

JSD 3D Learning Activity Template

Grade: 6

Title: It's a Zoo in the Room

Utah Science with Engineering Education Standard (SEEd): 6.4.4

Key crosscutting concept(s) (CCC): Patterns, Cause and Effect, Stability and Change

Key science and engineering practice(s) (SEP): Developing and Using Models, Analyzing Data

Materials: Posters, Colored Pencils, Chromebooks,

Time: 6 hours

Teacher background, key content information and hints: Basic ideas of how ecosystems work. Different relationships that exist among organisms in an ecosystem, how and why population changes

Prior knowledge that students need: Adaptations of animals

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 picture and ask “based on this picture why do the populations change in numbers?”

https://www.google.com/search?q=Predator+and+Prey+population+graph&safe=active&rlz=1C5C HFA_enUS683US683&espv=2&source=lnms&tbn=isch&sa=X&ved=0ahUKEwisj4fe7PnSAhXhllQKHb2uAN0Q_AUIBigB&biw=1258&bih=480&dpr=1&surl=1#imgrc=mBRaqiU2AW3n5M:

Learning Activity:

GATHERING: Show this video on different relationships that exist in an ecosystem

<https://www.youtube.com/watch?v=zSml2F1t81Q>

REASONING: Have students work in teams of two to draw a type of animal that they are going to “create” (Consumers, Producers, Decomposers) They should create an animal that is adapted to live in the classroom that fulfills the niche in the environment.

COMMUNICATE: The pairs of students should present their animal to the rest of the class.

REASONING/GATHERING: As each student-pair presents class should be creating a food web using all the created animals.

REASONING: After all students have presented their animal and a food web is created with all the animals that are created in the class. Follow each day with a disaster, discuss how each disaster might impact each species and have students record their answers on student page. 1st disaster strikes: (a food source is destroyed by an invasive species that has taken over) At this point, the teacher can go back to the phenomenon and look at the graph and discuss the changes in populations. As a class, discuss how these changes affect the other populations. The next day 2nd disaster strikes: Students leave for long break (Winter Break....) how does this effect the population? The next day 3rd disaster strikes: the heat has been turned off. The next day 4th disaster strikes: the main consumer goes extinct.

Assessment of student learning

Did students create an animal that follows the student page? Did they correctly infer/predict how each disaster impacted the ecosystem?