**Uncle Bob’s Garden**

# 1. Construct a food chain using the following organisms

Rose Bush, Aphid, Sun, Dragonfly, ladybug, Restless Flycatcher(bird). Use arrows to show energy movement and label all trophic levels.

# Uncle Bob garden maintenance

Uncle Bob takes pride in his roses. Every day he spends the afternoon weeding and watering. Unfortunately, the bugs love his roses too. To control the pests Uncle Bob went to the store and bought Pesticide X, the strongest pesticide on the market. Pesticide X (bug killer) has a chemical that is harmless to organisms in small quantities, but hazardous to organisms in large quantities or concentrations. He uses the pesticide on the entire garden just to make sure.

Assuming that each higher-level consumer, consumes 10 times more toxins than the level before, create a toxicity pyramid that shows the bioaccumulation that occurs in the food chain

Fox eats vole and gains 500ppm toxins

Voles eats caterpillars and gains 50ppm toxin

Aphids eat leaves from garden and gain \_\_\_\_\_\_ppm of toxins

Caterpillars eat leaves with 5ppm toxin

Tree leaves applied with herbicide

Pesticide X applied to the garden at 10ppm

3. According to your energy pyramid which of the organisms is going to be affected the most by the pesticide? Explain why.

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4. THINK: This question requires you to think beyond facts. Think about “How Wolves Change Rivers” video and the story of the effects of otter population on and If this organism dies, what might be the effects on the food chain be on Uncle Bob’s garden? First construct a **food web** with at least **10 other** organisms than the ones listed above in Bob’s garden (be creative, but realistic). Then using the information come up with what effects you’d have on the food web and **food chain** of the organisms that are associated with Bob’s garden.

**Food web**

What effects would the pesticides have on the food chain and the food web?

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5. Write a detailed email to Uncle Bob explaining the dangers of using pesticide X in his garden. Make sure to explain bioaccumulation to get your point across. Make sure that you convince Bob not to use the pesticide.

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