<table>
<thead>
<tr>
<th>Essential Standard</th>
<th>Science Inquiry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clarifying Objectives</td>
<td>Lab Process Skills</td>
</tr>
<tr>
<td><strong>Essential Questions</strong></td>
<td><strong>Knowledge/Skills</strong></td>
</tr>
<tr>
<td>How do students remain safe in the laboratory environment?</td>
<td>Students will:</td>
</tr>
<tr>
<td>What is the proper way to use and care for lab equipment?</td>
<td></td>
</tr>
<tr>
<td>How should students use and apply the scientific method?</td>
<td></td>
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<tr>
<td>Learning Progressions</td>
<td></td>
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<tr>
<td>How do students safely apply the scientific method?</td>
<td></td>
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<tr>
<td><em>By the end of the year, students should be able to design their own experiment to answer questions and solve problems. Learning experimental design is an ongoing process.</em></td>
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</table>
### Assessments/Probes

**Formative Assessment:**  
Teacher made quiz  
Lab of teacher’s choice  
Students will create an Alice World on either Lab Safety or the Scientific Method.

**Summative Assessment:**  
Ongoing through-out the year as students apply proper safety practices and problem solving skills.  
Teacher Made Assessments (derived from information delivered)

### Vocabulary

| List of lab equipment appropriate for lab. | • Hypothesis  
| Terms from the lab safety contract. | • Qualitative Observation  
| Units of the metric system. | • Quantitative Observation  
| (TERMS TO BE USED AS VOCAB) | • Procedure  
| | • Independent variable  
| | • Dependent variable  
| | • Constant  
| | • Inference  
| | • Conclusion  
| | • Purpose  
| | • Data/Results  

### Resources

- Mr. Lee’s Scientific Method Rap ([http://www.youtube.com/watch?v=MV8ISmlo4Ac](http://www.youtube.com/watch?v=MV8ISmlo4Ac))  
- Lab Safety Rap ([http://www.youtube.com/watch?v=xJG0ir9nDtc](http://www.youtube.com/watch?v=xJG0ir9nDtc))  
- Lab equipment and metric measure tools  
- SMART Board and other SMART equipment  
- Alice Software ([www.alice.org](http://www.alice.org))  
- Computer Lab or COW (Computer Lab on Wheels) Access

### Vertical Alignment

Ongoing
Scientific Method Flow Chart

Most of us you a loose form of the scientific method to solve everyday problems. For each of the problems and observations below, develop a hypothesis to explain what’s happening. Then describe how you might test your theory with a simple experiment.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Observation</th>
<th>Hypothesis (If..., then statement)</th>
<th>Experiment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your cat rejects a can of tuna cat food.</td>
<td>She ate the can of chicken flavored food you feed her last night, and the beef from the night before.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your bedroom air conditioner blows very cold air at night, but only cool air during the day.</td>
<td>Your bedroom gets lots of direct sunlight all day long.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>You’re talking on your cell phone in your bedroom, when suddenly the reception goes bad for a minute.</td>
<td>Just before the reception clears up, you hear the microwave beep in the kitchen.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Order of Events

Unscramble the letters to identify which steps of the scientific method each statement represents. Then number the statements in chronological order, 1-7.

_____ We bought a clock of unsliced cheese on the same day, and it isn’t moldy at all.

**ITVBARNOESO** ________________________________

_____ I think that sliced cheese gets moldy faster because people touch it more.

**PSHEYTSHIO** ________________________________

_____ After five days, both sets of cheese that I touched are moldy. Both sets of cheese that I left alone have no mold.

**SRUETL** ________________________________

_____ I keep four separate sets of cheese in the refrigerator; five slices that I touch once a day; five slices that I leave untouched; five cubes of unsliced cheese that I touch once day; and five cubes that I leave untouched.

**MRETEPXNIE** ________________________________

_____ Why is the sliced cheese in the fridge all moldy?

**BEMOPLR** ________________________________

_____ I was right: Touching is the critical factor in making cheese mold.

**LNCSUOICNO** ________________________________

_____ There must be something about sliced cheese that makes it more likely to mold.

**ECRFENINE** ________________________________
Scientific Method Foldable – Sponge Bob Science

Looking in your interactive notebook, write out the steps of the scientific method:
1. ___________________________________
2. ___________________________________
3. ___________________________________
4. ___________________________________
5. ___________________________________
6. ___________________________________

Flower Power
SpongeBob loves to garden and wants to grow lots of pink flowers for his pal Sandy. He bought a special Flower Power fertilizer to see if it will help plants produce more flowers. SpongeBob thinks the fertilizer will help make the most flowers. He plants two plants of the same size in separate containers with the same amount of potting soil. He places one plant in a sunny window and waters it every day with fertilized water. He places the other plant in the same sunny window and waters it with plain water every day. He then measures the height of the plants every 2 days in cm. In the end, the plant with the fertilizer grows a total height of 15 cm, while the one without the fertilizer grows a total of 8 cm.

1. What is the stated question:

2. What is SpongeBob’s hypothesis?

3. What data does he collect during the experiment?

4. What should SpongeBob’s conclusion be?

Scientific Method Foldable
1. Fold your printer paper in half landscape (hot dog) style. Now fold the hot dog into 3rds. You should now have 6 equal sized boxes.
2. Write the 6 steps of the scientific method, 1 for each box in order.
3. Write a description for each step in your own words.
4. Draw what SpongeBob did for each of these steps in the flower power experiment.
5. Write an explanation for each picture below the drawing.