



Science: Summer Assignment

Design your own investigable science experiment in which you will be required to:

- Ask a **scientific question**
- Make a **hypothesis**
- Set up any necessary **materials**
- Collect and organize **data** in a chart or graph
- Analyze **results**; make **changes** or adjustments if necessary
- Draw a **conclusion**

Use **ideas** and materials from your summer surroundings! Think of experiments based on **science subjects** studied (weather, absorption, pollution, erosion, heart rate, lung capacity, etc.) Think of activities that are fun for the **whole family** (bowling, gardening, singing, swimming, eating, etc.)

NOTE: Students must receive Parent Approval before conducting any experiments. Be safe scientists!

Record all steps of your experiment in a notebook or packet; **bring** all raw data, rough drafts, and final lab report with you to your Science teacher on the **first day** of school! Be prepared to **present** your experiment to your classmates!

A brief example:

Title:	Knock 'em down!	Parent Approval: <i>Mrs. Robertson</i>										
Purpose:	Which bowling ball will knock down the most pins?											
Hypothesis:	If the mass of the bowling balls is changed, then the <u>lightest</u> ball will knock down the most pins, because the lightest ball will be the fastest down the alley.											
Independent Variable: <i>(Manipulated Variable)</i>	Mass of the bowling ball											
Dependent Variable: <i>(Responding Variable)</i>	Number of pins knocked down											
Constant Variables:	Player, Distance between player & pins, Pins, Size of ball, Pin arrangement											
Materials:	4 lb bowling ball, 5 lb bowling ball, 6 lb bowling ball, 7 lb bowling ball, 10 pins											
Procedure:	<ol style="list-style-type: none">1. Set up the ten pins in the shape of a triangle exactly 10 meters from the player.2. Roll the 4 lb bowling ball down the lane 10 times.3. Calculate the average the number of pins knocked down.4. Repeat steps 1-3 using the 5 lb, 6 lb, and 7 lb bowling balls.											
Results:	<table border="1"><thead><tr><th>Bowling Ball:</th><th>Average # of Pins:</th></tr></thead><tbody><tr><td>4 lb</td><td>6</td></tr><tr><td>5 lb</td><td>7</td></tr><tr><td>6 lb</td><td>7.5</td></tr><tr><td>7 lb</td><td>8</td></tr></tbody></table>		Bowling Ball:	Average # of Pins:	4 lb	6	5 lb	7	6 lb	7.5	7 lb	8
Bowling Ball:	Average # of Pins:											
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5 lb	7											
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Analysis:	For this bowling ball player, the best bowling ball to use is the 7 lb ball because the player knocked down an average of 8 pins as compared to only 6 pins with the 4 lb bowling ball.											