



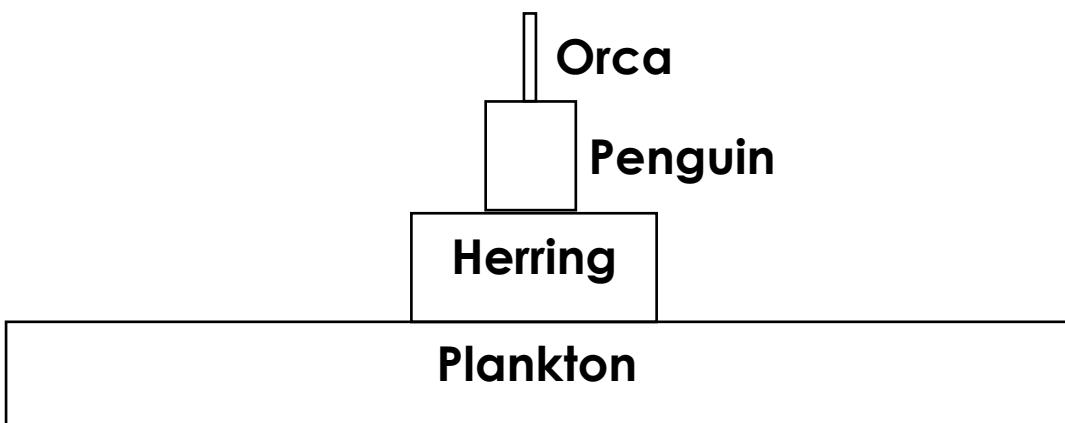
Pyramids of Biomass

1. State the definition of:

a. A producer

b. A consumer

2. Use the following pyramid of biomass to answer the questions:



- a. What is the producer in this food chain?

- b. State the key words you could use to describe:

i. Herring _____

ii. Penguin _____

iii. Orca _____

3. Use the following information to:

- Calculate the biomass of each trophic level
- Draw a pyramid of biomass to represent the information. Use 1 box = 100 kg.
- Calculate the percentage efficiency transfer at each level

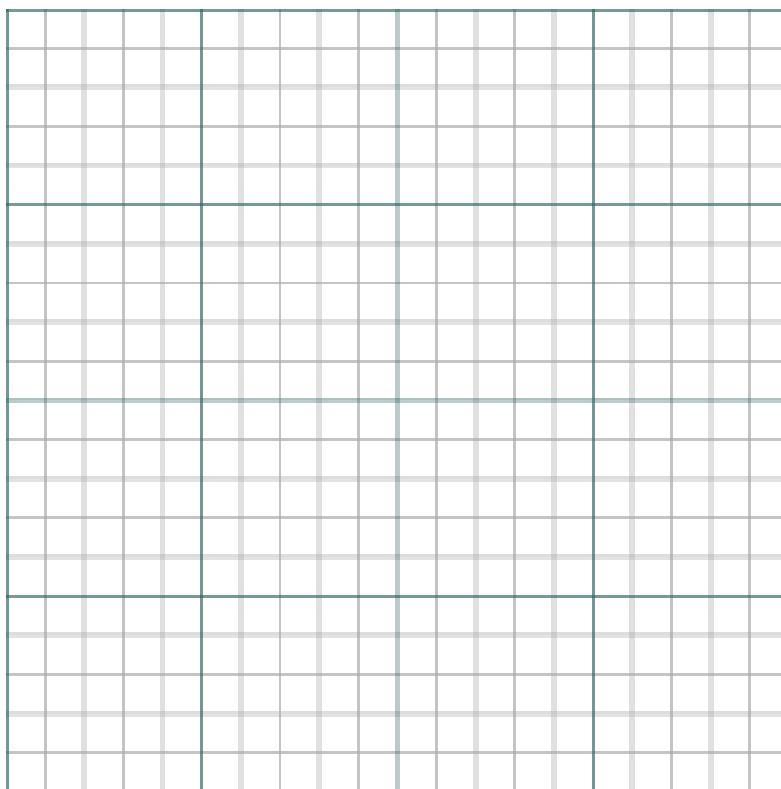


30 000 carrots, each with a dry mass of 50 g

80 rabbits, each with a mass of 2 kg

2 foxes, each with a mass of 10 kg.

