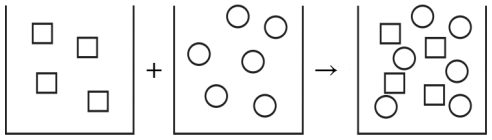
Physical Science Review Sheet – Matter & Physical Properties

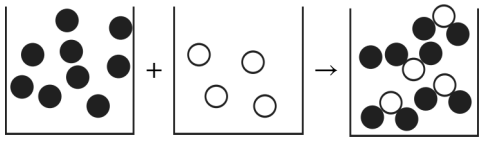
Name: _____ **Date:** _____

1. The four diagrams below model the results of mixing atoms of different substances. Each atom is represented by a different symbol. Which diagram correctly models a chemical change?

A.



B.



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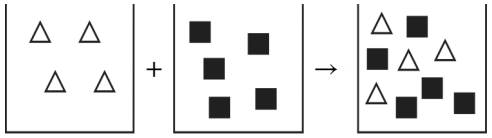

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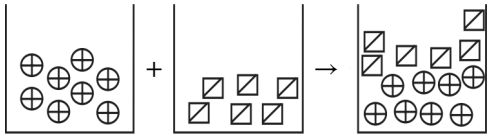


2. Water vapor changes to liquid water during which process?

A. dissolving B. melting

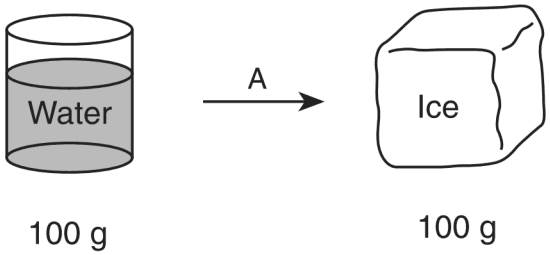
C. evaporation D. condensation

3. The tiny particles that make up all matter are called

A. genes B. atoms

C. minerals D. cells

4. Base your answers to the questions on the diagram below and on your knowledge of science. The diagram shows a phase change represented by letter *A*.



State the term for the phase change that occurs at *A*.

5. Which action forms a different chemical substance?

A. crushing a rock

B. burning a piece of wood

C. mixing salt and pepper

D. melting an ice cube

6. Sand and iron particles that are similar in size and color are mixed together in a beaker. What would be the best method of separating the particles?

A. Use tweezers to separate them.

B. Use a magnet to separate them.

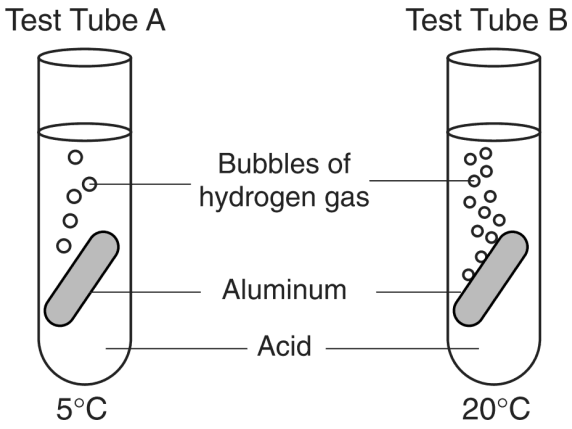
C. Add water to the mixture.

D. Pour the mixture into a filter.

7. A student is given a mixture of salt, sand, and iron filings. Explain *two* laboratory methods that the student could use to physically separate some of these substances.

8. Base your answers to the questions on information below and on your knowledge of science.

Equal-sized pieces of aluminum were placed in test tubes containing equal volumes of acid, at different temperatures. The temperature of the acid in test tube A is 5°C. The temperature of the acid in test tube B is 20°C.



What observation would indicate that a chemical reaction is taking place in the test tubes?

