

Chapter 6 Science Test Name: _____

- 1) Westley is comparing liquids. Which property shows the difference between a 100 ml cup of milk and a 100 ml cup of water?

Volume

Hardness

Color

State

- 2) Rugen and Humperdinck carefully observe two objects: a plastic beach ball and a concrete brick. They observe that the brick is small enough to fit inside the beachball.

Based on what **you know** about bricks and beach balls, **along with they have observed**, which statement correctly compares the two objects?

The brick has a greater mass and volume than the beach ball.

The beach ball has a greater mass and volume than the brick.

The beachball has a greater mass, but the brick has a greater volume.

The brick has a greater mass, but the beach ball has a greater volume.

- 3) Max and Valerie are investigating the properties of water.

Which of the following solids will dissolve in water?

Select **TWO** choices

Sand

Iron filings

Salt

Pepper

Sugar

Broken glass

For numbers 4-7, choose one of the properties of matter from the list below that you could use to separate each mixture that is identified.

Particle size

Magnetic attraction

Shape

Color

Gaseous state

- 4) A box filled with red and blue Lego pieces. _____
- 5) A tray with a mixture of cylinders, pyramids and cubes. _____
- 6) A pile of paper shreds and paper clips. _____
- 7) A bucket of beach sand and pebbles. _____

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8) When scientists study matter at the **smallest** (or most basic) **level**, they study the interactions and properties of.....

Atoms and solutions

Molecules and atoms

Mixtures and solutions

Solids and compounds

9) Cummerbund and his family have breakfast together every Saturday morning. Which answer is an example of a change caused by an increase in thermal energy (heat)?

A stick of butter is cut into smaller pieces

Pancake mix and milk are mixed together in a bowl

Milk and juice are poured into glasses

Eggs are fried on the griddle

10) Molasses is a thick, sticky, sweet liquid (sort of like honey). Fezzick and Max are going to try to dissolve some molasses in a bowl of water. What can they do to make the molasses dissolve more quickly? **(Pick TWO answers)**

Use a fan to blow on the mixture

Use a smaller bowl to mix it in

Heat the water up

Use less water and more molasses

Stir the mixture

11) Fezzick and Inigo want to separate a small pile of wood chips and sand into separate piles. Which of these methods will allow them to separate the wood chips and sand from one another? **(Pick TWO answers)**

Pour the mixture through a sieve or strainer.

Pass a magnet through the mixture.

Put the mixture in a big pail of water.

Use their fingers or a set of tweezers to pick through the pile.

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- 12) Vizzini claims that he has a box full of atoms AND that, for a dollar, he will let you view the atoms with his hand lens. Why is this a scam?

The box is too big to hold atoms.

Atoms will not fit in the box.

Individual atoms are too small to be seen using a hand lens.

Boxes can only hold solids.

For 13-16, tell whether the situation describes a CHEMICAL CHANGE or a PHYSICAL CHANGE.

- 13) Putting paper through a paper shredder: _____
- 14) Putting juice in popsicle molds into the freezer: _____
- 15) Frying an egg in a hot pan: _____
- 16) An old potato rotting in the potato bin: _____
- 17) What is the difference between a **mixture** and a **solution**?

- 18) Buttercup is throwing a big ice cream social to celebrate her **August** wedding to Prince Humperdinck. She has lots of tables around the room with ice cream and toppings for all the guests. If the air conditioner in the ballroom stops working in the middle of the party, what will happen to the big bowls of ice cream that have been placed on the tables around the room? What kind of change is this?

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#19-21..... There are TWO things to do to fully answer each question.

19) What state of matter has no fixed shape but has a fixed volume? _____

Draw a model/picture of its molecules

20) What state of matter has a fixed shape and a fixed volume? _____

Draw a model/picture of its molecules

21) What state of matter takes the shape of its container and has no fixed volume? _____

Draw a model/picture of its molecules

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Bonus question: (up to 5 free points) (2 parts)

(4 points) Thinking about the 3 states of matter that we studied, what are **the 4 changes** that occur when matter changes from one state to another?

Be sure to include:

- the name of the change,
- the state it changes from, and
- the state that it changes to.

(5th point) What change usually is responsible for these 4 changes occurring?