

## Lesson Identification & Learning Goals

**Prepared by:** *Stephanie Scheldt*

**Name of CT:** *Debbie Mangopoulous*

**Date (lesson planned):** *October 17, 2011*

**Date (To be taught):** *November 10, 2011*

**Curriculum material sources:**

**Title:** *Battle Creek Area Mathematics & Science Center*

**Lesson Title:**

*The life cycle of a flowering plant.*

**Grade Level:** *Second Grade*

**Learning Goals** to be addressed in the lesson from the Michigan Grade Level Content Expectations (GLCEs) and the related main ideas and practices within those learning goals

- *GLCE science process standards and related main ideas (cite sources)*
  - **S.IA.02.12** Share ideas about science through purposeful conversation.
  - **S.RS.02.15** Use evidence when communicating scientific ideas.

**Main Ideas:**

- Sharing ideas with purposeful conversation using evidence helps students clarify and verify what they are learning
- *GLCE discipline standards and related main ideas (cite sources)*
  - **L.OL.02.22** Describe the life cycle of familiar flowering plants including the following stages: seed, plant, flower, and fruit.

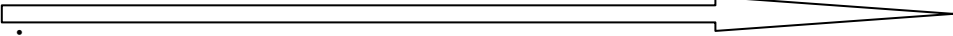
**Main Ideas:**

- All flowering plants go through the same life cycle.

**Driving/Key Question for Your Lesson:**

What does a plant look like when changing from one stage to another in its life cycle.

**Draft EPE Table addressing your learning goal embodied in your central question:**

Experiences	Patterns*	Explanations*
<ul style="list-style-type: none"> <li>- Read <i>Oh say can you Seed?</i> by Bonnie Worth</li> <li>- I will plant flowering plants in advance that show a plant at each different stage of the life cycle. Students will compare and contrast the different stages of the plant life cycle.</li> <li>- Students will observe how different plants progress through the same life cycle and compare and contrast them in relation to time, size, color, and shape.</li> <li>- Pass around a seed and have children describe one stage of the lifecycle and pass it on. This will illustrate that plant life is a cycle that begins and ends with a seed.</li> <li>-</li> </ul>	<ul style="list-style-type: none"> <li>- All plants have the same life cycle.</li> <li>- The stages of the life cycle of a flowering plant happen in a specific order.</li> <li>- The plant needs to go through all of the stages in order to complete the cycle.</li> </ul>	<ul style="list-style-type: none"> <li>- Plants have a specific life cycle that each flowering plant follows that leads to the progression from a seed to a young plant to an adult plant to a flower then a fruit and back to a seed.</li> </ul>
		<b>Application</b>

\* Document each statement with the code for national standards benchmarks or other source.

**Post-Assessment**

**Task Name:** Life cycle of a flowering plant.

**Task Description:** Draw and label the four stages in the life cycle of a flowering plant.

**Rationale:** Creating their own life cycle of a flowering plant will demonstrate an understanding of what the four stages of the life cycle are and what they look like. Also it will require knowledge of how the stages progress and change.

**Task Response Features that you are looking for:** I will use a rubric to analyze this assessment. The rubric will require that students have successfully shown and labeled each stage in the life cycle of a flowering plant. They will need to have the stages in the correct order and accurately represent each stage.

CATEGORY	Weight for Each Category	4	3	2	1
Complete	2 Points	All four stages are labeled.	Only three stages are labeled.	Only two stages are labeled.	Only one stage is labeled.
Correct Order	2 Points	All four stages are in the correct order: seed, plant, flower, fruit	Three out of four of the stages are in the correct location	Two of the stages are in the correct location	One of the stages is in the correct location
Corresponding drawing and label	2 Points	All drawings correspond accurately to the label	Three out of four drawings correspond accurately to the label	Two out of four drawings correspond accurately to the label	One out of four drawings correspond accurately to the label
Drawing accurately represents each stage	6 Points	All drawings accurately represent key elements of each stage	Three out of four drawings accurately represent key elements of each stage	Two out of four drawings accurately represent key elements of each stage	One out of four drawings accurately represent key elements of each stage
Name of plant labeled	1 Point	Plant for which they have drawn a life cycle is listed correctly.	Plant not listed	Plant not listed	Plant not listed
Presentation	2 Points	Drawings are neat, writing is clear. All words are spelled correctly. Name, date, and time are labeled.	Drawings are fairly neat, handwriting is clear. Majority of words are spelled correctly. Name, date, and time are labeled.	Drawings are a little messy, handwriting is mostly clear. At least half of the words are spelled correctly. Name, date, and time are labeled.	Drawings are sloppy, hand writing is illegible. Majority of the words are spelled incorrectly. Name, date, and time are not labeled.

