Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Structure of Matter Pretest**

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| --- | --- |
|  | **Models are used to represent atoms. The model used today is not the same as the model used 200 years ago. Which statement is the most accurate explanation for the change in the atomic model?** |
|   | A.  | Scientists conducted further experiments on atomic structure and science conclusions may change as new evidence is found. |
|   | B.  | Scientists in the past did not have modern equipment used to study atoms; therefore, the conclusions were automatically flawed. |
|  | C.  | Scientists conducted further experiments and were then able to make the modern, completely correct model. |
|   | D.  | Scientists in the past could not see atoms, but now that scientists have seen the atom, they have been able to develop the correct, final model.**2. Which of the following physical states has particles that vibrate in place and do not move past their neighbors?**A. GasB. LiquidC. PlasmaD. Solid |
|   | **3. In 1808, a man named Dalton proposed that matter is made of atoms. About 90 years later, Thompson created the "plum pudding" model of the atom, which was later abandoned. In the early 1900's, Rutherford performed an experiment that gave evidence that atoms have a nucleus. Later, Bohr proposed a model that explains how electrons may orbit the nucleus. What does this show about current knowledge of atoms?** |
|   | A.  | These scientists built upon previous knowledge and ideas about atoms. |
|   | B.  | These scientists each had their own ideas about atoms that were unrelated to previous information. |
|   | C.  | These scientists could only contribute scientific knowledge if they got the model of the atom completely right. |
|   | D.  | It takes more than 100 years to make major discoveries in science. |

|  |  |
| --- | --- |
| \_\_\_ 4)  | **Which of the following physical states has particles that move to take the shape of whatever container they are in?** |
|   | A.  | gas |
|   | B.  | liquid |
|   | C.  | molecule |
|   | D.  | Solid |
| \_\_\_ 5)  | **Which is too small to view with a microscope?** |
|   | A.  | an atom |
|   | B.  | a cell |
|   | C.  | one bacteria |
|   | D.  | a single virus |



**6. Students conducted an experiment testing the time it takes food coloring to mix with water. The results of the experiment are summarized in the table above. Which of the following best explains the results:**

1. The coloring mixed faster in A because the molecules in cold water move faster
2. The coloring mixed faster in C because the molecules in hot water move faster
3. The coloring mixed slower in A because the molecules in cold water move faster
4. The coloring mixed slower in C because the molecules in cold water move slower

**7. Why does a balloon full of air pop when it is left by a heater?**

1. The rubber material of the balloon itself melts with a loud bang.
2. The molecules of air inside move faster and further apart as they take on heat energy, causing the air to expand, which pops the balloon.
3. The air inside takes on heat energy, which pops the balloon like a bolt of lightning.
4. When the air in the balloon is heated, molecules of oxygen in the air greatly increase in number. When there are too many the balloon pops.

 **8. Which of the following physical states has particles that move very fast and travel as far apart as they can?**

1. Gas
2. liquid
3. molecule
4. solid

**9. One of the best ways to weaken the bonds holding particles together is by**

1. heat
2. grinding
3. movement
4. pressure

**10. Kim opened a bottle of flowery perfume in the back of the classroom. After a minute, Pat, in the front of the classroom, remarked that she smelled flowers. Which of the following statements best explains Pat's observations?**

A. Particles move through diffusion so Pat smelled the perfume

B. The particles of perfume did not move because not everyone could smell the perfume when Pat did

C. Pat smelled the perfume because she was told she should be able to

D. Pat was mistaken. There could not have been a perfume smell

**11. The theory that explains the movement of particles suggests that**

A. particles do not move

B. only particles of a gas move

C. only particles of a liquid move

D. particles of solids, liquids, and gases move