

# MORE THAN A SEED

## 1<sup>st</sup> Grade Ag in the Classroom Lesson Plan



### What students will learn and do:

- Why do farmers grow corn and soybeans, and how are they used?
- What are the steps of crop production?
- What do seeds need to germinate?
- Students will plant corn & soybean seeds and watch them germinate and grow.

**Length of presentation:** 40-45 minutes.

### Materials needed:

1. Products/items which use corn or soybeans – 6-8 ea. (*Suggestions below*) **pres. provides**
2. Set of 8 corn/soybean photos – 1 set per presenter
3. Ear of corn – 1 per presenter
4. Soybean plant (in clear tube) – 1 per presenter
5. Seed corn/soybeans
6. One bag of vermiculite
7. Clear plastic cups - 1 per student
8. Coffee filters - 1 per student
9. Pail for water to moisten vermiculite – **presenter provides**
10. Blank labels for cups (teacher or students can write names on each)
11. One large spoon (used to stir and distribute vermiculite) – **presenter provides**
12. Clear plastic jar with lid (used to dissolve corn-based packing peanuts) – **pres. provides**
13. 1 bag each: corn-based packing material and polystyrene packing material
14. Teacher gift bag – 1 per teacher
15. Certificates of Participation – 1 per student (signed by you in advance)

### SUGGESTED PRODUCTS

#### Items Using Corn

- breakfast cereal (corn meal and/or corn sweetener)
- hand sanitizer (ethyl alcohol = ethanol)
- toy farm animal (corn used as feed)
- soft drink (high fructose corn syrup)
- peanut butter (corn syrup)
- fruit juice (high fructose corn syrup)
- dog or cat food (corn meal)
- Sweet Tarts candy® (dextrose)
- toy car (ethanol)

#### Items Using Soybeans

- newspaper (printed with soy ink)
- mayonnaise (soybean oil)
- toy farm animal (soybeans used as feed)
- chocolate candy bar (soy lecithin, may also contain corn syrup)
- salad dressing (soybean oil)
- vegetable oil (soybean oil)
- soynuts (sold in grocery produce area)
- Tropical fish food (soy meal, oil, protein)
- toy truck or tractor (biodiesel)

### **Before the presentation:**

- Place vermiculite in bucket and dampen with water. This will save time and make the vermiculite easier to work with. *Vermiculite should be damp – not dripping wet.*
- Place name labels **vertically** on cups. (In the classroom, students will write their names on the labels, or you can ask the teacher to do so as you give your introduction.)

### **Procedure:**

1. **Introduce yourself.** Thank teacher & classroom for inviting you. Tell class what you do, or ask them to guess. By show of hands:
  - *How many of you live on a farm? Have a relative that lives on a farm?*
  - *How many of you have ever been on a farm?*
  - *How many of you have ever seen a corn field?*
2. **Discuss crop production.** Continue dialogue:
  - *What do you need for a seed to germinate, or to sprout and grow?* (soil, water, sunlight to warm the soil)
  - *Do you think farmers in our area have the things they need to grow seeds?* (Yes, we live in an ideal climate and have good soil for growing crops.)
  - *What if you lived in a desert/on a mountain?* (crops wouldn't grow very well)
  - *What happens when plants mature?* (they are ready to be harvested – **define “harvest”** in case students don't know what it means)
  - *What happens after harvest?* (crops are stored, sold, shipped, and made into food or other items)
3. **Introduce the terms “farming” and “agriculture.”**
  - “Farming” means to grow plants (crops) or raise animals (livestock) for food. “Farmers” are the people who grow crops or raise livestock.
  - “Agriculture” includes the farmers **and** everyone else that is involved in making farm products into things we can eat or use. (Give examples.)
4. **Show selection of corn items, then soybean items.**
  - *What do you think these items might have in common?*
  - *Did you know that all of these items contain products made from corn? ....soybeans?*

**Challenge students to look for more corn or soybean-containing items at home!  
Point out that packaged food items always include a list of ingredients.**
5. **Discuss the importance of fields around them to their everyday lives.** Using the set of eight corn and soybean production posters, show and discuss how crops are grown.

6. **Demonstrate/help students plant seeds.** *(Invite teacher to help with this process. Avoid down time as materials are passed out by continuing to ask questions and lead discussion.)*

- Distribute plastic cups and coffee filters.
- Have students write names on cup labels (unless the teacher did so in advance).
- Show class how to line cup with coffee filter.
- Fill each student's lined cup 3/4 with damp vermiculite.
- Distribute 2 corn kernels and 2 soybeans to each student. Make sure children wait for your instructions before planting their seeds!
- Demonstrate how to place seeds between plastic cup and coffee filter (as shown here).
- Encourage students to watch for root and shoot development during the next few days and discuss whether they think seed position will affect growth.
- Prepare 2-3 extra cups if the teacher would like them for further experiments, such as comparing how the seeds sprout without light or water.
- Encourage class to place cups in warm and sunny location if possible.
- Note: Students or teachers often ask about the vermiculite. Explain that it is a lightweight, water-absorbent material derived from a mineral called mica. We use it for the presentations because it is lighter, easier to transport, and less messy than soil!



7. **Discuss how farms feed us and help our environment** by providing Earth-friendly products.

- Starch-based packing peanuts made from corn are an earth-friendly choice over polystyrene (Styrofoam) packing material. **Show** dissolving of corn-based packing material in a clear container (if you plan to let a student shake the container, use plastic) about 3/4 full of water.
- Plastic can be made from corn! The cups you just used to plant your seeds are corn-based plastic. They are biodegradable, meaning they will break down over time.

8. **Conclusion**

- Invite students to raise their hands and share something new they learned that they are looking forward to telling their parents when they get home (as time allows).
- Answer any questions.
- Hand out signed certificates (students may fill in their own names).
- Remind teacher/class of upcoming **placemat design contest. The deadline for entries is March 10, 2017.** The first grade contest theme is **“If I Were a Farmer.”**
- Thank class and teacher!

9. Before leaving, give teacher the gift bag. Point out the evaluation link, placemat contest rules/entry forms, and other items. **Remind teacher to submit the online evaluation.**