

# Pioneer School Science Projects

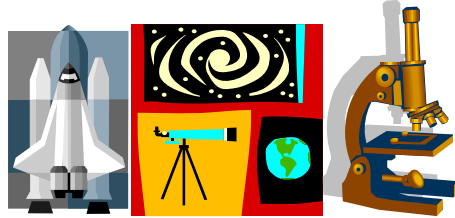
## Science Fair Information Packet

There are many different science projects that you can have fun with and display at the Science Fair including:

- Observations
- Collections
- Models and Demonstrations
- Experiments

This packet includes suggestions on ways to create your science project as well as how you can organize and display the information. If you are doing a science experiment

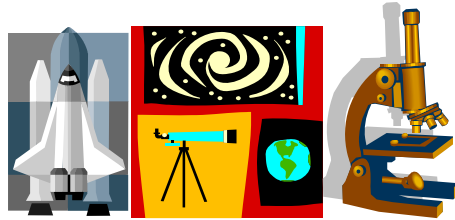
1. Decide on your project (see attached sheet for ideas).
2. Write out your problem and procedure.
3. Gather your materials.
4. Make a prediction about what you think will happen and write it down.
5. Perform your tests or experiments.
6. Record your observations. You can use the attached the Scientific Project Worksheet.
7. See if your original prediction was correct.
8. Record what you learned (on the Scientific Project Worksheet).
9. Use the Worksheet to help you make your poster.
10. Prepare a display board that includes easy to read graphs, tables, and short descriptions. An example of a display board is shown on the next page. You don't have to include as many things as this example; it is just to give you some ideas.
11. Bring your display board to the Science Fair.



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## Example Display Board





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## Scientific Project Worksheet

(This is to help you organize the different parts of your project for your display board.)

Name: \_\_\_\_\_ Grade: \_\_\_\_\_

Project Title: \_\_\_\_\_

Prediction (Hypothesis):

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Equipment and Materials:

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Procedure (what I did):

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Results (what happened):

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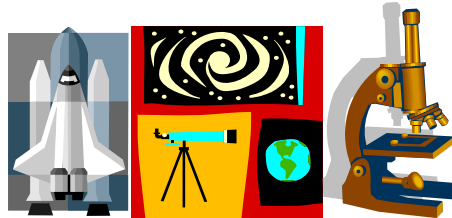
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Conclusions (what I found out):

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## Science Fair Project Ideas

### Environment

- Why are coral reefs dying?
- Investigate turtles and tortoises.
- Investigate sharks.
- Investigate leatherback sea turtles.
- Investigate various aspects of the North Atlantic Right Whale including its threatened status and what we can do to help.
- Investigate the great basin spadefoot toad, a vulnerable species in British Columbia
- How the Marbled Murrelet is threatened in British Columbia
- The farmed salmon and how it damages the environment and your health.
- Exploring dolphins getting caught in nets (bycatch).
- Investigate the endangered salmon and how humans are affecting the salmon by pollution.
- Survey student knowledge of the extinction and endangerment of animals. R The Effect of Antifreeze Type and Concentration on Soybean Growth
- Does Organic Material Affect The Absorbency Of Water In Soil?
- The Effect of Different Detergents on Pea Growth
- The concentration of lead content in drinking water
- The Greenhouse Effect In A Jar
- Compare the absorptivity of different sorbents used for cleaning up an oil spill in water.
- Make a tanker and clean up a vegetable oil spill
- Which type of environment is most affected by an oil spill?
- Oil Absorbency of Polypropylene Pads vs. Natural Products
- The Effect of Water Salinity and Temperature on Oil Spreading Rate S
- Which material cleans oil spills the best?

