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| <b>Title:</b>                | <b>The Scientific Method</b>   |
| Grade Levels:                | <input type="checkbox"/> 10 <sup>th</sup> grade  |
| Curriculum Areas:            | <input type="checkbox"/> Biology I   |
| Measurable Objectives:       | <p>TLW:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> State the steps of the Scientific Method.</li> <li><input type="checkbox"/> Demonstrate how to properly carry out all of the steps of the Scientific Method.</li> <li><input type="checkbox"/> Design a scientific experiment.</li> <li><input type="checkbox"/> Identify proper technology to use within the experiment.</li> <li><input type="checkbox"/> Conduct scientific research using various sources (print and electronic).</li> <li><input type="checkbox"/> Present and publish their findings appropriately.</li> </ul> |
| LA Comprehensive Curriculum: | <p>Subject, Unit #, Name of Unit Activity, GLE #s</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> This will be done within the Biology Comprehensive Curriculum. (This is not listed as an actual activity in this CC, however, it is an important component of Biology and is tested on the Biology EOC.)</li> </ul>  |

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| <p>Grade Level<br/>Expectations: (GLEs)</p>       | <p><b>Science As Inquiry:</b></p> <ol style="list-style-type: none"> <li>1. Write a testable question or hypothesis when given a topic (SI-H-A1)</li> <li>4. Conduct an investigation that includes multiple trials and record, organize, and display data appropriately (SI-H-A2)</li> <li>5. Utilize mathematics, organizational tools, and graphing skills to solve problems (SI-H-A3)</li> <li>6. Use technology when appropriate to enhance laboratory investigations and presentations of findings (SI-H-A3)</li> <li>8. Give an example of how new scientific data can cause an existing scientific explanation to be supported, revised, or rejected (SI-H-A5)</li> <li>9. Write and defend a conclusion based on logical analysis of experimental data (SI-H-A6) (SI-H-A2)</li> <li>10. Given a description of an experiment, identify appropriate safety measures (SIH-A7)</li> <li>11. Evaluate selected theories based on supporting scientific evidence (SI-H-B1)</li> </ol>   |
| <p>K-12 Educational<br/>Technology Standards:</p> | <ul style="list-style-type: none"> <li> Collaborate (e.g., desktop conferencing, e-mail, on-line discussions) with peers, experts, and others to compile, synthesize, produce and disseminate information, models, and other creative works. (1,2,3,5)</li> <li> Use appropriate technology to locate, retrieve, organize, analyze, evaluate, and communicate information for problem solving and decision making.(1,2,4)</li> <li> Evaluate the usage of technology and the processes involved during and upon completion of individual and group projects. (2,5)</li> <li> Refine knowledge and enhance skills in keyboarding, word processing, desktop publishing, spreadsheets, databases, multimedia, and telecommunications in preparing and presenting classroom projects. (3,6)</li> </ul> |
| <p>Technology Connection:</p>                     | <ul style="list-style-type: none"> <li> Computer with internet access.</li> <li> PowerPoint</li> <li> EBSCO</li> <li> Brain Pop</li> </ul>  |
| <p>Assessment:</p>                                | <ul style="list-style-type: none"> <li> Quizzes on the Scientific Method</li> <li> Rubric for Lab report</li> <li> Rubric for Presentation</li> <li> Teacher observation</li> </ul>   |

Procedures:

-  DAY 1 (The Student Will: TSW and The Teacher Will: TTW)
1. TSW complete the circle map on the Scientific Method in the Power point notes "Scientific Investigations".
  2. TSW watch the Brain Pop video on "The Scientific Method"  
(<http://www.brainpop.com/science/scientificinquiry/scientificmethod/>)
  3. TSW take notes on The Scientific Method using the note sheet provided by the teacher.
  4. TSW complete a flow map of the steps of the scientific method as closure for today.
-  DAY 2
1. TTW introduce the Scientific Method project to the students. Explaining that this will be a semester long, class project. They are going to work on each part together in class.
  2. TSW review the following steps: Observation, Asking a Question, and Researching the question.
  3. TTW show a picture of a nature scene, or other location and have the students write down all of the observations that they can make in one minute. (Picture can be found by completing a "Google Images" search)
  4. TSW then test how good their observation skills are by completing the "Teacher Observation" Lab. ( The teacher steps behind a current... or right outside the door and the students will answer various questions about the appearance of the teacher.. what color are her eyes, hair, describe her shirt... etc.)
  5. The teacher will again become visible to the students and they will share their responses.
  6. TSW will then discuss, as a class, what they want their class experiment to be about.
  7. TTW demonstrate how to use EBSCO, Nettecker, and Google to research the chosen topic.
-  DAY 3
1. TTW introduce the step of "Forming a Hypothesis" by asking TS to fill in the circle map of what they think a Hypothesis is.
  2. TSW take notes on the Hypothesis which will be written as an "if...then" statement and it contains the two parts: independent and dependent variable.
  3. TSW complete the "T chart" on the board on the

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| Materials:      |  Nintendo DS Hand-held device<br> Brain Age game software for the DS<br> Computer<br> Microsoft word (or another word processing program)<br> Microsoft Power Point |
| Teacher's Name: |  Christina Verberne   |
| School:         |  Loranger High School   |