



# Illinois 4-H | Spark Ideas. Ignite Possibilities.

Did you know that Illinois is one of the top-producing soybean states? Take a trip anywhere across Illinois and chances are you'll see a field of soybeans as 10 million soybean acres are grown each year, covering about 1/4 of Illinois.



## Exploring 4-H Soybeans

### Spark Activity: Topsy-Turvy Soybeans



If you plant a seed upside-down will the roots grow up? Perform an experiment to answer this question.

#### Supplies:

- Paper towel
- Permanent marker
- Large binder clips
- Water
- 4 soybeans
- 1 clear plastic CD case, petri dish, or equivalent clear plastic container

1. Cut the paper towel or blotting paper so it fits inside a small plastic case.
2. Moisten the paper towel and lay it in the case.
3. Evenly place four soybeans on the paper towel. Orient the soybeans in at least two different directions (note the direction of the bean's hilum).
4. Close the plastic case so that the beans are held snugly. Tape the case shut.
5. Using a marker, number the soybeans 1, 2, 3 and 4 on the outside of the case.
6. Set the plastic case in an upright position. Attach a binder clip to the bottom to help keep the case upright.
7. Keep the paper towel moist. As the seeds begin to sprout, note the direction in which the roots and stems are growing. Does the direction the seed is turned affect the direction of growth?
8. Two days after the seeds have begun to grow, rotate the plastic 90° on its side. Continue rotating the case every two days. Did rotating the case effect the growth?

## 4-H Project Levels and Goals

### Beginner

- Plant soybeans, monitor growth
- Compare seed growth using different soils
- Identify what helps and hinders plant growth
- Investigate how a soybean plant fixes its own nitrogen
- Investigate how a soy plant knows how/when to start flowering
- Track plant development and

growth through V and R stages

### Intermediate

- Learn how to take a soil sample
- Scout fields for growing conditions
- Identify products made from soybeans
- Learn about soil and nutrient requirements for your crop and ways to protect your plants from pests through Integrative Pest Management

### Advanced

- Use integrated crop management principles with your crop
- Explore career opportunities related to soybean production
- Calculate expenses and incomes to determine the profitability of field crops
- Identify how new technology impacts crop production

## Put Your Project Into Action

### Show Your Skills

- Exhibit a potted soybean plant with parts labeled
- Display of different insects and/or weeds that affect a soybean plant's growth
- Display showing parts of the soybean seed
- Display foods & products made with soybeans

### Service and Leadership

- Plan a farmer appreciation event during harvest
- Teach members of your club about farm safety
- Plan a soybean seed plant or grain elevator tour
- Write an article for your local newspaper about the importance of soybeans
- Present about the importance of soybeans
- Help to organize a crops judging contest

### Entrepreneurship

- Plant a soybean plot comparing varieties - include a budget to track costs and market opportunities
- Make and sell fish food from soy meal
- Create and sell soy candles from soy wax
- Sell baked goods made from soy products such as soy oil, soy flour, soy milk, etc. - follow IL Public Health guidelines as applicable

### Technology Connection

- Drones survey diseases, flooding, drainage issues
- GPS technology / precision farming techniques

### Connecting with a Mentor

- Illinois Extension Ag Educators and Specialists
- Local farmers
- Local farmer cooperatives
- Local agronomist
- Local seed representative

### Events

- Crops judging contests
- County and state fairs and shows
- University of Illinois Commercial Agriculture programs
- Farm Progress Show



### Careers for People Interested in Soybeans

|                    |                          |
|--------------------|--------------------------|
| Plant Breeder      | Agronomist               |
| Farmer             | Soy Product Entrepreneur |
| Researcher         | Extension Educator       |
| Grain Merchandiser | Crop Consultant          |

## Start a Conversation

How can soybeans be grown in less than ideal conditions?  
How is biotechnology helping farmers grow more soybeans to help meet an increasing demand for US soy?  
What are the two major components of a soybean and what are they used for?  
How does using biodiesel (made from soybeans) help the environment?  
How are soybeans used in the construction industry?  
What nutrients are in soybeans that make it beneficial as a food ingredient?

## Want to learn more?

[go.illinois.edu/4Hsoybeans](https://go.illinois.edu/4Hsoybeans)

## Explore more at Illinois 4-H!

[4-H.extension.illinois.edu](https://4-H.extension.illinois.edu)



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