Contact Information	Davidson, Emily
School	Westridge Middle School
District	Oakridge School District
Unit Title	Scientific Process
Grade level with which unit is aligned to state standards.	6th
Grade level(s) at which unit may be taught.	4th-8th
Duration	13 lessons (45 min. each)
Unit Overview	This unit was created to help students internalize the scientific process.
Subject(s)	Writing, Science, Technology, Careers
Strand(s)	Scientific Inquiry; Writing Modes, Communication; Technology; Personal Management, Communication, Teamwork
Common Curriculum Goal(s)	1. Write narrative, expository, and persuasive texts, using a variety of written forms—including journals, essays, short stories, poems, research reports, research papers, business and technical writing—to express ideas appropriate to audience and purpose across the subject areas. 2. Communicate supported ideas using oral, visual, written, and multi-media forms in ways appropriate to topic, context, audience, and purpose. 3. Structure oral, visual, written, and multi-media presentations in clear sequence, making connections and transitions among ideas and elements. 4. Formulate and express scientific questions or hypotheses to be investigated. 5. Design safe and ethical scientific investigations to address questions or hypotheses. 6. Conduct procedures to collect, organize, and display scientific data. 7. Analyze scientific information to develop and present conclusions.

Academic Standards Addressed	1. Expository Writing a. Write responses to literature: • Develop interpretations that show careful reading, understanding, and insight. • Organize the interpretations around several clear ideas. • Develop and justify the interpretations through the use of examples and evidence from the text. b. Write research reports: • Pose relevant questions that are focused enough to be thoroughly answered in the report. 2. Convey clear, focused main ideas with accurate, relevant supporting details, including documentation of sources, appropriate to audience and purpose. 3. Demonstrate organization by developing a beginning, middle, and end and by providing clear sequencing of ideas and transitions. 4. Based on observations and scientific concepts, ask questions or form hypotheses that can be explored through scientific investigations. 5. Design a scientific investigation to answer questions or test hypotheses. 6. Collect, organize, and display sufficient data to support analysis. 7. Summarize and analyze data including possible sources of error. Explain results and offer reasonable and accurate interpretations and implications.
Instructional Technology Common Curriculum Goals (CCG) Addressed	▪ Select and use technology to enhance learning and problem solving. ▪ Design, prepare, and present unique works using technology to communicate information and ideas. ▪ Demonstrate proficiency in the use of technological tools and devices.
Career Related Learning Standards Addressed:	Exhibit appropriate work ethic and behaviors in school, community, and workplace. Demonstrate effective communication skills to give and receive information in school, community, and workplace. Demonstrate effective teamwork in school, community, and workplace.
How will student use the technology as a tool to enhance their learning?	The use of technology engages and facilitates knowledge construction: (a) essential to the activity; (b) seamless integration; (c) gain essential knowledge; (d) communicate with a wide audience; (e) develop meaningful products; (f) analyze data.
Objective	Students will learn and apply the scientific process, communicating their knowledge through a power point.
Prerequisites	Basic Power Point
Non-Technology Materials	Paper, pencil, science experiments
Does this unit involve the use of technology	Yes
Required Hardware	Laptops, printer, projector

Required Software	Power-point, Word,
Links to relevant web sites and Other Technology	Introduction to method: http://www.isd77.k12.mn.us/resources/cf/SciProjInter.html Interactive scientific method: http://biology.clc.uc.edu/courses/bio104/sci_meth.htm Science Fair: http://school.discovery.com/sciencefaircentral/scifairstudio/handbook/scientificmethod.html
Preparation	Create an interactive power point presenting each step and the assignments required. Reserve the mobile lab. Gather materials for experiments.
Instruction	Lesson 1: Introduce the scientific process stating what it is, and when, how and why it is used. Lesson 2: Step 1 – Ask a Question Give a complete description of step 1. Present the students with various example scientific phenomena and have them complete Step 1 in each experiment. Lastly, have them think of their own scientific phenomena and complete step 1 for their phenomena. Lesson 3: Step 2 – Form a Hypothesis Give a complete description of step 2. Describe what a hypothesis is. Present the students with various example experimental questions and have them complete Step 2 in each experiment. Lastly, have them think of a scientific phenomena and complete step 2 for their phenomena. Lesson 4: Step 3 – Test the Hypothesis Give a complete description of step 3. Present the students with various example hypotheses and have them explain how they would test each hypothesis. Lastly, have them think of a scientific phenomena and complete step 3 for their phenomena. Lesson 5: Step 4 – Analyze the Results Give a complete description of step 4. Present the students with various example tested experiments and have them complete Step 4 in each experiment. Lastly, have them think of a scientific phenomena and complete step 4 for their phenomena. Lesson 6: Step 5 – Draw Conclusions Give a complete description of step 5. Present the students with various example experimental results and have them complete Step 5 in each experiment. Lastly, have them think of a scientific phenomena and complete step 5 for their phenomena. Lesson 7: Step 6 – Communicate Results Give a complete description of step 6. Present the students with various example conclusions to experiments and have them complete Step 6 in each experiment. Lastly, have them think of a scientific phenomena and complete step 6 for their phenomena. Lesson 8: Scientific Experiment (depending on the experiment, this may take 1 or 2 lessons) Present the students with a scientific phenomena, and have them complete the scientific process starting with step on and ending with step 6. Lesson 9-10: Power Point Creation (depending on the students knowledge of power point this may take more or less time than stated) Using the wireless labs, have each student create a power point presenting the scientific process using details and examples.
Modifications for Special Needs Students:	None needed, instruction will be differentiated.

Modifications for Gifted Students:	None needed, instruction will be differentiated.
Motivation	Students will be motivated through the privilege of using the wireless lab and participating in hands-on experiments.
Assessment	Students' learning will be assessed through the completion of a power point presentation on the scientific process and a write-up communicating each step of the scientific experiment.