9. Which equipment will best separate a mixture of iron filings and black pepper?

A. magnet B. filter paper

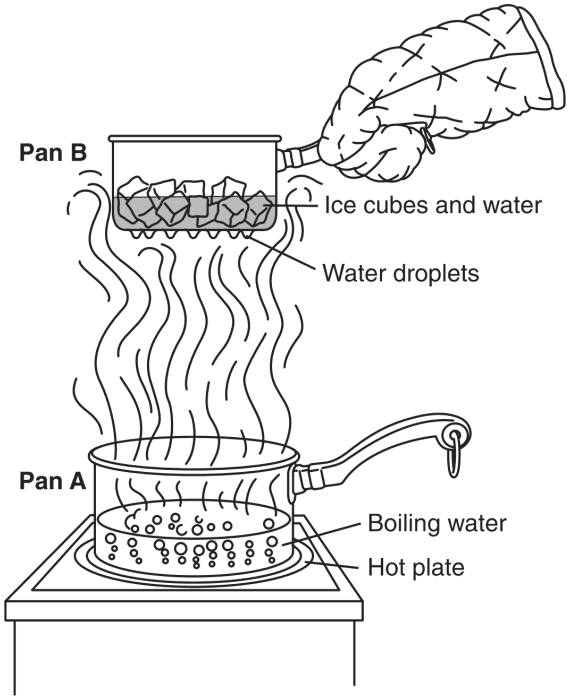
C. triple-beam balance D. voltmeter

10. Which model is used by scientists to determine the properties of elements?

A. a Punnett square B. the Periodic Table

C. a pedigree chart D. the rock cycle

11. The diagram below shows an activity performed by a student in a classroom.



Complete the chart below by identifying one phase change that is occurring at each location.

Location	Phase Change Occurring
Pan A	
Pan B	

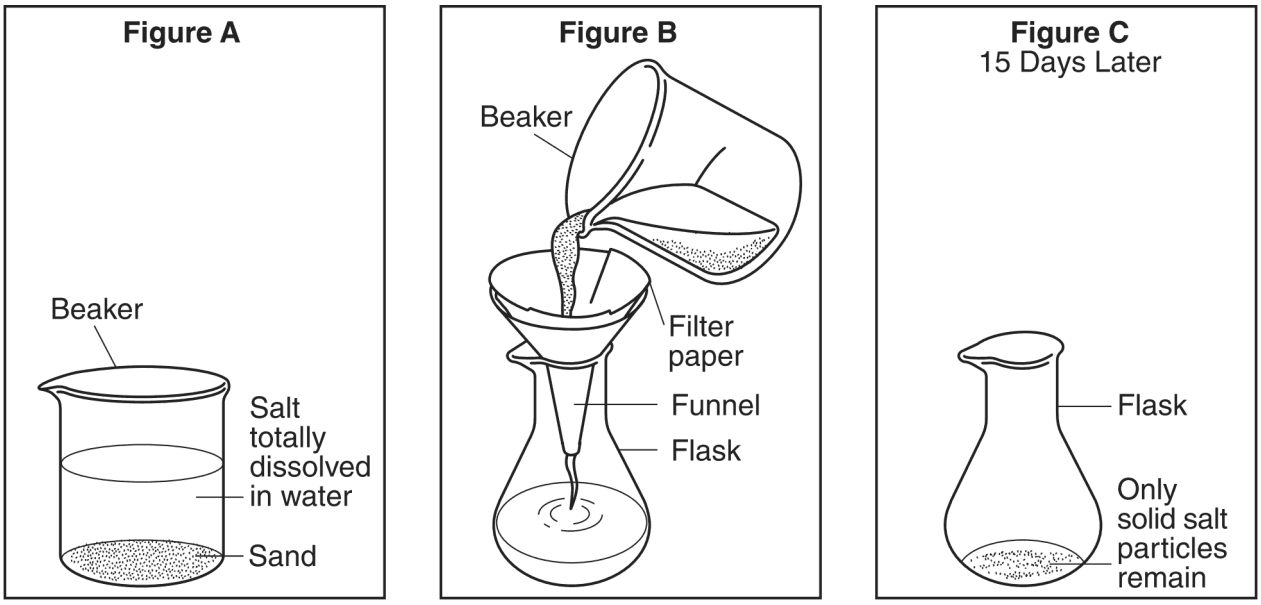
12. A teaspoon of dry coffee crystals dissolves when mixed in a cup of hot water. This process produces a coffee solution. The original crystals are classified as a

