



# Introducing Science Projects

Date: July 23, 2018

Dear Parents:

Your child will have the chance to solve his or her own science mystery by doing a science project, a mandatory assignment for your child's class.

Since your child has the chance to pick his or her own science project question, from the physics of making music to the biology of tide pool animals, he or she will have the chance to experience the joy of discovery.

When starting a science project, a student chooses a question he or she would like to answer. Then, he or she does targeted library and Web research to gain the background information needed to formulate a hypothesis and design an experimental procedure. After writing a report to summarize this background research, the student performs the experiment, draws conclusions, and communicates the results to teachers and classmates.

Through time management and project planning, your child will take on the responsibility of completing a project over at least a ten-week period. Your child will discover his or her creativity by brainstorming science project questions and figuring out how to display the process and results. A science project, through its challenge to ask questions and discover, is truly a real-world experience in innovation, similar to what scientists do in their careers.

We will provide your child with sufficient support to succeed, so that he or she develops enthusiasm for scientific discovery. First, your child will accomplish each step of the project by doing homework assignments. We will review the assignments at key checkpoints along the way, so that you won't face helping your child do a project the last night before the fair. Second, we have included a basic guide (enclosed) of how to help without getting over-involved.

To get started, read through this packet: Student Science Project Schedule and Guide to Science Projects.

You will have the opportunity to approve the project your student selects by signing a Science Project Proposal Form, one of the early assignments on the attached schedule.

If you have any questions, please email me at ssnyder2@wcpss.net or phone at 919-466-4377.

Sincerely,

Included:

- A Parent's Guide to Science Projects
- Student Science Project Schedule



# Parent's Guide to Science Projects

## Information on the Scientific Method

Science projects should follow the six-step scientific method. These steps are shown on the chart below. A comprehensive Science Buddies Project Guide ([www.sciencebuddies.org](http://www.sciencebuddies.org)) provides direction on all of the steps.

## Time Management

See your child's Student Science Project Schedule for all of the key due dates. Help your child meet these dates by getting out your family calendar and marking the interim due dates. Block out times for trips to the library and other work time. Look for any scheduling conflicts, such as vacations, and discuss issues with the teacher.

## How to Help

As your child works on his or her project, he or she will likely face stumbling blocks. To help, ask questions to help your child figure things out; don't just provide the answers. Open-ended questions, such as, "What else could you try to solve this?" or "What is stopping you from going on to the next step?" are best (Fredericks & Asimov, 2001, p.xiii). Sometimes just talking it out can help children get unstuck. If not, ask the teacher for help. Respect your child's independence in learning by helping at the right level.

## Helping at the Right Level at Every Step

Project Step	Helping at the right level:	Going too far:
Ask a question.	<ul style="list-style-type: none"> <li>Discussing with your child whether a project idea seems practical</li> </ul>	<ul style="list-style-type: none"> <li>Picking an idea and project for your child: A topic not of interest will turn into a boring project.</li> </ul>
Do background research.	<ul style="list-style-type: none"> <li>Taking your child to the library</li> <li>Helping your child think of keywords for Internet searches</li> </ul>	<ul style="list-style-type: none"> <li>Doing an Internet search and printing out articles</li> </ul>
Construct a hypothesis.	<ul style="list-style-type: none"> <li>Asking how the hypothesis relates to an experiment the child can do</li> </ul>	<ul style="list-style-type: none"> <li>Writing the hypothesis yourself</li> </ul>
Test the hypothesis by doing an experiment.	<ul style="list-style-type: none"> <li>Assisting in finding materials</li> <li>Monitoring safety (you should always observe any steps involving heat or electricity)</li> </ul>	<ul style="list-style-type: none"> <li>Writing the experimental procedure</li> <li>Doing the experiment, except for potentially unsafe steps</li> <li>Telling your child step-by-step what to do</li> </ul>
Analyze data and draw a conclusion.	<ul style="list-style-type: none"> <li>Asking how your child will record the data in a data table</li> <li>Reminding your child to tie the data back to the hypothesis and draw a conclusion</li> </ul>	<ul style="list-style-type: none"> <li>Creating a spreadsheet and making the graphs yourself, even if your child helps type in values</li> <li>Announcing the conclusion yourself</li> </ul>
Communicate your results.	<ul style="list-style-type: none"> <li>If a presentation is assigned, acting as the audience</li> <li>If a display board is assigned, helping to bring it to school</li> </ul>	<ul style="list-style-type: none"> <li>Writing any of the text on the display board</li> <li>Determining the color scheme and other graphic elements</li> </ul>