Name: _____

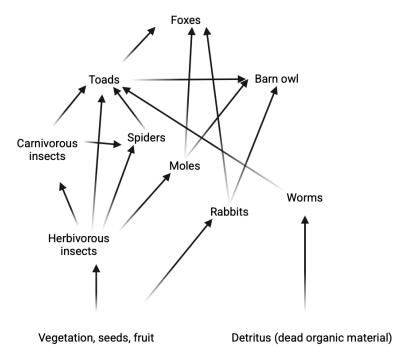**Lesson 1.2 (Understanding Energy Flow)**
Analysis Questions

1. Use the simplified food web below representing a North American grassland.

   a. Sketch the longest food chain in this food web below.

   b. Name two species that are found at two trophic levels and identify the two trophic levels.

      i.

      ii.

c. If all barn owls die, what may happen to (i) moles and (ii) foxes and why?

    i.

    ii.

d. If there is a great increase in the rabbit population, what happens to (i) rabbit predators and (ii) the vegetation?

    i.

    ii.

e. If a pesticide is added to kill spiders, what are two effects that may happen to the toad population?

    i.

    ii.

2. Make a food web diagram from the paragraph below.

    In a trout stream, many insects such as caddisfly larvae, mayfly larvae and stonefly larvae feed on aquatic plants such as algae in addition to leaves and other detritus (dead organic material) that has fallen into the stream. Aquatic worms also feed on detritus. Carnivorous (meat-eating) insects like dragonfly and damselfly nymphs feed on the herbivorous (plant-eating) insects. Crayfish feed on both detritus and on herbivorous insects, as do frogs. Both will also eat worms. Trout will eat all aquatic insects and worms, in addition to crayfish and frogs if the trout are big enough. Fish-hunting birds like herons and mergansers will eat trout, in addition to mammals like otters. Sculpin are small fish that eat herbivorous insects and are eaten by trout and fish-hunting birds.

3. Using the data in the table below, construct a pyramid of energy with proper labels. Remember the rules for doing a graph like this (listed below).

Trophic Level	Energy Production (kJ m^{-2} yr^{-1})	Pyramids of energy should be:
		...uld be stepped,
Producers	20,810	...ed by trophic ...consumer, ...he bottom ...its
Primary consumers	3,368	
Secondary consumers	383	
Tertiary consumers	21	