How do animals adapt to their environment?

Evolution & Natural Selection

Adaptations to desert environments

- Examples:

How do living things adapt?

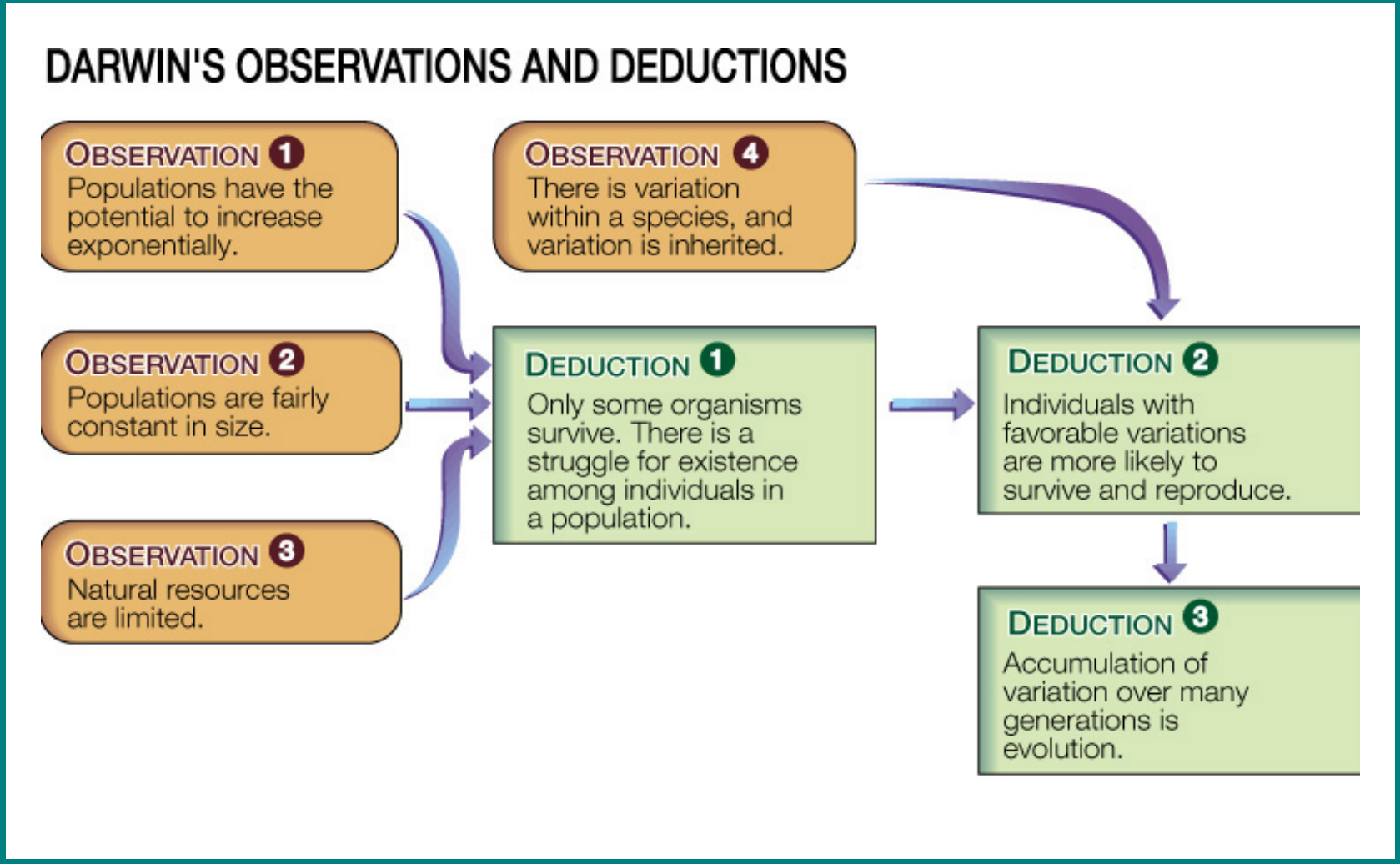
- **Adaptation –** adjustments made by animals in response to their environments.
  1. The adjustments may occur by natural selection, as individuals with favorable genetic traits breed more prolifically than those lacking these traits (genotypic adaptation),
  2. or they may involve non-genetic changes in individuals, such as physiological modification (e.g. acclimatization) or learned behavioral changes (phenotypic adaptation).

Evolution & Natural Selection

- The theory of natural selection was proposed by Charles Darwin in 1858 to explain how living things become adapted to their environment. How evolution happens.

- What is natural selection?
  - Often referred to as “survival of the fittest”
  - But what is the fittest?

His explanation (his hypothesis) was based on his observations and deductions



Think-Pair-Share

- Explain Observation 1: Populations have the potential to increase exponentially.
- Explain Observation 2: Populations are fairly constant in size.
- What's the logical conclusion?

Darwin's observations:

1) Populations have the **POTENTIAL** to increase exponentially.
2) Populations are fairly constant in size.
3) Natural resources are limited.

4) **Conclusion: Not all individuals survive**

Darwin's observations:

4) There is variation among individuals of a population and these variations are inherited.

Conclusion: Individuals with favorable variations are more likely to survive and reproduce = <u>Natural Selection</u>.

Darwin's Theory:

Accumulation of variation over many generations = **Evolution**.

Natural selection can, in time, change species.