

**Unit of Study**  
**By Rebecca Wood & Tracy Russell, Green County Elementary**  
**Special Education**

**Unit Title:** Plants

**Length of Unit:** four weeks

**Organizer:** Who cares about Plants?

**Essential Questions:**

1. Why do I need to know the seven basic requirements that plants need?
2. How can I examine six purposes or needs of plants?
3. How can I describe stages of plant development?
4. Are the parts of a plant related to their functions?
5. Are there a lot of different types of plants?

**Connections:**

**KERA Goals**

- 1.3 Students make sense of the various things they observe.
- 1.4 Students make sense of the various messages to which they listen.
- 1.5 Students use mathematical ideas and procedures to communicate, reason, and solve problems.
- 2.3 Students identify and analyze systems and the ways their components work together or affect each other.
- 2.4 Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.
- 2.6 Students understand how living and nonliving things change over time and the factors that influence the changes.
- 2.10 Students understand measurement concepts and use measurements appropriately and accurately.
- 6.1 Students connect knowledge and experiences from different subject areas.
- 6.2 Students use what they already know to acquire new knowledge, develop new skills, or interpret new experiences.
- 6.3 Students expand their understanding of existing knowledge, by making connections with new knowledge, skills, and experiences.

## **Program of Studies**

S-P-LS-1 Students will understand that organisms have basic needs (e.g., air, water, nutrients, light) and can only survive when these needs are met.

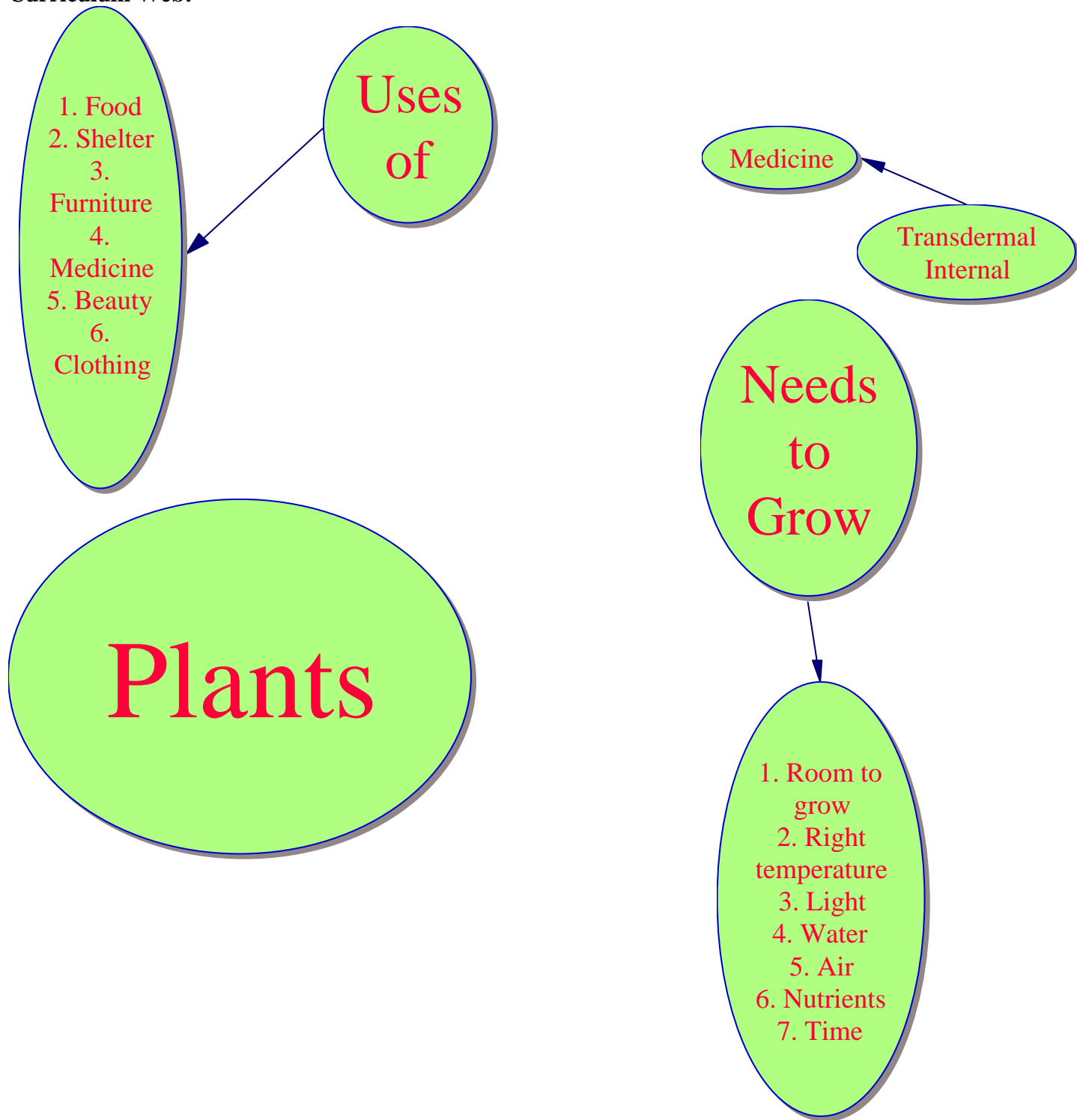
S-P-PS-1 Students will understand that properties (e.g., size, shape) of materials can be measured and used to describe, separate, or sort objects.

