

7 STEPS TO CREATE AN NGSS-ALIGNED GARDEN LESSON

1. IDENTIFY THE GARDEN PHENOMENON OR TASK

- What is happening in the garden?
- What natural phenomenon do you want to explore?
- What tasks do you need/want to do in the garden?

Examples:

- *The compost pile needs to be turned*
- *The cilantro is going to seed*

2. IDENTIFY THE DCI

- How is this related to science?
 - What explains this phenomenon?
 - What explains why we do this practice this way?
- Find the DCI that most closely aligns with this phenomenon or task.

Examples:

- *The compost pile needs to be turned because all living things need oxygen.*
- *The cilantro is going to seed because reproduction is a natural part of every living things' life cycle.*

3. IDENTIFY THE GUIDING QUESTION(S)

- What are the questions about WHY this phenomenon is occurring, or WHY we do this task this way?
- What is the mystery?

Examples:

- *What is happening in the compost pile? Why do we need to turn it?*
- *What is happening with this cilantro plant? Why is this occurring?*

4. IDENTIFY THE SCIENTIFIC PRACTICES

- What do students need to DO in order to gather more evidence for this mystery?
 - What tools do they need?
 - What “data” will they collect and how?

Examples:

- *Comparing organic matter in compost piles that have vs. haven't been turned*
- *Making observations of cilantro plants weekly over three months*

5. IDENTIFY THE PRIOR KNOWLEDGE

- What prior knowledge or contextual information do students need in order to be able to make sense of the data they collect?

Examples:

- *Compost piles are filled with microorganisms that facilitate the decomposition process.*
- *Overview of the life cycle for plants that reproduce sexually*

6. IDENTIFY STRUCTURES FOR SUPPORTING STUDENT SENSE-MAKING

- What structures/support might you offer to help students make sense of their observations and synthesize/reflect on their learning?

Examples:

- *Structured student talk routines*
- *Guided discussion questions*
- *Writing/reflection prompts*

7. ORGANIZE YOUR ANSWERS INTO A LESSON PLAN!

- **Engage:** Intro/hook that introduces the central question or phenomenon. You might also draw on prior knowledge and/or introduce necessary context before students gather more evidence.
- **Explore:** Activity in which students gather information/evidence/observations that help illuminate the central question.
- **Explain:** Structured reflection/synthesis to make sense of their data and construct explanations for what they observed. Sharing and discussion.
- **Elaborate:** Make sure the learning objectives have been reached by helping students complete their explanations or challenging them to apply their reasoning to other scenarios.
- **Reflect:** Reflect on learning.