

## Pyramids of Biomass

1. State the definition of:

a. A producer

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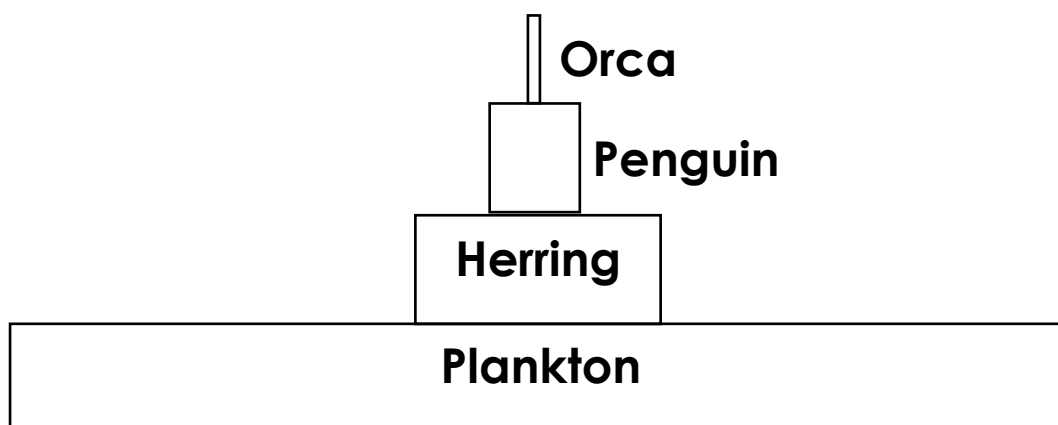
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b. A consumer

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



a. What is the producer in this food chain?

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

i. Herring \_\_\_\_\_

ii. Penguin \_\_\_\_\_

iii. Orca \_\_\_\_\_

3. Use the following information to:

a. Calculate the biomass of each trophic level

b. Draw a pyramid of biomass to represent the information. Use 1 box = 100 kg.

c. Calculate the percentage efficiency transfer at each level

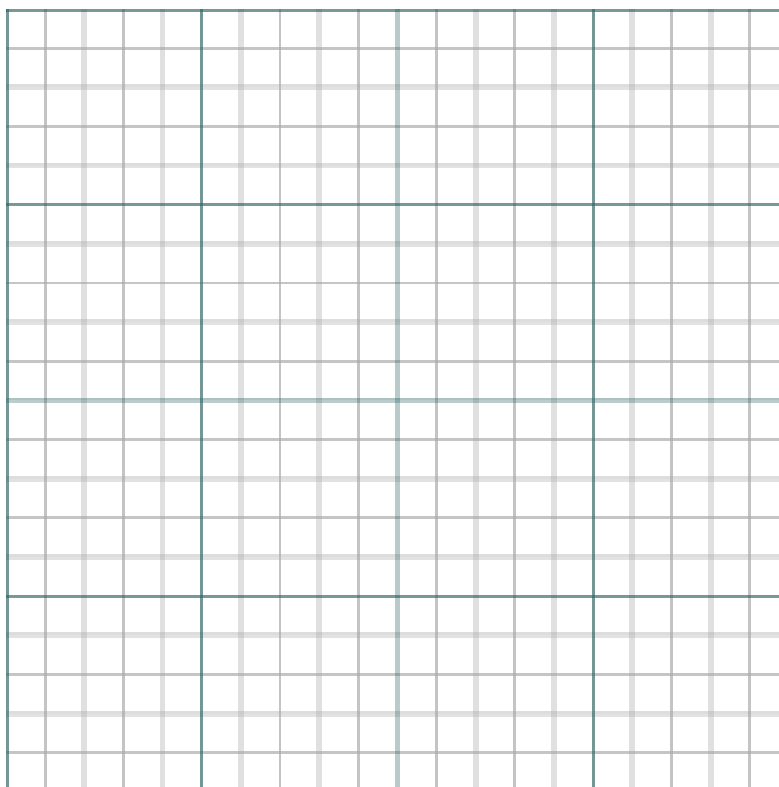


30 000 carrots, each with a dry mass of 50 g

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

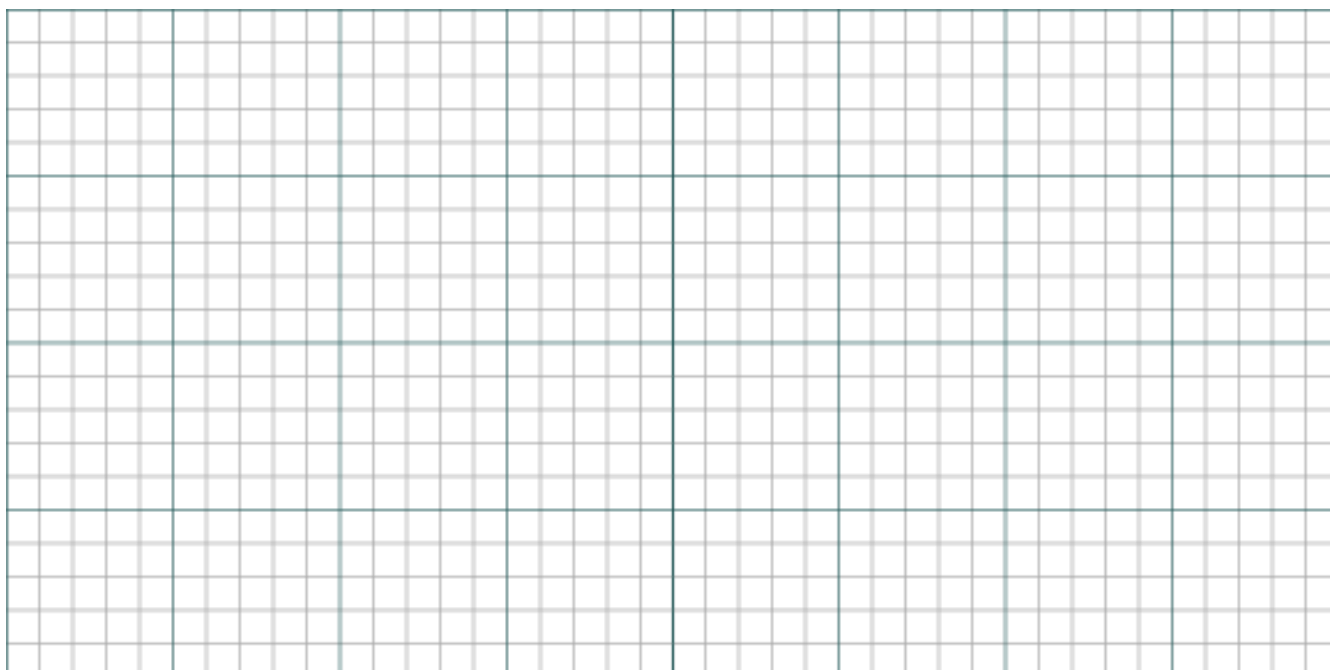
5 sharks, each with a mass of 200 kg

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 %.

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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.

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