### **Core Content**

SC-E-1.1.1 Objects have many observable properties such as size, mass, shape, color, temperature, magnetism, and the ability to react with other substances. Some properties can be measured using tools such as metric rulers, balances, and thermometers.

SC-E-3.1.2 Organisms have basic needs. For example, animals need air, water, and food; plants need air, water, nutrients, and light. Organisms can survive only in environments in which their needs can be met.

**Curriculum Web:**



**Culminating Performance:**

Now that you have learned about Plant Growth and Development, as a class in small groups you will create a final technology project which will include all the topics listed below. Each small group will choose only one of the topics. Then as a group you will create a hyper studio stack on that topic. When group projects are complete, each stack will be linked together to create a multimedia presentation on Plant Growth and Development.

Be sure to:

- \_\_\_\_ 1. Include important information you learned about this topic.
- \_\_\_\_ 2. Refer to your class work, websites, and resource books.
- \_\_\_\_ 3. Include pictures and text.
- \_\_\_\_ 4. Be sure to save your work often.

**Who Cares About Plants Topics:**

- 1. Seven basic requirements of a plant
- 2. Six purposes or needs of a plant
- 3. Stages of plant development
- 4. Parts of a plant and their function.
- 5. Different types of plants.

**Culminating Performance Rubric:**

	<b>Student Check</b>	<b>Teacher Check</b>	<b>Points Possible</b>
<b>I participated equally in the group assignment.</b>			<b>10</b>
<b>I included important information I learned on this topic.</b>			<b>10</b>
<b>I referred to my class work, websites, and resource books.</b>			<b>10</b>
<b>I included pictures and text.</b>			<b>10</b>
<b>I came to class prepared to work and had all necessary materials.</b>			<b>10</b>
			<b>Total Points</b>

## Daily Instructional Plans: (1-5 Lesson Plans)

Name: Tracy Russell and Rebecca Wood Date: 11-13, 2004 Age/Grade Level: K-12

Subject: Science # of Students 20 # of IEP Students 20

Major Content: Plant needs to maintain health Unit Title: Plants

### **Goals and Objectives:**

Students will participate in a science experiment.

Students will listen and participate in class discussions.

Students will be able to correctly identify the basic needs of all plants.

Students will understand what happens when one or more of those basic needs of plants are not provided.

Students will handle all materials appropriately.