A. solute. B. solvent.

C. reactant. D. product.

13. Base your answers to the questions on the information and diagrams below and on your knowledge of science.

Figure *A* shows a beaker containing water, sand, and salt. The salt is totally dissolved in the water. Figure *B* shows the contents of the beaker being poured through filter paper in a funnel over a flask. Figure *C* shows the same flask after sitting at room temperature for 15 days. After 15 days, the flask contains only solid salt particles.



Identify the soluble material, the insoluble material, and the solvent in the beaker in figure *A*.

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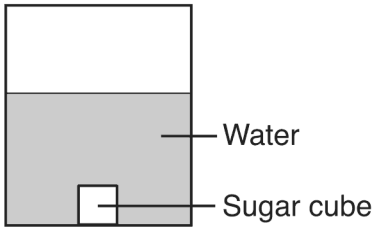
14. All matter is made up of particles called

A. cells
B. molecules
C. atoms
D. compounds

15. Which property of a substance indicates whether the substance is a liquid or a solid at room temperature?

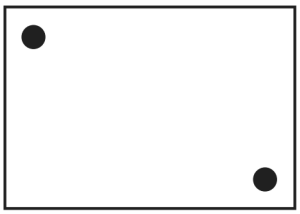
A. melting point
B. electrical conductivity
C. flexibility
D. solubility

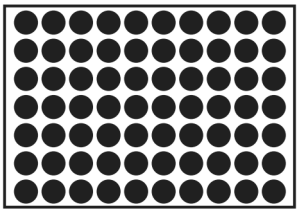
16. The diagram below shows a sugar cube that has been placed in a container of water. The sugar cube will dissolve in the water.

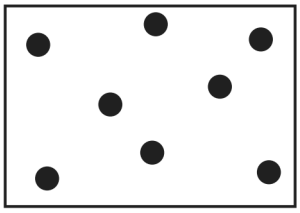


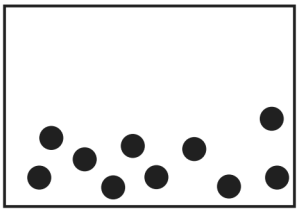
Describe *two* ways to make this sugar cube dissolve more quickly in the water.

17. Which diagram best represents molecules of matter in the solid phase?

A. 

B. 

C. 

D. 

18. A substance in the solid phase (state) of matter has

A. a definite shape and a definite volume

B. a definite shape, but no definite volume

C. no definite shape, but a definite volume

D. no definite shape and no definite volume

19. All of the liquid from a test tube is poured into a beaker, as shown in the diagram below.

Compared to the liquid that was in the test tube, the liquid in the beaker has

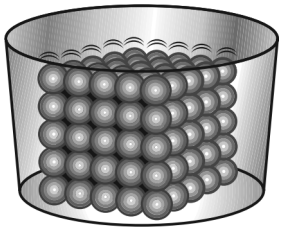
A. a different volume, but the same shape

B. a different volume and a different shape

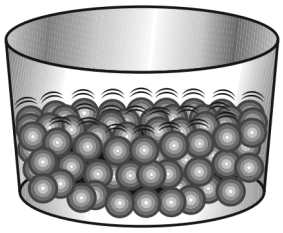
C. the same volume, but a different shape

D. the same volume and the same shape

20. Diagrams *A* and *B* show models of how the molecules of the same substance are arranged in two different phases of matter.



