



Name:

8th Grade Science Worksheet
Final Review :Topic (2) Chemical Reactions

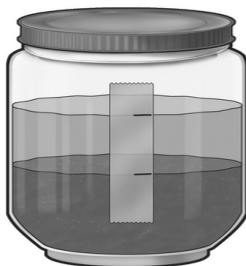
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Use the information below to answer questions 1 and 2.

Jasmine has been reading about mixtures and how they can be classified.

Write the letters of the correct answers on the lines at left.

- _____ 1. After reading about the kinds of mixtures and their characteristics, Jasmine wants to know how a heterogeneous mixture is different from a homogeneous mixture. What is the main difference between these two kinds of mixtures?
- A. In a heterogeneous mixture, the components are not evenly spread throughout the mixture. In a homogeneous mixture, the components are evenly spread throughout the mixture.
 - B. In a homogeneous mixture, the components are not evenly spread throughout the mixture. In a heterogeneous mixture, the components are evenly spread throughout the mixture.
 - C. In a homogeneous mixture, the components are easy to see and are well mixed so the components show up in different parts of the mixture.
 - D. In a heterogeneous mixture, the components are difficult to see and are spread out uniformly throughout the mixture.
- _____ 2. After reading that a solution is a homogeneous mixture, Jasmine wondered about her favorite morning drink, grape juice. Which statement about the solution that makes up grape juice is true?
- A. Sugar is the solvent, and water is one of the solutes.
 - B. Water is the solvent, and sugar is one of the solutes.
 - C. Grapes are the solvent, and water is one of the solutes.
 - D. Sugar is one of the solvents, and grapes are one of the solutes.
3. Julia has been studying the best ways to separate different kinds of mixtures. After learning about how mixtures are classified, Julia saw a picture and immediately knew how it was classified. Look at the image. Then, circle the words that complete the sentence below to identify the kind of mixture shown and the best way to separate it.





This mixture is classified as a(n) (**colloid / suspension / filter / evaporation**), and the best way to separate it is by (**evaporating / colloidal / suspending / filtering**) it.

Write an answer for the following question in the space provided.

4. Derrick decided to research what factors might affect the properties of the solubility of a solution. After completing his research, Derrick knew that several factors affected the properties of solubility. Explain the factors that affect the properties of the solubility of a solution.

Use the information below to answer questions 5 and 6.

Earlier in the day, Will learned about the kinds of changes in matter that can take place.

Write the letter of the correct answer on the line at left.

- _____ 5. Later that day, Will made toast and buttered it, but then he left the butter out on the warm stove. What kind of change would most likely take place with the butter?
- A. chemical
 - B. physical
 - C. liquid
 - D. solid

Write an answer for the following question in the space provided.

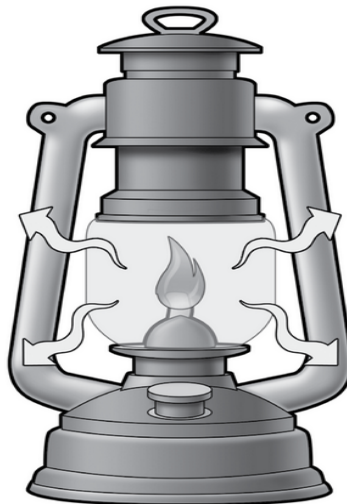
6. Will wanted to explore these changes in more depth, so he compared the two kinds of ways matter changes and how they differ. He recorded his findings in his science notebook. What are the ways in which matter changes, and how do they differ?



Write the letter of the correct answer on the line at left.

- _____ 7. Macy has been studying physical and chemical reactions in school. She read about chemical reactions and how energy is either required or released during chemical reactions. Which word describes the direction of heat flow illustrated in the picture?

A. chemical
B. endothermic
C. exothermic
D. physical



Circle the words that correctly complete the sentences.

8. After having studied chemical reactions in school, Jose knew that when oxygen and hydrogen gases combine in the correct amounts, the combination yields a new substance, water. The hydrogen and oxygen are (**products / reactants / synthetics / polymers**) while the water is the (**product / reactant / synthetic / polymer**).

Write the letters of the correct answers on the lines at left.

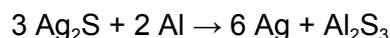
- _____ 9. Alex saw a rusty old car in an abandoned lot. Because he had recently read about chemical reactions, he began to wonder how the rust formed. What happened to cause the rust on the steel car?
- A. A physical change took place in the steel of the car to form rust.
B. Oxygen in the air reacted with the paint on the car and formed rust.
C. Oxygen in the air chemically combined with the iron in the steel to form rust.
D. A decomposition chemical reaction took place when the iron in the steel mixed with oxygen to form rust.



