

Energy Flow

**B2: UNDERSTANDING OUR
ENVIRONMENT**

OBJECTIVES & SUCCESS CRITERIA

OBJECTIVES

- × Be able to construct and describe a food chain
- × Understand the two types of food pyramids
- × Be able to draw a food pyramid to scale (higher level)
- × Be able to describe the problems with constructing pyramids (higher level)

SUCCESS CRITERIA

- × You can answer questions on food chains and pyramids
- × You can construct a pyramid of biomass to scale

LET'S GET STARTED....

- × Watch this video of a baboon stalking a baby gazelle

<http://www.youtube.com/watch?v=eJi7p5GcLxg> (A baboon stalks a baby gazelle – bbc)

- × TASK: Can you draw a simple three component chain from the video showing the:
 - + producer
 - + primary consumer
 - + secondary consumer

Can you identify any errors in this food chain?



Food chains and food webs

- × Food chains – represent flow of energy between different organisms that feed on each other
- × Each level called a “trophic (feeding) level”
- × Food chains can join together to become a food web – showing how the feeding of different animals in an area or habitat are linked

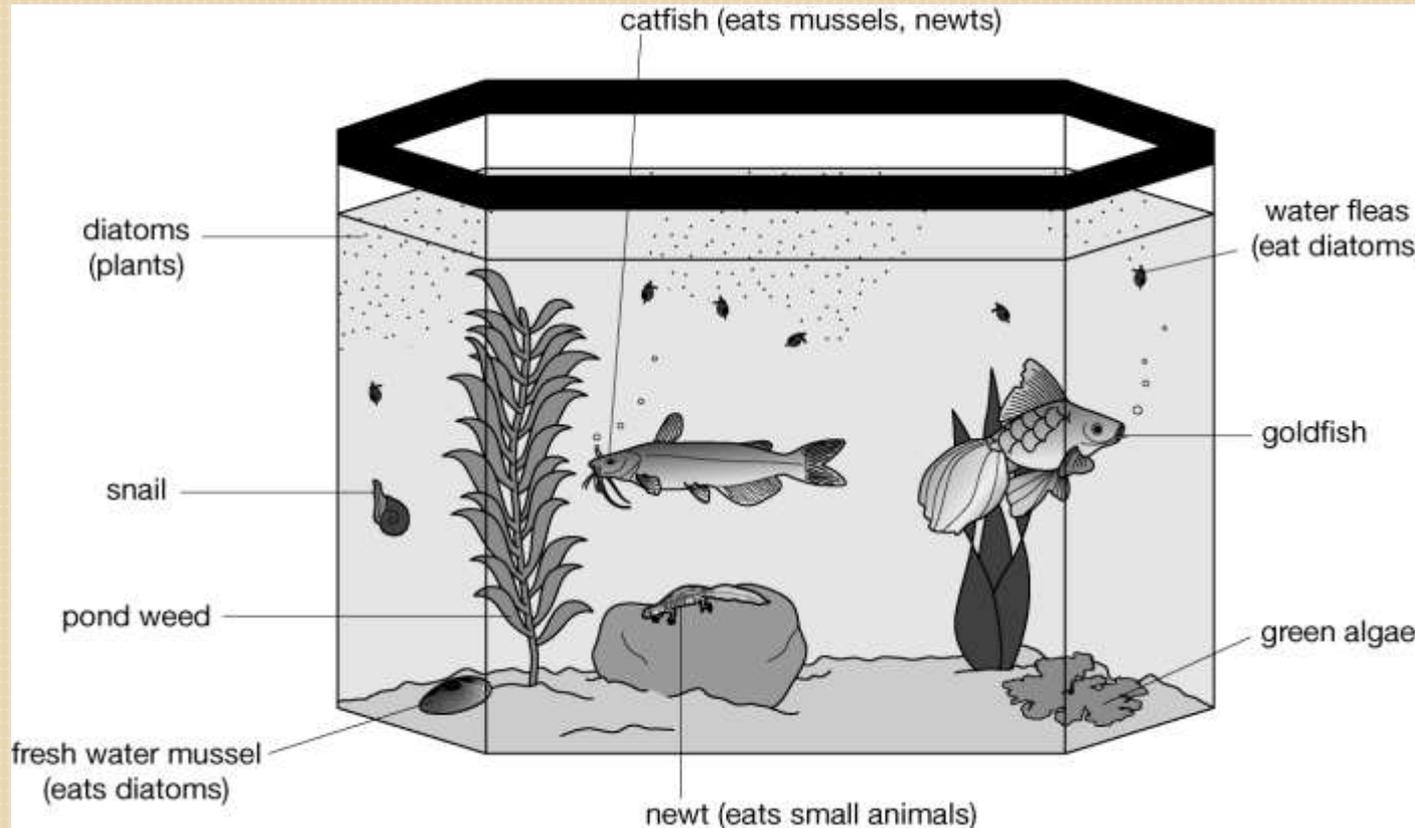
AQUARIUM ECOSYSTEM – LOOK AT THE PICTURE AND ANSWER THE QUESTIONS

1. Draw 3 food chains from this ecosystem

2. Combine your food chains to make a food web

3. Name 2 producers

4. Name 2 consumers



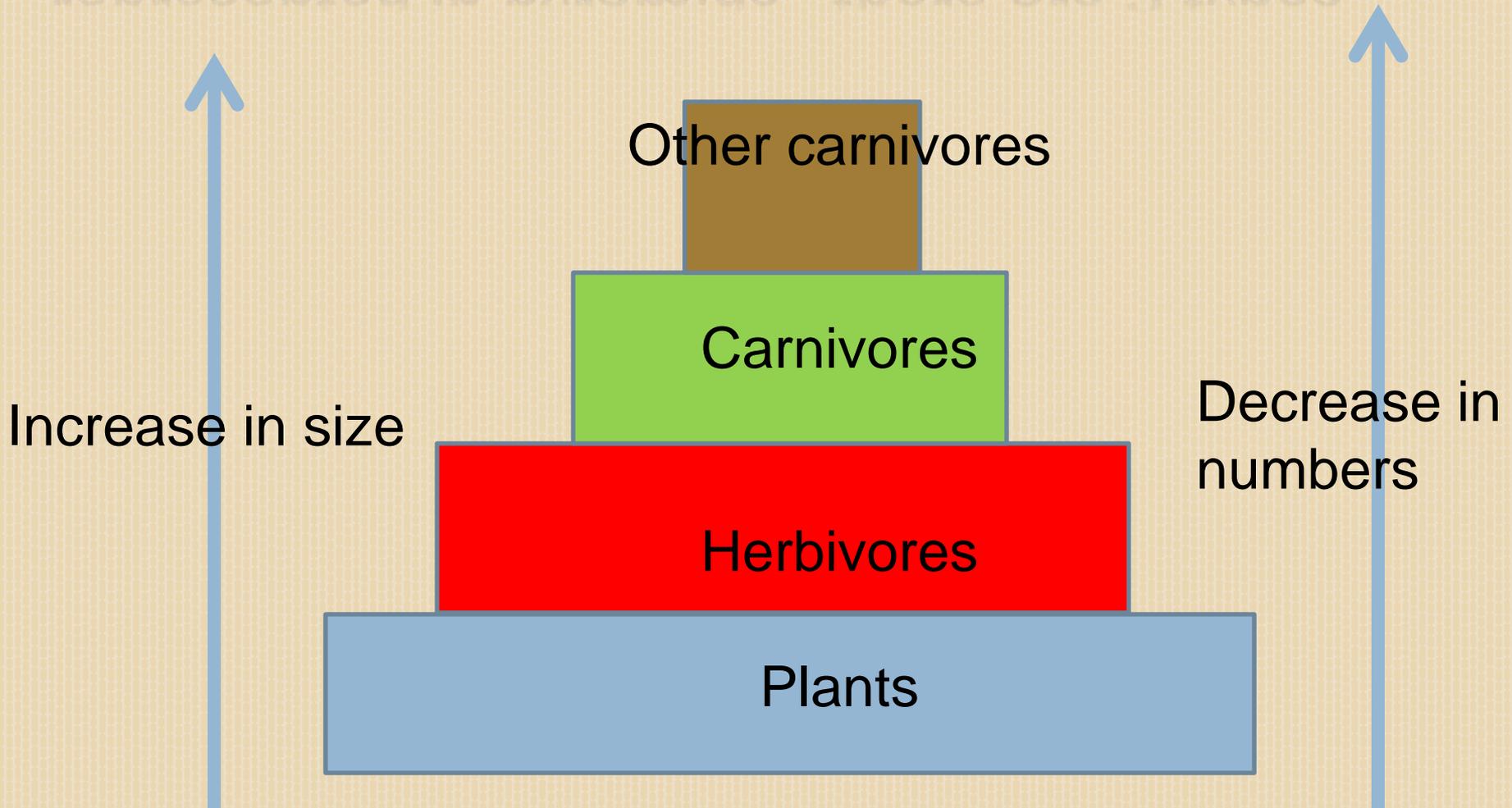
Answers

1. algae → snail → newt → catfish
diatoms → fresh water mussel → newt → catfish
diatoms → fresh water mussel → catfish
algae → snail → catfish
diatoms → water fleas → goldfish

(BEWARE OF ARROW DIRECTIONS)