A

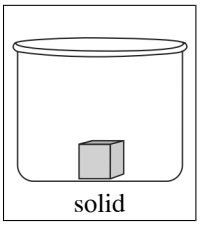
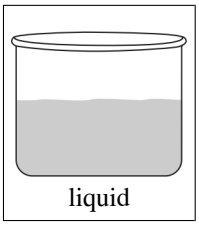
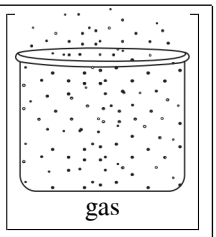


B

(Not drawn to scale)

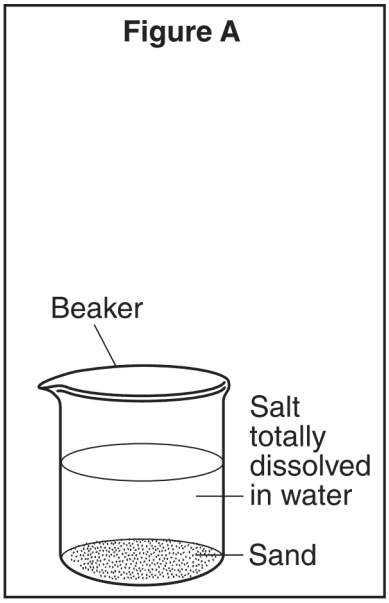
Which phases of matter are represented by diagrams *A* and *B*?

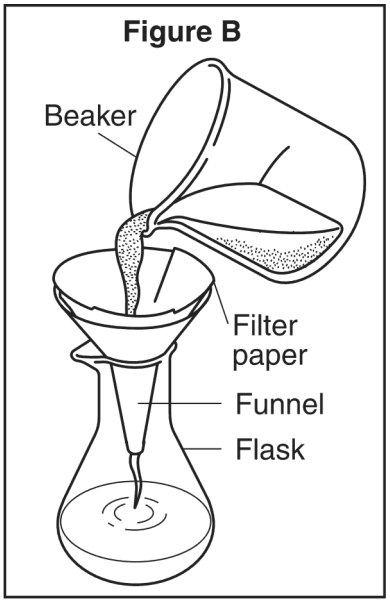
21. The drawings on the top row of the chart below represent water in its three phases (solid, liquid, and gas) in open containers. Complete this chart by filling in the answers that correspond to the drawing at the top of each column and the question in each row. Make sure you fill in an answer in every empty box.

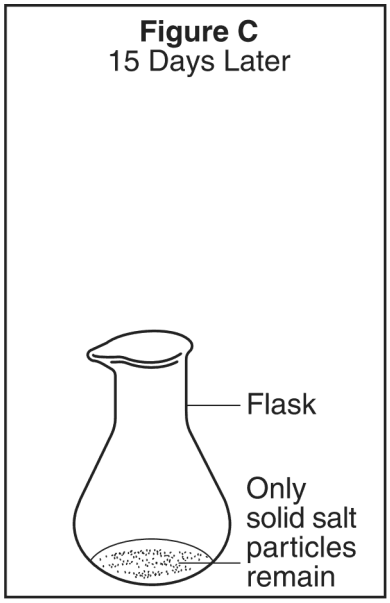
	 solid	 liquid	 gas
Does this phase of matter have a definite shape? Write *Yes* or *No* in each box.			
Does this phase of matter have a definite volume? Write *Yes* or *No* in each box.			
How do these phases rank in order of the relative speed of their particles? Rank them *1*, *2*, *3*, with 1 having the slowest particles and 3 having the fastest particles.			

22. Base your answers to the questions on the information and diagrams below and on your knowledge of science.

Figure *A* shows a beaker containing water, sand, and salt. The salt is totally dissolved in the water. Figure *B* shows the contents of the beaker being poured through filter paper in a funnel over a flask. Figure *C* shows the same flask after sitting at room temperature for 15 days. After 15 days, the flask contains only solid salt particles.

