

Designing an Experiment Using the Scientific Process

1. Question

- Think of something that you want to explore or learn more about.
- Ask yourself “What would happen if...?”

2. Hypothesis

- Make a prediction based on what you already know about what you’re studying.
- Say “I think that this is going to happen because I know that...”

3. Plan

- Design an experiment that will prove your hypothesis
- Control the variables
- Be sure your experiment addresses only your hypothesis

4. Experiment

- Conduct your experiment according to the plan you have devised
- Record all the relevant data you observe
- If possible, do your experiment more than once to be sure your results are consistent

5. Analyze

- Examine your data
- Pay careful attention to anything that supports or contradicts your hypothesis
- Consider any variables that may have affected your results

6. Conclusion

- Write up your findings in a neat, organized fashion
- Address whether your experiment proved or disproved your hypothesis
- Talk about how you would change your original plan if you re-designed your experiment.

Proposal for a Landforms Stream Table Experiment

Your assignment is to come up with a proposal for the experiment your group is going to conduct. Refer to the first three steps on the opposite side of this sheet when writing your proposal. Use the knowledge you have gained in the first three stream table experiments to formulate questions about this process of erosion and deposition that you would like to explore more. Your Landforms Journal also has some good experiment suggestions that you can refer to, but remember that I would really like to see your experiment guided by *your* curiosity and creativity! Have fun and be a curious scientist!