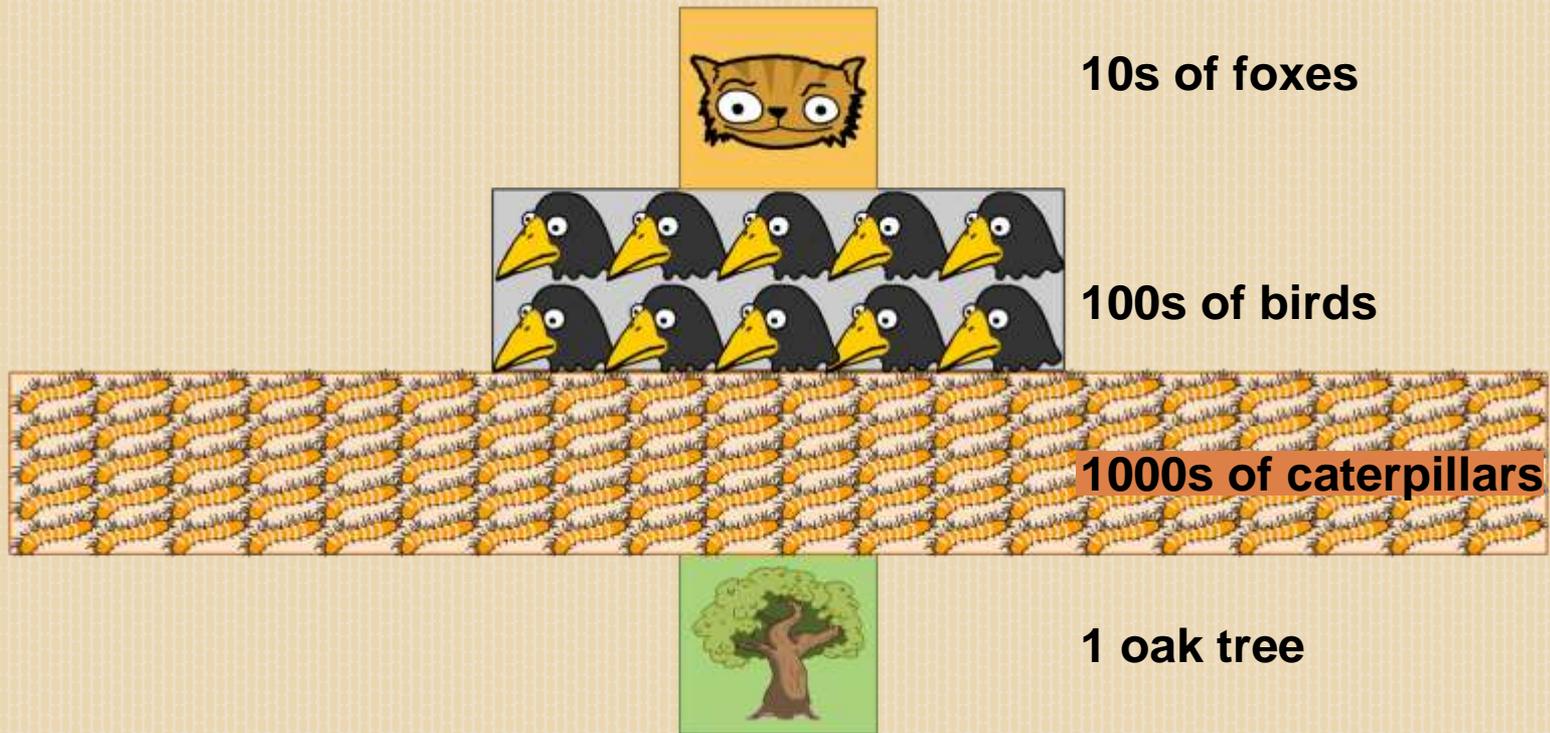
2. Algae, diatoms, pond weed
3. Two from: snail, newt, catfish, mussel, water flea, goldfish

Organisms at different tropic levels can be represented in pyramids...there are 2 types



