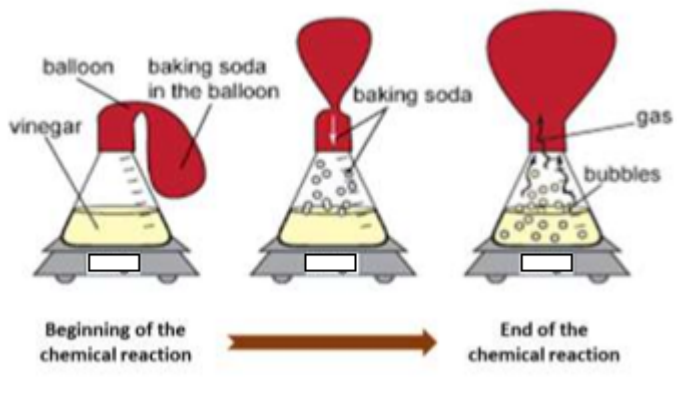
B. Changing the state of matter of a substance will have no effect on the shape of the sample.

C. Changing a substance from a solid to a liquid, or liquid to a solid will not change the weight.

D. Changing a substance for a liquid to a solid will change the color of the substance.

Item	BA-2_Grade 5_12
Identifier	I-SCI-F-S000026_C06526
Standards	SCI.5.5-PS1-2

A teacher does a demonstration for her class where she pours some vinegar into a flask. She then puts some baking soda into an uninflated balloon and attaches the balloon to the flask and places the flask on a scale. She records the weight of the flask, balloon, and baking soda. She then lifts the balloon up allowing the baking soda to fall into the vinegar which cause a chemical reaction as seen in the diagram. The class observes bubbles forming filling up the balloon with a gas.



What do you expect to happen to the weight shown on the scale during this process?

- A The weight shown on the scale will get larger as the balloon blows up.
- B The weight shown on the scale will get smaller as the gas goes from the flask to the balloon.
- C The weight shown on the scale will move up and down as bubble form and then go into the balloon.
- D The weight shown on the scale will not change from the beginning to the end.