**Energy in Ecosystems: The Rule of 10%**

Part 1, The Energy Pyramid: In the energy pyramid below, draw an organisms that might appear in that level of the pyramid. To the left of the pyramid, write whether the organisms is a producer, or a primary, secondary, tertiary consumer. To the right of the pyramid, calculate and write how many calories are available in each trophic level based on the rule of 10%.

Calories Available

\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Calories Available

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Calories Available

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Calories Available

\_\_\_Producers\_\_\_ 10,000 calories\_\_\_\_

**Part 2: Answer the Questions**

1. Why is a pyramid a good shape to represent how matter and energy transfer in an ecosystem? Why not a circle or a square?
2. What happens to the energy that is not transferred onto the next level? Where does it go/what is it used for?
3. Which trophic level is the MOST important? Explain your answer.
4. What would happen if there were more primary consumers than producers?

**Part 4: Energy Calculations: Show your work and write your answers on the lines provided.**

1. A coyote needs to eat three rabbits a week to survive. A rabbit needs to eat 25 berries a week to survive. How many berries are needed to support a coyote for one week?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ berries per week

1. A hawk needs to eat to eat two snakes a week to survive. A snake needs to eat three crickets a week to survive. How many crickets are needed to support a hawk a week?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ crickets per week.

How many crickets are needed to support a hawk for a month?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ crickets per month

1. An owl needs to eat two mice a night to survive. A mouse needs to eat five crickets a night to survive. A cricket needs to eat 10 blades of grass a night to survive. How many blades of grass are required to support one owl for one night in this ecosystem?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ blades of grass per night