

Chemistry of Fireworks WebQuest; SC1c, SC2a, SC3a

The purpose of this WebQuest is to discover the component parts of fireworks, and to identify the chemical compounds that are responsible for the brilliant colors that light up the sky as fireworks explode. You will explore the history of fireworks and find out when the first fireworks were invented. You will learn about firework design and how fireworks are built. You will also find out what chemical compounds are responsible for the colors seen in fireworks. Finally, you will answer a set of questions about fireworks to demonstrate what you have learned about the chemistry of fireworks.

Read through the following set of questions before you begin your Internet research. Navigate to our classroom website and locate this lab to easily access the hyperlinks, or scan the QR codes with your Smart device. As you explore each site, look for answers to the following questions.

1. What exactly is a firework?
2. Where and when were the first fireworks invented?
3. Who were the first Europeans to master fireworks?
4. What type of simple chemical reaction occurs in fireworks?
5. What are the components of black powder? What are the ratios of these components?
6. What three processes cause fireworks to emit light?
7. Describe each of the following: reducing agents, oxidizers and binders.
8. What types of elements are responsible for the colors of fireworks?
9. What is responsible for the whistling sound that often accompanies fireworks?
10. What are the component parts of modern fireworks? What does each part do?
11. What is a thermite reaction and what are the main reactants?
12. Create a table that lists the chemical compounds that create the following colors of fireworks: blue, turquoise, yellow, pink, red, brilliant red, green, bright green, purple, white. You need to use chemical formulas rather than common names of compounds in your table.

[How Fireworks Work](#)



[Anatomy of a Firework](#)



[Chemistry of Fireworks](#)



[Chemistry of Colors](#)



[Chemistry of Thermite](#)