- _____ 10. After learning about the law of conservation of mass, Remy began to wonder about how to best test this law. She wanted to show that the amounts of matter did not change but produced an equal amount of a different kind of matter. What is the best way to study this law?
- A. in a homogeneous mixture
 - B. in a heterogeneous mixture
 - C. in an open system
 - D. in a closed system

Circle the words that correctly complete the sentence below.

11. After learning about the law of conservation of mass, Sammy became interested in balancing equations. He knew that the symbol for aluminum was Al and silver tarnish was Ag_2S . He also knew that mixing the two chemicals yielded pure silver, or Ag, in an aluminum sulfide solution. Here is the equation showing this reaction:



This equation is (synthesis / unbalanced / replacement / balanced), and it represents a(n) (unbalanced / balanced / synthesized / replaced) chemical reaction.

Write the letters of the correct answers on the lines at left.

- _____ 12. Calvin was using super glue one afternoon after learning about synthetic materials. He understood that chemists create different kinds of new products based on their knowledge of the properties of substances and how they react with each other. What kind of product is super glue?
- A. accidental
 - B. developed
 - C. exothermic
 - D. planned
- _____ 13. Luisa likes to drink water from a plastic bottle. She knows the bottles were formed from synthetic polymers that were created in a chemical reaction. She also knows that synthetic materials can cause problems. Which statement explains the kind of problem that can develop from using synthetic materials such as plastic?
- A. Plastics have changed the way people use materials.
 - B. Plastics have made the lives of people easier.
 - C. Plastics have contributed to more pollution.
 - D. Plastics have made more work for people.



14. Robert read more about food preservatives after studying synthetic materials in school. He wanted to know more about the way food preservatives interact and their effects. Read each of the phrases that describe benefits and drawbacks of using synthetic food preservatives. Use the graphic organizer to place each phrase in the correct column.

cheaper to produce in large amounts • affects health • keeps food fresh longer • unknown effects in the future • can make food safer • can substitute for unavailable or scarce foods

Benefits	Drawbacks

Final Review :Topic (3); Describing Motion and Force

_____ 1. Suppose a bulldozer is being hauled on the back of a flatbed truck at 50 km/h to a construction site. From which reference point would the bulldozer not appear to be moving?

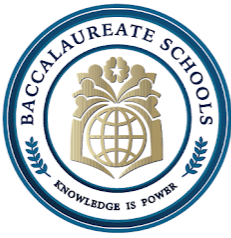
- A. the road
- B. a traffic light
- C. the truck driver
- D. a roadside tree

_____ 2. Carmen is helping load furniture and boxes onto a moving truck. She picks up boxes of her things, places them on a cart, and pushes the cart to the moving van. Which term best describes the type of force Carmen is using?

- A. contact
- B. friction
- C. gravity
- D. noncontact

_____ 3. Ahmed saw all of these things as he walked to school this morning. Which one is an example of a force pushing downward toward the ground?

- A. A bird sat on a telephone wire.
- B. A woman moved her child from one place to another in a wagon.
- C. A man pulled weeds in his garden.
- D. A dog tugged on a rope held by a child.



- _____ 4. Mr. Wang works in a recycling center. Recyclable materials arrive at the center mixed together. Workers use magnets to separate steel cans from other items. Which two statements are true about the force between a steel can and a magnet?
- A. Gravity pushes the can toward the magnet.
 - B. The force between the can and the magnet is a noncontact force.
 - C. The attraction between the can and the magnet is a pull.
 - D. The attraction between the can and the magnet is a push.

Use the information below to answer questions 5 and 6.

Keisha has two large dogs and a small dog. The dogs like to play tug-the-rope with each other. Each of these three diagrams shows one way that the dogs play together with the rope.



Look at each arrow and the number that goes with it. They show the direction and amount of force each dog exerts on the rope.

- _____ 5. Look at the middle diagram, where the large dog and the small dog tug on the rope. Which statement correctly explains the amount and direction of the net force acting on the rope, and in which direction the rope will move?

- A. The net force is 8 N to the left, and the rope will move to the right.
- B. The net force is 8 N to the left, and the rope will move to the left.
- C. The net force is 32 N to the left, and the rope will move to the left.
- D. The net force is 32 N to the right, and the rope will move to the right.

Write an answer for the following question in the space provided.

6. Explain whether the forces shown in each diagram are balanced or unbalanced. Use math-based evidence to support your claim for each diagram.