

## Atomic Practice

Name \_\_\_\_\_

Period \_\_\_\_\_

Instructions: Match the scientist with the correct statement. This activity will help you to know what you need in your presentation.

\* **Aristotle**

\* **J.J. Thomson**

\* **Democritus**

\* **Lord Kelvin**

\* **Antoine Lavoisier**

\* **Ernest Rutherford**

\* **John Dalton**

1. \_\_\_\_\_ imagined that atoms of an object had the same color and texture as the whole object.
2. Because the alpha particle bounced off a positively charged substance, \_\_\_\_\_ discovered it to be a nucleus made of protons and neutrons.
3. The physicist, \_\_\_\_\_, showed that atoms of elements had tiny negative particles. He found that they were repelled by the negative part of an electric field.
4. \_\_\_\_\_ was a shy man that recorded the weather daily for 46 years, producing a total of 200,000 data entries.
5. \_\_\_\_\_ thought that everything was made of different proportions of the 4 fundamental qualities: hot, dry, cold and moist. Various combinations of these gave rise to the four basic elements: earth, fire, water and air.
6. \_\_\_\_\_ Known as the "father of modern chemistry".
7. \_\_\_\_\_ accepted the idea of an element as any material made of only one component.
8. \_\_\_\_\_ identified a compound as any material composed of two or more elements.
9. \_\_\_\_\_ came up with the most modern model of the atom.
10. \_\_\_\_\_ discovered that there is no detectable change in the total mass of materials when they react chemically to form new materials. He measured the mass of a sealed glass container that had tin in it. He burned the tin and found that the container weighed the same as the container that

had the original tin. Air rushed in when he took the glass container off so he guessed that the tin had absorbed some of the air.

11. \_\_\_\_\_ did another experiment where he placed a piece of tin on a block of wood floating in water and covered it with a glass jar. He burned the tin with a magnifying glass and the water level in the jar began to rise. When the reaction was complete, there was less air in the jar. He found that the air originally in the jar (which kept water out before the reaction began) had been consumed in the chemical reaction with the tin.

12. \_\_\_\_\_ found that oxygen gas could not be broken down to simpler substances so he recognized it to be an element.

13. \_\_\_\_\_ shot alpha (positively charged) particles at a gold foil. Most of the alpha particles went straight through the foil and hit a screen that lit up showing location of the alpha particle. An atom is mostly empty space (if the atom were expanded to the size of a huge stadium like the Astrodome, the nucleus would be only about as big as a fly at the center).

14. \_\_\_\_\_ stated that elements are made of tiny particles (atoms) and that the atoms of a given element are identical.

15. \_\_\_\_\_ thought it was possible to form one substance from another by altering the proportions of the 4 basic qualities. He believed that metal could be made into gold (alchemy) under the right conditions.

16. \_\_\_\_\_ came up with the word atom from the Greek phrase *atomos*, which means "that which cannot be separated".

17. The fact that matter is composed of a set number of incredibly small but discrete units called atoms was originally proposed by \_\_\_\_\_.

18. \_\_\_\_\_ had a theory that stated that atoms chemically combine in definite whole-number ratios to form compounds and atoms of different elements have different masses.

19. \_\_\_\_\_ discovered what we know today to be electrons but he knew that the overall charge of an atom was zero.

20. \_\_\_\_\_ came up with the "plum pudding" model of the atom. He thought that an atom was uniform "pudding" of positive charge with electrons, "raisins", sprinkled in to give the overall charge of the atom a net zero charge.