

# B2: ADAPTATIONS (PART 2)

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## Learning Objectives

- × Everyone will know how predators and prey are adapted
- × Most will understand adaptations to cold climates (including the importance of surface area: volume ratio)
- × Most will understand penguin thermoregulation and biochemical adaptations to climate

## Success Criteria

- × Successfully draw diagram of predator-prey and adaptations
- × Correctly complete worksheet questions on adaptations
- × Successfully carry out practical, draw results graph and write conclusion

# STARTER

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- × Watch the video and write down:
  - + 3 ways the predator is well designed to be a predator
  - + Suggest possible attributes of the prey that help it to protect itself from predators

<http://www.youtube.com/watch?v=QettcCSq1FY&feature=relmfu>

# PREDATOR AND PREY ADAPTATIONS

Eyes to the front of the head to judge size and distance



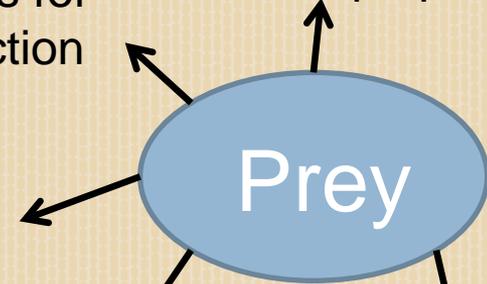
Built for speed to catch prey

Sharp teeth and claws to grip onto prey

Camouflage to avoid being seen by prey

Live in groups for protection

Built for speed to escape predators



Warning colours and mimicry

Camouflaged to hide from predators

Eyes on side of head to give a wide field of view

# ADAPTING TO THE COLD

✘ How is a polar bear adapted to live in the arctic?

Large body compared to its surface area, to reduce heat loss



White colour to camouflage in the snow when hunting seals

Thick fur and blubber for insulation

Small ears to reduce surface area and heat loss

Some animals also hibernate or migrate during the cold months when food is scarce

# WORKSHEET – CARRY OUT QUESTIONS 1, 2 & 3

- × Use pp. 74-75 of text book to help
- × Stick worksheet in and then write answers in your books
- × Leave a page free in your books to finish answering any questions you haven't finished later.

# POLAR BEAR PRACTICAL

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- × What did we learn about heat loss and surface area:volume ratio?
- × We will demonstrate this using 2 beakers – 1 large and 1 small and see how the temperature decreases over 10 minutes
- × A large beaker has a smaller surface area:volume ratio than a small beaker
- × Therefore what will your hypothesis be?
  - + Write a heading and write down the hypothesis

# WRITE IN YOUR BOOKS

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- × Title “Using beakers of hot water to demonstrate how heat loss is related to surface area to volume ratio”
- × Hypothesis
- × Method (2-3 lines)
- × Questions 1-6 of sheet (including drawing a graph)

# HOMEWORK

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- × Finish question sheets on adaptations
  - × Finish writing up experiment, drawing graph and answering questions from second handout.
- + Deadline = next Monday (5<sup>th</sup> December) – you have Wednesday off so use this time to do your homework.

Design two organisms.

- 1) The ultimate predator
- 2) The perfect escapee prey

**Draw and label your animals**  
**highlighting their specific**  
**adaptations**