

LESSON 2

Feeding the World



FAIR OAKS

— FARMS —

ENRICHMENT

SOME BACKGROUND

In 1900, 41% of the United States Workforce was employed in agriculture. That is nearly half of the workforce! In 2000 that number dropped to 2% of the workforce. That means for every 100 people 2 people are employed in agriculture and our population is not shrinking, it is growing. Thus, agricultural improvements must be made. Some improvements may include faster equipment, better seed, precise understanding of soil, and so much more make feeding the population possible. Farmers must adjust to challenges such as limited land, climate change, population growth, and limited water.

Farmers have also utilized their time more efficiently in order to be more productive in the field with satellites, unmanned aerial vehicles (UAVs), self-driving equipment, sensor technology, and even robots! The WinField Crop Adventure shows that together, we can ensure that hunger never outgrows our ability to produce food that feeds the world with new, innovative ideas!



POOP POWER

Lesson 2 | Elaborate | Option 2



Materials

- Plastic Bags (3)
- Seltzer Tablets (3 ½)
- Tap Water
 - Not bottled water

Introduction to Activity

Greenhouse gases include carbon dioxide, methane, water vapor, ozone, and nitrous oxide. Some greenhouse gases stay in the atmosphere longer than others. Water vapor is a greenhouse gas, but it is removed from the air every time it rains. Methane stays in the air for hundreds of years so emitting even a little bit of extra methane can have an effect for a long time. Greenhouse gasses are reported in pounds of CO₂ equivalent per year.

Instructions

1. Explain what you are going to do and ask the students what they think will happen.
2. Ask them what the plastic bags represent and what the seltzers represent. Plastic bags = atmosphere, and seltzers = carbon footprint.
3. Add roughly a half cup of water to each of the plastic bags.
4. Make sure to close the bag just enough to let the tablet fit as you are going to want to close the bag quickly.
5. Make sure the bag is sealed and then shake the bag for 3 seconds.

Reflect

1. How can you reduce your carbon footprint?
2. Which greenhouse gasses does Fair Oaks Farms release?
3. How does Fair Oaks Farms reduce its carbon footprint?

The Digester uses chambers to breakdown the waste and turn waste into methane gas. The gas is captured and run through generators to create electricity and compressed to create our own biofuel. We can produce enough electricity with each of the 3,000 cow dairies to power 750 homes everyday! Our trucks are powered by the biofuel and transport a cumulative 118 million gallons of milk a year. The biofuel replaces the diesel trucks and saves 2.2 million gallons of diesel annually. The trucks lower emissions by 60% and help make our carbon footprint smaller. Anything left over is used on our fields to irrigate and fertilize crops! Fair Oaks Farms then uses some of the crops to feed our cows so they can produce more manure! We would like to reach a zero carbon footprint.