Dust and breathing

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Investigating peak flow: Student sheet

Equipment

- Peak flow meters
- Disposable mouth pieces
- Absorbent paper towels
- Graph paper
- Pencils
- Rulers

A peak flow meter measures how fast you can blow air out of your lungs in one breath. It records your maximum airflow in litres per minute (l/min). If your airways are not completely clear and relaxed, you'll get a lower peak flow reading. Also remember it is normal for peak flow to vary from person to person.

Method

1. Read the instructions in full before you begin
2. Get into pairs and collect a peak flow meter and mouthpieces from the teacher
3. To begin, one of you should fit an **unused** disposable mouthpiece onto the peak flow meter. Remember to change the mouthpiece with **each user**
4. Check the marker arrow is set to zero on the flow meter's scale
5. Now you are ready to go:
   a. Stand up straight
   b. Take a deep breath
   c. Seal your lips around the mouthpiece
   d. Breathe out as hard and as fast as you can in one big blast
6. If you are the person not using the peak flow meter, note down the reading on a piece of paper
7. Repeat the experiment two more times. The best of the three attempts is your 'peak flow'
8. Take your mouthpiece **off** the peak flow meter and **throw it away**
9. Switch roles and go through steps 2-7 again
10. Now that you both have your results, use the graph paper to plot a line graph of height (m) against predicted peak flow (l/min)
    a. Use the data in the table below to plot the graph
    b. Height goes on the x-axis and predicted peak flow on the y-axis
11. Mark you and your partners peak flow results with a cross
    a. If you can, use a different colour to identify who is who
12. Check if your results match the predicted flow for your height. Are they the same or different? Why do you think that is?

Top tip

When you do three breaths straight after each other, the readings should all be about the same or similar. If they aren't, you may not be blowing into the meter properly. Make sure you breathe out **as hard as you can** and seal your lips **tight around** the mouthpiece so all the air goes through the meter

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Data table

Height (metres)	Height (feet)	Predicted EU PEFR (peak expiratory flow) (litres per minute)
0.85	4’3”	212
0.90	4’5”	233
0.95	4’7”	254
1.00	4’9”	276
1.05	4’11”	299
1.10	5’1”	323
1.15	5’3”	346
1.20	5’5”	370