

# 2020 Horizon Elementary



**April 15, 2020**  
**5:30-7:30 PM**

**Project/Demonstration  
Registration  
Due to Classroom Teacher  
*March 13, 2020***



February 20, 2020

Dear Parents and Students,

This night is designed to encourage students to learn and develop enthusiasm for science, technology, & the arts. Projects are optional and are not judged. Last year's participants had fun and were proud of the attention their efforts received. We hope this year's new additions, as well as traditional projects will allow all children to learn from each other.

### **IMPORTANT DATES TO NOTE**

Registration for Projects or Demonstrations	<b>March 13, 2020 (papers to classroom teachers)</b>
Project & Demonstration Board Drop-Off	<b>April 14, 2020, 3:30-6:00 PM</b>
Classes will tour Science Fair	<b>April 15, 2020, During the School Day</b>
Family Viewing Time	<b>April 15, 2020, 5:30-7:30 PM</b>
**Project Breakdown**	<b>April 15, 2020, 7:30-8:00 PM</b>

**\*\*If you are will be unable to retrieve your project at this time, please contact your child's teacher before the Science Project Drop-Off. The S.T.E.A.M. Committee will help you make arrangements for project pick-up.**

A Reference Resource Center has been set up in the library for use by teachers, parents and students. Numerous experiment and demonstration ideas are in these books.

### **Project Criteria**

Students may choose to show an organized *collection*, a *demonstration*, or an *experiment*.

- **Collections** must be from the **natural** world. They must be organized, labeled, and displayed in an orderly and attractive fashion.
- **Demonstrations** must use the scientific process to show a specific scientific principle, fact, or program. Students should show the reason why something works the way it does or step by step process for coding activities.
- **Experiments** must use the **scientific process** (See attached page). PLEASE DO NOT CONFUSE THIS WITH A DEMONSTRATION! Experiments require changing **ONE** variable and testing to see what result the change brings about. You can change a demonstration into an experiment by asking, "What would happen if I change the \_\_\_\_\_?" and testing to find the answer.



Create a **Step-by-Step Tutorial for Coding apps or Robots**



Start by coming up with an interesting question, such as "How does a Sphero work?" or "How do you code in Minecraft?" Then find a way to show the process. If you are demonstrating an apparatus, it is also fun to uncover the history of the equipment, how it is used, and why it is important. \*Please note that models and pictures are encouraged for the display, but students are responsible for their own equipment if you plan on demonstrating your own coding project on S.T.E.A.M. night.

## MISCELLANEOUS RULES AND GUIDELINES

A **FREE-STANDING** backboard is needed for all displays. See attached sheet for information regarding displays. Project boards may be homemade or purchased.

**\*\*\*Display boards (colored and white) \*\*\*  
will be sold at the school store on  
Tuesdays, Wednesdays, and Thursdays March 9- April 3.  
\*\*\*White boards are \$3.00 and colored boards are \$4.00. \*\*\***

1. Liquids **MUST** be in a container and sealed tightly with a lid. Glass is not permitted due to breakage.
2. There will be **NO ELECTRICAL OUTLETS** provided so batteries are recommended if a power source is needed.
3. No live animals, body fluids, containers of caustic or corrosive chemicals, or biological specimens can be brought into the exhibit area. Photographs or other pictures may be used and are encouraged!
4. **NO mercury-filled thermometers!**
5. Projects will not be judged. **Every** participant is a *blue ribbon winner!*

A list of project ideas may be found on the Horizon Website (<https://www.lcps.org/domain/7138>). If you have any further questions, please contact your child's teacher.

Remember, the project or demonstration should be a fun and exciting learning experience for your child. Enjoy your time together, and let your child do the work. Good Luck!

