# Inductive and Deductive Reasoning

What is inductive and deductive reasoning?

Famous writer of the Victorian era, Henry Mayhew, once said that “The deductive method is the mode of using knowledge, and the inductive method the mode of acquiring it.” Though these methods of reasoning are most often used in the scientific method, these modes can be useful to explain logical thought in academic essays. Note: Be careful of logical fallacies. An argument can be fallacies for many reasons. The argument might misuse a legitimate rule of logic, or it might omit or misunderstand information. Logical fallacies such as these can severely damage a writer’s credibility and fail to support a writer’s claims.

# Inductive reasoning:

This reasoning starts with a specific situations or facts on a topic from which conclusions can be drawn.

* Induction moves from a single observation to a larger pattern from which a broad generalization can be made.
* To be accurate, it should observe individual outcomes or facts and combine them to assume cause or reason.
* The specific facts must fairly represent the larger situation. It also must be based on enough reliable evidence.

# Deductive reasoning:

This reasoning starts with a generalization of a topic and applies specific facts and evidence to support it.

* Deduction moves from a theory drawn because of a more specific observation which confirms the conclusion.
* This takes general observations and compares them, putting them together to form one fitting conclusion.
* The generalization being used at the start must be based on enough valid information.

Reasoning Type:

Inductive Reasoning (From specific, to general)

Deductive reasoning (From general, to specific)

Example:

A parrot is a bird (observation). They can all fly (pattern). Therefore, all birds can fly (theory).

Kristin is a law student (observation). Most law students own laptops (pattern). So, Kristin owns a laptop (theory).

All birds can fly (theory). A parrot is a bird (observation). So, parrots can fly (conclusion).

All men are mortal (theory). Socrates is a man (observation). Therefore, Socrates is mortal (conclusion).