OBSERVATIONS

Based upon one or more of your senses, observations are statements about what you see, hear, taste, smell or feel. Observations may involve using tools such as magnifying lenses and microscopes, measuring equipment such as rulers or balances, and communication skills such as drawing and writing. An observation is an act of recognizing and noting a fact or occurrence. To watch carefully, especially with attention to details for the purpose of arriving at a decision is an observation.

QUESTIONS FOR OBSERVING

What do you observe?  
How many properties can you list?  
How many senses can you use?  
What is the most unique thing you noticed?  
What is something else that looks, feels, smells or sounds like this?  
What does this remind you of?

INFERENCES

An inference is when you arrive at a conclusion by reasoning from the evidence and interpreting or explaining what was observed. For example, it is an inference to assume that a grasshopper has released a dark, sticky liquid from its mouth because it is upset and trying to defend itself. However, the statement “released a dark, sticky liquid from its mouth” is an observation. Assuming you know why it happened is an inference.

QUESTIONS FOR INFERRING

What are some possible reasons why that happened?  
What is a logical explanation for that?  
What are some other explanations for what you observed?  
What might have caused that to occur?  
How do you interpret what you saw, heard, smelled, touched?  
How does your past experience help you explain this?

CONCLUSIONS

Conclusions are statements that explain why something has occurred based on evidence collected from several observations. Conclusions explain the results, outcome, or final part of something. A conclusion is a type of inference in which you have the most confidence after considering all the observed evidence. Jumping to conclusions occurs when you believe you know why something has happened without gathering all the evidence or data first.

QUESTIONS FOR CONCLUDING

What did you learn from the data that you collected (or the observations that you made)?  
How did you learn it?  
What is your evidence?  
What pattern did you notice (in the data or observations) and how can you explain it?  
Did your results match those of others?  
Why or why not?