How Much Air Is in Your Lungs?

Maximum lung capacity is 6 liters. This is the volume of air in your lungs after a full inhale. When you exhale, about 80% of that air is released. Some air always remains in your lungs. Let's see what happens with a few breathing exercises.

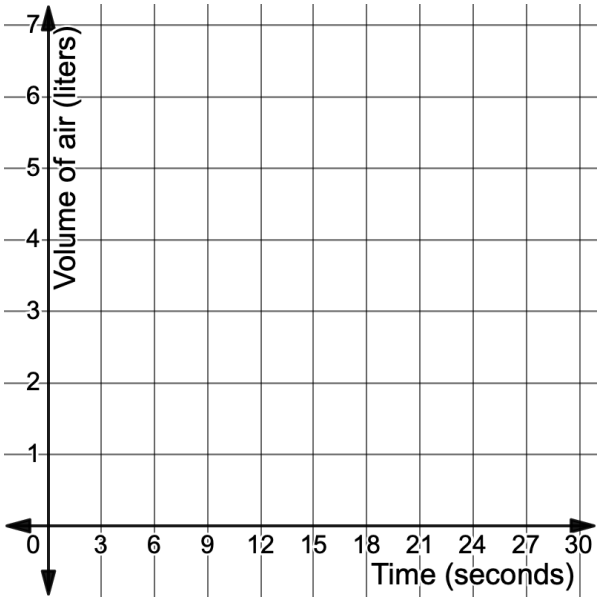
1. Complete the 2-minute breathing exercise in this video.

2. How many seconds is each inhale (breathe in)? How many seconds is each exhale (breathe out)?

3. What is the maximum volume of air in your lungs? What is the minimum volume of air in your lungs?

4. Sketch a graph of the volume of air in your lungs during the first 30 seconds of the breathing exercise. What do you notice?

5. How long does it take to go through one full breath cycle (inhale and exhale)? How can you tell this from the graph?



6. How many full breath cycles can you go through in 2 minutes?

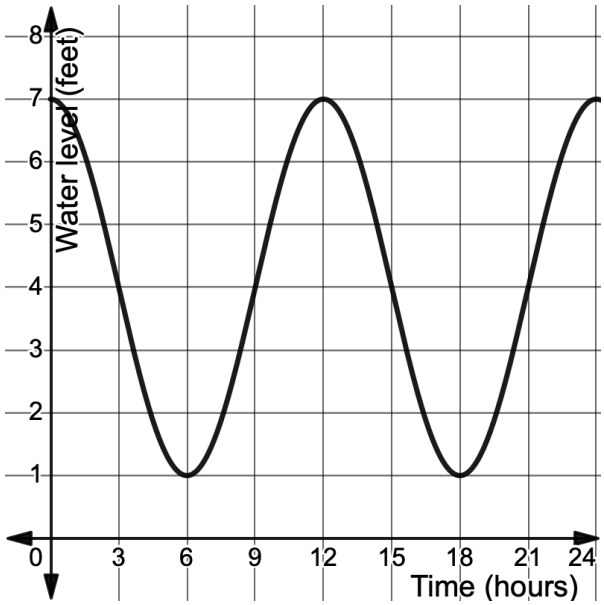
7. Estimate the volume of air in someone's lungs 93 seconds after starting the breathing exercise. Explain your reasoning.

Lesson 6.1 – Periodic Phenomena

QuickNotes

Check Your Understanding

1. The height of the tide in San Diego, California on a particular day can be modeled by the graph shown. The height of the water is measured in feet and time is measured in hours with $t = 0$ corresponding to 12 PM (noon).



a. Describe how the water level is changing throughout the day.

b. Determine the period of the function and interpret your answer in context.

c. What do you expect to be the water level at $t = 33$? Explain.

d. At which time(s) is the water level changing the fastest? How do you know?