

## 31 - Human Breathing

### Activity 19b To investigate the effect of exercise on breathing rate

1. Work in pairs, one person recording the results.
2. Sit down on a chair and rest for a few minutes.
3. Breathing in and breathing out is considered to be one breath.
4. Count the number of inhalations or exhalations per minute while at rest.
5. Repeat this two more times.
6. Calculate your average breathing rate per minute (measured in breaths per minute, or bpm) at rest by adding the three values and dividing the total by three. This is called the resting breathing rate and is used as a control.
7. Walk slowly for 5 minutes.
8. Count your breathing rate per minute immediately after walking.
9. Walk briskly for 5 minutes.
10. Count your breathing rate per minute immediately after walking.
11. Exercise strenuously for 5 minutes (e.g. step up and down on a chair every 3 seconds or run).
12. Count your breathing rate per minute immediately after exercising.
13. Compare your resting rate with the rate immediately after each type of exercise.
14. Present your results in tables such as those shown below.

**Syllabus** You have a choice to carry out either this activity or Activity 19a on page 311.

Breathing rates before exercise					
Before exercise	Trial 1	Trial 2	Trial 3	Total	Average
Resting breathing rate (bpm)					

Breathing rates after different types of exercise			
Activity	Slow walk	Brisk walk	Strenuous exercise
Breathing rate (bpm)			

15. After exercise the rate of breathing often falls below the resting rate. This is due to deeper breathing.