

Cooper Mountain STEAM Fair

Exhibitor Entry Form (Due March 9th)

Please submit only one entry form per project

<u>Student First Name</u>	<u>Student Last Name</u>	<u>Grade</u>
#1 _____	_____	_____
#2 _____	_____	_____
#3 _____	_____	_____

Teacher

#1 _____
#2 _____
#3 _____

<u>Parent Name</u>	<u>E-Mail</u>
#1 _____	_____
#2 _____	_____
#3 _____	_____

If you have any questions about volunteering or the STEAM fair in general, contact Junru Ruan and Harsha Grunes at coopermtsciencefair@gmail.com or sign up at myvolunteerpage.com.

Important Dates:

3/9 Entry Forms Due to Teachers

4/8 Project Set Up

4/9 Project Review & STEAM Fair Night

2019-2020 Cooper Mountain STEAM Fair Information & Guidelines

Students – You are invited to participate in this year’s Cooper Mountain STEAM Fair! Projects may be done individually or in groups (no more than 3 students). If you want to participate, please fill in the Exhibitor Entry Form (attached) and return it to your teacher on or before **Monday, March 9th**. Participating students are welcome to enter with a traditional science project, but everyone is encouraged to apply the STEAM concepts as part of their project. In the spirit of STEAM, we have invited **OMSI** to set up interactive displays for all attendees to explore!

Parents – The STEAM Fair requires many volunteers to be successful. **Please consider serving as a reviewer during the day on April 9th!** Please sign up at myvolunteerpage.com if interested.

<u>Day</u>	<u>Event</u>	<u>Time</u>	<u>Location</u>
March 9th, Monday	Entry forms due to teachers	3:00 pm	Classroom
April 8th, Wednesday	Setup Projects	3:00 pm – 6:30 pm	Gym
April 9th, Thursday	Class Tours & Reviews	8:40 am – 3:00 pm	Gym
April 9th, Thursday	STEAM Fair Night	6:00 pm – 7:30 pm	Gym
	Take projects home	7:30 pm (not before)	Gym

STEAM Fair Guidelines

A project should be:

- **FUN!**
- Demonstrate an understanding of scientific and/or STEAM concepts
- Done carefully and neatly
- **The student’s own work**
- Displayed within a 32-inch x 30-inch area

A project must **NOT**:

- Improperly use currency
- Include any latex products
(Beaverton is a latex free school district)
- Use a science kit purchased from a store
- Include expensive or irreplaceable personal property
- Use hazardous chemicals, fire, etc.
- Involve consumption of alcohol or drugs



How Can Parents Help?

- Provide lots of positive encouragement!
- Help your child choose a realistic project according to their abilities
- Demonstrate your interest by asking questions and listening
- Let your child do their own work
- Volunteer to help with the Science Fair! Sign up at myvolunteerpage.com.

How to Perform an Experiment Using the Scientific Method:

Step 1 Choose your topic

Choose an area of science that interests you such as plants, animals, the Earth, space, machines, magnetism, etc.

Step 2 Research your topic

Find out more about your topic by reading books, browsing the Web, talking to people, visiting a museum or the zoo, etc.

Step 3 Select a question to be answered by your experiment

The question generally should **not** be answered Yes or No. For example, "How does the amount of light affect plant growth?" is better than "Does light affect plant growth?"

Step 4 Design your experiment to answer the question

Write down the steps you will follow (Procedure) to perform the experiment. Only one variable should change (the amount of light). Only one variable needs to be measured (the amount of plant growth).

Step 5 Make a prediction (Hypothesis)

Predict what will happen when you perform the experiment. Remember, there are no wrong answers. A false prediction is just as useful as a true prediction!

Step 6 Perform the experiment following the procedure

Collect and summarize the results using tables, graphs, photographs, etc.

Step 7 Make a conclusion

Was the Hypothesis true or false?

Why did the result occur?

If possible, explain the science behind your results.

How could you improve the experiment?

What experiment would you do next?



Step 8 Create your project display

Example Project Questions:

Mold grows best on what type of bread?

Do plants prefer tap or distilled water?

Does salt affect how fast water freezes?

What substances are acids/bases?

How does temperature affect the size of a balloon?

How does the size of a drum affect how loud a sound it makes?

How many visible stars are there?

How strong is the Earth's magnetic field?

For additional advice and project ideas:

- Talk to your teacher and parents
- Visit your library
- Visit the following links:

<http://www.sciencebuddies.org/>

<http://www.scifair.org>

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

<http://lemonlimeadventures.com/50-totally-awesome-steam-projects-to-boost-creativity/>

<https://www.pinterest.com/goldiebloxinc/diy-steam-projects/>

Ready to take your project to the next level?
Try applying the STEAM concepts!
What is STEAM? (Science, Technology, Engineering, Art, Math)

Science is the intellectual and practical activity encompassing the systematic study of the structure and behavior of the physical and natural world through observation and experiment. Scientists learn about the world in many different ways. They build models, make observations, assemble collections, etc. Ultimately, scientists test what they have learned by performing an experiment using the Scientific Method. We would like the students to come up with a scientific question to test a hypothesis and come up with a conclusion. Anything they do further is completely optional.

Technology is the application of scientific knowledge for practical purposes, especially in industry. People who create new technology are often on the cutting edge of science. There are many inventions we use on a daily basis that did not exist 10, 25, 50 years ago. Cell phones, computers, and television are all modern technology that has helped reshape our lives.

Engineering - the branch of science and technology concerned with the design, building, and use of engines, machines, and structures. Engineers are the people that build the infrastructure of our lives. Whether it is the roads we drive on or the houses that we sleep in or the cars that we drive all of these things were designed by engineers. Engineers use the practical application of math and science to design and build things we use every day. Building a structure or a machine as part of your experiment would be a form of engineering.

Arts - the expression or application of human creative skill and imagination, typically in a visual form such as painting or sculpture, producing works to be appreciated primarily for their beauty or emotional power. Artists are very important in designing and building new technology. From the sleek design of a new car or the style of your high tech running shoes. Designing an experiment that creates art as a product of the experiment is a fantastic way to include part of STEAM.

Mathematics - the abstract science of number, quantity, and space. Mathematics may be studied in its own right (pure mathematics), or as it is applied to other disciplines such as physics and engineering (applied mathematics). Many projects may use mathematics to measure or graph the results.

If you have any further questions please email coopermtsciencefair@gmail.com or visit the websites listed above.