

THINKING ON MY OWN

Video: Elements of Destruction

*Cause-Effect Relationships Nonfiction Text Structure
(multiple causes – single effect)*

If you've ever been to a fireworks show at an amusement park, baseball game, Fourth of July celebration, or on New Year's Eve, then you know that fireworks have a mesmerizing magic all their own.

The best part of summer for D'Sean is the Fourth of July celebration in City Park. While he loves the hot dogs, bands, and all the people, the best part of the holiday is at night. His heart pounds with the bangs and bursts of fireworks every time they explode in the sky. The shimmer of the palms and serpentines make those his favorites.

While watching last year's display, D'Sean wondered, "How do fireworks work?" His curiosity led him to check out a great website. He found all the information he was looking for in this fascinating article. D'Sean also realized that it's a wonderful example of cause – effect text structure!

Now it's **Your Turn!** Read **Razzle-Dazzle Science: How Fireworks Work** and create your own *Think Aloud* and Graphic Organizer.

Then compare your thinking with [D'Sean's Think Aloud and Graphic Organizer](#).



Before You Read:

Think about what you may already know about fireworks.
Think about what you've learned about cause-effect relationships.
Then, jot your ideas.

While You Read:

As you read this passage, ask yourself, "Am I making sense?" Look for signal words that can help you determine the causes and their effect. You may want to highlight signal words in blue. Highlight the causes in orange and the effect in green. (You may use any colors available to you – just remember your color scheme!)

After You Read:

- Now it's time to try Thinking Aloud on your own. Ask yourself this question, "How do fireworks work?"
- Use the information you've learned from this passage and Cause-Effect Relationships Nonfiction Text Structure to explain how you determined how fireworks work.

Razzle Dazzle Science: How Fireworks Work

Evening falls on the fourth of July. Everyone looks to the sky for the first bang, burst and beauty of a fireworks display. With a lighting of a fuse, the combination of metals, oxygen and human innovation create a breathtaking show.

Metal particles give fireworks their vibrant colors. Calcium produces orange, while sodium produces yellow. Red is created by strontium and lithium. Mixed with gunpowder and a fuel, these metals are packed in a shell. The shell is placed in a paper tube with a fuse.

When the fuse is lit, the shell launches. Pressure builds within the shell, causing it to burst. Metal particles scatter, are instantly oxidized, and become cascades of glittering, diamond-like light.

Special effects depend on how innovators pack the shells and allow the gas to escape. Science and art work together to amaze us with brilliant waterfalls, flowers, rings and spiders.





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Create a Graphic Organizer:

After you have determined the multiple causes and the single effect for how fireworks work, create a graphic organizer below to represent your thinking and to help you remember the author's main points.





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Compare your Think Aloud with D'Sean's Think Aloud:

D'Sean's Think Aloud: "The fourth of July is a blast! It's one of my favorite holidays. From the title, I know that the author is going to tell me what *causes*, or makes fireworks work. I really thought about what I'm going to read about when I read the last sentence of the first paragraph. When metals, oxygen and human innovation are combined, they create or *cause* a breathtaking show, the *effect*. I read on to find out how that happens. The metal particles *cause* the bright colors. The oxygen *causes* the bright light, and the special effects are *caused* by the way the shells are packed. I like the palms and serpentines best!"

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Compare your Graphic Organizer with D'Sean's Graphic Organizer:

D'Sean's Graphic Organizer: "Because there are multiple causes that result in a single effect, I use a multiple causes-single effect organizer."

Questions to Think About:

- How do *signal words* help D'Sean make sense of the text?
- How does the *Multiple Causes-Single Effect Graphic Organizer* help D'Sean determine important ideas?
- Why might this process help you make sense of text?
- When might this process be useful?

