



1 Learn the Skill

An **inference** is a logical guess based on facts, evidence, experience, observation, or reasoning. You **make inferences** by thinking critically about the details of material being presented to understand any implied meanings.

It is important not only to make your own inferences but also to **identify inferences** being made in scientific materials. Scientists use facts, evidence, experience, observation, or reasoning to make inferences about natural objects, events, and processes. To gain a full understanding of scientific presentations, you must be able to identify inferences and the details that support those inferences.

2 Practice the Skill

By practicing the skill of making and identifying inferences, you will improve your study and test-taking abilities, especially as they relate to the GED® Science Test. Study the information and illustration below. Then answer the question that follows.

NATURAL SELECTION

Individuals within a species have differing traits. In any environment, certain traits are advantageous, whereas others are neutral or detrimental. Individuals having advantageous traits are better able to survive and, therefore, more likely to reproduce. Likewise, individuals having detrimental traits do not survive to reproduce. **An advantageous trait that is heritable, or able to be inherited, is passed on to future generations and becomes more common in the population.** Natural selection is the process by which individuals best adjusted to an environment survive and reproduce, thereby perpetuating traits best suited to the environment.



Most deer mice are dark brown. However, deer mice living in Nebraska's Sandhills have lighter coats. This feature allows them to hide from predators more easily in the area's light-colored terrain.

a Skills such as comparing and contrasting and identifying cause and effect can help you make inferences. If a helpful trait occurs more often in a population, what might happen to a harmful trait?

b People often make incorrect inferences. To make accurate inferences, avoid over-generalizing.

USING LOGIC

An inference is an idea that follows logically from information you already have. When making an inference, say to yourself, "If *a* is true, then *b* is probably true."

- Which statement is an inference that can be supported by the information?
 - Factors in an organism's environment have little effect on its survival.
 - Heritable detrimental traits occur less often in a population over time.
 - Natural selection is unrelated to evolutionary change in a species.
 - All traits that help members of a species are passed on to future generations.

3 Apply the Skill

★ Spotlighted Item: DRAG-AND-DROP

DIRECTIONS: Study the information. Then use the drag-and-drop options to complete the diagram.

DARWIN'S OBSERVATIONS OF POPULATION SIZE

Charles Darwin traveled around the world, observing plants and animals in many different places. He used his observations to make inferences as he developed his theory of evolution.

Observation 1: Resources such as food and shelter are limited in a given ecosystem.

Observation 2: If all individuals in a population reproduce, the population quickly grows out of control.

Observation 3: In most cases, the size of a population stays basically stable over time.

2. Determine which two drag-and-drop options are appropriate inferences based on the observations. Then record those inferences in order in the boxes below.

INFERENCE 1

INFERENCE 2



Drag-and-Drop Options

Traits that help individuals acquire and use resources are important to survival.

No two members of a population have identical traits.

An increase in population size must lead to an increase in available resources.

Competition for resources keeps many individuals from surviving to reproduce.

DIRECTIONS: Read the passage and question, and choose the **best** answer.

REQUIREMENTS FOR NATURAL SELECTION

Three factors are needed for natural selection to occur. (1) Organisms within a population must have variation in traits. (2) Differential survivability must exist. That is, certain individuals must have a trait that helps them survive and reproduce in their environment. (3) The beneficial trait must be heritable. Given the criteria, if a certain species of beetle can have a green shell or a brown shell and the beetle's main predator usually eats green beetles, then the heritable trait of a brown shell will become predominant in the population over time.

3. Which statement **best** expresses the information used to support the inference made in the last sentence of the passage?
- A. Natural selection can occur only when variation in traits, differential survivability, and heritable advantageous traits exist.
 - B. The color of an organism's exterior and the preferences of its predator are factors needed for natural selection to occur.
 - C. Whenever organisms within a population have varying traits, natural selection can occur.
 - D. When members of a population have a trait that helps them survive in their environment, differential survivability occurs.



1 Learn the Skill

A **conclusion** is a reasoned understanding of something. Often, a conclusion is based on a collection of inferences. Remember that an inference is a logical guess based on facts, evidence, experience, or observations. When you **draw a conclusion**, you make a statement that explains the overall meaning of various pieces of information and inferences you have made.

A valid conclusion conveys an idea that is supported by all available information and accurate inferences. Conclusions can be supported by information presented in text or information presented visually.

2 Practice the Skill

By practicing the skill of drawing conclusions, you will improve your study and test-taking abilities, especially as they relate to the GED® Science Test. Read the passage below. Then answer the question that follows.

SELECTION PRESSURE, ADAPTATION, AND SPECIATION

a To draw a conclusion, make inferences. From this information and what you know, you can infer that selection pressures cause natural selection.

b From this information, you can infer that adaptations are passed from generation to generation.

c From this information, you can infer that adaptation is related to evolution.

Selection pressures are features of an environment that affect an organism's ability to survive and reproduce in the environment over time. Changes in these pressures, such as climate changes, enable animals having traits suitable to the new environment to flourish and cause others to struggle and possibly even die off.

Over time, selection pressures and natural selection lead to adaptation. Through adaptation, species develop traits that allow them to respond to certain features of their environment. These traits, or adaptations, can be physical or behavioral.

Biological evolution is a process of constant change over generations. Because adaptation is ongoing, species change over time. Sometimes populations of a species develop different adaptations in response to different selection pressures. These differences can be substantial enough that the populations eventually become separate species. Formation of a new species is called speciation.

USING LOGIC

Think carefully about what the question is asking. In this case, the question asks for a conclusion. Therefore, the correct answer will not be directly stated in the passage.

1. Which statement is a valid conclusion supported by the passage?
 - A. Over time, changing selection pressures affect a species' ability to survive and reproduce in its environment.
 - B. Species can develop adaptations that allow them to respond to features of their environments.
 - C. Evolution is the result of selection pressures, natural selection, and adaptation.
 - D. If populations of a species develop different adaptations, they always become separate species.

