

# The 5 E's: A Model for Designing Lessons for Inquiry Planner<sup>1</sup>

## Logistics Information:

- a) Sense of Smell Education Learning Cycle Example
- b) Iowa Core Essential Concepts  
Science (Inquiry):
  1. Asks questions about objects, organisms, and events in the environment
  2. Uses tools to gather data and extend the senses
  3. Use data to construct reasonable explanations
  4. Communicate investigations and explanationsScience (Life Science):
  1. Understand and apply knowledge of basic human structures (human body parts and their functions)Social Studies (Behavior):
  1. Understand all people have individual traits
  2. Understand interactions between self and the peer group
- c) Characteristics of Effective Instruction are embedded within the Iowa Core Curriculum
- d) A synthesis of *Project Learning Tree*
- e) Developed April 16, 2010

**Background Information** (What do observers need to know about our learners, classroom and school?): Schools will vary

## Materials Required:

*Peppermint Beetle* (*Project Learning Tree*, p. 23-25)

- Small bottle of concentrated flavoring (peppermint, cinnamon, wintergreen, etc)
- Cotton balls
- Ball of yarn
- Smelling jars containing items with different scents

## Time Period:

2-3 45-minute class periods

**Name of the Unit:** Sense of smell

- I. Plan of the Unit  
Goals of the unit:

- a. Students will demonstrate how animals, including insects, use their sense of smell to respond to the environment around them.
- b. Students will identify the importance of the sense of smell in peoples' daily lives.

How this unit related to the curriculum:

Previous Grade/Course	Current Grade/Course	Next Grade/Course
	K-2 (Life Science) – Students have been introduced to and explored the sense of smell.	3-5 (Life Science) – Students will continue to explore the sense of smell as it relates to the functions of the nose.

- c. Lesson Plan: Phases in a 5E Learning Cycle (in no particular order) are Engage, Explore, Explain, Elaborate, and Evaluate. There may be multiple experiences in each phase.

Phases of the lesson: learning activities and key questions (and time allocation)	Student activities/ anticipated student reactions or responses	Teacher’s response to student reactions/ Things to remember	Evidence of Student Understanding
<p><b>ENGAGE:</b> Students will guess what is in a variety of covered containers, using their sense of smell and/or tell where they have smelled it before.</p>	<p>Smelling jars – positive or negative reaction to each scent.</p> <p>Examples – onions, cinnamon stick, vanilla, brown sugar, vinegar, rubbing alcohol, lemon.</p>	<p>Guided discussion to keep student focus on the sense of smell - Why do you like/dislike this? Where have you smelled this? What does this remind you of?</p> <p>Be mindful of student allergies.</p>	<p>KWL – K and W columns.</p>
<p><b>EXPLORE:</b> Students will work collaboratively to find the trees (or locations) that the peppermint beetles have marked.</p>	<p>Groups of students will explore the area to locate the peppermint beetles’ scent. When the group agrees, they will mark the location.</p>	<p>Monitoring and guiding students as they explore.</p>	<p>Are students working together to find and mark the scent?</p>
<p><b>EXPLAIN:</b> Students will be asked to consider why the peppermint beetles marked the identified trees (attract a mate, define a territory, etc.).</p>	<p>Students will participate in a teacher led discussion of why peppermint beetles are only found in certain locations.</p>	<p>Teacher will ask focused guided questions about the activity.</p>	<p>Student participation.</p>

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<b>ELABORATE:</b> Students will make posters of scents they like and don’t like.	Students will make posters.	Teacher provides examples, lead a discussion of items that have different smells.	Completed poster.
<b>EVALUATE:</b> Students will complete KWL chart and participate in a thoughtful discussion on the sense of smell.	Students complete “L” portion of the chart.	Teacher led class discussion on the activity.	Short quiz on the sense of smell.
<b>EXTENSION:</b> Students will explore different ways that their sense of smell impacts their daily lives.	Students will write and draw pictures of how they use the sense of smell in their daily lives. This will be followed by student sharing.	Teacher will collect and display student work.	Student produced work.