

# Collinswood Language Academy

## Elementary

# Science Fair Packet



**2013-2014**

Dear Parents/Guardians,

The Science Fair is fast approaching so please take time to read this packet carefully. Guidelines, explanations, schedules and helpful hints are included. *Your help and support are welcome, but please remember that the final project should reflect the problem solving and work of your child and must demonstrate their individual effort and design.*

All students in grades 3-5 will participate in the Science Fair by submitting a Science Fair experiment. Your child will need a large, 36 in. X 48 in, tri-fold cardboard presentation board for their final presentation. These can be purchased at Target or any office supply store. Let your child's science teacher know if purchasing the board poses a problem for you.

Please note: If your child is doing a project that includes materials that are messy, photographs should be taken and posted on the board instead of bringing in the actual materials (No student faces should be included in the photos). Also, no materials that will decay quickly should be brought into school.

If you have questions, please feel free to contact Mrs. Fergusson at 980-343-5820 or [ninac.fergusson@cms.k12.nc.us](mailto:ninac.fergusson@cms.k12.nc.us) or your child's science teacher.



Estimados padres/tutores,

La Feria de la Ciencia se aproxima rápidamente, por favor lea el paquete de información con su hijo/a, la cual incluye directriz, horarios y consejos. *Su ayuda y su apoyo son bienvenidos, pero por favor recuerde que el proyecto final debe reflejar el esfuerzo y trabajo individual del estudiante.*

Todos los estudiantes de los grados 3º a 5º participarán en la Feria de la Ciencia entregando un experimento. Su hijo necesitará un tablero grande de cartón doblado en tres (36 in. X 48 in. tri-fold cardboard presentation board) la cual puede comprar en Target o cualquier almacén que venda materiales para oficina. Si usted no puede comprarlo, por favor infórmele al maestro de su hijo/a.

NOTA: Si su hijo hace un proyecto que incluya materiales que ensucian, deberá tomar fotos y ponerlas en su proyecto en lugar de traer los materiales reales (NO se permite incluir fotos del estudiante). Tampoco deberían traer materiales que se descompongan rápidamente.

Si tiene preguntas, por favor comuníquese con la Sra. Fergusson al 980-343-5820 o por correo electrónico: [ninac.fergusson@cms.k12.nc.us](mailto:ninac.fergusson@cms.k12.nc.us) o la profesora de ciencia de su hijo/a.

Dear Student,

November 2013

Your Science Fair Project will show your understanding of the scientific method through an investigation of a problem. This is an opportunity for you to conduct a hands-on investigative experiment to solve or investigate a problem; it is not an opportunity to show how something works. You must have a question or problem that guides your investigation, and then ask a testable question. Testable questions are those that can be answered through hands-on investigation. We only allow "investigation" projects, not "invention" projects. Try out these websites:

- <http://school.discoveryeducation.com/sciencefaircentral/>
- [http://www.sciencebuddies.org/science-fair-projects/project\\_ideas.shtml](http://www.sciencebuddies.org/science-fair-projects/project_ideas.shtml)

Your project will be displayed on a 36 in. X 48 in. tri-fold board. You may choose how to organize the information on your board. Information should be neatly written or printed. Do not put your name on the front of the board. Do not include photos with someone's face in them.

Write your name, grade level and homeroom teacher on the back of your board

**A. Title** - What is the topic of your experiment?

## **Required Elements of your Science Fair**

**B. Question** - What is the question you are answering with this experiment?

**C. Problem/Purpose** – What is the problem you are solving? What is your purpose for doing this experiment? Why is this experiment important and applicable to real life?

**D. Research** - Research your topic, summarize what the research says and how it relates to your experiment, include your summary on your board.

**E. Hypothesis** - What do you think will happen and WHY?

**F. Materials** – Materials used in the experiment.

**G. Procedures** – List your step-by-step instructions to carry out the experiment.

**H. Data** – Show the data you obtained while completing your experiment. Numerical data must be included! Chart the data in a graph (pie chart, line or bar graph, etc) At least three trials should be carried out and recorded.

