AKS:4. obtain, evaluate, and communicate information about the roles of organisms and the flow of energy within an ecosystem.
4a. develop a model to describe the roles of producers, consumers, and decomposers in a community

Target Science & Engineering Practice:

- Develop and use models
- Construct explanations and design solutions

QPTS:

- Collaboration
- Non verbal representation
- Background and prior knowledge

Learning Target:

I can identify the roles of producers, consumers and decomposers in a community.

I can explain the roles of producers, consumers and decomposers in a community.

Materials

Aquaponics System
Paper
pencil

Activating Strategy

*How can we access students' prior knowledge and **ENGAGE** their interest in the phenomenon?*

Students will have the opportunity to observe the aquaponics system. They will be asked to think about what they notice. They will then share in smaller groups. *

Differentiated Small Groups

*How can we have students collaboratively participate in an activity that facilitates conceptual change as they **EXPLORE** the phenomenon?*

Modeling with… Aquaponics System
Technology…... Students can use different sites to learn more about producers, consumers and decomposers. They can also watch videos provided by the teacher that explain how the aquaponics systems works.
Small group collaboration…Students will work in small groups to learn about how the aquaponics system works.
Teacher-led small group….The teacher will pull a small group of students who may need more instruction on what producers, consumers and decomposers are or who do not understand how the aquaponics system works.

Architecture of a Mini-Lesson

*How can we have students **EXPLAIN** the phenomenon?*

Background/Prior Knowledge: We have learned the important role producers, consumers and decomposers play in a community.

Teaching Point/*Purpose*: Today we are going to learn that the aquaponics system has its own version of producers, consumers and decomposers. We will identify what those are and the role each plays in creating a successful aquaponics system.

Teaching:
The teacher will ***think aloud*** …Today we are going to look at the aquaponics system. You will be creating a model, with your group to identify and explain the role of the producers, consumers and decomposers in the aquaponics system. You may also identify what would happen to our aquaponics system if one was eliminated.

Active Engagement: Students will work together to create a model showing the producer, consumer and decomposer in the aquaponics system and explain the role and importance of each.

Link: This is important to help us understand how our aquaponics system works.

Differentiated Small Groups

*How can we challenge and/or deepen students' understanding of the phenomenon through new experiences? How can students **ELABORATE** on this phenomenon?*

Modeling with… Aquaponics system, student created model
Technology…... Students can use google slides, powerpoint or another computer design program to create their model.
Small group collaboration…Students will work together to create their model and explanations of roles of producers, consumers and decomposers.
Teacher-led small group….The teacher will talk with students about what would happen if one part of the aquaponics system was eliminated.

Summarizing

*How can we assess, or **EVALUATE**, student understanding of the phenomenon, including both content and the science & engineering practice embedded in the AKS?*

We can assess students based on their model and explanations of the roles of the producers, consumers and decomposers in the aquaponics system.