

Lesson Plan

Soil Science

DISCUSSION

What are cover crops?

- Crops planted for soil health rather than being harvested. They are normally planted early fall before the winter months.

What are some examples of cover crops?

- Rye, Wheat (two most popular), clover, oats, rapeseed, triticale.

Why are they important?

- Cover crops will improve the soil's quality by keeping it in place and keeping nutrients in the soil.

What is erosion?

- Erosion is when tiny pieces of the earth's surface are moved from one place to another by natural forces such as wind and water.

How do cover crops prevent erosion in farmers' fields?

- When topsoil is lost to erosion it is washed in to rivers and stream. However, with cover crops the soil is kept in place, preventing it from washing into those waterways.

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ACTIVITY – COVER CROP MONSTERS

Supplies

1. Small plastic cup
2. Knee high shear nylon socks
3. Grass seeds
4. Potting Soil
5. Accessories for face features (small nails, glue dots, googly eyes, rubber bands)
6. Spray bottle (optional)



Instructions

1. Start by taking 1-2 handfuls of the grass mixture seeds and place them in the nylon socks.
2. Fill the nylon sock no more than $\frac{1}{4}$ way full with potting soil.
3. Tie off the end of the nylon sock right above the soil.
4. To add eyes on your cover crop monster you can use the glue dots to put the small nails on the back of the googly eyes.
5. To add a nose or ears you can use the rubber bands to tie off certain sections of the cover crop monster.
6. Fill the plastic cup with water regularly or use a spray bottle to keep the cover crop monster damp.

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ACTIVITY – COVER CROP MONSTERS

Observations

- How many days did it take when you first saw the grass sprouting out of the socks?
- If you push on the sock, does it feel tighter? More solid?
- Does it feel like the soil is being held in place, much like farmers use cover crops to hold the soil in place in their fields?
- Compare to one that hasn't sprouted. What difference can you feel?

Have students complete the attached observation sheets.

Lesson Plan

Pollinators

ACTIVITY 2 – SEED BOMBS

Supplies

1. 6 pieces of colored construction paper
2. 3-5 packages of flower seeds
3. Food Processor/ Blender
4. Scissors
5. Water

You can also use recycled scraps from other projects in the classroom and recycle scraps from this activity.

Instructions

1. Cut each piece of paper into about 1-inch squares and put them into a small dish. Keep each paper color in its own dish.
2. Fill each dish with water just until the paper is covered. Soak the paper for about 20 minutes.
3. Take one of the bowls of paper and wring it out about halfway. Put it in the food processor and pulse the paper into a pulp.
4. Repeat this with all the paper colors and put the pulp back into each bowls.
5. Sprinkle some seeds into each bowl of paper, mix them in a little, and press the pulp and seeds into balls. If the pulp is a little dry, put a few sprinkles of water on the pulp. It will help it to hold its shape better.
6. Set the seed balls on a sheet pan to dry overnight.

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Learning Targets Met

Kindergarten

K.LS.1: Living things have specific characteristics and traits.

Grade 1

1.ESS.1: The sun is the principal source of energy

1.LS.1: Living things have basic needs, which are met by obtaining materials from the physical environment.

1.LS.2: Living things survive only in environments that meet their needs.

Grade 2

2.ESS.1: The atmosphere is primarily made up of air.

2.LS.1: Living things cause changes on Earth

Grade 3

3.ESS.1: Earth's nonliving resources have specific properties.

3.LS.3: Plants and animals have life cycles that are part of their adaptations for survival in their natural environments.

Grade 4

4.ESS.1: Earth's surface has specific characteristics and landforms that can be identified.

4.ESS.3: The surface of Earth changes due to erosion and deposition.

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Other Resources

- Iowa Agriculture Literacy Foundation
- Linn County Iowa Education Outreach
 - <https://www.linncoag.com/>
- Cover Crop Monster Video
 - <https://www.youtube.com/watch?v=9FsNGo0TAK4>
- Nebraska Farm Bureau
 - <https://nefbfoundation.org/make-take-activity-cover-crop-monster/>
- Any Local Producer or Agriculture Professor