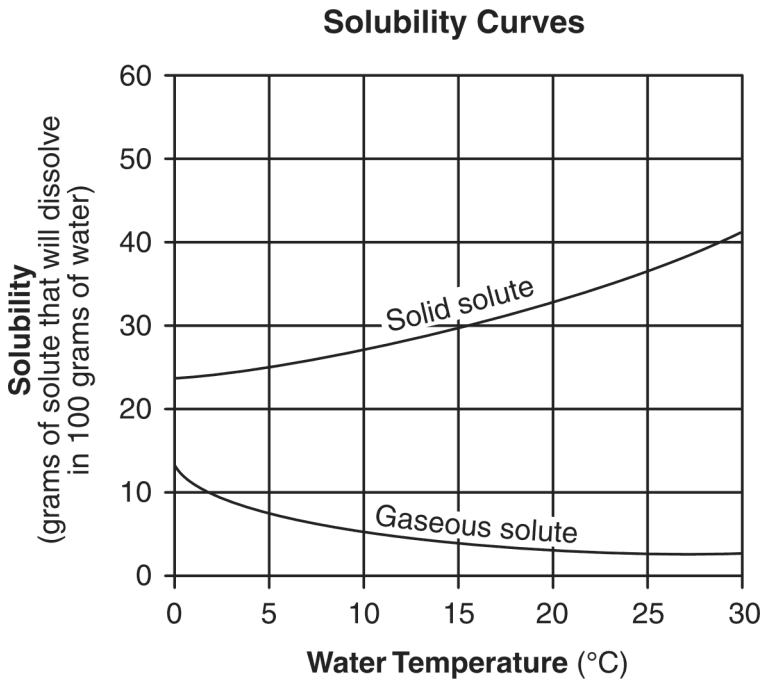






Explain why only solid salt particles remain in the flask in figure *C*.

23. Base your answers to the questions on the graph below and on your knowledge of science. The graph shows the solubility curves for a solid solute and a gaseous solute.



State *one* way to increase the rate at which a solid solute dissolves in 100 grams of water.

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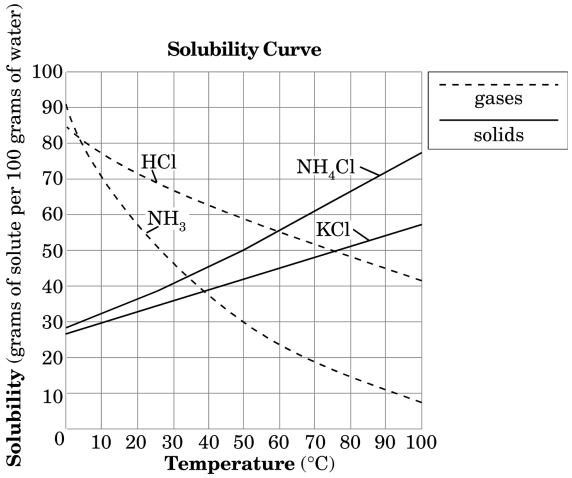
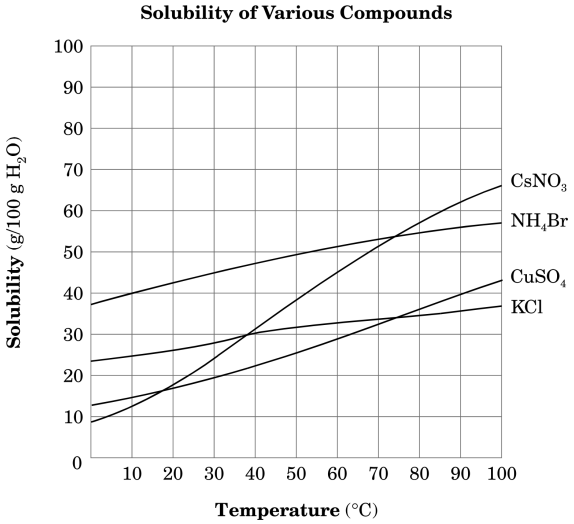
24. 

Which solute exhibits the *least* response to temperature change?

A. NH_4Cl B. KCl

C. HCl D. NH_3

25. This graph shows the solubility curves for various ionic compounds.



Which compound is *most* affected by a change in temperature from 30° C to 50° C?

A. $CsNO_3$ B. NH_4Br

C. $CuSO_4$ D. KCl