

Fun with

# Science!

## Activity Guide



**AMGEN**

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# How to use this booklet

1. Choose a page! Biology, Chemistry or Physics
2. Choose an activity! Use the ⚡ difficulty scale:
  - ⚡ Easiest activities, quick preparation
  - ⚡⚡ More tricky activities, longer preparation
  - ⚡⚡⚡ Tough activities with tougher preparation
  - ⚡⚡⚡⚡ Long-term or very challenging activities
3. Explore the links! All "tinyurl.com" links direct to a webpage with more detailed instructions.
4. Enjoy! How many of the experiments have you been able to try? What's your favourite page? Your favourite activity?

About the sponsors for this booklet:

The logo for Amgen, featuring the word "AMGEN" in a bold, blue, sans-serif font.

Amgen Canada strives to serve patients by transforming the promise of science and biotechnology into therapies that have the power to restore health or even save lives. In everything we do, we aim to fulfill our mission to serve patients. And every step of the way, we are guided by the values that define us.

Amgen Canada is committed to increasing interest in Science among children and youth.

# Biology

the study of life and living things

## Plant a Tree ⚡⚡⚡⚡

Planting a tree is a great way to make a long-term difference. Prepare for a lot of work and detailed planning! Resources and instructions are online at

<http://tinyurl.com/pvawuq7>.

## Engineer Custom Coloured Flowers ⚡⚡

Start out with white flowers - carnations and daisies are recommended, although many white flowers will work. Clip the stems and put the flowers in a cup of water. Add food colouring of choice to the water. Within a few days, you'll notice a colourful difference in your white flowers! Full directions can be found at

<http://tinyurl.com/nrtmzmk>.

## Try a Virtual Lab ⚡⚡⚡

Ever wonder what it's like to be a scientist conducting biological research? Try a virtual lab to gather data and draw conclusions about life around us. A fantastic virtual lab investigating Caribbean anole lizards can be found at <http://tinyurl.com/k748g5z> or check out

the evolution of stickleback fish species at

<http://tinyurl.com/nsx9fcb>.

## Go for a walk! ⚡

Local parks and recreation areas are excellent places to get "back to nature" and experience the outdoors! For a challenge, try to identify species of birds or trees you see along the way. Great lists can be found at <http://tinyurl.com/prtchor> and

<http://tinyurl.com/oqsko25>!

## Homemade Bird Feeders ⚡⚡

An easy way to bring nature to your own backyard! Find some inspiration for homemade bird feeders at <http://tinyurl.com/nn9yl3h>.

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Big Brothers Big Sisters  
of Peel

# Chemistry

the composition and properties of substances

## Ice Cube Tray Battery ⚡⚡⚡

Who knew copper wire, a few nails, vinegar and an ice cube tray were enough to turn on a light? Find out how to turn chemistry into electricity at <http://tinyurl.com/oes28qx>.

## Homemade Slime ⚡⚡

Who doesn't love slime? Check out three different slime recipes: one with liquid starch at <http://tinyurl.com/nw69n7t>, one with cornstarch at <http://tinyurl.com/lmft2or>, and one with Borax at <http://tinyurl.com/lgfv2st>.

## Make "plastic" from Milk! ⚡⚡⚡

Adding a bit of vinegar to milk causes a chemical reaction that isolates casein, a protein that looks and feels a little like plastic. For full directions, see: <http://tinyurl.com/nvhdulq>.

## Make Art with Food Colouring ⚡

Soap has the ability to break fat molecules like those found in whole milk. By adding food colouring to the mix, you can make a scientifically stimulating masterpiece! Find the full directions at <http://tinyurl.com/ok4x8fq>.

## Make Saltwater Drinkable with a Solar Still ⚡⚡⚡⚡

You're stranded on a deserted island, with only ocean water around you. Use evaporation and condensation to create a purifying device! Full directions are at <http://tinyurl.com/kg7jp4j>.

# Physics

matter, energy,  
motion  
and force

## Measure the Speed of Light with Chocolate ⚡⚡⚡⚡

A cool experiment for a math-lover! You can even eat the chocolate afterwards! Find out how at <http://tinyurl.com/oujxogg>.

## Bend Water with Static! ⚡

Harness the power of static electricity to bend the stream of water coming from a tap! Just passing a comb through your hair or rubbing a balloon on your head should produce enough static to see an effect when placed close to a thin stream from a tap. More information is at <http://tinyurl.com/qfmxe8c>.

## Build a Catapult ⚡⚡⚡⚡

Building a catapult is a fun project for those brave enough to take on a challenge. Before starting, make sure you know what safety rules to follow and what materials you'll need. For a variety of catapult designs and plans, visit <http://tinyurl.com/qx989pk>.

## Make an Egg Float ⚡

Eggs don't float in water normally, but by adding salt to water to change its density, you might be able to change that! Full directions are at <http://tinyurl.com/np9vbn>.

# Other Resources!

- <http://camp.wonderopolis.org/>  
An online summer camp experience that guides campers through scientific exploration!
- <http://kids.nationalgeographic.com/>  
Science resources and activities including some great nature photography tips.
- <http://www.nwf.org/Kids.aspx>  
A good website for nature games, apps and activities.
- <http://discoverykids.com/>  
A wealth of videos, games and activities on topics like dinosaurs, animals, space, food and health.
- <http://sciencebob.com/>  
One of the better online resources for quick, easy science demonstrations and experiments
- <http://gowild.wwf.org.uk/>  
A website with fact sheets, games and activities about animals from all around the world.
- <http://wwfgap.org/tracker/species.php?s=1&r=2>  
The World Wildlife Fund's animal tracker, showing the location of GPS-tagged animals including polar bears, walruses and jaguars.
- <http://www.hhmi.org/biointeractive>  
Advanced-level online interactive virtual labs and presentations, for the avid scientist.
- <https://www.ontariosciencecentre.ca/>  
Information about the Ontario Science Centre.
- <https://www.ripleyaquariums.com/canada/>  
Information about Toronto's Ripley's Aquarium.
- <http://www.torontozoo.com/>  
Information about the Toronto Zoo.