

**Matter Study Guide** Name: \_\_\_\_\_

1. Mrs. Shafer is making ice cream for her class. She will use 40g of sugar, 350g of milk and 20g of vanilla. What will be the weight of the ice cream after it is frozen? (Show your work!)
2. Christy measured the mass of an empty cup. The mass of the cup was 200 grams. She filled the cup with some water and measured the mass again. The total mass was 275 grams. Christy put the cup with the water in the freezer. After the water froze, what was the mass of the cup?
3. An ice cube melts and then evaporates. The ice cube and the water vapor have the same \_\_\_\_\_.
4. The mass of a cake is 25 grams. The cake is cut into 4 equal pieces. When weighing the four equal pieces together, what would be the mass of the cake?
5. Write down two examples that would show a new substance being formed (chemical change).
6. What are two ways you can know a chemical change has taken place?
7. Acid in the stomach digesting food is an example of a chemical change. Why is this an example? (Give at least two reasons.)
8. Rust is an example of a \_\_\_\_\_ change. Why is rust classified as this type of change?
9. When a substance changes from a solid to a liquid, \_\_\_\_\_ has taken place.
10. Give two real life examples of a change in state of matter.
11. Give two examples of a physical change.
12. How can you change melted chocolate back into a solid?

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**410 GRAMS**

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**275 GRAMS**

3. An ice cube melts and then evaporates. The ice cube and the water vapor have the same **\_MASS\_**.

4. The mass of a cake is 25 grams. The cake is cut into 4 equal pieces. When weighing the four equal pieces together, what would be the mass of the cake?

**25 GRAMS**

5. Write down two examples that would show a new substance being formed (chemical change).

**BUBBLING, FIZZING, VINEGAR AND BAKING SODA, BURNING WOOD, RUST, ASHES, AND SMOKE, ODOR (SMELL), ACID, REACT, COOKING FOOD, TOASTING A MARSHMALLOW, BOILING AN EGG**

6. What are two ways you can know a chemical change has taken place?

**NEW COLOR, DIFFERENT SMELL, LIGHT AND HEAT ARE PRODUCED, A NEW ENERGY IS PRODUCED, BURNING, COOKING, FIZZING, BUBBLING, A NEW GAS, LIQUID, OR A NEW SOLID IS PRODUCED**

7. Acid in the stomach digesting food is an example of a chemical change, why is this an example? (Give at least two reasons)

**THE FOOD IS CHANGED TO A NEW SUBSTANCE**

**ACID IS INVOLVED IN BREAKING DOWN THE FOOD**

8. Rust is an example of a **\_\_\_\_\_CHEMICAL\_\_\_\_\_** change. Why is rust classified as this type of change?

**BECAUSE THE MOLECULES ARE BREAKING DOWN AND FORMING A NEW SUBSTANCE WHICH WAS NOT THERE TO BEGIN WITH.**

9. When a substance changes from a solid to a liquid, **MELTING OR PHYSICAL CHANGE** has taken place.

10. Give two real life examples of a change in state of matter.

**LIQUID WATER CHANGES TO FREEZING WATER**

**BOILING WATER CHANGES TO STEAM**

**WATER CHANGING TO WATER VAPOR**

**ICE MELTING IN THE SUN**

**WATER EVAPORATES ON EARTH AND CHANGES TO A GAS, THEN COOLS AND COLLECTS IN THE CLOUDS (CONDENSATION), AND COMES BACK DOWN AS RAIN (LIQUID)**

11. Give two examples of a physical change.

**PAPER BEING RIPPED**

**SMASHING A PLASTIC CUP**

**CUTTING A CAKE TORN**

**PIECE OF FABRIC**

**POPPING A BALLOON**

**HAIR CUT**

**BREAKING A**

**BRICK**

**BREAKING A PLATE**

**BREAKING A BONE**

**FREEZING WATER**

12. How can you change melted chocolate back to a solid?

**PUT IT IN THE FREEZER OR REFRIGERATOR**