**Agriculture in Society**

**Unit 3:** Plant Science in Agriculture

**Lesson 1:** Major Agricultural Crops in Oklahoma

**Lesson 1.7:** Growing Conditions of Crops

State Orientation to Agriculture in Society Standards:

**OAS 4.02** Demonstrate knowledge of proper plant conditions (temperature, water, light, nutrients, air) to improve production

National AFNR Standards:

**PS.01** Develop and implement a crop management plan for a given production goal that accounts for environmental factors.

Student Learning Objectives:

1. Students will identify and describe the proper plant growing conditions, including termperature, water, light, nutrients, and air.

Outside Resources

1. Ag in the Classroom
   1. [Timing is Everything](https://cdn.agclassroom.org/ok/lessons/wheat/wheatgame.pdf)
      1. **Lesson Plan and Activity -** Students will play a game to determine how much wheat a section of land will yield based upon a series of setbacks caused by weather, insects, etc. Students will read about the impacts of weather on wheat production. Students will use online resources to find statistics about wheat production and annual precipitation in Oklahoma. Students will graph the information.
2. CASE
   1. AgX 1.5 The Space CASE Challenge
      1. **Lesson Plan and Activity –** Students will learn more about space requirements of plants by developing plans for a small trellis garden. Students will calculate area and volume of the container and use the information to develop plans for their garden.
   2. AgX 2.1 Seed to Sprout
      1. **Lesson Plan and Lab –** Students will learn about seed germination and the factors that impact seed germination. Students will conduct an experiment where they will place corn seeds in a variety of different environments and predict which seeds will germinate.
   3. AgX 2.4 Healthy Happy Plants
      1. **Lesson Plan, Lab, and Game –** This lesson has multiple parts, including playing the Journey 2050 game, and participating in a lab about growing cucumbers.
3. Pork Checkoff & National FFA
   1. [2.7 Researching Plant Growth Conditions.pdf](https://officemgmtentserv-my.sharepoint.com/:b:/r/personal/cody_dean_careertech_ok_gov/Documents/Foundational%20Courses%20in%20Agricultural%20Education/7th%20Grade%20Agriscience%20Standards/2.7%20Researching%20Plant%20Growth%20Conditions.pdf?csf=1&web=1&e=eioEFu)
      1. **Lesson Plan and Lab –** Students will design an agricultural research project using the scientific method. Students will explore different factors that influence plant growth, including the amount of light, temperature, moisture, seed type, time of day, orientation of seed, and type of gas exposed to the seed.