Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Block\_\_\_\_\_\_\_\_

Ecological Pyramid 3-D Model

**3D Pyramid Directions**

1. Shade the first (bottom) level of each pyramid green.

2. Shade the second level of each pyramid yellow.

3. Shade the third level of each pyramid blue.

4. Shade the fourth (top) level of each pyramid red.

5. Label each level of the first pyramid side with the following terms as you move up the pyramid:

 \*(producer, primary consumer, secondary consumer, tertiary consumer).

6. Label each level of the second pyramid side with the following terms as you move up the pyramid:

 \*(plants, herbivores, omnivores, top carnivores).

7. Label each level of the third pyramid side with the following terms as your move up the pyramid:

 \*(autotroph, 1st order heterotroph, 2nd order heterotroph, 3rd order heterotroph).

8. Label each level of the fourth pyramid side with a picture/names of example organisms that belong there.

 1st - Example organism:

 2nd - Example organism:

 3rd - Example organism:

 4th- Example organism:

9. Fold your pyramid on the lines radiating from the center and tape it together.

10. Answer the following **questions** using your pyramid:

a. What are three terms used to describe organisms such as trees?

b. What are three terms used to describe organisms such as cows?

c. What are three terms used to describe organisms such as humans?

d. What are three terms used to describe organisms such as lions?

e. What do the organisms in each trophic level eat?

f. Do organisms always stay in the same level? Explain your answer.

Constructing Ecological Pyramids

In this assignment you will be using the given data to construct the three types of ecological pyramids that we work with in IB ESS: Pyramids of numbers, biomass, and productivity. Be sure to label the levels of the pyramids as the animal, the corresponding trophic level, and the information from the data. The pyramids do not need to be exact, but they must clearly indicate the relative size of each level to the other levels (big ones big, small ones small).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Animal | **Numbers** | **Biomass** (kg) | **Productivity** (kcal/m^2 yr) |
| Food Chain One | Osprey | 1 | 14 | 6 |
| Northern Pike | 10 | 90 | 67 |
| Perch | 100 | 100 | 1478 |
| Bleak | 10000 | 500 | 8633 |
| Freshwater shrimp | 10,000,000 | 1250 | 15438 |
| Food Chain Two | Mongoose | 10 | 100 | 9 |
| Cobra | 1000 | 5000 | 87 |
| Shrew | 5000 | 2500 | 186 |
| Grasshopper | 250000 | 25000 | 574 |
| Grass | 1000 | 0.1 | 6234 |

Food Chain One

|  |  |  |
| --- | --- | --- |
|  |  |  |

Food Chain Two

|  |  |  |
| --- | --- | --- |
|  |  |  |