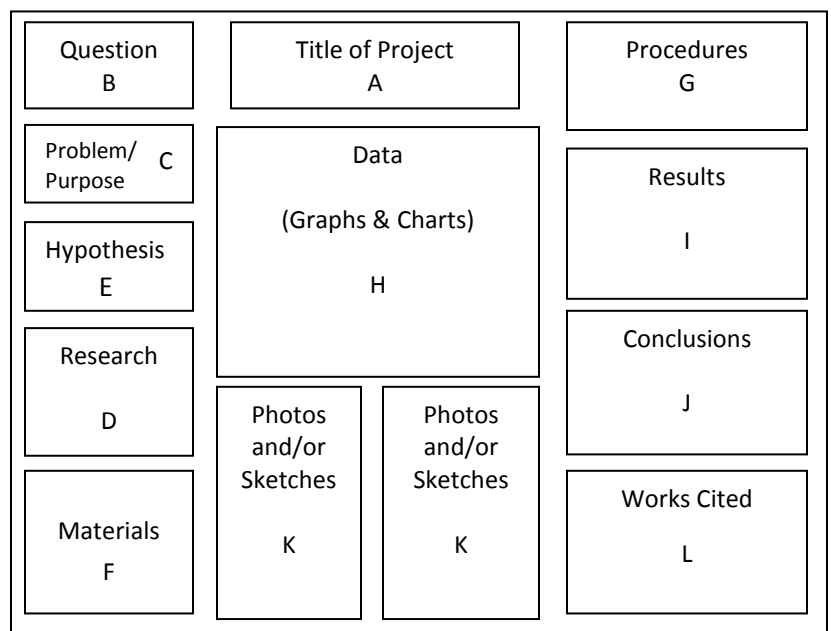
**I. Results** - Explain your charts. Why is your data important? Summarize the results of your experiment in a paragraph.

**J. Conclusions** - What did your science experiment teach you? Was your hypothesis correct? What do the results of your experiment have to do with the real world? How can you apply what you've learned to other areas of science? Why is your experiment important? What are the implications of your test results?

**K. Photos/Drawings/Diagrams** – Include photos or sketches of the process of your experiment. Do not include any photos with people's faces in them.

**L. Works Cited** – Reference the books, magazines and websites that you used to gather information about your experiment. Hint: [www.bibme.org](http://www.bibme.org) is very helpful with this! Do not cite [www.google.com](http://www.google.com) as a reference.

**Note:** You may display relevant items on the floor in front of your board. These items may not decay or be dangerous in nature. They should be able to fit inside a shoebox.



# Time Management Chart

Check off the things you've done, once you've completed them.  
Some due-dates are placed for you; others should be created by you.

	<u>Your Mission!</u>	Deadline	DONE!
1.	Complete your Science Fair Project Plan and turn it in to your science teacher.		
2.	Prepare Materials, Conduct your Experiment, Document Data and Draw Conclusions		
3.	Prepare your Science Fair Project Board (a large-size cardboard tri-fold board)		
4.	If you would like the option to participate in the Regional Science Fair, your Science Fair Board is due early. You will be notified if your board is chosen to participate in this opportunity.	1/15/14	
5.	Science Fair Project Board and Presentation Due for all Elementary Students A first, second, and third place winner will be chosen from each homeroom.	1/23/14	

A fool, Mr. Edgeworth, is one who has never made an experiment.

— Erasmus Darwin

Experimentation is the least arrogant method of gaining knowledge.

The experimenter humbly asks a question of nature.

— Isaac Asimov



# Judging Criteria

When evaluating the exhibits and selecting winners, judges will consider the following:

/70	<b>Scientific Method</b>	Does this project show the <u>scientific method</u> ?		
		Purpose/Problem /10	Question /5	Research /5
		Hypothesis /5	Materials /5	Procedure /5
		Data/Results /20	Conclusion /15	
/15	<b>Clarity &amp; Understanding</b>	Is the experiment explained well? Does the presenter understand the topic well?		
/10	<b>Effective Presentation &amp; Dramatic Impact</b>	Are the different aspects described well and organized neatly using photographs, drawings, graphs, etc.? Is the presentation appropriate for what is being demonstrated? Is the exhibit attractive? (uses good visuals; "eye-catching" quality)		
/5	<b>Creativity &amp; Originality</b>	Does this project show creativity and originality of thinking?		
/100	<b>Total</b>			

