Y6 Measuring Precision

KS2 Y6 Science · Follows the national curriculum

Name _____ Class _____ Date _____

1. Worked example

Priya counts 23 pulse beats in 15 seconds. What is her heart rate in beats per minute?

Step 1 · How many lots of 15 seconds are in a minute?

60 ÷ 15 = 4

Step 2 · Multiply the count by 4

23 × 4 = 92

Answer: 92 beats per minute (bpm).

Check: Counting for a full 60 seconds is more precise but takes longer, and the heart rate falls while you count.

2. Now try one with the steps

Three shadow heights: 24.5 cm, 25.0 cm, 24.5 cm. Find the mean.

Step 1 · Add the readings

Step 2 · Divide by how many readings

Step 3 · Round sensibly

Answer:

3. Practice

Have a go at each one. There is space underneath to work it out.

1. Why do scientists take repeat readings?

2. What is an anomaly?

3. What unit is heart rate measured in?

4. What equipment measures loudness in decibels?

5. Which is better for measuring a 3 m shadow: a 30 cm ruler or a tape measure?

6. You count 20 pulse beats in 15 seconds. What is the heart rate in beats per minute?

7. You count 45 pulse beats in 30 seconds. What is the heart rate in beats per minute?

8. Find the mean of 10, 12 and 14.

9. Readings: 30 cm, 31 cm, 45 cm, 29 cm. Which is the anomaly in cm?

10. Readings: 30 cm, 31 cm, 45 cm, 29 cm. What is the mean in cm without the anomaly?

11. Why should you read a measuring cylinder with your eye level with the water?

12. A stopwatch shows 4.83 s. Rounded to the nearest tenth of a second, what is it in seconds?

13. Give one advantage of a data logger over measuring by hand.

14. Three readings are 50, 51 and 50. Three other readings are 40, 60 and 51. Which set can you trust more, and why?

4. Before you hand it in

Taking only one reading and treating it answer.
Take at least three repeats and compare them.

Including an obvious anomaly in the mean without comment.
Check it, repeat it, or leave it out and explain why.

Copying every digit from a stopwatch, e.g. 2.4783 s.
Round to a sensible precision, usually the nearest 0.1 s for hand timing.

Forgetting units, e.g. writing '24' for a shadow.
Always write the unit: 24 cm.