Calculations of biomass of each trophic level:



Calculations of percentage efficiency transfer at each trophic level:



4. Use the following information to:
- Calculate the biomass of each trophic level
 - Draw a pyramid of biomass to represent the information.
 - Calculate the percentage efficiency transfer at each level

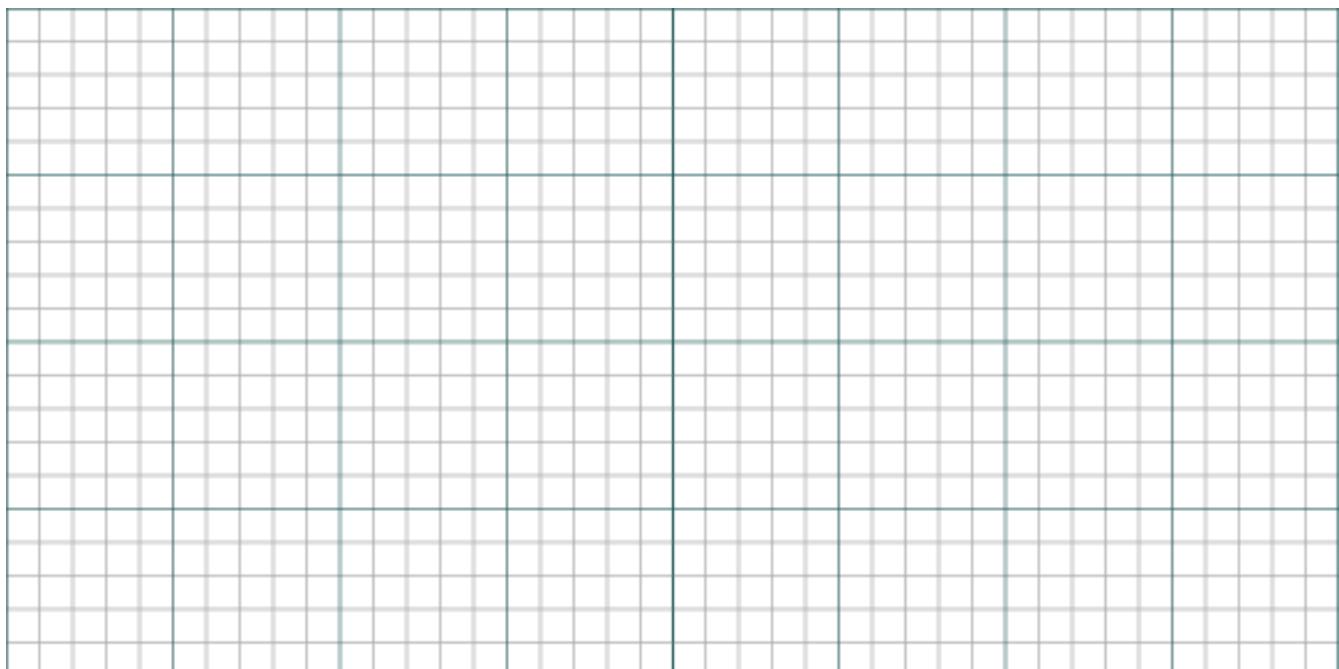
5 sharks, each with a mass of 200 kg

50 seals, each with a mass of 100 kg

2000 flatfish, each with a mass of 20 kg

200 000 kg of plankton

Calculations of biomass of each trophic level:





Calculations of percentage efficiency transfer at each trophic level:

5. Suggest what life processes would cause the efficiency transfer to not be 100 %.

6. A cow eats 10 kg of grass over the course of a week. Its own mass increases by 0.8 kg and it excretes 5.5 kg in waste (urine, faeces and gas).

- a. Calculate how much biomass was used up in respiration.

- b. Calculate the percentage efficiency transfer (clue – think how much biomass is available to the next trophic level).

7. Explain why there are rarely more than 4 or 5 levels of a food chain.

