

# How do Fireworks Work?

Imagination  
Station

Kia ora explorers!

This worksheet is to help you learn about fantastic fireworks!

Start by watching this LEGO Discover video on YouTube:

<https://www.youtube.com/watch?v=2-jaGF0XK6U>



## QUESTIONS:

When did you last see fireworks?

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Fireworks have been around a long time! Where and when were they invented?

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## Research:

Originally, fireworks were simply exploded by throwing them onto a fire, rather than being blasted up into the air. What kinds of occasions were the first fireworks used to celebrate?

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## Research:

Where was the largest ever fireworks display? Find out how long the display lasted, what it was celebrating and how many individual fireworks were involved.

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## How do Fireworks Work?

### LET'S BUILD IT!

Create a fireworks display, without using any fire! Build, draw, collage... Take it to the next level when you've finished this worksheet and try making a stop motion animation movie to create explosive effects. (**Hint:** you could download the *Lights, Camera, Action!* worksheet.)

### QUESTIONS:

Draw and label the combustion triangle.

A large, empty rectangular box with a thin black border, intended for a student to draw and label the combustion triangle.

Imagine you see a small fire. How could you put it out? Which one of the three elements of combustion are you taking away? (Do some **research** if you need to.)

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What substance is in the lift charge?

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When gunpowder explodes, the sudden pressure inside the mortar causes the shell to...

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## How do Fireworks Work?

What is the middle of the shell called?

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Flash powder burns

faster

slower

than gunpowder, so it makes a

smaller

bigger

explosion. (Circle the correct answers.)

Match the metals with the colours they produce:

Strontium

Green

Copper

Red

Barium

Blue

### Research:

What metal is normally used to produce yellow light?

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### EXPERIMENT:

You can use the build-up of pressure to launch a rocket at home!

You'll need some effervescent (fizzy) tablets, such as Alka Seltzer or Berocca. You'll also need the tube the tablets came in, or if you're really lucky someone might have an old film canister you can use. Make sure you have plenty of room around you and are working on a surface that can get wet and maybe a little sticky—outside is best! (Safety glasses are a good idea too!)

Fill your empty tablet container about a quarter of the way with water. (If you're using a film canister, fill it half-way.) Place the tablet on the inside surface of the lid. Flip the lid onto the container and seal it quickly with the tablet inside, then immediately place the rocket upside down (lid on the bottom) and take a few steps backwards.

### Watch your rocket take off!

Just like a firework, gas is produced and creates pressure. The pressure builds until there's nowhere to go but up!

