

Plant Growth and Development Science Kit- Third Grade (2011)

***Teachers please use this as a guide, when preparing the science kit lessons. Please be sure you are using focus questions with each lesson and are having the children use some type of science notebook. The purpose of the notebook is to help students develop, practice, and refine their science understanding, while enhancing reading, writing, mathematics and communications. Below you will find a link to additional teacher materials. In addition, we have provided you with a description of lessons and special things to consider. If you are in need of further assistance please contact your CTC. ***

Website to obtain teacher materials and video lessons

http://www.carolinacurriculum.com/premium_content/Premium+Gateway>Login+Failed.asp

Username northcarolina.nsrci3@carolina.com

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Teacher Materials include (but are not limited to)

- Bees-Teacher's Guide
- Bees-Power Vocabulary
- Inquiry Masters
 - Lessons 1,3,6-9
- Concept Storyline
- Goals
- Safety Contract
 - English/Spanish
- Assessments
 - English/Spanish
- Glossary
 - English/Spanish

Videos

- Lesson 1
 - What do you know about plants?
 - Chart paper "What we know about plants." (brainstorming activity)
 - Chart Paper "What we would like to know about plants" (brainstorming activity)
- Lesson 3
 - The Watering System
 - Soaking a mat in water
 - Take mat out (after 15 min.) with end dangling in water (*see video for example*)
 - Drop in copper sulfate square
 - Assemble light system (*see video for step by step process*)

- **The Distribution Station**
 - Materials needed for planting (*see video*)
 - Count out ahead of time
 - Separate wicks
 - Planter quads need to be separated at the seams
 - Empty potting mix into large container
 - Prepare soil into cups ahead of time
 - (*See video for materials kids will need for activity*)

- **Planting Wisconsin Fast Plant Seeds**
 - Place one wick in each section of planter quad
 - Use forceps to pull wick out one centimeter (cm)
 - Fill quad half full in each section with potting mix (use end of spoon to press soil down gently)
 - Place fertilizer pellets into quad sections (larger pellets) put three into each section
 - Fill each section to the top with potting mix (press down gently with finger)
 - Use dropper to place drop of water onto tray, dip toothpick into water, touch toothpick to seed
 - Pick up one seed and place just under the soil and press down, repeat by putting two seeds in each section
 - Water a drop or two at a time until water drips from each wick
 - Put kid's name and date on planter label and place in planter
 - (*See video for placing under light bank*)-light must be on 24 hrs a day

➤ **Lesson 4**

- **Thinning and Transplanting**
 - Students are thinning or transplanting so that only one plant remains in each quad.
 - (*See Video*) This is done with scissors or tweezers

➤ **Lesson 5**

- **How does your Plant Grow?**
 - Kids use centimeter (cm) cubes or graph paper (*use blackline master in the back of teacher's manual for the graph paper*) to measure the vertical growth of plant.
 - The kids will continue to measure their plants throughout the unit.

➤ **Lesson 6**

- **Observing Leaves and Flower Buds**
 - Viewing difference between Cotyledon and true leaves

➤ **Lesson 7**

○ **Observing the Growth Spurt**

- Between days 9-13 plants will change between buds that are tightly closed to buds that are fully opened
- Some plants will need to be staked-due to falling over (*see video for process*)

➤ **Lesson 8**

○ **Why are Bees Important?**

- Chart paper “What we know about Bees?” (brainstorming activity)
- Chart paper “What we would like to know about Bees?” (brainstorming activity)

➤ **Lesson 9**

○ **Getting a Handle on Your Bee**

- Creating a bee stick
 - (*See video for kid’s materials*)
- Kids study dried bees to find thorax, underside area of thorax where the six legs are attached (this is where the bee stick is going to be attached)
- (*See video for attaching the stick to the bee*)
- Record sheet 4- kids check off body parts they can identify
- Place bee stick to the underside of an upside down cup (*see video*)

➤ **Lesson 10**

○ **Looking at Flowers**

- Students become familiar with the scientific name for the Wisconsin Fast plants
- Flower petals are arranged in a cross
 - 4 petals, 6 anthers, and 1 stigma

➤ **Lesson 11**

○ **Pollinating Flowers**

- Day 12-18 kids use bee sticks to cross pollinate- move pollen from one flower to another (*see video*)

➤ **Lesson 12**

○ **Observing Pods**

- Day 17-35 petals have faded, withered, and fallen- leaving behind developing seed pod
- Kids record pod growth

➤ **Lesson 13 &14**

○ **Making Brassica and Bee Models**

- Kids apply what they have learned by making models of what they have learned about flowers and the bee
- *(See video- for rubric)*

➤ **Lesson 16**

○ **Harvesting and Threshing the Seed**

- To harvest the pod, snap off with your fingers
 - Roll between your fingers
 - Separate the seeds *(see video)*