

Plant Growth Investigation

Name: _____ Group #: _____

Use your senses to observe your plants each day. Write about your observations, draw a picture of your plants, and record the measurements of your plants.

Write	Draw	Measure (cm)
Day 1		Plant 1: Plant 2: Plant 3:
Day 2		Plant 1: Plant 2: Plant 3:
Day 3		Plant 1: Plant 2: Plant 3:
Day 4		Plant 1: Plant 2: Plant 3:
Day 5		Plant 1: Plant 2: Plant 3:



Think about the variables in the investigation as you record your data. A variable is the thing that you change in the experiment and the other factors must stay the same. Possible variables for this experiment are sunlight, nutrients and water.

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Group #: ____ Variable: __water __sunlight __nutrients

Continue to observe your plants each day. Write about your observations, draw a picture of your plants, and record the measurements of your plants.

Write	Draw	Measure (cm)
Day 6		Plant 1: Plant 2: Plant 3:
Day 7		Plant 1: Plant 2: Plant 3:
Day 8		Plant 1: Plant 2: Plant 3:
Day 9		Plant 1: Plant 2: Plant 3:
Day 10		Plant 1: Plant 2: Plant 3:



What are your conclusions? Conclusions are ideas that are a result of looking at all the information and coming up with the final results. In other words, what happened with your plants?

