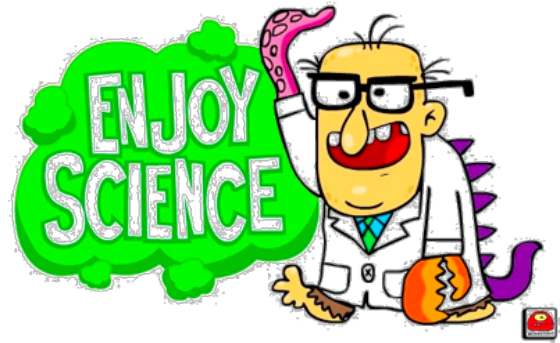


Trentino Young Scientist Challenge

Project Planning



Young Scientists (max 4 - 3 is better - 2 ok):

School: _____

Class: _____

Guides: _____

What to do?

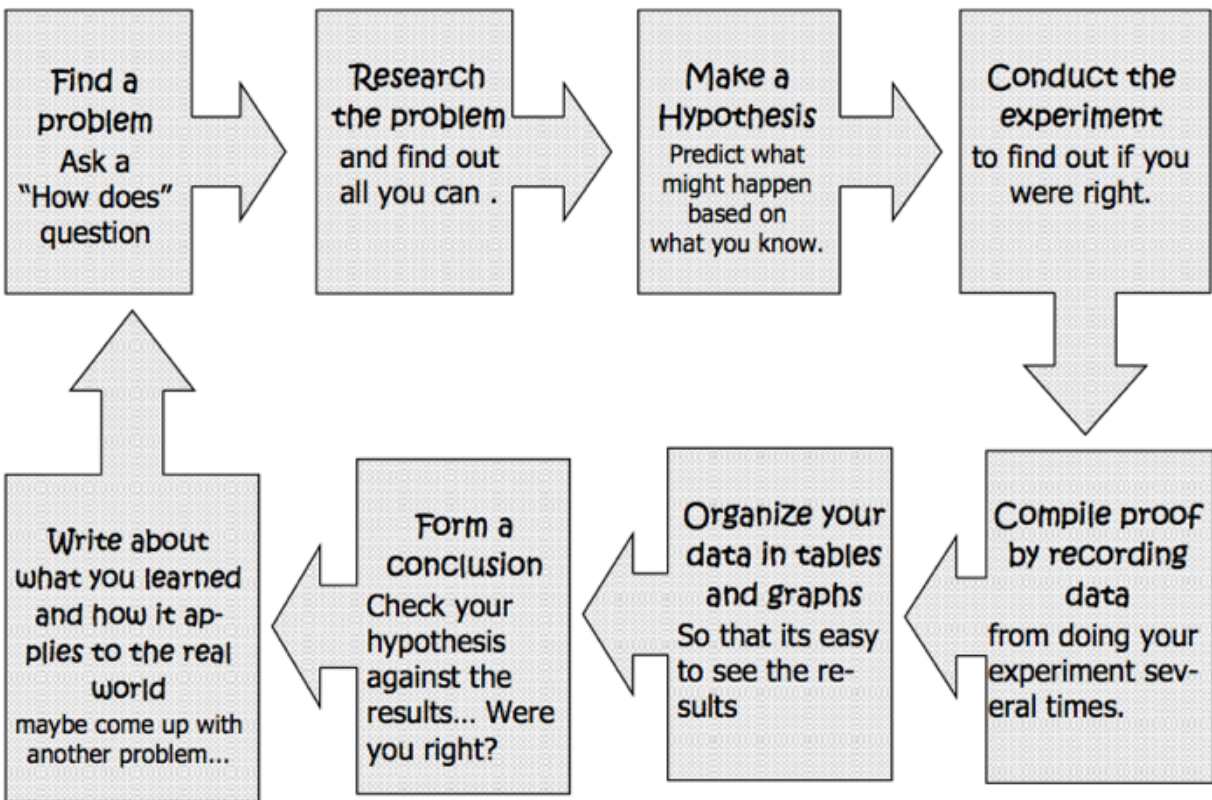
What	When
Project start	Oct. 2014
Constitute a group (max 4)	Week+1
Validate project idea with the teacher	Week+3
Complete experimentation and fill project template (this document)	Week+7
Prepare the display board	Week+8
Present your project at the science fair school open day, be ready!	Week+9
Trentino Young Scientist Challenge	March 2015

Check list !

