

McKinley Science Fair: 2020 Science Project Family Guide

2020 – A Clear Vision of STEM

McKinley's 2020 sensational science season has begun! The culmination is a non-competitive Science Fair on **Thursday, February 20th**. This is a chance for your child to get hands on experience with the scientific process.

First and foremost, the Science Fair is supposed to be FUN! Let your child set the pace. Do not take the project more seriously than your child. The experience should leave your child with fond memories of science and a pleasant time spent with a parent or project partner.



The second goal is for students to learn about the scientific process by experiencing it. These are elementary school-age kids. They will not become scientists with one project. We hope they will gain a basic understanding of how to ask a question and use the scientific process to get the answer, and then explain the answer to others.

Participation: 5th graders are required to complete science fair projects as an integral part of their curriculum. 4th graders work on class projects. Participation for all other students is optional. Once your child has begun the project, however, they should be encouraged to complete it.

Choosing a Project: 4th and 5th grade science teachers provide in-class guidance on project selection. Projects for K-3 students are optional and generally activities, not complicated experiments. Feel free to help your child choose a project from books, the internet, or other sources. An excellent website for choosing a science project is: www.sciencebuddies.org. Everyone can pick a project that suits interests, time, and available resources.



Family Assistance: 5th graders are expected to complete the experiment independently at home, but do a lot of the prep work at school. A detailed packet will be given to the students to provide assistance with the entire science fair process. This packet will be explained fully in class. 4th graders complete group projects at school.

Younger students (K-3) will need your help. You know your child best and can gauge how much assistance they need. Try to minimize frustration, but make sure your child has the full benefit of **doing** the science project and **understanding** what is going on. In the end, success depends upon your child having fun and increasing their understanding of the scientific phenomenon being explored. For **all** students you can:



- Help gather supplies and materials.
- Provide an extra pair of hands for tasks that require it.
- Take pictures of your child working on the science project; these pictures can be used in the project display for the Science Fair.
- Discuss the project. Make sure your child understands the concepts, and what they are doing.
- Ask leading (sometimes **very** leading) questions to help guide your child to the next step, without telling them specifically what to do.

Be very encouraging if the project runs into difficulty. Unanticipated results do not mean that the project is a failure. Scientists learn a lot from experiments that go awry. This is how science really works!

If you need assistance at any other time or have a question about the Science Fair please contact Brian Hatchl at brian.hatchl@verizon.net or Julie Bolin at julie.bolin@apsva.us.

Scientific Method: Scientists use a specific process, called the Scientific Method, to advance scientific knowledge. Our young scientists should do the same. The general process is:

- 1) **Ask a question or make an observation.** What are you curious about, or what have you seen that makes you wonder?
- 2) **Conduct research.** What can you find out about this topic by doing a little reading?
- 3) **Write a hypothesis.** Based on what you discovered in your research, what do you think the answer to your question is, or the reason for your observation?
- 4) **Perform tests or experiments.** What will you do to test your hypothesis?
- 5) **State your conclusions.** What did your experiment show? Did the experiment confirm your hypothesis? Your hypothesis may not be correct. That's OK!
- 6) **Discuss the outcome.** What do these results mean? How could you use them in everyday life? Do they raise other questions that could lead to other experiments?



Level of Effort: The expectation is that this project need not take more than 3 or 4 total hours of active effort, including putting together the display board. For K-1st graders even a couple of hours may be enough. If your child is motivated to spend more time on the project, be supportive as long as this is not interfering with other important activities. Start working on the project a couple of weekends before the Science Fair. It's not much fun rushing to finish the night before.



Supplies and Materials: Many projects require simple, inexpensive, household items that can be found at a grocery, hardware or drug store. If you have trouble getting a few supplies, let your child's teacher or the Science Fair coordinators know.

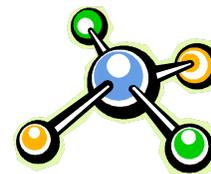


Safety: Parents should provide necessary oversight during this project to keep children safe.

Science Fair Display: Display boards are available from local stores such as Michaels and A.C. Moore.

When the experiment is complete, putting together the display may take more time than the actual project! Your child can be creative: drawing pictures, adding photos, and telling the story. Important components include:

- project title and the student's name,
- question being asked, or phenomenon being explored,
- methods: steps taken to explore the question or phenomenon,
- results: what happened during the project.



If your child is interested, they can expand these basic components to include:

- hypothesis: prediction of what will happen, made before doing the experiment,
- table or graph of any data that are generated,
- conclusion: discussion of the results, including what they may mean for real life situations.

The display can also include products of the project, as long as they are small enough to fit on the space in front of the display board and are not messy (no leaky containers of liquid, please). Be aware that even with 'Do Not Touch' signs and adult supervision there will be some inevitable handling, so leave fragile items at home.

At the Fair: Thursday, February 20th! The project should be brought to school 8-9 a.m. that morning. Projects will be on display for classes during the day, and the fair will be open to families and our community that evening from 7:00-8:30 p.m. The evening fair will include activities involving a variety of science demonstrations and a chance to have fun with science. Join us!



Teachers and parents will provide positive written feed-back to the students using the Comment Cards. If you have time during the day on the 20th feel free to volunteer to write comments. Use this link to sign up:

<https://tinyurl.com/yx88tfgy>

Projects are not given scores or awards. This is not a competition. Everyone who participates is successful!