# FINAL PROJECT

**Summary:** In this lesson, students will synthesize their learning from the unit in order to develop a planting proposal for the garden. Depending on how in-depth you want your students to go, you may choose to spend anywhere from a day to a week on this part of the unit. However long you give them, we recommend that you make time for students to share their proposals with each other, as this gives them a valuable opportunity to learn from the inevitably wide range of approaches their peers will take to the same challenge.

This is the final lesson of a 13-lesson series in which students explore the basic ecological principle of interdependence through the lens of common organic farming practices.

**Time:** 120 minutes

**Teacher Notes:**

- For sections that instruct students to READ, you can record yourself reading aloud and send it to students. Invite them to read along with the recording. This is a helpful strategy for differentiating learning that supports all students, especially English Language Learners.
- If you are teaching this lesson in the garden, we suggest completing the sections as a whole glass or in small groups. The garden is a great place for discussion-based lessons.



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**READ:** Over the past 10 lessons, you have been exploring how the garden works as an ecosystem, and the role that a variety of different organic farming practices play in that interdependent system. Today you are going to apply what you have learned to develop a planting proposal for the garden. Here are some key terms that may be useful as you work:

| | | |
|---|---|---|
| Cultivation | Soil type | Weeding by hand |
| Tillage | Sunlight/shade | Producer |
| Aeration | Wind exposure | Consumer |
| Compost | Temperature | Food web |
| Fertilizer | Water/moistness | Matter |
| Decomposition | Ecosystem | Energy |
| Decomposer | Interdependence | |
| Nutrient | Biotic interaction | |

**CREATE:** With your group, work to develop a planting proposal for the garden. You may want to use the **Brainstorming Chart** you started in the first lesson. Some questions to consider as you work:

- What crops do you plan to grow? Why do you want to grow these crops?
- What kind of care do you anticipate each crop might need? Describe the farming techniques you plan to use and why you want to use them.
- Do you plan to plant any other plants? Which kind(s) and why?
- What challenges might you encounter while growing your crops? (For example, do your crops have any common pests, or specific nutrient needs?). For each challenge, discuss how you might approach it and why.

**WRITE:** Write a paragraph on the **Final Project Worksheet** that outlines your proposal. In your paragraph, make sure the answer the questions above.

**MODEL:** Sketch a diagram on the **Final Project Worksheet** that illustrates your crop plan. Include:

- The crops you plan to grow and where you plan to plant them.
- The abiotic conditions that affect the areas you're planting.
- The other important abiotic or biotic relationships that you anticipate will impact your crops.



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**PLAN:** Create a timeline on the **Final Project Worksheet** for your project that includes:

- When you plan to plant each crop.
- The farming techniques you plan to use in order to care for your crops.
- When you anticipate your crops might be ready for harvest.

**REFLECT:** Discuss or write about the questions below on the **Final Project Worksheet**.

- What questions do you still have about your project? How might you find answers to those questions?
- How important were the ecological principles that we've been studying in your final plan? Did you take them into consideration while you worked?
- What other considerations did you have while you developed this plan? Why were these considerations important to you?
- How was the process of collaboration for you in this project? What did you do well as a team? Were there areas you could have improved?

**SHARE:** Share your work plans with other groups in your class. You may do this in the form of a discussion, group presentations or a gallery walk. You may want to take time to provide feedback to your peers:

- What are 2-3 strong points of their plan?
- What 1-2 questions do you have about their plan?

**REVISE:** You may find that you want to revise certain aspects of your plan after hearing from your peers. Do this in collaboration with your group.

**DO:** Now you're ready to put your plan into action!



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# GARDEN PLANNING

# BRAINSTORM WORKSHEET

In this unit you will work in pairs or small groups to develop a planting proposal for our garden. By the end of the unit, you should be able to answer these questions in your proposal:

- What crops do you plan to grow? Why did you choose these crops?
- When do you plan to plant each crop?
- Where in the garden will you plant each crop? Why?
- What kind of care do you anticipate each crop might need? Describe the farming techniques you plan to use.
- When do you anticipate each crop will be ready for harvest? (an estimate is fine!)
- Do you plan to plant any other plants? Which kind(s) and why?
- What challenges might you encounter while growing your crops? (For example, do your crops have any common pests, or specific nutrient needs?). For each challenge, discuss how you might approach it.

As part of answering these questions, you will sketch a diagram illustrating where you plan to plant each crop and why. You will also create a timeline that outlines important moments in the life cycle of each crop, and notes on how you plan to care for your crops.



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# GARDEN PLANNING BRAINSTORM CHART

**Fill out the chart below to get started:**

| **Prior Knowledge**—things you already know about gardening or growing food that could help you complete this project. | **Ideas** you have about the project. These don't have to be perfect. Now is the time to get all your thinking on the table! | **Questions** you have, or things you need to learn in order to complete this project. (The chart already includes a couple example questions). |
|---|---|---|
| | | • *How much space do we have to grow food?*<br>• *When is the earliest we could begin planting crops?*<br>• *When is the latest we should be harvesting crops?*<br>• *What resources do we have? (ie. seeds, tools, water, informational books etc.)* |

# GARDEN PLANNING BRAINSTORM CHART

**ELABORATE:** What do you know about a few common organic farming techniques: **cultivating and tilling**, **companion planting**, **hand weeding**, and **composting?** In the chart below, write what you know about each farming technique. Use the questions below to help you brainstorm.

- Have you heard of these techniques before? Do you have any experience practicing them?
- What ideas do you have about why they are used and what effects they have on crops and gardens?
- What questions do you have about them?

| cultivating and tilling | companion planting | hand weeding | composting |
|---|---|---|---|
| | | | |

# FINAL PROJECT WORKSHEET

Today you are going to work to develop a planting proposal for the garden. Here are some key terms that may be useful as you work:

| | | |
|---|---|---|
| Cultivation | Soil type | Weeding by hand |
| Tillage | Sunlight/shade | Producer |
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| Fertilizer | Water/moistness | Matter |
| Decomposition | Ecosystem | Energy |
| Decomposer | Interdependence | |
| Nutrient | Biotic interaction | |

**WRITE:** Write a paragraph outlining your proposal that answers the questions below:

- What crops do you plan to grow? Why do you want to grow these crops?
- What kind of care do you anticipate each crop might need? Describe the farming techniques you plan to use and why you want to use them.
- Do you plan to plant any other plants? Which kind(s) and why?
- What challenges might you encounter while growing your crops? (For example, do your crops have any common pests, or specific nutrient needs?). For each challenge, discuss how you might approach it and why.



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**MODEL:** Sketch a diagram that illustrates your crop plan. Include:

- The crops you plan to grow and where you plan to plant them.
- The abiotic conditions that affect the areas you're planting.
- The other important abiotic or biotic relationships that you anticipate will impact your crops.



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**PLAN:** Create a timeline for your project that includes:

- When you plan to plant each crop.
- The farming techniques you plan to use in order to care for your crops.
- When you anticipate your crops might be ready for harvest.

**REFLECT:**

- What questions do you still have about your project? How might you find answers to those questions?
- How important were the ecological principles that we've been studying in your final plan? Did you take them into consideration while you worked?
- What other considerations did you have while you developed this plan? Why were these considerations important to you?
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