Title: Worm Life Cycle

Grade: 1st /2nd	Date of Delivery:
Unit: Life Cycles	**Time: 1/ 60 min lesson**

Unit overview and background information:
One of the most visited themes in 1st grade gardening is *cycles*, specifically pertaining to the life cycles of various garden critters. This concept is strongly introduced in 1st grade to lay the foundation that all things in nature flow in cycles, which plays to the interconnectedness of all things. While this concept will be applied to more complex scenarios in upper grades such as making compost, the nitrogen cycle, the carbon cycle and climate change in 1st grade the focus is that living things grow, change, and eventually produce more living things.

ESYNOLA Garden Core Concepts:
- Natural Cycles: Life Cycles

Objectives:
SWBAT:
- explain the different stages of the worm life cycle
- identify one way we can take care of our worms
- Explain why worms are beneficial to our garden

Assessment plan (formal or informal):
- Each student will sequence a series of worm images or real worms to demonstrate the cycle.

Academic component:
Our worms are like us. They grow and change throughout their life. A worm's life cycle is one of the simplest and most engaging in the garden. For this reason we always start the Life Cycle Unit with worms. The investigation ties together proper trowel use, respecting our animals, and observations.

Though a worm's life cycle is not as clearly defined as a butterfly's we classify 4 stages of its life from egg to baby to "teenage" to adult. Students are challenged to observe and compare worms in order to categorize them into one of these 4 stages. Keep in mind that worm eggs are very hard to find.

Since worms are abundant in all parts of the garden after learning the cycle there will be ample opportunities to revisit the concept in future garden activities.

Key Academic and Culinary Vocabulary (intentionally taught)	**Secondary Vocabulary** (language used in other classes; increase exposure)
Worm Bin- worm composting bin	**Cycle-**a sequence of events that repeats itself again and again (in a circle)

	habitat, *n.* The place where an animal or plant normally lives and grows

Key Preparation/Materials: Ready for each small group:

- a worm bin
- popsicle sticks
- small plastic containers (1 per pair)
- plastic lids with 4 compartments
- whiteboards & markers

Lesson Flow

Driving Question: How does a worm grow and change during its life?

Lesson Intro - Engagement/Inquiry: (min)

Teacher Content: Define **Cycle** (a sequence of events that repeats itself again and again (in a circle) students repeat.

- **Pair-Share:** Our garden is full of life cycles. Can you name 3 we've discussed this year. (butterfly, snail, ant, chicken, plant). Share out.
- **Sorting Game:** I have cards for the butterfly and the snail life cycle, but the words and pictures are all mixed up, can you help me sort them out? I will give each person a card, if it belongs to the snail life cycle put it on that board, if it is the butterflies life cycle, put it on this board, then let's see if we can put them in order. (there will be a little confusion because some words and pictures are similar, that is ok, help students recognize that there are similarities in their life cycles.)

Today we will explore the worm's life cycle, let's take a look and see if it is similar to the butterfly and snail's life cycle.

- Ask what is a worm bin? why would someone want a it?
- Model how to safely explore worms with popsicle sticks- softly, don't poke, saw, or press down

Body - Exploration: (min)

Teacher Content: Explain that today you are going to be challenged to find each stage of a worm's life.

- **Round Robin:** How do you think a worm changes during its life cycle?
- **Silent Hand:** How will we tell the different stages apart? What do you think is different in each stage?

Predict: Students predict the stages of a worm's life cycle and draw a picture on a whiteboard (if time permits).

Teacher Content: Explain that there are 4 stages of the worm's life cycle: egg, baby, juvenile, adult.

- Show them the plates/trays where they will create their cycle.
- Show them the containers of worms and model how to respectfully hunt.

Ask a student to demo this.

Give a container of worms to each pair with popsicle sticks and a plate/tray.

- Students hunt for examples each stage of their life cycle and place them in the compartments of the plate/tray.
- Students compare their cycle with ones from other groups.
- Once finished students can then draw a picture of the life cycle on their whiteboard or in their journal.

Closing - Final check for Understanding/Summarization:

Draw your worm's life cycle into the garden journal. Label each stage.