

## LESSON | CRITICAL THINKING

**8** | **Making Inferences**

When you make an **observation**, you receive information with your senses. For example, you might step outside and observe that the ground is wet. After seeing the wet ground, you might conclude that it had been raining. The conclusion you draw based on the observation is an **inference**. Making an inference, or inferring, is a thinking process. Inference involves using clues to figure out something about the observation. In addition to inferring by drawing a conclusion, you can infer by offering an explanation or by making a prediction.

As an example, consider the situation shown below. What can you infer from the illustration?



**Question** What direction do you think the ball is moving?

**Conclusion** It's moving toward the basket.

**Question** Where will the ball be in one second?

**Prediction** It will drop through the basket.

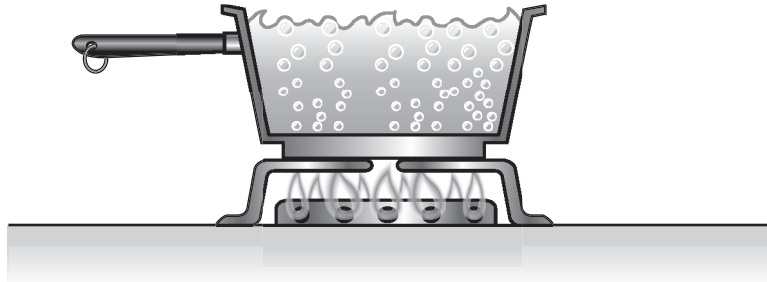
**Question** How did the ball get to where it is?

**Explanation** A player shot the ball toward the basket.

Notice that the first inference led logically to the next two. It is possible to begin with a different inference: The ball has bounced off the backboard and will miss the basket. This other would lead to a different string of predictions and explanations. It is always a good idea to ask yourself what other inferences can be made and to keep an open mind about what you infer.

**MAKING INFERENCES**

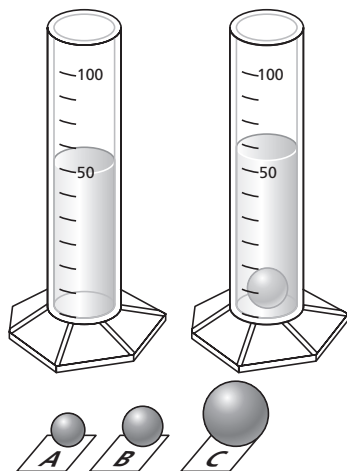
Look at the illustration below and make inferences to answer the questions that follow.



1. What is happening in the pot of water?  
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2. What caused what you observe?  
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3. What will happen to the pot of water if it stays where it is?  
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4. How could you stop that from happening?  
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5. What would happen if you added a large block of ice to the pan?  
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6. How could you make the ice melt faster?  
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**MAKING INFERENCES**

Look at the illustration below and make inferences to answer the questions that follow.



7. The first cylinder shows the level of water without the marble, the second cylinder the same amount of water with the marble in it. Why did the water level go up?
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8. Marble B is the same size as the marble in the cylinder. What would happen if marble B were added to the cylinder with the marble already in it?
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9. Suppose you had only 25 mL of water in the cylinder. What would the water level be if you put marble B into the cylinder?
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10. Marble A is smaller than marble B. What would happen to the water if you put marble A into a cylinder with 50 mL water in it?
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11. How many marbles the size of marble B would you need to add to the cylinder with 50 mL of water in it to bring the line up to 75 mL?
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12. Suppose you wanted to measure the volume of marble C, but the marble does not fit into the graduated cylinder. You have a plain paper cup, without measurements. How could you use the cylinder, the paper cup, and water to measure the volume of marble C?
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