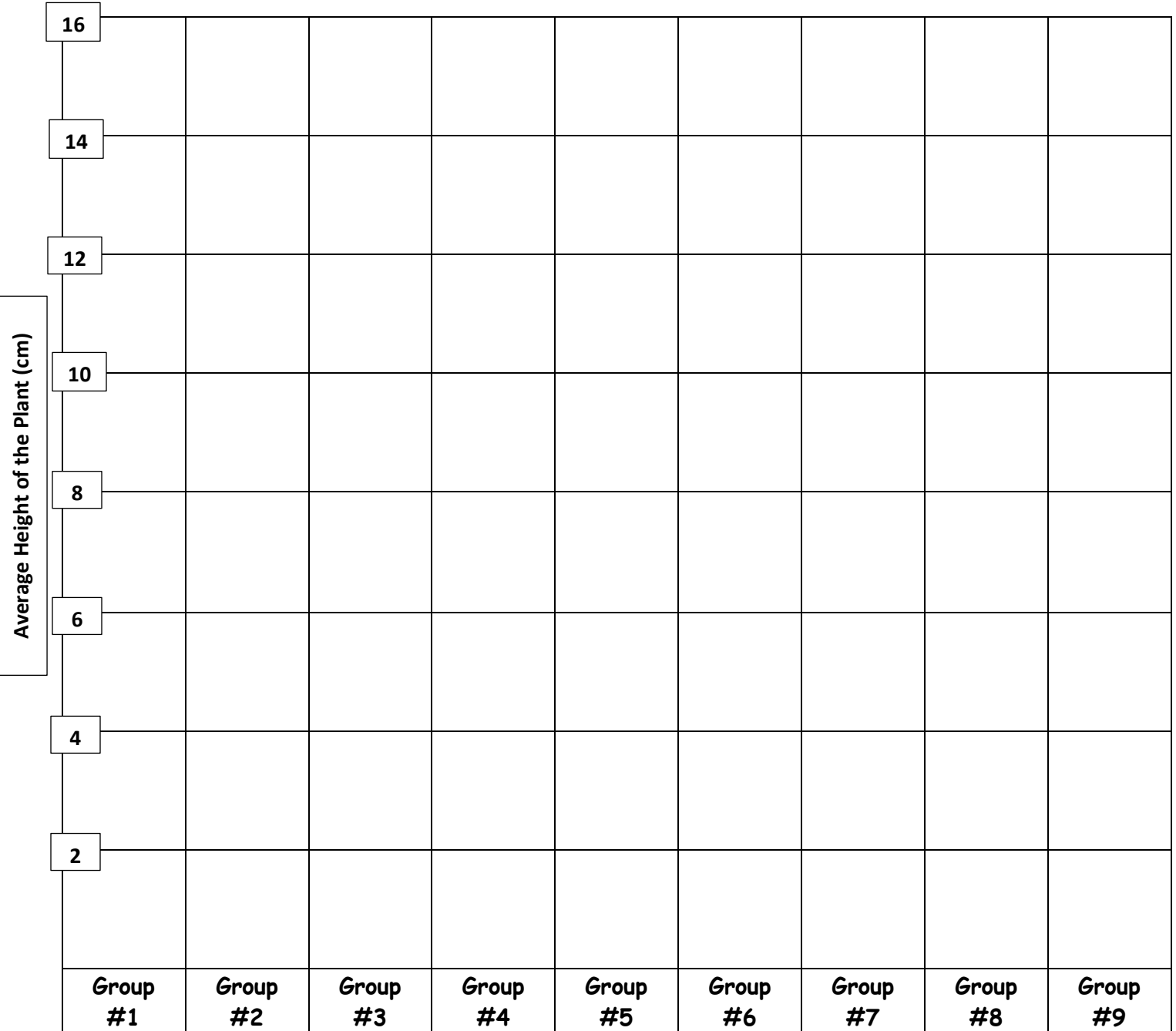




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Compile each Group's Results in the Graph



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Interpret the Results

1. Which plant grew the most? _____
How tall was it at Week 6? _____
2. Which Group of plants grew the most? _____
By how many inches? _____
3. During which week did Group ____ grow the most?

4. During which week did Group ____ grow the most?

5. Did any of the plants die? __Yes __No
If yes, how many died? _____



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Teacher's Tips Page

Discussion Question #1: What do plants require to grow?

For plants to be successful and grow they need water, sunlight, soil with nutrients, and carbon dioxide. If one of the needs is not met how will the plant grow? Let's investigate!

Discussion Question #2: What if the soil lacks nutrients?

We can add fertilizers that contain different amounts of nutrients (such as nitrogen, phosphorous and potassium) to the soil to help plants grow.

Discussion Question #3: Why do plants need sunlight and carbon dioxide?

In a process called "photosynthesis," plants use the energy in sunlight to convert carbon dioxide (CO₂) and water (H₂O) into sugar and oxygen. The plants use the sugar for food—food that we use, too, when we eat plants or animals that have eaten plants — and they release the oxygen into the atmosphere.

Tech Timeout: Look up a video on plant growth and nutrients.

Set up your Experiment in your Outdoor Classroom

Directions: Divide your students into nine groups. Give each group three small containers (such as (3) 8 oz plastic cups). Label each cup with their Group # and then number each cup as Plant #1, Plant #2, and Plant #3. Give each child a copy of the data forms.

Groups #1, #2 & #3: Add $\frac{3}{4}$ cup of plain top soil without fertilizer or amendments to each container, plant one bean in each container, and place all three containers in an area with 4-6 hours of sunlight. Add $\frac{1}{4}$ cup of water three times per week to Plant #1, add two tablespoons of water three times per week to Plant #2, and do not add any water to Plant #3 for 10 days.

Groups #4, #5, & #6: Add $\frac{3}{4}$ cup of plain top soil without fertilizer or amendments to Plant #1's cup, add $\frac{3}{4}$ cup of potting soil with triple 13 fertilizer to Plant #2's cup, and add $\frac{3}{4}$ cup of clay soil from the schoolyard to Plant #3's cup. Plant one bean in each container, place all three containers in an area with 4-6 hours of sunlight, and add two tablespoons of water each day to all three plants for 10 days.

Groups #7, #8 & #9: Add $\frac{3}{4}$ cup of potting soil with triple 13 fertilizer to each container, and plant one bean in each container. Place Plant #1 in an area with 4-6 hours of sunlight, place Plant #2 in a shaded area, and place Plant #3 in an area with no sunlight. Then add $\frac{1}{4}$ cup of water three times per week to all three plants for 10 days.

Extension Activity: Contact your AL Cooperative Extension System office to test your school's soil.



Alabama Course of Study Objective Correlations for 2nd Grade

Language Arts: 27.) Participate in shared research and writing projects (e.g., record science observations). [W.2.7]

Science: 5.) Plan and carry out an investigation, using one variable at a time (e.g., water, light, soil, air), to determine the growth needs of plants.

