



# INDUCTIVE AND DEDUCTIVE REASONING

When you are constructing an argument or reaching a conclusion, there are two basic styles of reasoning that are used: **inductive and deductive reasoning**. Inductive reasoning relies on specific premises to reach a general conclusion, while deductive reasoning uses general premises that are certain by definition to reach a specific conclusion. Note that inductive conclusions are not always true.

## Inductive Reasoning

### 1. Specific Observations

Inductive reasoning begins with observations.

- John is from Atlanta.
- John has brown hair.
- Mary is from Atlanta.
- Mary has brown hair.

### 2. Generalization

Patterns are drawn from the observations and then generalized.

- John and Mary are both people from Atlanta.
- John and Mary both have brown hair.

### 3. General Conclusion

The generalizations are combined to form a general conclusion.

All people from Atlanta have brown hair.

## Deductive Reasoning

### 1. General Premises

Inductive reasoning begins with observations that lead to a generalization.

- All peaches are fruits.
- All fruits have seeds.



*TRANSFORMATIVE LAW*

If  $A = B$  and  $B = C$ , then  $A = C$   
A: peaches B: fruits C: have seeds



### 2. Specific Conclusion

The general premises are combined to form a specific conclusion.

Peaches have seeds.

## Other examples

### *INDUCTIVE*

Lisa is a grandmother. Lisa has gray hair. Therefore, all grandmothers have gray hair.  
I always see Sam eat lunch at noon. Therefore, Sam will probably eat lunch at noon today.

### *DEDUCTIVE*

All birds have feathers. All pigeons are birds. Therefore, pigeons have feathers.  
All apples are fruits. Granny Smith is an apple. Therefore, Granny Smith is a fruit.