Individual Learning Design

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CURR 5018

Flow of Energy

Learning Outcome: The students are expected to create a diagram or digital media that explains the flow of energy through living systems, including food chains and food webs.

ISTE: 1.6c - Students communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations.

Tools/Technologies

- sheppardsoftware.com
- Thejigsawpuzzles.com
- Internet
- Flipgrid
- Canva
- Scratch

Activities

- TSW: Create several food chains and webs on sheppardsoftware.com to show mastery of concept. https://www.sheppardsoftware.com/science/animals/games/food-chain/
- TSW: Use the internet to analyze different ecosystems for the final product. (assessment)
- TSW: Create and construct a digital jigsaw puzzle of a food chain in a specific ecosystem. https://thejigsawpuzzles.com
- TSW: Create an infographic to explain the difference between food chains and food webs.

Assessment

TSW: Create a final product. Each student will have the opportunity to create either a Scratch product, school commercial, or flipgrid to communicate the flow of energy through their selected ecosystem.

RUBRIC

Points	Expert (4)	Competent (3)	Beginner (2)	Novice (1)
Identification of Problem and Constraints	Clearly defines the problem in a real-world context and addresses all constraints for an accurate solution.	Defines the problem and addresses the constraints within the context presented.	Identifies the problem but does not address the constraints.	Problem is not clearly identified, and/or few constraints are addressed.
Solution, Prototype, or Plan	The solution is well outlined and clearly addresses each constraint. The model accurately represents a real-world ecosystem.	The model is complete but does not address some areas and constraints clearly. Model shows understanding but lacks details or has small errors.	The model is basic, with some key pieces missing. Some constraints are not addressed	The model is not accurate, does not represent a real-world ecosystem, and/or many of the constraints are not addressed.

Collaboration	Steps in to help when a team member is absent. Encourages others to share ideas, helps clarify them, and connects them to the work. Notices if a team member does not understand and takes action.	Helps the team solve problems, manage conflicts, and stay focused. Share ideas that help the team. Gives specific, supportive feedback to others. Offers to help.	Cooperates with the team but does not actively help. Make some effort to share ideas. Sometimes gives feedback and offers help.	Does not help the team solve problems, and may cause problems. Does not share ideas with other team members. Does not give useful feedback or offer help.
Scientific, Research-Based Content	The model demonstrates accurate scientific reasoning and research. The information given is fully research-based and cites resources	The model demonstrates some scientific reasoning and research. Some information given is research-based and some resources are cited.	The solution offered is based on scientific knowledge. Some resources are cited.	The solution is not based on scientific principles, and/or no resources are used.