

McCullough 2018 Art & Science Expo Participant's Guide

Friday, February 23, 2018, 5:00–8:00 PM (the same evening as the book fair)

Entry Forms Due: Friday, February 16, 2018

Registration and Project Drop-off: Hallway outside the cafeteria, **Thursday, Feb. 22, 2018, 4:30–6:30 PM**

Questions? Contact Reid or Chris Maust at rcmaust@gmail.com or 724-744-0312.

Thank you for your interest in the art & science expo. **The expo is not judged.** Instead of competing against your classmates, you can do something interesting and learn something new. What is interesting? *You* get to decide!

Looking for project ideas? We made a few suggestions at the end of this document. You can also look at books in the library or search online to find an idea of your own.

Please put your name, grade, and teacher somewhere on your project. We want to know who made the exhibit!

Art Projects

Show your creativity! You may submit a 2-dimensional project (like a drawing, painting, collage, or photograph) or a 3-dimensional piece (like something you built).

Science Projects

A science fair project starts with a question. The scientist makes a *hypothesis* (an educated guess) of what will happen. Then, the scientist uses the Scientific Method to see if the hypothesis was correct. (Often, the hypothesis is wrong, but we still learn something from the work.)

We realize that younger students have not learned about the Scientific Method yet. Nevertheless, younger students can follow the basic scientific principles of observation. They can guess what will happen, perform a simple experiment, and see if they guessed correctly.

Safety Rules

1. Parents or guardians must ensure that the students are safe when conducting their experiments.
2. Projects must not be dangerous to the viewing public.
3. No flammable, explosive, or poisonous substances.
4. No cruelty to animals. You may observe animals, as long as it's done humanely and safely.
5. No live animals are permitted in the school as part of the exhibit. If you do an experiment involving animals, you may include pictures of the animals in your exhibit.
6. No open flames.
7. No weapons.
8. No syringes with the needle attached. (Syringes without the needles are permitted.)

Making Your Art or Science Exhibit

1. All exhibits must be free-standing, or able to lie flat on a table. You can make your own display, or you can buy a free-standing tri-fold presentation board.
2. **No liquids are permitted in the hallway.** If liquids are necessary for the exhibit, the project must be set up in the multi-purpose room (cafeteria).
3. **Projects will not be supervised 100% of the time.** Please do not include anything valuable in your exhibit (such as laptops, smart phones, valuable stamps, or valuable coins). Neither the school nor the PTO will assume any risk of loss or damage to anyone's property.
4. **Exhibits must not be messy,** even if the original experiment was messy. You may display pictures of messy work that you did at home, but don't make a mess in the school.
5. Projects should not be transported on the school bus (unless they are very small and easily transported).
6. The Art & Science Expo committee reserves the right to make the final interpretation of the rules.

Suggestions for a Science Presentation

1. Use a catchy title.
2. Use large lettering. Make it colorful and bold.
3. Use graphs, charts, photos, or illustrations to explain what you found.
4. In your conclusion, explain whether your hypothesis was correct. Don't worry if it was incorrect, because that's how real scientists improve their theories!

Questions and Answers (both Art and Science)

May I work in a group?

For art, students may not work in a group.

For science, up to 3 students may work together, but each person must participate in all parts of the project.

How do I sign up?

Return the entry form to your teacher by the deadline.

How can my parent or guardian help?

Most importantly, they should help you stay safe. Adults can offer suggestions and advice, but the students need to do the work (as appropriate for their age).

May I submit a project that I already did for school?

No. We want you to learn something new from your project. However, you may do a project that is related to something that you studied in class, or you can do a project that builds on previous work.

When do I bring my project in to the school?

During registration, which is the day before the expo, between 4:30 and 6:30 PM.

What do I do the night of the expo?

During the expo, spend some time beside your project and explain what you learned to the guests. Also, take some time to walk around and see the other projects.

When do I take my project home?

Please take your project with you that evening, at the end of the expo. We don't have room to store projects.

What should I include in a science project?

- A **clearly stated title**, which is often in the form of a question (Example: How do leaves take in oxygen?)
- An **objective** (Example: To demonstrate the effect of a magnet on a steel object)
- A **description** of what you did, including your hypothesis and procedure.
- The **results and conclusions** of the project

Remember the scientific method: **Question, Hypothesis, Procedure, Results, and Conclusion.**

Science Project Checklist	Date Completed
1. Topic: What is interesting to me?	
2. Question: What do I want to find out?	
3. Research: Find out what I can about the topic.	
4. Hypothesis: What do I think will happen?	
5. Procedure: Write a step-by-step procedure. Gather materials for the project. How will I do the experiment?	
6. Results: Do the experiment and make observations. Keep notes, make a record, and maybe take pictures or draw what I see.	
7. Conclusion: What happened? Was my hypothesis correct? (If not, what did I learn?)	

Some Science Project Ideas

Kindergarten

- Make celery change color.
- Make a carnation change color.
- Grow a plant from a seed.
- Make a magnet from a paper clip.
- What items are magnetic?
- Learn about static electricity with a balloon.
- Mix colors (Why things appear the color they are).
- Make corn-starch quicksand.
- Dry salt water on black paper, to see the water disappear and crystals form. (Try table salt and Epsom salt.)
- Make a telephone out of cans and string.
- Catch air in a zipper bag.

Grades 1-3

- Which is heavier, hot air or cold air?
- Build a toy boat to investigate the science of floating. How much weight can the boat hold before it sinks? How much water did the boat displace while still afloat?
- Does a fresh egg float in fresh water? How much salt do you need to add to the water to make the egg float?
- How do magnets and metal affect a magnetic compass?
- What items conduct electricity?
- Explore sound vibrations by making a simple musical instrument. How can you change the pitch?
- Is each snowflake really unique under a magnifying glass?
- Can air do work? Lift a weight by blowing into a balloon.

Grades 4-5

- If an airplane flew the shortest-distance route between Pittsburgh and Tokyo, what path would it take? Show the route on a globe and on a flat map.
- How can you move water uphill? (A siphon? Capillary action? A pump?)
- Learn about the water cycle. How can you make steam?
- Does water's density vary with temperature? Is ice more or less dense than water, and is that unusual?
- How much weight can a helium balloon lift?
- What absorbs more heat, light or dark colors?
- Does hot water freeze faster than cold water?
- Why is the sky blue? Support your hypothesis by making a model of the sky in a jar.
- Learn about mechanical advantage by building a simple machine. How much mechanical advantage did you get?
- Explore statistics. Roll a pair of dice many times, and graph how many times each total came up.
- Bend and reflect light with a prism, lens, or mirror. Can you project an image onto a piece of paper?