Norcross Elementary Science Fair Packet 2013-2014



Inside

Letter from the Principal

Application

Getting Started

Scientific Method

Display Boards

Have you ever wondered why something worked, or how our world came to be? Then you are a scientist! Continue your scientific discoveries by being a part of the science fair. Start thinking of the possibilities right now, and begin planning that great experiment to show us all.

A Note from Our Principal

To: Parents and Guardians

From: Dr. Dora S. Hill

Date: 9/25/2013

Re: Norcross Elementary Science Fair

This year Norcross Elementary will be participating in a school wide Science Fair. All students are encouraged to participate in this event. Fourth and fifth grade students are required to participate. All projects are due by to the classroom teacher by January 9, 2014 for preliminary judging. The Grade Level Science Fair will be judged on January 14, 2014. Classroom and grade level winners will be on display in our media center. The first place grade level winners are eligible to participate in the Gwinnett County Science Fair on February 28th at the Gwinnett Center. Two grade level winners for grades K-2 will also be on exhibit but will not be judged at the county level.

Kindly read the following information carefully and keep in a handy place for future reference:

1. Each student should select an experiment to do in science. One can be selected from their science textbook, from the attached selections, or one of their choices.
2. All projects are due no later than January 9, 2014. (NO EXCEPTIONS)
3. Each grade level will provide grading information for students’ projects. Students must be able to explain their experiment orally.
4. After the projects are judged in the classroom, teachers will select the top three projects to advance to grade level judging.
5. A team of judges will select the best projects from each grade level to receive awards.

Sincerely,

Dr. Dora S. Hill

Science Fair Application

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Teacher \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Grade Level \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

Scientific Question \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (Student’s Name) has reviewed the information in this packet with their parent or guardian and will be participating in the Norcross Elementary Science Fair. We know that a science fair project is a big commitment that takes time to plan and conduct. We understand that the project is due to the homeroom classroom on the morning of January 9, 2014.

(Parent or Guardian Signature)

(Student Signature)

**Please return this completed form to your teacher before beginning the project.**

**Rule Changes for the 2014 Regional Science Fair Competition!**

**NO human or vertebrate experimentation is allowed. This means you cannot have people or other vertebrates such as dogs drink or eat specific things in your experiment. You may not test reaction times of people and or vertebrate animals.**

**You MAY do experiments such as these on invertebrate organisms such as plants, insects, or worms. However, you must note how the invertebrates will be disposed of after the experiment.**

**NO liquids, batteries, food items or living objects such as plants can be displayed with the projects. Pictures are the preferred method for displaying these items if used in the project.**

**NO children’s or adult’s faces can be displayed in any of the pictures.**

**There will be an Engineering Project section in this year’s competition!**

A note from Mrs. Petree:

Parents/Guardians we welcome your support for your child’s science fair project. While the project should be ideas and effort of the student, here are some ways you can help make this a positive and meaningful experience for your students. First go over this packet with your student and help him or her find a topic in which they are interested. Help your child be realistic in what they can accomplish and what they can afford to accomplish. Provide technical and/or safety assistance. Ask questions and provide encouragement. Check on your child’s progress throughout the experiment. Don’t forget to be an audience for your student to practice his or her presentation! If there are questions I will be holding a few help sessions for the students in December.

**How to Start!**

1. Make a list of the topics you are interested in studying. Do some research by looking at books from the media center, your local library or online.
2. Next narrow the topics down by making a list of testable questions. Choose a testable question and write up a procedure for your experiment. Make sure that you have materials for the experiment or can afford to buy them. Make sure you can do the experiment in the time period you have been given by making a schedule.
3. Keep a logbook of everything from your plans through the actual experiment. Write down all your observations and data collection. Taking pictures helps show the judges what you have done. It also makes a good record for you to look back on to remind yourself of the order you did things.
4. Remember to use the scientific method! This will help you organize your experiment, and it will make your experiment easier to understand.

**The Parts of the Scientific Method**

**Purpose/Problem**- This is your testable question! Your question must list the variables you will be changing and how you plan to measure the results.

**Research**- Find out as much as you can about your subject and take notes!

**Hypothesis**- What you believe will happen in your experiment and why you think so!

**Materials**- Write down everything you use to complete your experiment.

**Procedure**- Write down the steps of your experiment. Be thorough and make sure every step you did is included!

**Data Collection**- **Keep a science log of your observations.** Record all data, then for your display put your data in an easy to read chart!

**Conclusion**- Write about how your experiment turned out. Some important things to include are restating your hypothesis, (tell whether it was right or wrong), tell about the data (a graph is a great way to show the data), talk about the research you did and what science concepts you learned. Finally make a display board to show your results! Be prepared to explain your experiment to the judges!

****

Project Ideas

K-5

Does the color of an object affect how much heat it absorbs

from sunlight?

Does the color of a liquid contribute to its ability to absorb heat?

Which type of dry cell battery lasts the longest?

Which common fruit or vegetables generates the most electricity?

How does the temperature of an object compare in the sun and in

the shade? How could we use this to help keep our houses

cool in the summer?

What types of objects sink? What objects float? What affects

this?

Which light bulb is the best value for the money?

How much more heat do incandescent bulbs produce than

compact fluorescents?

Which metal conducts the most heat?

Which materials retain the most solar heat after the sunlight is

gone?

Does a dry cell battery last longer if it used continuously or if it

is turned on and off periodically?

What is the most effective insulating material? Build a model

that can keep ice frozen for 24 hours.

Does changing the temperature of water affect the speed of an

object’s solubility?

What percentage of an apple’s (or any fruit or vegetable’s) weight

is water?

Which material will break down the fastest when buried in soil?

Which area of air around your home contains the most pollution?

How do different soils affect the pH of water?

Do different diets affect how fast earthworms multiply?

Are all colors of the light spectrum used by plants to make

food?

**New This Year!**

Engineering Projects

What is the lightest weight material that can be used to build a bridge that holds five pounds of weight?

Can a miniature rocket that travels 20 feet in the air be built for $3.00?

Does the angle of an inclined plane affect how quickly a slinky can walk down a board?

Does the length a rubber band is stretched affect the distance it can fly?

Can a rubber band catapult be designed to make a ping pong ball fly 50 feet through the air?

Can you design packaging to protect a raw egg from a ten foot drop?

Does the amount of spacing between dominoes affect the speed in which a line of dominoes fall?

Does the material that covers an incline plane affect the speed at which a toy car moves down the ramp?

How can you use toilet paper tubes to support 50 pounds of weight?

What is the tallest newspaper tower that can be built using only two sheets of newspaper and nothing else?

**Helpful Web Sites**

http://www.sciencebuddies.org

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

www.accessexcellence.org/RC/scifair.html

http://www.scifair.org

www.sciencebob.com

http://pbskids.org/zoom/activities/sci/

http://school.discoveryeducation.com/

More websites can be found on Mrs. Petree’s school webpage.