

# Lesson Title - To study growth pattern in plants, based on differences in temperature and sunlight

**Aim:** To study growth pattern in plants after seeing the effects of temperature and sunlight

**Design :** Use plastic containers as growth support systems for plants with small germination time. Use of transparent containers for viewing the growth obtained and recording images at regular intervals.

**Engineering Design Process:** Use of different materials for determining the most suitable design model for the growth experiment.

**Possible Outcomes:** Students will learn the nuances of plant cultivation. They can infer models, of all the necessary elements required for growth.

## STEM Lesson Plan for Publication

<b>1. Aligned to Grade-Level Standards</b> The lesson is aligned to appropriate state and/or national math, science, technology, and engineering standards.	<b>Lesson plan for Middle school Grades 4, 5 and 6</b>
<b>2. Multidisciplinary</b> A true STEM lesson must integrate science, technology, engineering, and mathematics.	<b>Involves all 4 disciplines</b>
<b>3. Addresses Authentic Challenges</b> The lesson presents students with real-world challenges or problems with practical and meaningful implications.	<b>Study seasonal pattern and effect of temperature on the growth of plants</b>
<b>4. Integrates 21st Century Skills</b> The lesson encourages students to develop creativity, critical thinking, problem solving, and teamwork.	<b>Lesson encourages student to choose the plant they want to learn and emphasizes the importance of need for sustained food production</b>
<b>5. More Than One Solution</b> The lesson includes problems or challenges that have more than one possible solution.	<b>Lesson gives a hands experience in studying various phases in a</b>

	plants life cycle starting from germination to flowering
<p><b>6. Uses the Engineering Design Process</b> Any design, construction, or prototyping follows the steps of the engineering design process.</p>	Lesson requires the building of a growth chamber for the plant using household items
<p><b>7. Hands-On</b> The lesson encourages hands-on manipulation of technology or materials to solve a problem or engineer a design.</p>	Lesson will need construction of a suitable growth chamber
<p><b>8. Integrates Technology</b> The lesson incorporates technology in a way that is seamless and appropriate, simplifying rather than complicating the lesson.</p>	Students will be required to monitor the growth of the plants by measuring their length at regular intervals of time. They will need to capture images and will analyze them using imaging software like imageJ