

Keatsway Science Fair

Wednesday, February 12, 2020



- Who:** Keatsway students with an interest in science and their families
- What:** A voluntary, non-competitive science fair
- Why:** To pursue personal interests; learn something new about the world around us; develop a love of science; and build creative thinking, problem solving, and planning skills
- Where:** Keatsway gym
- Cost:** A registration fee of **\$4.00 per student participant** to help cover expenses. *The \$4 registration fee, together with a subsidy from School Council, covers the cost of the boards, a medal for each student, and other materials. Please talk to us if the fee is prohibitive.*

If you have questions, please contact Keatsway at 519-886-1650 or parent volunteer organizers Rebecca Steinmann and Jennifer Lhotak at keatsway-science-fair@googlegroups.com.

Schedule

January 23, February 3 and 4

9:00-9:30 am & 3:40-4:00 pm **Registration** in front of school gym. Please bring your completed registration form, the \$4 fee and pick up your display board. *If you cannot attend any of these times, contact us to make alternative arrangements.*

February 12

8:15-9:20 am* Bring projects to gym for **set up**

During school Class visits

3:40 – 4:15 pm** **Presentations:** Participants present their projects to science professionals. Students should be prepared to answer questions and explain their projects in a one-on-one conversation with a science expert.

4:15 – 5:30 pm **Open House:** Keatsway families are invited to the gym to view the projects and appreciate the hard work of the participants. *All student participants are expected to be present until 5:30 pm and should take projects home at that time.*

5:30 pm **Clean-up:** Your help with clean up and stacking tables is appreciated!

Please do not bring live animals or valuable objects to school in the morning. These items may be added to presentations **after school when students are present at their displays.*

***Feel free to send after-school snacks with your child if needed. Note that pizza will not be served this year.*

Keatsway's 2020 Science Fair

General Information

Participating in this event is a great opportunity for students to develop a curiosity about the world around them, to learn more about a topic of interest, and to share their discoveries with their families and the school community.

All students from JK-Grade 6 are welcome to participate, and primary students are encouraged to join in the fun to get an early start on building a love of science. This is a non-competitive science fair. All participating students will receive a certificate and medal as recognition of their work.

While it is important that the projects are student-driven, family support can be very valuable. The objective is for students to learn something new and gain a sense of accomplishment through their efforts, but family involvement may enhance this experience. The supervising adult(s) may facilitate the choice of topic and formulation of a research question, help with the logistics of presenting the results, and of course, provide encouragement along the way.

2020 Theme: Climate Change and the Environment

New this year, we are inviting students to choose a topic either closely related to Climate Change and the Environment or indirectly related to this theme (with a challenge to make the connection between their topic of interest and this theme). Please note that ***this is an optional challenge***—it is more important that students choose a topic of personal interest that will spark their curiosity than one that fits closely with this theme.

We hope that many students (but of course, not all) will want to engage in a topic related to this timely, relevant, and important theme. We encourage families to research these issues (see web links provided below) and learn more about the future of our planet—both how human beings have interacted with the world and the environment in the past, and how we can play a role in improving the health of the planet for generations to come. We trust that parents can help students engage in their topics in age-appropriate ways with a focus on the possibilities for positive change.

Choosing a Topic

Students will enjoy the Science Fair more if they choose a topic of personal interest. Some of the topics listed below are related to the theme of Climate Change and the Environment, and others are not—we have tried to offer you a wide range of ideas...but the possibilities are limitless!

Sample Topics

Animals and Plants

The life cycle of flowering plants
What makes a plant a weed?
Photosynthesis
The Importance of bees
Beneficial vs problem insects
A study of a favourite animal
Arctic animals & climate change
Keystone species
Butterfly migration
The food chain
Invasive animals or plants

The Environment

Plastics in the oceans
Endangered animals
The Greenhouse Effect
Wetlands
Pesticides
Solar energy
The importance of forests
The water cycle
The effects of melting polar ice
Cleaning up oil spills

Machines and Technology

Simple machines
Wind turbines
Electricity
Robots
Photoelectric cells
How an electric guitar works
Computer programming
Rockets
Electric cars
The International Space Station
Communication satellites

Human Body

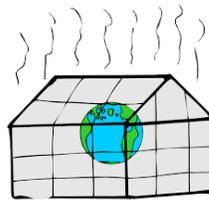
Teeth
Digestive system
Circulatory system
Why exercise?
The brain
How do prosthetic limbs work?
Immune system

Earth and the Universe

The sun
Rocks and minerals
Volcanoes
The Milky Way galaxy
Glaciers
Solar system
Weather
Light
Space exploration
Sound Waves

