

Student Name:

### Finding Trophic Levels

You have learned about how ecologists use food chains, food webs, and energy pyramids as models that provide a visual representation of the flow of energy between trophic levels in an ecosystem. Can you create a model of an ecosystem using trophic levels?

#### **Part One: Energy Pyramid**

Consider the following description of an ecosystem.

There are many cacti, as well as sagebrush, and a few low trees. There are tracks of a desert fox leading to and from a potential burrow. Sand grouse feathers are present at the mouth of the burrow. Termites are feeding on a fallen tree. Many birds called sand grouse are eating the termites.

Think about the trophic levels in this ecosystem. Describe how you would create an energy pyramid to model the flow of energy in this ecosystem.

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Part Two: Food Web

Consider the following organisms that live together in a field ecosystem. For the purpose of this activity, we will assume that no other interactions between organisms take place except for the following:

Grasses cover the ground of the field, providing food for organisms like deer, rabbits, mice, and insects like crickets. Deer also browse on the leaves of the small trees that dot the field. Mountain lions use their keen eyesight to prey on deer and rabbits. Hawks also are predators in this ecosystem, eating snakes, rabbits, mice, and frogs. Mice sometimes eat the crickets, as will frogs. The snakes in this field survive by eating mice.

Use this information to construct a food web of this field’s ecosystem. There are ten organisms in this ecosystem. Begin by determining which organisms are at each tropic level. Remember, an organism can be at more than one tropic level. Complete the table below.

Primary Producers	Primary Consumers	Secondary Consumers	Tertiary Consumers

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Now complete your food web by writing the name of each organism on small a piece of paper. You may also include a sketch of each organism if you'd like. Place all of these smaller pieces of paper on a full sheet of paper, and move them around to places such that you will be able to draw arrows that indicate the flow of energy between each organism. Once this is complete, glue or tape the food web's organisms in place, and draw the arrows. When you are finished, take a photograph of your food web that you can submit to your teacher along with this worksheet.

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