CHAPTER 7

REVIEW

The following icons indicate the Achievement Chart categories: K/U Knowledge/Understanding; T/I Thinking/Investigation; C Communication; A Application

What Do You Remember?

1. What are fluids? Give three different examples of fluids. K/U
2. Most solids cannot flow. Use the particle theory to explain why solids are not considered to be fluids. K/U
3. List four types of fluids found in the human body and describe one function of each. K/U
4. Make a t-chart to compare differences between laminar and turbulent flow. Provide examples for both. K/U
5. Define flow rate. What units are used to measure flow rate? K/U
6. Use the particle theory to explain why 10 mL of liquid cannot fill a 20 mL container. K/U
7. List the five main statements of the particle theory. K/U
8. Is the science that studies wind patterns around wings on aircraft (Figure 1) called aerodynamics or hydrodynamics? Name two other applications related to this field of study. K/U A

Figure 1

9. The words "cohesion" and "adhesion" look very similar. Use the meanings of the words to show why it makes sense that these words should look alike. What might the parts "co," "ad," and "hesion" refer to? K/U
10. "The greater the viscosity of a fluid, the slower the flow rate." Do you agree or disagree? Support your answer based on your work with fluids in this unit. K/U
11. Describe three ways in which fluid flow is important in the food industry. K/U A
12. Describe one way that streamlining plays a role in your daily activities. K/U A
13. Should the practice of lining waterways with concrete continue? Justify your answer using concepts from this chapter. K/U A

What Do You Understand?

14. One of the Big Ideas of the unit is "Fluids are essential to life." Comment on this statement and use this text and your notes to justify your answer. K/U T/I C
15. Does warming a viscous fluid generally increase or decrease its flow rate? Use the particle theory to explain why this might be so. K/U
16. One of the Looking Ahead statements reads, "The way fluids flow depends on various factors." Choose three of these factors and briefly describe them. K/U C
17. If the particles of a substance show considerable adhesion as well as cohesion, is this fluid likely to have a fast or slow flow rate? Justify your answer. K/U
18. Many modern terms related to air travel come from sailing. Using concepts from this chapter, describe three ways in which travelling through air and travelling through water share similar characteristics. K/U A
19. When you tip a syrup bottle upside down, it takes a long time for all the syrup to move down. Explain this, using the ideas of viscosity, cohesion, and adhesion. K/U A

20. Look at the graph in Figure 2. It shows the length of time three fluids took to flow through a funnel at different temperatures.

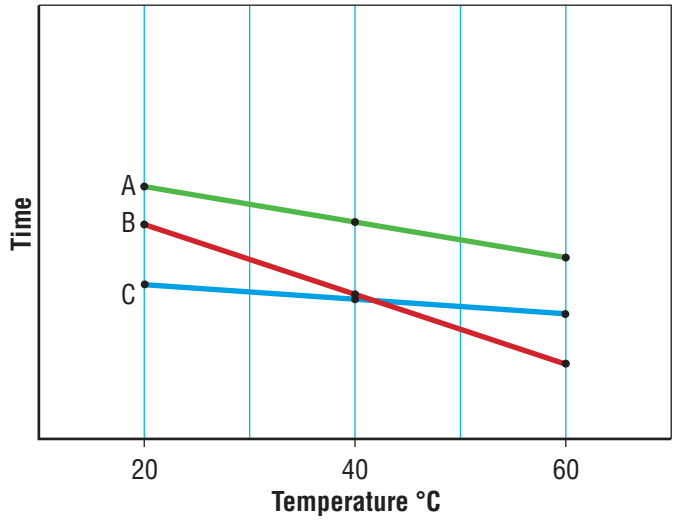

Figure 2

(a) Which fluid is most viscous? Justify your answer.

(b) Which fluid is most affected by changing temperature? Justify your answer. T/I C

21. The phrase "as slow as molasses in January" comes from a time when molasses was used as a common liquid sweetener in cooking. What does the phrase have to do with concepts learned in this chapter? K/U

22. In many situations in which fluids are moving, designers want to reduce drag. Describe a situation in which drag is important. Why is drag so important in this situation? K/U A

23. Bicycle and car racers often stay very close to the person in front of them. Using the concept of fluid flow, explain why this strategy is useful. K/U A

Solve a Problem!

24. Squeezing a mustard container results in 60 mL of mustard coming out in 5 seconds. Calculate the flow rate of mustard. T/I A

25. You are scheduled to have a bicycle race with your friends. The day of the race is very windy. What can you do to give yourself an edge? T/I A

Create and Evaluate!

26. Use information from this chapter to add to your concept map from "Let's Get Started." Include the seven points in the Looking Ahead section on the first page of the chapter and the words in the vocabulary list. Evaluate your graphic organizer against those of your classmates. Ask a classmate to evaluate yours. Discuss your perspectives. K/U C

27. Research the importance of fluid flow in your favourite sport. Present your findings in a poster, brochure, slide show, or another creative manner. A C

Go to Nelson Science

Reflect on Your Learning

28. How did working with Goobleck help you learn about the properties of fluids?

29. In what ways has the material in this chapter changed your understanding of fluids?

30. (a) Which concepts in this chapter do you find the easiest to understand? Explain why.

(b) Which concepts in this chapter do you find the most difficult to understand? Explain why.

(c) What action could you take to help you understand these concepts better?

31. Think back to the Key Question on the first page of this chapter.

(a) In a brief paragraph, answer the Key Question. You may use diagrams.

(b) Write one or two more questions about the topic of this unit that you would like to explore.