### **Connections:**

#### KERA Goals

1.3 Students make sense of the various things they observe.

1.4 Students make sense of the various messages to which they listen.

2.3 Students identify and analyze systems and the ways their components work together or affect each other.

2.4 Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed

2.6 Students understand how living and nonliving things change over time and the factors that influence the changes.

6.2 Students use what they already know to acquire new knowledge, develop new skills, or interpret new experiences.

#### Program of Studies

##### S-P-LS-1

Students will understand that organisms have basic needs (e.g., air, water, nutrients, light) and can only survive when these needs are met.

#### Core Content

##### SC-E-3.1.2

Organisms have basic needs. For example, animals need air, water, and food; plants need air, water, nutrients, and light. Organisms can survive only in environments in which their needs can be met.

### **Context:**

In this unit we will be learning about plants. This is the first lesson of the unit; we will introduce and determine the basic needs of a plant. In order to have a healthy plant it will need certain things from its environment, such as water, sunlight, nutrients, and oxygen. The focus will be

what will happen if the plants are deprived of one or more of those needs. This lesson will continue throughout the entire unit and will be incorporated in conjunction with the culminating performance as the final explanation for what we want the students to learn as the result of this unit of study.

**Resources:**

6 different plants  
Potting soil  
6 Flowerpots  
Liquid fertilizer  
Water  
Small garden tools  
6 different growing areas  
Computer

**Procedures:**

Students will be divided into six different cooperative learning groups in which they will keep a daily log as to monitor group effort. Each group will be assigned different elements in which they are going to manipulate (i.e., water, sunlight, fertilizer.) The students will then take their plants and put them into the flowerpots with fresh potting soil, water, and liquid fertilizer. The students will take their potted plants to the designated growing areas. First plant will be placed in a dark room, depriving it of sunlight; second plant will be deprived of water; third plant will receive water but no nutrients; fourth plant will be placed into a plastic bag, depriving it of oxygen; fifth plant will be given a chemical mixture that would represent acid rain; the sixth group will be given instructions set the plant on a window ledge and to give their plant water and liquid fertilizer one a week. Before we began our lesson the students were asked the following questions:

1. What I want to find out?
2. What I think will happen?

Student responses are to be recorded on a growth chart that they will be using throughout this unit of study and also in conjunction with the culminating performance and the remainder of this unit.

**Student Assessment:**

**Formative Assessment:**

Did students cooperate and work collectively as and equal partner in their cooperative learning group?

Did students participate in the classroom discussion?

Did students try when completing their growth chart?

Did students handle materials appropriately?

**Summative Assessment:**

Students will be assessed according to the data recorded on their growth chart and by the group evaluation?

## Group Evaluation Form

	4	3	2	1
Did I complete my part of the group project?				
Did I offer assistance to others in my group?				
Did others participate in an appropriate manner?				
Name each member in your group in the following blanks and give each person including yourself a grade.				

Name: Tracy Russell and Rebecca Wood Date: 11-13, 2004 Age/Grade Level: K-12

Subject: Science # of Students 20 # of IEP Students 20

Major Content: Changes in Plants Unit Title: Plants

**Goals and Objectives:**

Students will learn why leaves change colors.

Students will draw, measure, and describe his of her leaf.

Students will listen as Why Do Leaves Change Color by Betsy Maestro is read.

Students will handle all materials appropriately.

**Connections:**

KERA Goals

1.3 Students make sense of the various things they observe.

1.4 Students make sense of the various messages to which they listen.

1.5 Students use mathematical ideas and procedures to communicate, reason, and solve problems.

2.6 Students understand how living and nonliving things change over time and the factors that influence the changes.

2.10 Students understand measurement concepts and use measurements appropriately and accurately.

6.1 Students connect knowledge and experience from different subject areas.

6.3 Students expand their understanding of existing knowledge, by making connections with new knowledge, skills, and experiences.

Program of Studies

S-P-PS-1

Students will understand that properties (e.g., size, shape) of materials can be measured and used to describe, separate, or sort objects.