✓	Due Date	Things to be done
		Choose topic and write project question.
		Get approval from your teacher.
		Research your topic and write key words and paragraph.
		Write a hypothesis.
		Design an experiment; list variables and write procedure.
		List and gather your materials.
		Conduct experiment and record data and observations.
		Create a table, chart, or graph of the data.
		Draw conclusions.
		Make the project display.
		Write and Print Abstract
		Turn in Planning Packet to teacher.
		Present your project at the science fair.

Notes

A Scientific Process



1. Project Title

Think of a Question - Your question will drive your entire project. Make sure that your question is something that can be measured and answered by following the scientific process. Your question will also be the title of your project (but feel free to make it funny if you wish).

2. Research Topic

Research Your Topic - spend some time with your group learning more about your topic. Use reliable Internet sources, books from the library, your science book, or other resources. Not only do you want to be an expert on your topic, but you want to teach others about your topic.

- 1. Key Words** - locate at least 3 key science words related to your topic. Your science book is an excellent place to find these. Make sure that the words you choose are directly related to your topic. Provide a definition of each key word **IN YOUR OWN WORDS**.
- 2. A paragraph** describing the science behind your project - after you have completed your research give us (your audience) some background information on your topic in a complete and well-written paragraph (5-7 sentences). Give us specific, rather than general information. Use the space provided to write a draft. You will edit a final copy to place on your display board.

Keyword	Definition

Short Research Description:

3. Hypothesis

State Your Hypothesis (Hp) - In your group decide what you think the outcome of the project will be and make a good guess as to what you think the answer to your question will be. Also explain WHY you think that will be the outcome. Remember, it is ok if you don't have the right answer; that is how scientists make discoveries. Make sure that your hypothesis is written in a complete sentence.

4. Project Design

Design Your Experiment - Clearly write out the procedure you are going to follow. Remember that your experiment needs to follow the scientific process and that you need to have one variable that you are going to change.

- 1. Variables** - List the variables that you are going to keep the same and the one variable that you are going to change. You need to have at least one control (normal) variable and at least two to three other variables.
- 2. Write your procedure** - Think through each step very carefully and list them in numbered order.

Variables:

Variables to keep the same: _____

Variable to change (Independent Variable): _____

Control Variables (environment variables): _____

Procedure:

5. Materials & Competences

Gather Materials and Competences - list all the materials that you will need to complete your experiment, including eventual external competences.

6. Experiment

Conduct the experiment(s) (time for pure fun :-) – when you do your experiment you need to collect data and make observations. You will complete these in your Experiment Log. After you have completed the experiment use your log to write down the data and observations below. In your log you will need to:

- 1. Collect Data** - you will need to collect numerical data; that means you need to take measurements during the experiment. It can be temperature, distance, height, etc. You will analyze the data later to determine the results of your experiment. Try also to take pictures and videos of the experiment, especially if the experiment is hardly reproducible again, or simply impossible to show at the giury at open day.
- 2. Make Observations** - as you conduct your experiment you will use your senses (sight, smell, touch, etc.) and write down any observations you make during the process.

Data:

Observations:

7. Results

Determine the Results - Now it is time to review your data and observations to find out what happened. Think about the best way to show your data: bar graph, line graph, chart, etc. and then create a table or a graph using your data. Write out the results of each test in the experiment in paragraph form using complete sentences. Make sure that you include the numerical data (measurements) as well as any other important observations that you made.

Results (graph and/or chart)

Was your hypothesis correct or incorrect? If not, why?

If you were to complete this experiment again, what changes would you make? How would you improve this experiment?

9. Documentation for the *Science Faire*

Display Board

(See **Annesso A** as example bit.ly/Z9Vzqv) - Now that you have completed your experiment you will begin setting up your display board to communicate the results of your experiment to others. Remember, the board is graded on the information not how colorful or pretty it looks (but actually we love nice display board :-). Your display board must have as much as possible of the following components located in the same places. Other board guidelines: Font should be easy to read and at least a size of 16pt or greater; Photos should not include faces of students; Information on the board can be typed or written neatly by hand.

