

<p>What is the Scientific Method?</p>	<p>The Scientific Method is a process used to find answers to questions about the world around us.</p>
<p>Is there only one Scientific Method?</p>	<ul style="list-style-type: none"> <li>• No! There are several versions of this scientific process ranging in the number of steps.</li> <li>• However, all versions begin with a question to be answered based on observations of the world around us and provide an organized method for conducting and analyzing an experiment.</li> </ul>
<p>Which version will we use?</p>	<p>We will be using a 7-step version in class with the following steps:</p> <ol style="list-style-type: none"> <li>1. Formulate a question.</li> <li>2. Research the question.</li> <li>3. Form a hypothesis.</li> <li>4. Conduct an experiment to test your hypothesis.</li> <li>5. Analyze data.</li> <li>6. Draw Conclusions.</li> <li>7. Communicate results.</li> </ol>
<p>Do real scientists use this process?</p>	<ul style="list-style-type: none"> <li>• It's important to note that even though many scientists do use the idea of the Scientific Method for their daily work, they do not necessarily use each of the individual steps.</li> <li>• Also, a similar version of the Scientific Method has been adopted by businesses all over the country. It teaches employees and management to diagnose a problem, think about ways of solving that problem, then testing those ideas to try and solve the problem. It's the same process but with a twist!</li> </ul>
<p>Step 1: Formulate a question</p>	<ul style="list-style-type: none"> <li>• What do you want to know or explain?</li> <li>• Use observations you have made to write a question that addresses the problem or topic you want to investigate.</li> </ul>
<p>Step 2: Research the question</p>	<ul style="list-style-type: none"> <li>• This is an important step, especially when you do an independent investigation such as a science fair project.</li> <li>• Researching your question lets you know if others have done this same experiment before and if so, what their data suggests. If they had a widely accepted conclusion, you may want to try a different angle with your experiment or test a different variable.</li> <li>• You should also research the scientific concepts associated with the experiment. For example, if you are testing to see which paper towel brand is the most absorbent, you should research absorbency, paper material, and quality control testing. This will help answer the "WHY?"</li> </ul>

Step 3: Form a hypothesis	<ul style="list-style-type: none"> <li>• What do you think will happen?</li> <li>• A hypothesis is your prediction for the outcome of the experiment.</li> <li>• It is based on your observations and should be testable!</li> </ul>
Step 4: Conduct an experiment to test your hypothesis	<ul style="list-style-type: none"> <li>• Design a procedure that tests your hypothesis to see if your prediction is correct.</li> <li>• Record all of your data and observations and put them into a table that is neat and organized.</li> </ul>
Step 5: Analyze data	<ul style="list-style-type: none"> <li>• Is your data reliable? Does it make sense?</li> <li>• Put your data into a chart or graph and look for any trends.</li> </ul>
Step 6: Draw conclusions	<ul style="list-style-type: none"> <li>• Do your data and observations support your hypothesis?</li> <li>• If you cannot make a definite conclusion, you may need to try the experiment again.</li> <li>• This means you may either need to rewrite your procedure if it was not specific enough; you may need to change your hypothesis.</li> </ul>
Step 7: Communicate results	<ul style="list-style-type: none"> <li>• Report the results of your experiment to let others know what you have learned.</li> <li>• This will be represented as either a lab report, oral presentation, or Science Fair display board.</li> <li>• Scientists may want to repeat your procedure to see if they get the same results as you. They may also tweak your experiment a little and have a slightly different focus.</li> <li>• Also, your report may lead to a new question which may lead to another investigation. This of course brings us right back to the first step again!</li> </ul>