An Introduction to Regenerative Agriculture

Summary: In this lesson, students will learn about regenerative agriculture and how it is similar to, and different from, organic agriculture. Students will explore what "regenerative" means, learn what practices are considered regenerative, and discuss the differences between regenerative and organic. This lesson is designed to be an introduction to the principles and practices of regenerative agriculture rather than a comprehensive summary. The goal is for students to become aware of some of the issues and discussion around regenerative agriculture and how it aligns with, and differs from, organic agriculture.

Time: 60 minutes

Teacher Notes:

- It is highly recommended to complete the lesson The Indigenous Origins of Regenerative Agriculture after this lesson in order to acknowledge and center the Indigenous origins of the principles and practices that comprise regenerative agriculture today.
- The first portion of this lesson includes viewing videos as texts. The second portion of the lesson includes a garden walk and imagination activity. If this presents a logistical challenge, the lesson could be split into two lessons, or the garden "walk" activity could be completed without visiting the garden space.
- This lesson was developed for Edible Schoolyard Project's Understanding Organic curriculum and is part of the extension inquiries.

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AN INTRODUCTION TO REGENERATIVE AGRICULTURE

READ: Regenerative agriculture is very similar to organic agriculture—they both aim to create healthy ecological systems and build soil health. Unlike organic agriculture, regenerative agriculture also has an important goal of capturing carbon dioxide from the atmosphere into the soil to reduce, or even stop climate change.

WATCH: Explore the following videos to learn more about regenerative agriculture practices.

- The Soil Story with Pashon Murray
- What is Regenerative Agriculture?

ANSWER: Write your responses to the following questions or discuss your answers with a classmate.

- What is one thing that you learned from the videos?
- Was there any new information that surprised you in the videos?
- What is one example of a regenerative practice that a farmer can do to help the environment?

READ: From the videos you watched you've learned that regenerative agriculture aims to build **soil health**, increase **biodiversity**, and **invert carbon emissions** through practices like adding compost, maintaining soil coverage, and supporting living roots with cover crops, reducing tilling, growing a variety of crops, rotating crops and incorporating livestock into farms.

DO: Complete the Regenerative Farm Practices Worksheet (see page 2). You may complete this individually, with a small group, or as a whole class. Be sure to read and review the Regenerative Farm Practices on the worksheet before beginning to fill in the blanks.

RESPOND: Once you have completed the worksheet, discuss with a classmate, or write down your answers to the following questions.

- Did you learn anything that surprised you about regenerative agriculture?
- What questions do you still have about regenerative agriculture?
- What role can you imagine regenerative agriculture playing in our future?

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READ: Regenerative agriculture offers a lot of promise for slowing, stopping, and reversing climate change through the combination of farm practices that help to sequester carbon in the soil. If adopted on a wide scale, regenerative agriculture could drastically slow or even reverse carbon emissions and the associated climate impacts. While many of these practices and ideas may seem new and exciting, most have been practiced for thousands of years. Learn more about where the ideas and practices of regenerative agriculture came from in The Indigenous Origins of Regenerative Agriculture

References:

Murray, Passion. (2015, November 27). *The Soil Story with Pashon Murray* [Video]. YouTube. https://www.youtube.com/watch?v=npu6GBbB-Oc

Sol, Jimi. (2020, March 20). *What is Regenerative Agriculture?* [Video]. YouTube. https://www.youtube.com/watch?v=fSEtiixqRJI

DO: Review the regenerative farm practices listed below in the phrase bank. Then use each phrase once to fill in the blanks in the narrative below. The narrative below describes an imaginary farm that uses a wide variety of regenerative practices to build soil health. You may complete this activity by yourself, with a small group, or as a whole class.

Phrase bank:

- **compost**: a nutrient-rich mix of decomposed food scraps and plant material
- **cover crops**: crops that are grown to help the soil, rather than to produce food. Cover crops can help loosen the soil, protect it from erosion, and convert nutrients in the soil to more available forms.
- **reduce tilling:** turning over the soil less frequently or less deeply to minimize soil disturbance. Frequent tilling can disrupt soil structure and lead to erosion and runoff. Reducing tilling avoids this and keeps soil healthy and in place.
- **growing a variety of crops**: planting many different types and varieties of edible crops increases biodiversity and makes a farm more resilient to inclement weather and drought.
- **rotate crops**: moving plantings to different areas of a farm from year to year. Rotating crops can prevent nutrient depletion in the soil and helps avoid pest issues.
- **Integrating livestock:** adding livestock to a farm system can have many benefits. Manure is a nutrient-rich additive to compost or soils. Animals can help with pest and weed control, too!

Narrative:

At Windy Bay Farm, the farmers are passionate about using growing practices that contribute to ecological richness and enhance the soil for future generations. During the winter, you may see fields full of _____ _____ . These crops reduce erosion and topsoil loss from wind and rain during the off-season (when there aren't many edible crops growing), and they help to loosen the soil and fix nitrogen with their roots.

Compared to most other farms, they also _____ _____ in order to minimize the number of times and depth at which they disturb the soil by turning it over. The Windy Bay farmers also improve their soil's health and fertility by adding _____ to their fields. This boosts the soil's nutrients and its ability to hold water by increasing the amount of organic matter in the soil. This practice increases the carbon stored in the soil, which reduces the carbon in the air.

Windy Bay Farm is a rich environment with many different types of living creatures and plants. The farmers are always _____ __ _____ ___ _____, which increases the biodiversity of the farm and attracts beneficial insects like pollinators. For example, they grow strawberries, summer squash, dry beans, and tomatoes, etc., and they intermix flowers with their vegetable plantings. When planning what to plant, the farmers _____ _____ each year so that they don't deplete the nutrients of one area by growing the same type of plant there year after year. For example, last year they grew strawberries in the North Plot, and this year they will grow cabbage there. This practice helps to avoid plant diseases and pests because the viruses, bacteria, and bugs that affect strawberries won't thrive in the cabbage patch.

The farmers at Windy Bay Farm sometimes let the goats into the orchards to graze on the grasses growing underneath their fruit trees. _____ _____ adds manure to the soil, which is a good source of nutrients for plants. Combined, all of these practices at Windy Bay Farm help to increase biodiversity, build soil health, and capture and hold carbon in the soil.

DO: Draw a diagram to illustrate the growing practices that Windy Bay Farm uses. Refer to the descriptions in the narrative to guide your illustration.