Abstract

Abstract – The abstract is a short version of your science fair final report. It should be no more than 250 words. Most of the information you will put in your abstract is already written, you will just need to copy it over. You must have the following five components in your abstract:

- A. Introduction
- B. Project Question
- C. Procedures
- D. Results
- E. Conclusions

The only new thing you will need to write is the **Introduction**. This is where you describe the purpose for doing this experiment or project. Tell why people should care about the work you did. How does your experiment give us new science information? Can this information be used to improve our lives? If so, how? This is where you want to interest the reader in your project and motivate them to read the rest of it.

Abstract Introduction

- **BE SMART & SAFE !**
- **It's a Competition, BUT It's for FUN (and learn to)**
- **You have the competences you need**
- **We like mistakes**
- **Collaborate & Share**
- **Make it simple**
- **Enjoy !**

Useful information (just to start):

Trentino YSC2015 Common resources

Shared Drive: bit.ly/1rhRWJt

Forum: <http://groups.google.com/d/forum/trentinoysc2015>

Email coordinator: ivanbedini@gmail.com

Websites with several examples of nice experiences for you

- 100 Science Experiments You Can Do at Home:
https://www.youtube.com/watch?v=2n9ZZVHx_il
- Science experiments videos:
https://www.youtube.com/results?search_query=science+experiments+for+school+exhibition
- Science Tube Today:
https://www.youtube.com/user/ScienceTubeToday/videos?annotation_id=annotation_647099&feature=iv&src_vid=AS74oAmjpxU
- <http://www.education.com/science-fair/>
- <http://www.sciencekids.co.nz/experiments.html>
- http://www.sciencebuddies.org/science-fair-projects/project_ideas
- <http://science.pppst.com/>
- Internet Public Library - <http://www.ipl.org/div/projectguide/>
The IPL will guide you to a variety of web site resources, leading you through the necessary steps to successfully complete a science experiment.
- Discovery.com: Science Fair Central - <http://school.discoveryeducation.com/sciencefaircentral/>
This site provides a complete guide to science fair projects. Check out the 'Handbook' which features information from Janice VanCleave, a popular author who provides everything you need to know for success. You can even send her a question about your project.
- Science Fair Idea Exchange - <http://scienceclub.org/scifair.html>
This site has lists of science fair project ideas and a chance to share your ideas with others on the web!



- Try Science - <http://tryscience.com>
Science resource for home that gives you labs to try and 400 helpful links all related to science
- The Yuckiest Site in the Internet - <http://discoverykids.com>,
<http://www.cyberbee.com/yucky/>
Brought to you by Discovery Kids, this site gives you lots of ideas on how to do the messiest yuckiest experiments
- Gateway to Educational Materials: Science Fair Projects -
<http://members.ozemail.com.au/~macinnis/scifun/projects.htm>
The Gateway to Educational Materials extensive and detailed step-by-step guide to doing a science fair project.
- Science Fair Primer - <http://users.rcn.com/tedrowan/primer.html>
A site to help students get started and run a science fair project.
- Science Project Guidelines - <http://www.sciencelabsupplies.com/>
The scientists at the Kennedy Space Center have participated in judging local school science fairs for many years and have some great suggestions for student research projects. This information by Elizabeth Stryjewski of the Kennedy Space Center is now provided on a commercial site.
- What Makes A Good Science Fair Project -
http://www.usc.edu/CSSF/Resources/Good_Project.html
A website from USC that gives a lot of good tips and ideas to think about regarding what makes a good science fair project. Advice for students as well as teachers and parents is included.
- Neuroscience for Kids: Successful Science Fair Projects -
<http://faculty.washington.edu/chudler/fair.html>
Site made by Lynne Bleeker a former science teacher, science fair organizer, and judge. Gives a thorough and detailed description of the steps to a successful science fair project

Simple projects showed at the presentation:

- How to Make a Foxhole Radio: <https://www.youtube.com/watch?v=4-X1RuMQZQ8>
- Battery: https://www.youtube.com/watch?v=VMdS65_E_X4
- Steam engine: <https://www.youtube.com/watch?v=0ki9Kta8g14>
- Density and miscibility of liquids: https://www.youtube.com/watch?v=_HSsu11-frQ
- Social Science: <https://www.youtube.com/watch?v=cbEKAwCoCKw&feature=youtu.be>
- Miniwind turbine: <https://www.youtube.com/watch?v=AS74oAmjpxU>
- Tornado simulator: <https://www.youtube.com/watch?v=TVvi1mXovCM>

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