Core Content

SC-E-1.1.1

Objects have many observable properties such as size, mass, shape, color, temperature, magnetism, and the ability to react with other substances. Some properties can be measured using tools such as metric rulers, balances, and thermometers.

**Context:**

In science class, we have been learning about plants. Our focus now is on trees. We are learning about the various parts and functions of a tree. On Monday, as a class we took a walk outside to look at leaves and see how some of them are starting to change colors. We brought some leaves back in the classroom and looked at them more closely. Since the first day of autumn is on Wednesday and the leaves are starting to change to colors, I thought this would be a good lesson to incorporate reading, science and math.

**Resources:**

Why Do Leaves Change Color by Betsy Maestro

Various leaves

Observe a Leaf handout

Pencil

Crayons

Ruler (on handout)

Computer for AR test on book (later in the day)

**Procedures:**

Teacher will lead students in a class discussion about why they think leaves change colors in the fall. Teacher will remind students of our walk on Monday and how they noticed that some of the leaves are starting to change colors. Teacher will read Why Do Leaves Change Color by Betsy Maestro. Teacher will stop and ask students true or false questions about the book. Teacher will show some leaves to the students. Teacher will ask the following questions:

1. What can you tell me about these leaves?
2. What is the same about these leaves?
3. What is different about these plants?
4. What colors are these leaves?

Teacher will give each student a leaf if they did not bring one from home. Students that brought leaves will be asked to get them. Teacher will give students the Observe a Leaf handout. On the handout the students will do the following:

1. Create a drawing of their leaf.
2. Measure their leaf (length and width) in centimeters.
3. Describe what their leaf smells and feels like.
4. Tell what leaves are for.

Students will take an Accelerated Reader test on this book later in the day. The book will be reviewed before students take the test.

**Student Assessment:**

**Formative Assessment:**

Did students listen as Why Do Leaves Change Color by Betsy Maestro was read to them?

Did students participate in the class discussion?

Did students try or rush through to be finished?

Did students handle all materials appropriately?

Students should be able to tell why leaves change colors.

**Summative Assessment:**

Students will be assessed by their answers on the Observe a Leaf handout. These will be taken up and a daily grade will be given. Students will be told that spelling will not count against them. Students may either do their best on spelling or tell us their answers and we will write them down on a sheet of paper and then they will copy them. Students will also receive AR points based on the percentage of questions they answer correctly when they take the AR test on the book.

Name: Tracy Russell and Rebecca Wood Date: 11-13, 2004 Age/Grade Level: K-12

Subject: Science # of Students 20 # of IEP Students 20

Major Content: Leaves, Flowers, Roots & Stems Unit Title: Plants

**Goals and Objectives:**

- Students will participate in a science experiment.
- Students will listen and participate in class discussions.
- Students will be able to correctly identify leaves, stem, and flower.
- Students will understand what happened to our carnations.
- Students will create a drawing of our experiment.
- Students will handle all materials appropriately.

**Connections:**

KERA Goals

- 1.3 Students make sense of the various things they observe.
- 1.4 Students make sense of the various messages to which they listen.
- 2.3 Students identify and analyze systems and the ways their components work together or affect each other.
- 2.4 Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed
- 2.6 Students understand how living and nonliving things change over time and the factors that influence the changes.
- 6.2 Students use what they already know to acquire new knowledge, develop new skills, or interpret new experiences.

Program of Studies

S-P-LS-1

Students will understand that organisms have basic needs (e.g., air, water, nutrients, light) and can only survive when these needs are met.

Core Content

SC-E-3.1.2

Organisms have basic needs. For example, animals need air, water, and food; plants need air, water, nutrients, and light. Organisms can survive only in environments in which their needs can be met.

