

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.)