

Goal • Use this activity to build your understanding of the periodic table.

What to Do

Use the clues below and the periodic table on page 50 of your textbook to complete the Element Identities table on the next page. Use those elements to fill in the periodic table on the same page.

Clues

1. **Element A** is a gas produced by photosynthesis and is necessary for life.
2. 2 atoms of **element B** combine with 1 atom of **element A** to produce a compound that covers approximately 70% of Earth's surface.
3. **Element C** has an atomic number twice as great as element A.
4. **Element D** is a halogen found in period 3.
5. **Element E** combines with **element D** to produce a compound often sprinkled on food to enhance taste.
6. 1 atom of **element F** combines with 2 atoms of **element A** to produce a compound that humans exhale.
7. **Element G** is a metalloid with 8 more electrons than **element F**.
8. **Element H** is an alkali metal found in period 2.
9. **Element I** has 3 times as many protons as **element H**.
10. In the energy level diagram for **element J**, there are 5 valence electrons and 2 levels occupied.
11. **Element K** is an alkaline earth found in the same period as **element E**.
12. **Element L** is a noble gas with 2 neutrons.
13. **Element M** has an atomic mass 27 numbers higher than the atomic mass of **element L**.
14. **Element N** is the only element in group 13 that is *not* a metal.
15. **Element O** is found in milk and is important for bone strength.
16. **Element P** is found in the same group as **element O** and has the lowest atomic number of all elements in the group.
17. **Element Q** is found in period 2 and group 18.
18. **Element R** has the same number of valence electrons as **element Q** with 1 additional energy level.
19. The chemical symbol for **element S** is the 11th letter of the alphabet.
20. On the blank periodic table, fill in **elements A** through **S**. **Element T** is the only element left from elements 1 through 20.

