

How many fit? Food and fruit

Ages 8–12 · Measurement and number: millimetres and centimetres, division, ratio

Name _____ Class _____ Date _____

In each picture the two things are drawn to scale: their sizes match real life. Look carefully and write your estimate first. Then use the sizes to work it out.



pizza



grape

1. How many grapes in a row would reach across a pizza?

Grape: 2 cm (0.79 in) across · Pizza: 30 cm (11.8 in) across

My estimate: _____ Worked out: _____



watermelon



blueberry

2. How many blueberries in a row would reach across a watermelon?

Blueberry: 1.5 cm (0.59 in) across · Watermelon: 30 cm (11.8 in) across

My estimate: _____ Worked out: _____



pumpkin



cherry

3. How many cherries in a row would reach across a pumpkin?

Cherry: 2 cm (0.79 in) across · Pumpkin: 40 cm (1 ft 4 in) across

My estimate: _____ Worked out: _____



chicken egg



pea

4. How many peas, one on top of another, would be as tall as an egg?

Pea: 8 mm (0.31 in) across · Chicken egg: 6 cm (2.36 in) tall

My estimate: _____ Worked out: _____



pizza



rice grain

5. How many grains of rice, end to end, would reach across a pizza?

Rice grain: 7 mm (0.28 in) long · Pizza: 30 cm (11.8 in) across

My estimate: _____ Worked out: _____



strawberry



sesame seed

6. How many sesame seeds, end to end, would reach across a strawberry?

Sesame seed: 2 mm long · Strawberry: 5 cm (1.97 in) across

My estimate: _____ Worked out: _____

Check it yourself

Bring in a few of these foods. Measure them with a ruler in millimetres. The sizes in the table are typical sizes: real fruit and seeds vary.

Food	Typical size	My measurement	Bigger or smaller?
Grape	2 cm		
Pea	8 mm		
Rice grain	7 mm		
Blueberry	1.5 cm		
Strawberry	5 cm		

Why might your answers to questions 1 to 6 be different with your own food?

Challenge: fill it up

A watermelon is about 20 blueberries across. Would it hold 20 blueberries, 400, or even more? Explain your thinking.

What students practise

Estimating before calculating; converting between millimetres and centimetres; division as "how many fit"; comparing an estimate with a calculation; natural variation in measurements. The pictures are drawn to scale, so students can check their estimate by eye.

Answers

1. $30 \text{ cm} \div 2 \text{ cm} = 15$.
2. $30 \text{ cm} \div 1.5 \text{ cm} = 20$.
3. $40 \text{ cm} \div 2 \text{ cm} = 20$.
4. $6 \text{ cm} \div 8 \text{ mm} = 7.5$, so about 8.
5. $30 \text{ cm} \div 7 \text{ mm} = 42.9$, so about 43.
6. $5 \text{ cm} \div 2 \text{ mm} = 25$.

Challenge: filling is about volume, not width. The watermelon is 20 blueberries wide, tall and deep, so it has room for $20 \times 20 \times 20 = 8,000$ blueberry-sized spaces. Round berries leave gaps (about a third of the space), so about 5,000 blueberries. Twice as wide means eight times the volume.

Good to know

Sizes are typical values from the Magnitude catalogue, rounded (how we measure: magnitude.fit/methodology). The silhouettes were generated with AI and traced to outlines; the numbers come from the catalogue, never from the pictures.