

Biology - Key stage 4
Ecology

Review 3

Dr Clapp



Independent practice

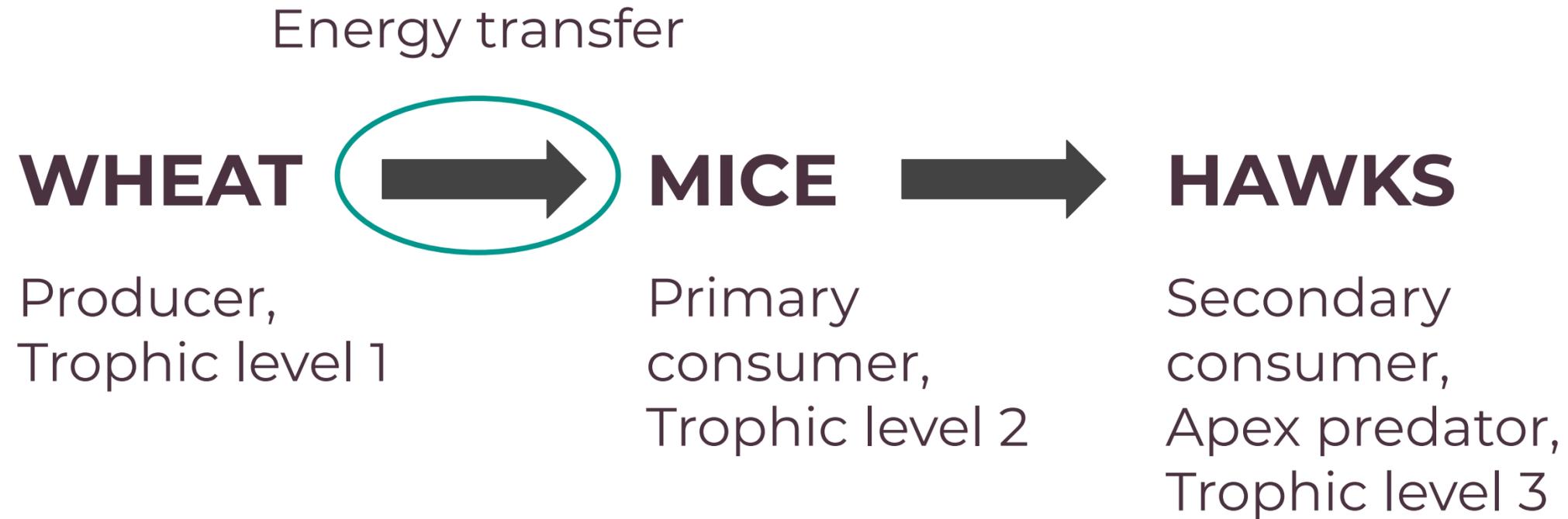
Scientists took measurements from a local habitat and discovered that there were hawks with a biomass of 0.1 kg, 4 kg of wheat and mice with a biomass of 0.3 kg.

1. Draw a food chain for the habitat and add as many labels as possible
2. Calculate the percentage biomass transferred between the wheat and the hawks and the wheat and the mice.



Independent practice - answers

1.



Independent practice - answers

Scientists took measurements from a local habitat and discovered that there were hawks with a biomass of 0.1 kg, 4 kg of wheat and mice with a biomass of 0.3 kg.

2. Calculate the percentage biomass transferred between the wheat and the hawks and the wheat and the mice.

Wheat to hawks:

$$(0.1 \div 4) \times 100 = 2.5\%$$

Wheat to mice:

$$(0.3 \div 4) \times 100 = 7.5\%$$



Independent practice

1. A new type of fishing net has been designed that contains fixed holes in certain places which are bigger than the mesh size. Explain how this helps to keep fish populations at a sustainable level. (2)
2. In order to make the most profit from their animals some farmers keep pigs indoors in very small cages. Explain why this type of farming allows farmers to make more profit. (2)
3. The type of farming described in question two is called intensive farming. Explain why some people are against intensive farming. (1)



Independent practice - answers

1. A new type of fishing net has been designed that contains fixed holes in certain places which are bigger than the mesh size. Explain how this helps to keep fish populations at a sustainable level. (2)

Smaller fish would be able to escape (1)

Smaller fish are often younger and would be able to go on and breed increasing population size (1)



Independent practice - answers

2. In order to make the most profit from their animals some farmers keep pigs indoors in very small cages. Explain why this type of farming allows farmers to make more profit. (2)

Keeping animals indoors means that they don't have to use energy to stay warm and so more is converted into biomass (1)

Keeping animals in small cages means that they can't move around which would use energy so more is converted into biomass (1)



Independent practice - answers

3. The type of farming described in question two is called intensive farming. Explain why some people are against intensive farming. (1)

It is cruel to the animals/not good for animal welfare and is unnecessary (1)



Independent practice

1. Using what you know about decay explain why food lasts for longer when kept in the fridge. (2)
2. Explain why phenolphthalein was added to the reaction in the decay required practical. (2)
3. Describe the roles of detritivores and decomposers in the process of decay. (2)



Independent practice - answers

1. Using what you know about decay explain why food lasts for longer when kept in the fridge. (2)

Decay happens best when conditions are warm as this speeds up reactions (1)

Fridges are cold so the reactions would be slower and decay would take longer to occur (1)



Independent practice - answers

2. Explain why phenolphthalein was added to the reaction in the decay required practical. (2)

Phenolphthalein was added as it is an indicator that changes colour dependent on pH (1)

This means it was easy to see when the milk had become more acidic/had undergone decay (1)



Independent practice - answers

3. Describe the roles of detritivores and decomposers in the process of decay. (2)

Detritivores (worms/woodlice) begin the breakdown of dead plant and animal material in the decay process (1)

Decomposers (fungi/bacteria) continue the breakdown of dead plant and animal material and also break down waste products (1)

