

Building Food Chain/Energy Pyramid Mobiles

Summary

In this activity students will be building hanging mobiles which represent food chains and energy pyramids from a specific biome.

Main Core Tie

Science - Biology

[Standard 1 Objective 1](#)

Time Frame

2 class periods of 60 minutes each

Group Size

Pairs

Materials

textbook (Prentice Hall: Biology, pp 100-104) OR other text
construction paper
glue
scissors
twine
colored pencils
mammal field guides tree/bush field guides
insect field guides
computers if desired
- [student page](#)"
(attached)

Student Prior Knowledge

Students should understand the concept of energy pyramids, food chains and feeding levels.

Instructional Procedures

Collect supplies.

Instruct students they will be creating mobile representing energy pyramids. (You may have students work in partners for this activity) These pyramids should include at least 1 complete food chain within their selected biome. Some organisms in the top levels of the pyramid will overlap. The website listed above is also very helpful.

Each level should represent the amount of energy available. This should be shown as biomass. Remember to remind students, the more biomass available the more energy available.

Examples of food chains could include:

The food chain should include 4 different types of producers, 3 different types of primary consumer, 2 secondary consumer types and 1 tertiary consumer.

When making their mobiles students should remember that only 10% of the energy is available from one feeding level to the next. Students represent this by the size of each level on the

mobile.

Example: Strips of paper should be cut to the following ratios:

Tertiary consumer .1 cm

Secondary consumers 1 cm

Primary consumers 10 cm

Producers 100 cm

Students should draw the organisms on the energy level which they belong on the pyramid. They could also draw them on separate sheets of paper, cut them out and hang them from the level.

Students may fold the strips of paper into triangles then attach together with twine.

Make 3 large arrows which say energy on them. You may want to laminate these for future use.

Students should conference with you to grade the pyramid.

During the conference you may want to ask some of the following questions.

Using the 3 arrows show where energy is lost and explain to me what form the energy is in that is lost.

Respiration, movement, reproduction, heat

What does each level represent on the pyramid?

Producer, primary, secondary, tertiary consumers

Why did you make each triangle the size you did?

To represent the amount of energy available at each level, energy is lost as we move up the pyramid

How would the number of organisms on the base level of your pyramid compare to the number of organisms on the top?

More on bottom than top

What might change these numbers (hint: think about size)

If the producer was a redwood and the primary consumers were tiny insects

What is the ultimate source of energy for your pyramid? How would a decrease in this source affect the biome?

Sun, less energy means some organisms would die

Describe 3 changes in the form of energy as it flows through your pyramid

chemical energy in the form of food, heat energy lost through organisms, solar energy from the sun, energy for movement. . .

Assessment Plan

Scoring Guide:

All organisms are from the same biome.....10 pts

Complete food chain included.....10 pts

Levels are constructed according to the amount of energy available...10 pts

Color and Neatness.....10 pts

Ability to answer discussion questions.....16 pts

Bibliography

Lesson Design by Jordan School District Teachers and Staff.

Authors