## **Knowing Your Students**

### **1. *Commonly Held Ideas:***

Based on the science talk given to six students in the class I gathered information about what I areas students were knowledgeable and which areas they struggled with. This information helped me to modify my lesson to focus on areas they had trouble with and spend less time on concepts they already were comfortable with. One commonly held idea was that plants start as a seed, become a plant, and then grow a flower and end their life cycle here. Another concept that surprised me was what students listed as plants. When I asked if there were different kinds of plants all the students answered “Yes” but some were at a loss as to what the different kinds were. Students from groups 1 and 3 listed different kinds of plants all of which were flowers, while students from group 2 did not list any specific types of plants but said “there are plants that you can eat and plants that you can’t eat, there are plants that are poisonous and some that are not....there are plants with leaves, some have poisonous leaves.”

Using this information I decided to modify my lesson plan to the needs of the students based on areas in which they struggled. I was going to show just one example life cycle to my students but after this talk I decided to do three plants that were very different in one aspect of their life cycle or another. I chose an apple because it is familiar and follows all the stages of the lifecycle in a common way that will be easy to understand. I will also use a sunflower to demonstrate the idea of an unusual fruit (based on their perception of a fruit), and a cactus which is a unique plant with uncommon flowers and fruit. I will bring a variety of examples of flowering plants including a cactus, ivy, grass, and a gerbera daisy. With a wide range of flowering plants I hope my students will understand that just because a plant does not have a

flower or the flower does not look like a typical flower these plants all go through this stage in the life cycle.

**Previous Experiences and Funds of Knowledge:**

My students have had quite a few experiences with plants outside of the classroom. All of the students that I interviewed mentioned their trip to the MSU Children's Garden at one point or another and have all planted flowering plants either in class or at home. Even though they have not done very much science this year the main topic they had been studying was plants so they knew all about the parts of a plant with the exception of a fruit. Students were knowledgeable about what they were familiar with and the majority of students had only planted flowers. Based on their previous experiences I wanted to broaden their horizons so I brought in a wide variety of plants that they had not mentioned in our science talk as well as one familiar flower.

**Linguistic, social and academic challenges, resources and supports:**

To accommodate for students with social and academic challenges I will provide a hands on learning experience with a variety of examples and fair amount of repetition to reinforce difficult concepts. I will include an activity called pass the seed in which every student in the classroom will get an opportunity to participate. This will allow shy students to be involved and engaged in their learning. I will also be available to all students before beginning their assessment to clarify any questions that were not answered during the lesson.

### Overview of Activity Sequence for Lesson

Activity Number	Activity Title	Activity Summary	Rationale
1	Read <i>Oh say can you Seed?</i> by Bonnie Worth	The students will participate in an interactive read along. As I read aloud <i>Oh say can you Seed?</i> Students will recall information given in the book and apply it to the life cycle of flowering plants.	<b>Establish a question</b> I will introduce the topic before reading the book as I am reading I will point out key points and students will start to establish questions and form ideas about the life cycle of flowering plants.
2	Live plants	I will bring in live plants in all four separate stages of the life cycle so students can see firsthand the differences. They will be asked to determine the difference in a whole class discussion.	<b>Elicit student's initial ideas</b> I will show students plants in all stages of the life cycle and allow them to guess what stage they are in this will give me an idea of how well students know the four stages of the life cycle
3	Different plants same life cycle	I will bring in diagrams of the life cycles of several different flowering plants such as trees, flowers, or grasses and show how they all go through the same cycle.	<b>Explore experience and ideas for patterns</b> I will show examples of three different life cycles so students can see the pattern of the life cycle is the same for all plant
4	Seed pass	Students will pass around a seed and with each pass, name the next stage in the life cycle of a flowering plant. I will allow the students to go through the cycle 3 or 4 times so they understand it begins and ends with a seed and how it is circular.	<b>Students explain patterns</b> The students will be required to determine what stage the seed will progress to and so on as the pass the seed around the room and repeat the pattern of the life cycle
5	Assessment	The students will choose a plant and draw their own life cycle labeling and drawing a picture for all four stages.	<b>Students explain patterns</b> Students will have to independently draw and label the four stages in the life cycle of flowering plants showing they understand the pattern of the life cycle and its stages.