**Context:**

In this unit we have been learning about plants. We have been studying leaves, flower, roots, and stem. Students know that most plants grow from a seed. We studied how eat parts of some plants. For example, a carrot has a root we eat. We studied what a plant needs in order to survive. We planted radishes using the rapid radish growing kit. We have kept them out of sunlight to see what would happen. Next, we will put them in sunlight and then they will be

planted in a greenhouse. We put a bean seed in a zip-loc bag with a moist paper towel and watched the stages as it grew and sprouted. This lesson started on Wednesday because of time restraints of the experiment.

**Resources:**

- My Science Journal
- Two white carnations
- Four colors food coloring
- Four glasses
- Knife (for cutting carnations teacher use only)
- Pencil
- Crayons

**Procedures:**

Students will be lead in a class discussion on the part of the experiment that we completed yesterday. We cut the two carnations apart and then placed the two stems in separate glasses, we did this for each carnation. Each glass had a separate food color in it. The food colors we used were red and blue with one carnation and green and yellow with the other carnation. We did this experiment in the morning. Before we cut the carnations apart students were asked the following questions:

1. What I want to find out?
2. What I think will happen?

Student responses were recorded in their science journals. In the afternoon we noticed changes in the two carnations.

**Student Assessment:**

**Formative Assessment:**

- Did students participate in the classroom discussion?
- Did students try when completing their science journal?
- Did students rush through the assignment?
- Did students handle materials appropriately?

**Summative Assessment:**

Students will be assessed according to the rubric for this assignment?

**Carnation Experiment Rubric**

	<b>Your Check</b>	<b>Teachers Check</b>
<b>I listened and participated in class discussions.</b>		
<b>I learned what happened to the carnations.</b>		
<b>I correctly identified the leaves, stem, and flower on my drawing.</b>		
<b>I handled all materials appropriately. Ex. Pencils, crayons, coloring pencils etc...</b>		

Name: Tracy Russell and Rebecca Wood Date: 11-13, 2004 Age/Grade Level: K-12

Subject: Science # of Students 20 # of IEP Students 20

Major Content: Plant web quest Unit Title: Plants

**Goals and Objectives:**

Students will participate in a science web quest.

Students will listen and participate in class discussions.

Students will be able to design an age appropriate game with correct science terminology and easy to follow instructions for players.

Students will understand the different parts and functions of plants.

Students will use technology in an appropriate manner.

**Connections:**

KERA Goals

1.3 Students make sense of the various things they observe.

1.4 Students make sense of the various messages to which they listen.

2.3 Students identify and analyze systems and the ways their components work together or affect each other.

2.4 Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed

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Core Content

SC-E-3.1.2

Organisms have basic needs. For example, animals need air, water, and food; plants need air, water, nutrients, and light. Organisms can survive only in environments in which their needs can be met.

**Context:**

In this unit we have been learning about plants. In this lesson we will learn that most plants have 6 basic parts. They will find out what they are and what they do for the plant. Then using that information they will create a game or activity for their classmates that will teach them about the plant parts and functions. Students will have a good understanding of the parts of plants and the functions of those parts as the outcome of this lesson.

**Resources:**

Computers  
Plant parts diagram  
Plant parts functions  
The great plant escape case #1  
The Tiny Seed by Eric Carle  
Rubric  
Art supplies

**Procedures:**

Students will complete individual work on the computer then they will be divided into cooperative learning groups in which they will keep a daily log as to monitor group effort. Each group will work together to create a game or activity that can be shared with the rest of the class to teach the different parts of the plants and their functions. Before we began our lesson the students were asked the following questions:

1. What I want to find out?
2. What I think will happen?

The results of this lesson will be monitored by the rubric given to the students before the beginning of the day.

**Student Assessment:****Formative Assessment:**

Did students cooperate and work collectively as and equal partner in their cooperative learning group?

Did students participate in the classroom discussion?

Did students use creativity when designing their game?

Did students use technology appropriately?

**Summative Assessment:**

Students will be assessed according to the rubric for this assignment.

