About Me

- Education Program Coordinator with the Iowa Agriculture Literacy Foundation
  - Coordinates Ag in the Classroom efforts at STEM festivals, fairs, and family nights across the state
About You!

• Are you Agriculture in the Classroom staff or a volunteer with AITC?
• Are you a classroom teacher?
• Are you involved already in STEM efforts of some kind?
• Are you active in fairs, festivals, or similar family events?
Best Practices

Event Stations
- Portable
- Scalable across grade levels
- Hit two or more STEM areas

Introduction Activities
- Quick activity
- Minimal preparation
- Cost efficient
- Impactful
- Direct agriculture tie
- Succinct message
- Hands-on

Tied to standards
- Phenomena-based
Activity time!

Seed Germination Necklaces

Take one baggy, 4-5 water beads, one corn kernel, one soybean seed, and one piece of yarn.
Seed Germination Necklaces

• Why it works:
  • Very ‘Iowa’ and gives monocot/dicot comparison
  • Wearable
  • Easily scalable across grade levels
  • Everyone loves it!
Ag on the Go

• Our best tool in training for festivals
• Different sections for:
  • Hands-on activities
  • Demonstrations & presentations
  • Printables
**Mighty Soybeans**

**Description:**
Students will observe the power of seeds by germinating soybeans in plaster of Paris.

**Talking Point:**
Sometimes seeds aren’t very hospitable to newly germinating and growing seeds. Those little seeds need a lot of force to break free of soil—especially poor soils like dense clay. Plaster of Paris dries hard, and takes 2,000 lbs. per square inch to break!

**Activity Instructions:**
1. Place plaster of Paris in a plastic cup.
2. Add water and mix. Continue adding water until the water has the consistency of a thick milkshake.
3. Using the popsicle stick or spoon, push the soybeans into the plaster until they are covered, then smooth the surface of the plaster.
4. If possible, check the soybeans every hour for the first day. What do you think will happen?
5. At the end of the day, add five drops of water to the cup.

**Instructors Notes:**
Seeds require moisture and warmth to germinate. In this case, the seed absorbs moisture from the plaster mixture. As the seed absorbs water it increases in size and applies pressure to the surrounding plaster. This force, combined with the strength of the germinating sprout, causes the plaster to crack and allows the shoot to start to grow through the plaster. This strength and ability to grow in adverse conditions allows plants to survive in a wide range of environments. The soil in fields often crusts over and becomes hard after farmers plant soybeans in the spring. The beans will break the hard surface of the topsoil as they germinate and emerge as seedlings.

**Link to Full Lesson:**

**Instructional Video:**
[http://youtu.be/6dgwM8vIQ1U](http://youtu.be/6dgwM8vIQ1U)
Other Activity Ideas Sheet
Tips for Activities

• Find how-to videos on IALF’s YouTube channel

• Distill an activity from a lesson you already know

• Find phenomena ideas on https://www.ngssphenomena.com/ - just find their ag connection
Tricks for Events

• Table leg extenders save your back
• Have “emergency kits” pre-packed
  • Scissors, tape, pens, rubber bands, paper towels, etc.
• Create packing lists in advance
• Laminate everything
Apple Earth

• Great introduction to why agriculture matters
  • Land use
  • Soils
  • Sustainability
  • Etc.

• Good for any age
Cover Crop Monsters

- Good intro to lessons on:
  - Erosion
  - Plant structures
  - Germination
  - Growing seasons

- Very fun activity
Mighty Soybean

• Good introduction for lessons on:
  • Germination
  • Parts of a seed
  • Pressure/Force
  • Energy

• Always blows students’ minds. Always.
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