Evaluating the Experiment

1. Why do the rats press a lever the first time?

2. Compare the lever-pressing behaviors of the four different rats. Which rat pressed the stimulus lever the most? Which one pressed the stimulus lever the least? Which rat pressed the food lever the most? Which one pressed the food lever the least?

3. Rat A was injected with cocaine each time it pressed the stimulus lever. Can you use this fact to explain why Rat A behaved the way it did?

4. On the basis of the data you analyzed, do you think Rat B was injected with cocaine when it pressed the stimulus lever? From what you have learned so far in this unit, do you think Rat B was injected with a different addictive drug when it pressed the stimulus lever? Why?

5. Do you think Rat C received cocaine when it pressed the stimulus lever? Why?

6. Rat C did not receive an injection of cocaine when it pressed the stimulus lever. When Rat C pressed the stimulus lever, it received a mild electrical stimulation in the brain. From what you have learned, can you predict what part of the brain was stimulated?
7. Rat D also received a mild electrical stimulation in the brain when it pressed the stimulus lever. Do you think the same part of the brain was stimulated in Rat D as was stimulated in Rat C? Why?

8. Why did Rats A and C press the stimulus lever more than the food lever?

9. Why did Rats B and D press the food lever more than the stimulus lever?

10. Why did the scientists who conducted this experiment include Rats B, C, and D in this experiment? How did the data from those rats help scientists understand more about how cocaine acts in the brain?

11. Do you think that Rats A and C will stop pressing the stimulus lever if they continue to receive the same stimulation each time they press it? Why?

12. On the basis of what you learned from these data, what might this investigation tell you about drug use by humans? Explain your view.