

## Competition Corner: System Boundaries

g11\_u08\_w29

Original fictional systems challenges. Use  $K = [B]/[A] = 4.00$ ; no real-world action is implied.

**Challenge 21.** Card R has  $[A] = 0.30$ ,  $[B] = 1.80$  M. Find  $Q$ , compare it with  $K$ , and state the model direction. Then name two missing variables that prevent a rate or source claim.

**Challenge 22.** Two fictional reservoir cards have pH 6.0 and 7.5. Calculate the factor difference in  $[H^+]$ . Write a bounded comparison and explain why it does not establish an effect on a real environment.