<u>SHOWING A COLLECTION</u>	<u>DO A DEMONSTRATION</u>	<u>PERFORMING AN EXPERIMENT</u>
<p>If you are a collector, this is your chance to shine. A display of a well-organized collection of rocks, shells, fossils, pressed leaves or flowers, insects, or anything else can be a great science fair project.  <b>**Notice, these are collections from the <u>natural world</u>. **</b></p> <p>To make your collection spectacular, show plenty of variety and label everything clearly. Interesting pictures and maps of your discovery sites will jazz up your display. Also, if you've kept a log book detailing your discoveries, show that too. (If you plan to come up with a collection in time for the night, keep a log book from the beginning.)</p>	<div style="text-align: center;">  <p><b>Create a Step-by-Step Tutorial for Coding apps or Robots</b></p> </div> <p>Would you like to demonstrate a scientific principle or fact, or show how a tool or device works? Start by coming up with an interesting question, such as "How does rain form?" or "How does a Sphero work?" or "How do you code in Minecraft?" Then find a way to show the process. If you are demonstrating an apparatus, it is also fun to uncover the history of the equipment, how it is used, and why it is important. *Please note that models and pictures are encouraged for the display, but students are responsible for their own equipment if you plan on demonstrating your own coding project on S.T.E.A.M. night.</p> <p style="text-align: center;">OR</p> <p>Models and cross sections (objects cut in half to see inside) also make good demonstrations. For instance, you could show a model of the human eye or a cross section of a pair of roller blades.</p>	<p>An experiment is a test that's designed to find the answer to a problem.</p> <p>Exploring the universe through science is exciting, but there are rules to the game. To gather and present information in an orderly manner, scientists use the scientific method, a step-by-step approach to discovering answers and solving problems. In general, the steps are:</p> <ol style="list-style-type: none"> <li>1. Find a problem. (Ask a scientific question that you can test.)</li> <li>2. Do the research. (Gather as much information as possible.)</li> <li>3. Make a hypothesis – that is, a guess. (Predict what the answer to the question will be. Be confident. Write your hypothesis in the form of a statement. A good format to use is:  <b><u>If</u> I . . . . ., <u>then</u> . . . . .</b></li> <li>4. Experiment! (Think of a way to test your hypothesis. The test is the experiment.)</li> <li>5. Record the results. (Collect data from the experiment.)</li> <li>6. Draw a conclusion. (Figure out what the experimental data tells you by asking the questions below.)</li> </ol>

# Experiment Worksheet

Use this sheet to help you plan your project or demonstration.  
Answer the questions and follow these steps, if they apply to your project.

## **Step 1: Ask a Question or Make an Observation**

What are you curious about, or what have you seen that you wonder about?

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## **Step 2: Write a Hypothesis**

What do you think is the answer to your question or the reason for your observation?

*If I* \_\_\_\_\_ *(the one thing you'll change)*

*then* \_\_\_\_\_ *(what you measure or observe)*

## **Step 3: Make Predictions**

What are some if/then statements that explain and confirm your hypothesis?

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## **Step 4: Perform Experiments/Tests**

What will you do to test your predictions? You may find that your hypothesis was not correct. That's OK!

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## **Step 5: State Your Conclusions**

What did your experiment show? Did the experiment confirm your hypothesis?

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## **Step 6: Make an Application to Everyday Life**

How can the information found relate to real life or help us?

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# PROJECT OR DEMONSTRATION REGISTRATION FORM

Student Name: \_\_\_\_\_

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

I will: (check which type of project you will complete)

Show a **COLLECTION** of: \_\_\_\_\_

Do a **DEMONSTRATION** of: \_\_\_\_\_

\_\_\_\_\_

Perform a Scientific **EXPERIMENT** answering the question:

\_\_\_\_\_

\_\_\_\_\_

Give a brief description of what you plan to do and include the materials you will need.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## **\*\*\*Parents/Guardians\*\*\***

*Please sign below to acknowledge you have reviewed this project your child.*

Parent/Guardian Signature: \_\_\_\_\_

Turn this form into your classroom teacher, **NO LATER THAN March 13, 2020.**