**Lesson I-AIM functions:**

Establish a question  
Elicit student’s initial ideas  
Explore experiences and ideas for patterns  
Students explain patterns

**Total time for lesson:** 35 minutes

**Materials Needed:**

- *Oh say can you Seed?* book.
- Flowering plants in the seed, plant, flower, and fruit stages of the life cycle.
- Elmo projector
- Three diagrams of different flowering plants.
- Paper, pencils, crayons to draw life cycle.

**Lesson Procedures Table**

*Learning Goals:*

- **S.IA.02.12:** Share ideas about science through purposeful conversation.
- **S.RS.02.15:** Use evidence when communicating scientific ideas.
- **L.OL.02.22:** Describe the life cycle of familiar flowering plants including the following stages: seed, plant, flower, and fruit.

*Objective:*

Students will correctly draw, label, and understand the life cycle of a flowering plant.

<b>Activity Element &amp; Time</b>	<b>Procedures and management</b>	<b>Students</b>	<b>Academic, social &amp; linguistic resources and support</b>
Activity 1 (7-10 minutes)	<ul style="list-style-type: none"><li>• Read <i>Oh say can you Seed?</i></li><li>• Tell students were going to be learning about the life cycle of flowering plants</li></ul>	<ul style="list-style-type: none"><li>• Students will participate in an interactive read aloud. I will point out specific things in the book that directly relate to our topic. They will be asked to respond to some points or discuss others with a</li></ul>	I will read the book clearly and slowly. I will point out important parts and show important pictures and diagrams on the elmo for all students to see

		friend during the book.	
Transition (1 minute)	<ul style="list-style-type: none"> <li>Students will go back to their seats, as I prepare the different plant stages.</li> </ul>	<ul style="list-style-type: none"> <li>Students will quickly and quietly return to their seat.</li> </ul>	
Activity 2 (5-7 minutes)	<ul style="list-style-type: none"> <li>Students will observe the different life cycle stages.</li> </ul>	<ul style="list-style-type: none"> <li>They will be asked to describe the differences between the stages.</li> </ul>	Students will pass all the different plants around the class to see each stage close up.
Transition (2 minutes)	<ul style="list-style-type: none"> <li>Students will be asked to talk to their neighbors about a plant they have seen go through its life cycle.</li> </ul>	<ul style="list-style-type: none"> <li>This will allow the students to stay on task while I gather materials for diagrams.</li> </ul>	
Activity 3 (10 minutes)	<ul style="list-style-type: none"> <li>I will show diagrams of the life cycle of three different flowering plants.</li> </ul>	<ul style="list-style-type: none"> <li>From this activity I hope for students to understand that a plant does not need to grow what they know as a flower or fruit to go through the life cycle of a flowering plant.</li> </ul>	The diagrams will be shown on the elmo for everyone to see. They will be colorful and mimic the format of the assessment.
Closure (5 minutes)	<ul style="list-style-type: none"> <li>One student will be given a seed and asked to state the stage in the life cycle and important aspects, then they will pass it to another student who will explain the next stage.</li> </ul>	<ul style="list-style-type: none"> <li>This will help students to learn that this is a cycle, and is therefore never ending. It will also serve as a group pre-test for creating their own diagram of the life cycle.</li> </ul>	All students will get a chance to be involved and the repetition will help to further instill the pattern of the life cycle.