Big6™ Science Fair Project Organizer

Name: _____

Big6 #1 Task Definition

1. **Choose a topic for study.** Here is a way to start: Observe the world around you. What interests you about it? What hobbies do you like to do? If you cannot think of anything go back to the Feature Section Page on the Big6 Kids web site and click on "Ideas for Topics."

   Make a list of topics here:

   a. Look at the topics on your list. How can you turn one of those interests into a scientific study (a question to explore) that you will enjoy and will capture the interest of those who view it?

   b. Write your topic here:

2. **Make your topic into a question that you will answer by conducting an experiment**.

   Write your question here:

3. **Make a hypothesis**—predict what you think the answer to your question might be. You can rephrase the question into a statement.

   Write the hypothesis here:

4. **Begin your background research**. First make a list of questions that you need to find out about your topic before you start.

   Make a list of questions here:

   You will actually do the reading and note taking in Use of Information (Big6 #4) below.

5. **Develop a method**. You need to figure out a way to prove or disprove (test) your hypothesis. This is the experiment you will perform on your subject. The outcome should be measurable. This means that you should be able to tell how much or how little (usually in numbers) your hypothesis was proven or disproved. Your method should be observation and/or experimentation. Consider the amount of time you need for the study and when the project is due. For example: plant growth experiments take weeks to complete. Plan carefully!

   Describe your method here (talk to your teacher or parent if you need help):

   How much time will you need for this project? Consider that scientists repeat their experiments several times in order to confirm their results. Try to plan time to do the experiment at least two times. Ask your science teacher how many repeats or sets of the experiment you should do.

When is it due? If parts are due separately, then create a calendar or timeline.

Do you have time to do this study? If not, start over at number 1.

Big6 #2 Information Seeking Strategies

1. **Sources** you will need for background information. Brainstorm a list of these sources in which you can find background information for your topic. Consider using library books, scientific magazines, experts on your topic, and web sites to which your library subcribes. Use free web sites if you can't find anything else. Ask your librarian for help!

   Make a list here:

   Now decide which will be the best to use because you can find them (or have someone help you find them). Circle them in the list above.

2. **Materials** you think you will need for your experiment.

   Make a list here:

   Who can help you get these materials?

Big6 #3 Location & Access

1. **Locate** the sources for your background information. Your librarian can help you find the books and web sites you need.

2. **Gather** the materials you will need for your experiment (the materials you listed in #1 above). You will probably need your teacher's or your parent's help getting the materials. Include in your materials, a notebook so you can record all of your experimentation method, observations, and data.

Big6 #4 Use of Information

1. **Answer** the questions you developed for your background information (Big6 #1 Task Definition number 4 above) by reading and taking notes. Write down any thing else that is interesting about your topic of study. Be sure to cite your sources (this means to give credit to the souces since you borrowed from them.)

2. **Conduct the experiment** you designed in the Method section above (Big6 #1 Task Definition number 5). Take notes and keep careful records on everything you do. Take photographs of each step of the experiment to use when you display the results. This may take several days or weeks. Record your results. Scientists repeat the experiment in order to confirm their results. Do this the number of times you planned in the method section in Task Definition above).

Big6 #5 Synthesis

1. **Draw a conclusion.** State whether your hypothesis was proven or not and explain the results.

2. **Make a plan to display** your question, hypothesis, method, conclusion and the results. Your background information and data can be displayed in a notebook or report. You can include the written process in the report also. Using charts and graphs help your audience understand your data. Don't forget to include a bibliography (list of sources you used for your background information).

3. **Make a list of what you will need for the display**. A tri-fold poster board (to set behind your materials) is available at many hobby shops or office supply stores.

4. **Create the display**. Be sure to include a title and your name on the tri-fold poster. Use a word processor instead of handwriting the display and report. Include graphics and pictures (possibly photographs) to help your audience understand what you were trying to do. Include a shortened version of the process on your display. Here is where you will use your photos to help the judges and audience understand what was

included in the steps of the study. Include some of your materials and show as much of the experiment as you can.

5. **Present your findings**. Be ready to talk to the judges about your process and results and answer questions from people visiting your project.

Big6 #6 Evaluation

Before you take your project to school or to the science fair, answer the following questions to make sure that you have done your best work:

1. **Evaluate** your method.

   Was the method the best way to prove or disprove the hypothesis? If you answered no, then what would you change about the method? Add this to your conclusion.

2. **Evaluate** your background research.

   Did your background research give you adequate information about your subject to get you started on planning your experiment? If not, what information should you have researched? Is it too late to add this information to your report?

3. **Evaluate** your display.
   - Does your display contain your name and a title?
   - Is it word processed, neat and organized using headings and subheadings?
   - Do the text, graphics, and photographs extend the judges' and audience's understanding of your process and results?
   - Are your materials safe? Can your materials break or spill and harm young children who may look at your project? If so, how can you make the materials safe? This is very important!
   - Would you be proud for anyone to view this project?