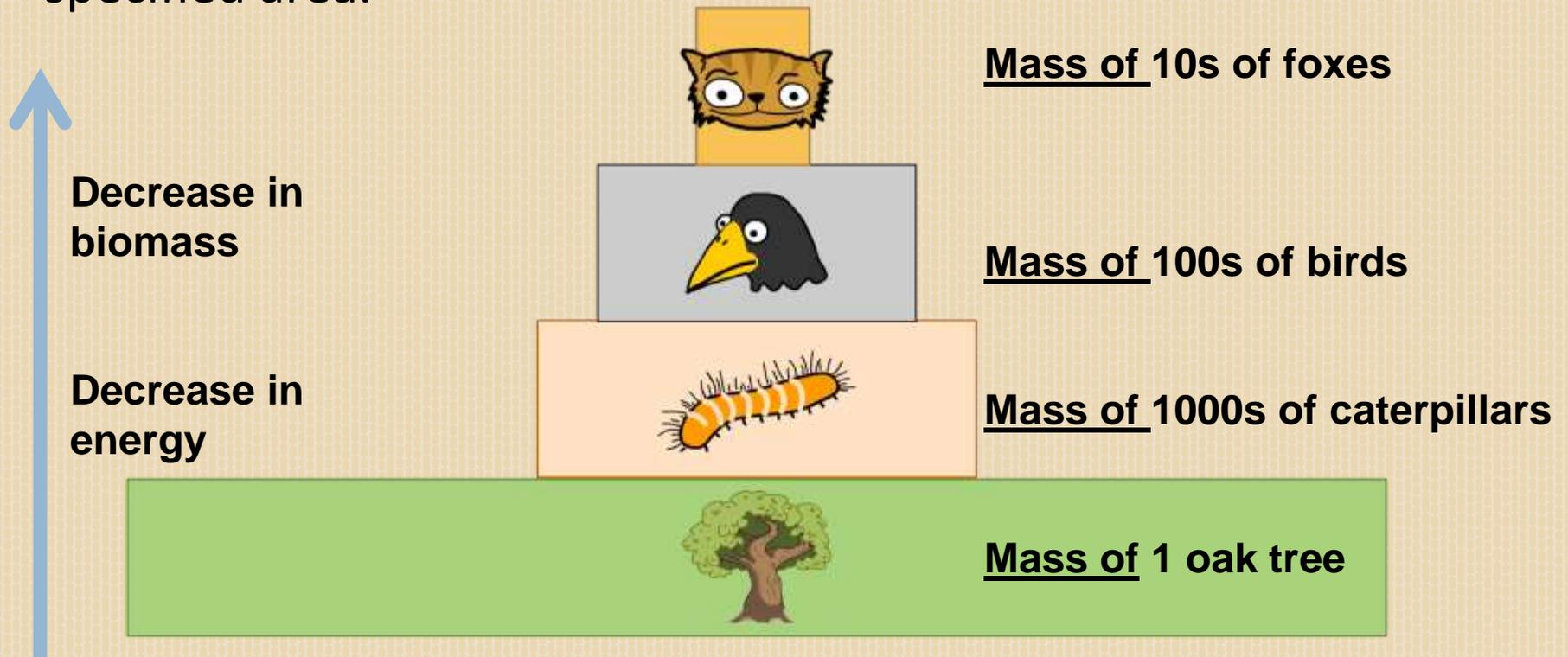
PYRAMIDS OF NUMBERS

In a pyramid of numbers, the length of each bar represents the **number of organisms** at each trophic level in a specified area.



PYRAMID OF BIOMASS

In a pyramid of biomass, the length of each bar represents the **amount of organic matter – biomass** – at each trophic level in a specified area.



Pyramid

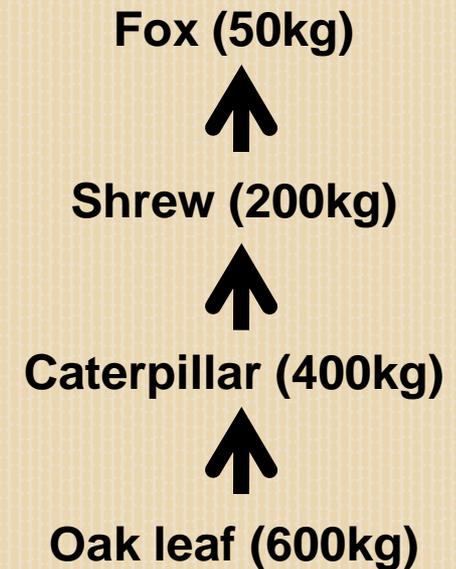
QUESTION: DISCUSS IN PAIRS

- × You are a scientist measuring the effect of a large increase in the number of primary consumers on the biomass food pyramid of an ecosystem in a tropical rainforest. You take a measurement in January and another in June.
 - + 1. Can you foresee any problem that might arise in your method?
 - + 2. What might have caused the sudden increase in the primary consumers?

ACTIVITY: Draw and label a pyramid of biomass for the following food chain in Martinshaw Wood:

× Label on or close to the diagram:

- + Title – include habitat
- + Write names and biomass in blocks
- + Arrow with decreasing energy levels
- + Producer (describe why it is a producer (medium level))
- + Explain why biomass must often be estimated (higher level)
- + 2 ways in which energy is lost (higher level)



× **REMEMBER TO MAKE YOUR DIAGRAM TO SCALE**

TO END

Match the feeding relationship terms to their definitions

food chain

producer

consumer

herbivore

carnivore

omnivore

biomass

trophic

organism that makes its own food

organism that eats plants and animals

organism that only eats animals

living material that makes up organisms

a feeding level in a food chain

organism that eats other organisms

organism that only eats plants

sequence showing feeding relationships



solve