### Game/Activity Rubric

	4	3	2	1
<b>Participation</b>	Work is done cooperatively. Each student contributes and time is spent on task.	Work is mostly done cooperatively. Each student contributes somewhat equally. Time is mostly spent on task.	Some lack of partner cooperation. Time on task is moderate to low	Complete lack of partner cooperation. Little time is spent on task.
<b>Appearance</b>	Work is neatly done.	Work is mostly neat.	Work is somewhat neat	Work is sloppy.
<b>Attraction</b>	Game is interesting and eye-catching: colorful, creative, etc.	Game is mostly interesting and eye-catching.	Game is somewhat interesting and eye-catching.	Game is neither interesting nor eye-catching.
<b>Information</b>	Information is accurate and appropriate.	Information is mostly accurate and appropriate.	Information is somewhat accurate and appropriate. May lack some information.	Information is not accurate and not appropriate. Lacks information
<b>Overall</b>	Work is completed on time with no errors.	Work is complete on time with few errors.	Work is not completed on time and has no errors.	Work is not completed on time and has errors.

## **Plant Parts Functions**

<b>Plant Part</b>	<b>Function</b>	<b>Other Facts</b>

Name: Tracy Russell and Rebecca Wood Date: 11-13, 2004 Age/Grade Level: K-12

Subject: Science # of Students 20 # of IEP Students 20

Major Content: Plant uses, focus on medicine absorption Unit Title: Plants

**Goals and Objectives:**

Students will participate in a science experiment.

Students will listen and participate in class discussions.

Students will be able to correctly identify the utility purposes of plants.

Students will understand the different ways the body absorbs medicines that are made from plants.

Students will handle all materials appropriately.

Students will use technology in an appropriate manner.

**Connections:**

KERA Goals

1.3 Students make sense of the various things they observe.

1.4 Students make sense of the various messages to which they listen.

2.3 Students identify and analyze systems and the ways their components work together or affect each other.

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S-P-LS-1

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Core Content

SC-E-3.1.2

Organisms have basic needs. For example, animals need air, water, and food; plants need air, water, nutrients, and light. Organisms can survive only in environments in which their needs can be met.

**Context:**

In this unit we have been learning about plants. In this lesson we will determine and discuss the importance of plant to humans (i.e. food, shelter, medicine). The focus will be on plants and their medicinal values. Also we will explore the way that our bodies absorb medicines made from plants and distributes the medicines throughout our bodies.

**Resources:**

Water  
Soap  
Salt or sugar  
Baby oil  
Towels  
Peppermint plant or leaf  
Peppermint oil  
Stopwatch (preferably one for each group)

**Procedures:**

Students will be divided into six different cooperative learning groups in which they will keep a daily log as to monitor group effort. Each group will work together to make a salt or sugar scrub by combining salt or sugar with the baby oil. The students will wash their own feet with the soap and water. They will then scrub their feet with the mixture, rinse, and dry them with a towel. The instructor will assign a timekeeper for each group and place one-drop of peppermint oil on the bottom of a student's foot. The student will then tell the timekeeper to stop the time at the time at which they taste peppermint on their tongue. Before we began our lesson the students were asked the following questions:

1. What I want to find out?
3. What I think will happen?

Student timed results are to be recorded and placed on Excel and converted into a chart by using the chart wizard function of Microsoft Excel. Each group will then present in an oral report to the rest of the class.

**Student Assessment:****Formative Assessment:**

Did students cooperate and work collectively as and equal partner in their cooperative learning group?

Did students participate in the classroom discussion?

Did students try when completing their computer-generated chart?

Did students handle materials appropriately?

**Summative Assessment:**

Students will be assessed according to the data recorded on their computer-generated charts, the oral presentation, and by the group evaluation.

## Oral Presentation Rubric

	Student Check	Teacher Check
<b>Did I speak loud enough for the whole class to hear?</b>		
<b>Did I face the audience?</b>		
<b>Were all materials visible to the audience?</b>		
<b>Was the chart information accurate?</b>		
<b>Did I use appropriate terminology and address the audience in a respectful manner?</b>		