Food Science

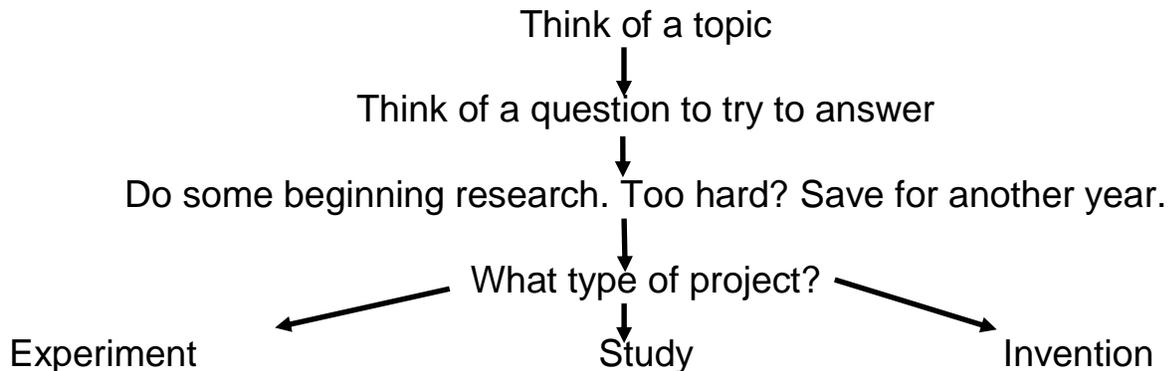
How is maple syrup produced?
Mold growth on food
Bacteria in food – good and bad
Genetically modified foods
Food allergies
Chemical reactions in cooking



The starting point for a project may be asking: Why? What? How? When? or Where? Answering any of these questions regarding a selected science topic can form the basis of an appropriate exhibit.

The next three pages provide planning resources for students to use to help organize their thoughts and research.

HOW TO APPROACH YOUR SCIENCE PROJECT



An experiment involves a test under controlled conditions to discover or demonstrate a fact (test a hypothesis) or general truth. The work might involve multiple trials, observation, recording of the results, and then concluding what the student determines to be the answer to the original question.

Describe what you want to find out or demonstrate.

Identify variables and methods.

Record ALL results, expected and unexpected.

A study is a presentation of research. The information can be obtained from any resource including the library, home, internet or interviewing a scientist. A study is ideal for younger students as they can find topics of special interest and present what they know about the subject. The presentation may include use of props such as pictures, models or other related objects.

More involved studies might also work well for older students who wish to research a complex topic in detail.

An invention is an original project that solves a real-life problem or creates an improvement to everyday life.

Describe what you are trying to make or improve and the purpose of your invention.

Test your invention and keep records of failures and successes.

Even if you can't quite get your invention to work, you can talk about why and how you might improve it.

Analyze results, summarize findings, evaluate invention

Prepare your presentation

Be proud of your accomplishment!
Can you think of ways to make it even better?

Science Fair Project Planning Sheet

For Student Use Only – Do not Hand in

1. My project will be about:
2. The title might be:
3. The question I am asking is:
4. If I'm doing an experiment, I think this will happen (my hypothesis):
5. Books, websites and other references I might use:
6. I'll need these supplies:
7. I might need help with:
8. The first three steps I will do to get started are:
 - a)
 - b)
 - c)
9. What did I find out?

Remember to look to the library for ideas and information. The school library has an excellent collection of science books available. The Waterloo Public Library and Kitchener Public Library branches are also good sources of books full of science project ideas and tips. See the next page for some helpful websites.

Imagine that your project is finished. Draw a picture of what your display will look like.

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Additional Resources to Help You Plan Your Project

The following websites may provide topic ideas, inspiration, and helpful information. The first three links relate to climate change, and the rest are more general.

<https://climatekids.nasa.gov/climate-change-meaning/> (information, activities, videos and more to explain climate change to kids)

<https://earther.gizmodo.com/this-video-is-all-your-kid-needs-to-understand-climate-1826423581> (short video explaining climate change to kids)

<https://www.natgeokids.com/nz/kids-club/cool-kids/general-kids-club/greta-thunberg-facts/> (Who is Greta Thunberg? 10 facts about her)

<https://www.exploratorium.edu/snacks>

<http://www.funology.com/category/science-experiments/>

<http://www.all-science-fair-projects.com/>

<http://billnye.com/?billnyeresourcetax=home-demos>

<http://www.education.com/science-fair/>

<http://madsci.org/experiments/>

<https://sciencebob.com/>

<http://www.sciencebuddies.org/>

<http://www.sciencekids.co.nz/projects.html>

<http://sciencemadesimple.com/>

<http://sciencefair.math.iit.edu/projects/>