## Possible Questions for your Science Fair Project

**Physical Science:** the natural science - physics, chemistry, and astronomy - that deal mainly with nonliving things

- Does baking soda lower the temperature of water? Does the shape of a kite affect its flights?
- Which shape holds the most weight? Does adding salt to water change the temperature at which it boils?
- What type of package helps eggs stay intact? Will more air inside a basketball make it bounce higher?
- Do all colors fade at the same rate? Does the color of a material affect its absorption of heat?
- Does sound travel best through solids, liquids or gases? Does an ice cube melt faster in air or water?
- Will water with salt evaporate faster than water without salt? Do all colors fade at the same rate?
- What materials dissolve in water? Which banana/fruit has the most sugar –green, yellow, or brown?
- Does the viscosity of a liquid affect its boiling point? Which type of oil has the greatest density?
- A comparison of the heat conduction abilities of different metal? Which boat shape is fastest?
- What material keeps food coldest? Does the length of a vibrating object affect the sound?
- Do suction cups stick equally as well to different surfaces? Which metal conducts heat best?
- What materials provide the best insulation? Does temperature affect the performance of a golf ball?
- Which type of glue holds 3 boards together better?

**Earth Science:** the sciences - geology, meteorology, or oceanography - that deal with the earth

- What type of soil filters water best?
- Does muddied water heat up faster in the sun than clear water?
- What gets warmer – sand or dirt?
- Do different types of soil hold different amounts of water?

**Life Science:** an area of science - biology - that deals with living things and processes of life

- The effects of car exhaust fumes on the growth of plant
- How does the color of light affect plant growth?
- Bird feed consumption at different colored bird feeders
- The effect of salt on the growth of plants
- How much of a piece of fruit is water?
- Do living plants give off moisture?
- The effect of different light intensities on the growth of plants
- How does the temperature affect plant growth?
- The effect of light on the growth of mold
- Do different potting soils affect a plant's growth?
- Do different kinds of caterpillars eat different amounts of food?
- Does an earthworm react to light and darkness?
- Does a plant need some darkness to grow?
- Does surrounding color affect an insect's eating habits?
- Does sugar prolong the life of cut flowers?
- Do living plants give off moisture?
- Does it matter in which direction seeds are planted?
- What are the effects of chlorine on plant growth?
- Does adding sugar, aspirin or lemon-lime soda to the water make cut flowers last longer?

Student \_\_\_\_\_

Grade \_\_\_\_\_

Science Teacher \_\_\_\_\_

# Elementary Science Fair Project Plan

*Your science teacher must approve this plan before you begin your experiment.*

**Title of Experiment:** \_\_\_\_\_

**Purpose/Problem:** \_\_\_\_\_

*Example: My bubbles aren't lasting long enough when I take a bubble bath.*

**Question:** \_\_\_\_\_

*Example Question: Which type of liquid bubbles will last the longest in my bubble bath?*

**Hypothesis:** Explain what you think the result of your experiment will be and why. Base your reasoning on your current knowledge, without doing research.

*Example: I **think** the bubbles created with Mr. Bubbles soap will last the longest **because** when I pour out the soap it is the thickest of all of the soaps I've tried.*

I think \_\_\_\_\_

because \_\_\_\_\_

**Research:** You'll need to find background information on the main process or the topic involved in your investigation. To help in this process, complete the **K, W, L** chart showing what you **Know**, **Want to Know** and **Learned**. Research the topics in your **Want to Know** section to complete the **Learned** section.

<b><u>K</u>now</b>	<b><u>W</u>ant to Know</b>	<b><u>L</u>earned</b>
These are things you know, or think you know about your topic already, without doing any research.	These are things you want to learn more about. These are things you will research.	These are things you learned about your topic from your research.

**Materials:** List the materials and the amounts of each that you'll need to conduct your experiment.

Example: 1 Tablespoon of Mr. Bubbles, 3 quart-sized bowls

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**Procedures for your Experiment:** Write specific directions that you will follow to conduct your experiment. These should be written in your own words. Write the amount/measurement of each item. Continue on lined paper.

Step 1:	Example: Measure 1 Tablespoon of each soap into 3 quart bowls.
Step 2:	Example: Add 1 cup of water to the soap in the quart bowls.
Step 3:	
Step 4:	
Step 5:	
Step 6:	
Step 7:	
Step 8:	
Step 9:	
Step 10:	
Step 11:	
Step 12:	
Step 13:	
Step 14:	
Final Step	Repeat the entire experiment 2 more times, for a total of 3 trials.

I am ready to begin my investigation. I have reviewed this project with my teacher and my parent, and have received their permission to begin work on my project. In addition, I have arranged a way to get the necessary materials. No animals, humans, or the environment will be hurt or endangered by my experiment.

Student's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Parent/Guardian's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Teacher's Signature: \_\_\_\_\_

Date: \_\_\_\_\_