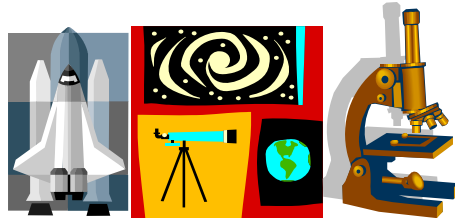
- Test how biodegradable different materials are
- Recycle Discarded Automobile Tires and Create Gardening Sites for Limited Space Areas R
- How much space trash really occupies?
- Research practices and habits that might reduce the amount of wastes created at school
- Do lunch packing materials decompose faster if they are buried in the ground or on top of the ground, and what materials decompose quicker?
- Analyze the various items in weather reports and see if you can determine what factors contribute to high pollution days.
- Pool vs. Jacuzzi: A Study of Bacteria Levels in Water
- Bacterial Content of Water Bottles
- Comparing the Lead Content of Drinking Water in Various Schools

### Food and Our Bodies

- On which foods does fungus grow best?
- How are teeth affected by fluorides and acids?

### Plants and Gardening

- The Effect of Four Common Types of Domestic Water on the Growth of Soybeans
- Determine the effect of different water pollutants on corn.
- The effects of microwaved water on plants
- What kind of soil is best for water retention?
- Will antacids help soil polluted by acid rain?
- What is the percentage of water in various fruits and vegetables?
- Which plants and vegetables make the best dye?
- How does temperature affect the water uptake in celery plants?



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## Physical Sciences

- What are the effects of weight on pendulum swing?
  - Which battery is the best buy?
  - How do pulleys reduce work?
  - What type of materials make balls bounce higher?
  - Which surfaces reflect light?
  - Which shapes float best?
  - Which toilet paper dissolves best in water?
  - Does wick size affect how fast candles burn?
- Which is the strongest paper towel?

## Water Quality

- Can Fabrics Be Used for Water Filters? R
- Does decreasing filter particle size cause less water turbidity?
- The procedure of tap water chlorination S
- Research water quality - compare water pH levels of tap water, purified water and distilled water
- Are our local waters acidic?
- Do our soils show the effects of acid rain?
- What is the lime content of various samples of water?
- Which environmental pollutant - motor oil, used transmission fluid, used antifreeze - has the most effect on
- Discover the effect of different types of reclaimed water on the growth of grass.
- The Effect of Water Acid Levels on the Growth of Radishes
- See if toxins are able to travel through the water cycle. If It remains toxic? How Toxic? Can this effect our crops and does this provide dangers to animal life. R
- Conserving Water and Minimizing Nitrogen Pollution Caused by Nitrate Leaching
- Is recycled water really safe?
- Test for water purification by building your own water conductivity meter
- Cleaning Water of Bacteria Via Silver
- What is the best way of cleaning water? (distillation, filtering with coffee filter,

filtering with Kleenex, and filtering with paper towel).

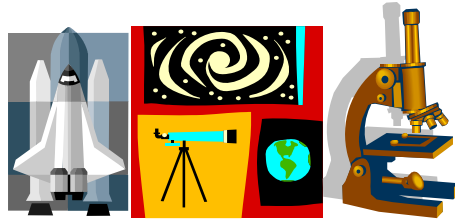
- Total Suspended Solids in Wastewater before and after Treatment
- Compare the bactericidal effects of chlorine versus iodine disinfectants on the recycled wastewater.
- Determine whether Brita Water Filter makes significant improvements in the pH, total hardness, total dissolved solids, free chlorine, total chlorine, and total alkalinity of tap, mineral, spring, sparkling, and distilled water.
- Emergency Disinfection of Drinking Water

## Other

- Are safe homemade cleansers as effective as commercial cleansers?
- How does particle size affect settling rates?

## Oceans, Rivers, Streams

- Does the amount of water affect the size of the wave?
- How does the volume of a stream affect its flow rate?
- Where is the current of a stream the fastest?



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## Helpful Science Fair Project Websites

- <http://school.discovery.com/sciencefaircentral/>
- <http://www.billnye.com>
- <http://www.ipl.org/div/projectguide/>
- <http://www.sciencebuddies.org/mentoring/science-fairs.shtml>
- <http://www.scienceproject.com/>
- <http://www.juliantrubin.com/environmentprojects.html>
- <http://faculty.washington.edu/chudler/fair.html>