JSD 3D Learning Activity Template

Grade: 6th	**Title:** Patterns Across Multiple Ecosystems

Utah Science with Engineering Education Standard (SEEd): 6.4.2
Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems. Emphasize consistent interactions in different environments, such as competition, predation, and mutualism.

Key crosscutting concept(s) (CCC): Cause and Effect, System Models, Stability and Change
Key science and engineering practice(s) (SEP): Analyzing and Interpreting Data, Obtaining, Evaluating and Communicating Information.

Materials: 1 computer to 2 students, Color Pencils, Note Cards, Typing Paper, 1 piece of really long yarn or string and a set of 30 notecards with pictures and names of organisms (both animals and plants) from jungle ecosystem.

Time: 2 hours

Teacher background, key content information and hints: Relationships among organisms

Prior knowledge that students need: Previous Lesson

Learning Activity Plan

These three aspects of a lesson should be identified in your learning activity.		
Gathering: *(Obtain Information, Ask Questions/Define Problems, Plan & Carry Out Investigations, Use Models to Gather Data and Information, Use Mathematics/Computational Thinking.)*	***Reasoning:*** *(Evaluate Information, Analyze Data, Use Mathematics/Computational Thinking, Construct Explanations/Solve Problems, Develop Arguments from Evidence, Use Models to Predict & Develop Evidence.)*	***Communicating:*** *(Communicate Information, Argue from Evidence (written & oral), Use Models to Communicate).*

Phenomenon: Show this set of graphs and ask what does each graph show and how are they related. Record the answers on an anchor chart.

Learning Activity:

Gathering:

Pass out 1 notecard to each person in the class and answer any questions students may have about each organism. Ask how these organisms are related? What ecosystem they are a part of and how do you know?

Allow students 10 minutes to research the organisms that is on their notecards.

Reasoning and Communicating:

Discuss what would happen if one organism were to experience local extinction (how it would impact the rest of the food web… stress the trickle-down effect to other organisms and the impact in other populations).

Gathering:

Wolves in Yellowstone
Start at 20 second (1-20 is about the big bang)

https://www.youtube.com/watch?v=5Iddy0CVILg

Communicating:
Revisit the anchor chart from beginning of the lesson and review the answers that were given and add any new information and connections that students have discovered

Assessment of student learning
Participation and depth of answers on wolves in Yellowstone graphs (final question). Participation in food web activity.

Introduction of Wolves in Yellowstone in 1992

- Compare the graph of the introduction of the wolves (A) to the other graphs.
- Write down what happened in each graph compared to the graph of the wolves.
- Draw a conclusion of why you think each graph changed.