

7. Sulfur (S)



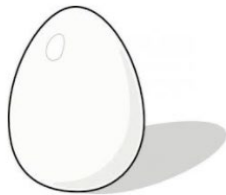
Sulfur is a nonmetallic element found usually as deposits from gases at volcano vents or produced by anaerobic bacteria. Sulfur itself has no odor, but sulfur minerals easily weather in the presence of oxygen to form compounds that have a very distinctive annoying

smell, like a skunk or a rotten egg! Sulfur is unusual because not only is it the only common mineral that is yellow but it is bright yellow. It is in the orthorhombic crystal system, which has three axes at 90° to each other that are unequal in length.

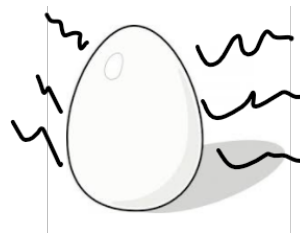
Sulfur is used to make many chemicals, including sulfuric acid, which is important for making fertilizer to help plants grow and as a highly effective electrolyte in car batteries. Sulfur is commonly used as a bleaching agent and for food preservation, in pesticides and fungicides, and to vulcanize rubber, which improves the hardness, elasticity, and durability. Sulfur is an essential component of the antimicrobial medicines developed in the early 20th century called sulfa drugs.

Activities:

K-2: If you have eggs in the refrigerator, give them a sniff to make sure one hasn't gone bad, which you would detect by the sulfurous smell. If you have boiled eggs in the refrigerator, give them a sniff, because the sulfur and iron in the egg can react to have a sulfurous odor (this does not mean that the boiled egg is rotten). Did you find an egg with a sulfur smell? Circle your answer:



No sulfur odor



Sulfur smell

3-5: Sulfur can be recognized by its bright yellow color. Draw a picture of what you think a sulfur crystal might look like, using a bright yellow color. Remember it is in the orthorhombic crystal system, so all the sides are rectangles of different sizes:



7. Sulfur continued

6+: Sulfur crystallizes in the orthorhombic crystal system. The most common crystal pattern has the shape of a trapezoidal prism. Make a 2D view by drawing two trapezoidal prisms, one on top of the other, with the widest parts of the trapezoids sharing the same border (one trapezoid is right side up, the other is upside down, touching each other). Color it yellow.

8+: Find sulfur on the periodic table of the elements. What is its atomic number? _____. What element is above it on the periodic table? _____. What else do you know about sulfur from its position on the table? _____

_____.