

# Metabolic Magic Mini-Interventions

## Closing the Loop

*(Suggested usage: After Case Study 4)*

Students will create a plan for a garden based on closed-loop or self-sustaining gardening practices. If the setting allows, students can present/teach this to a younger class and create an activity where the younger/older student pairs work together. If the school has a garden, include it in this project.

### Discussion questions:

- What does sustainable mean?
- Why might this be useful in a garden?
- Have you seen examples of composting? (ie., natural composting such as the leaves decaying on the ground, a compost bin in a garden, or a city park with large compost piles)
- Have you seen examples of vegetable gardens? What were they like?
- What would you want to grow in your garden? Why?

### Guidelines:

- Using problem based learning, students research what closed-loop gardening is, and what sustainable practices are included. This could include examples within the school's garden or a community garden if they have access to it.
- Students research what a garden needs to survive and thrive.
- Students can choose a topic related to sustainable gardening or split into groups and each take a topic (or create their own topic!)
  - The life cycle of a plant (including what it needs to thrive)
  - How to deal with "garden pests"
  - Companion planting (see ["The three sisters"](#) video)
  - Composting
  - How do the plants get water?
- Students brainstorm about what they want to create and how they might do it.
  - What items do I need to start the garden? To sustain it? How might I get them?
  - Who can participate? What jobs need to be done?
  - Where will it be? How much space?
  - What will we plant?
- Decide on the details and create a plan, including a map of the proposed garden
- If the school or community has a garden, how can the garden be a part of this project?

## **Community engagement:**

Students research and reach out to professionals in the community such as the County's Parks Department or a City Botanical Garden who may have educational programs.

- Students gather resources from these sites
- Students organize an event where a speaker from one of these places comes to the school to present, or they go there for a presentation, on a field-trip.
- Students then create an activity based on this project where they would work with younger students as mentors or teachers.