

Design-A-Firework

Name _____

Go to <http://sciencespot.net/> and click the link for the Kid Zone. Choose Matter & Atoms to find the links to help you complete this assignment.

Site #1: Anatomy of a Firework - Click the link for "Launch Interactive" to complete this section. Click on the parts of the firework to find the answers for each blank.

- A) What are the separate compartments within the shell that contain the stars called? _____
- B) What type of fuses are used? _____ - _____ fuse and the _____ fuse
- C) What do we call the particles that create the flashes of color and light? _____
- D) What elements are used to make black powder? _____
- E) How does the lift charge help a firework? _____
- F) What does the launching tube do? _____

Site #2: NOVA Making Color - Watch the video to answer these questions.

- A) Who changed the black powder recipe? _____ What did they do? _____
- _____
- B) How did this affect the fireworks? _____
- C) What do you need to add to fireworks to make colors? _____

Site #3: Pyrotechnics: It's Elemental - Click the "Launch Interactive" button to view the periodic table and complete the chart.

<i>Symbol</i>	<i>Name</i>	<i>Family</i>	<i>Colors and/or Effects</i>
<i>Li</i>			
<i>Na</i>			
<i>Mg</i>			
<i>Al</i>			
<i>Ca</i>			
<i>Ti</i>			
<i>Fe</i>			
<i>Cu</i>			
<i>Zn</i>			
<i>Sr</i>			
<i>Sb</i>			
<i>Ba</i>			

Site #4: NOVA Lifting Charge -Watch the video and complete the following information.

- A) The gunpowder recipe is _____% potassium nitrate, _____% charcoal and _____% sulfur.
- B) Today, black powder is compressed into marble-sized balls, called _____. These are loaded into _____ to create fireworks displays.
- C) What type of shell is shown in the video? _____
- D) Types of fireworks made from round shells include _____, _____, strobes, _____ salutes, and _____.

Site #5: DIY Fireworks Show

- A) Click to play the game and then select options for your first shell. Click "Test Fire" to see how it looks. If you like the mortar, click "Next" to create a new one. If not, click "Change".
- B) Try the different options to help you answer all these questions.
- (1) Which style resembles a smiley face? _____
- (2) Which element results in a yellow or gold color? _____
- (3) Which length results in the highest fireworks? _____
- C) Show your final show to a classmate and watch their show. How do they compare? Which one do you like the best? Explain.

Done?

- (1) Explore any of the other sites listed on the Chemistry -Matter & Atoms page.
- (2) Try one of the sites listed in the **Chemistry Challenges** section (same page - different column.)