# A4.1 Evolution and speciation

What the Cell · DP Biology · note-taking sheet · SL statements A4.1.1–7

**Name** _____ **Date** _____

**How to use this sheet:** go through the slides with it, then close them and write from memory. Use your own words and add page numbers from the book (pp. 138–150) where you want more detail.

**Guiding questions.** What evidence supports evolution? What do analogous and homologous structures show about what organisms share and how they differ?

## A4.1.1 Evolution

Define evolution. How did the ideas of Lamarck and Darwin differ?

## A4.1.2 Sequence evidence

Why do close relatives have more similar sequences? Name one gene that is widely shared.

## A4.1.3 Selective breeding

What does selective breeding show, and what does it not prove? Give two examples.

## A4.1.4–5 Homologous and analogous structures

| | **Homologous** | **Analogous** |
|---|---|---|
| Basic structure | | |
| Function | | |
| Origin | | |
| Example | | |

Sketch and label the bones of a pentadactyl limb.

## A4.1.6–7 Speciation

Define speciation. Explain what reproductive isolation and differential selection each contribute, using the example of bonobos and chimpanzees.

## Before you finish

Tick the ones you can explain without notes. Circle anything to ask about.

☐ Definition of evolution
☐ Lamarck and Darwin
☐ Sequence evidence
☐ Selective breeding
☐ Pentadactyl limb
☐ Analogous structures
☐ Speciation
☐ Bonobos and chimpanzees