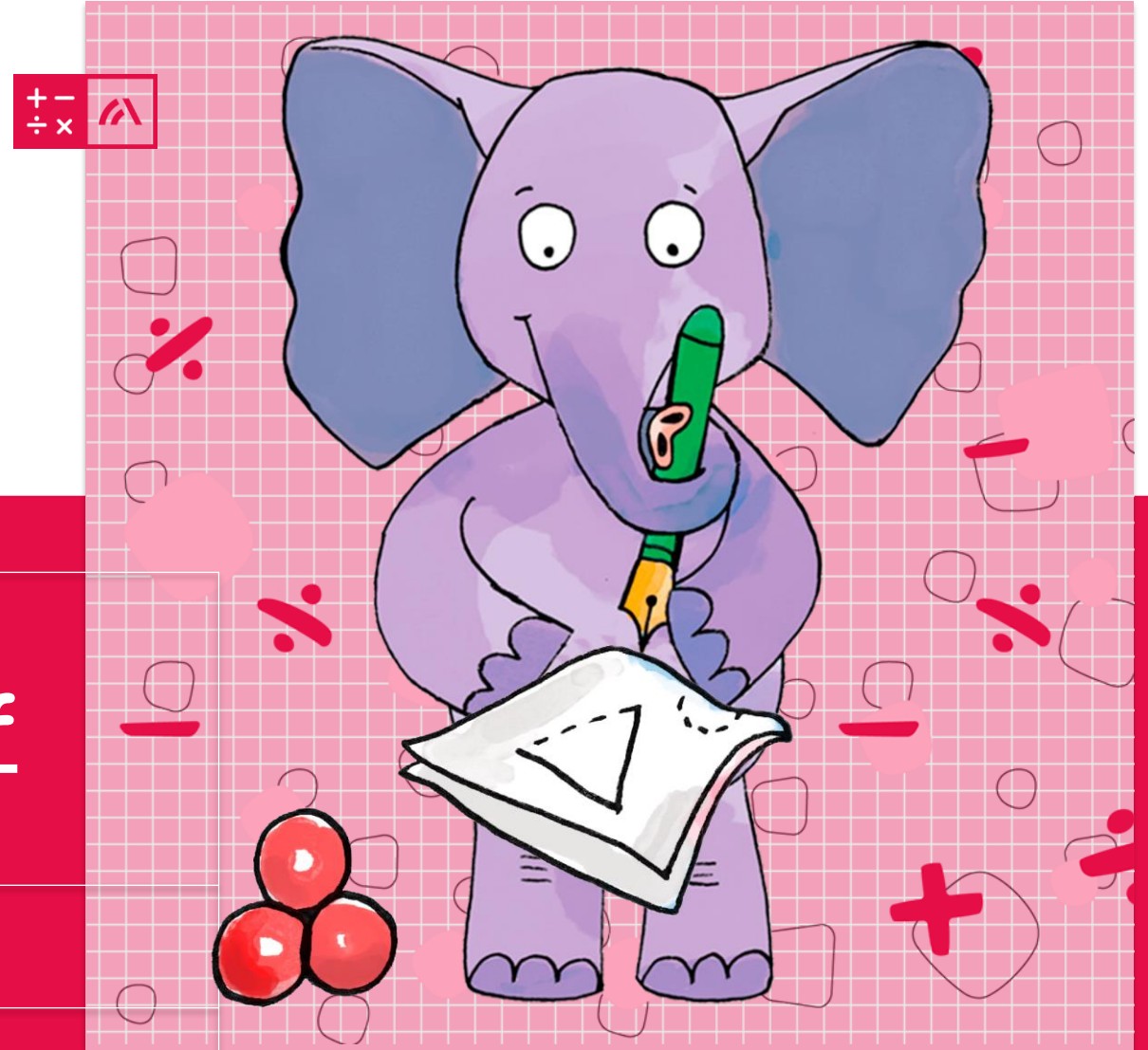


10.03.21

Big ?: Can I convert units
of length in the context of
perimeter?



Key learning: To convert between units of length in the context of perimeter



length

breadth



height



distance



ruler



tape measure



millimetre (mm)



centimetre (cm)

metre (m)



kilometre (km)

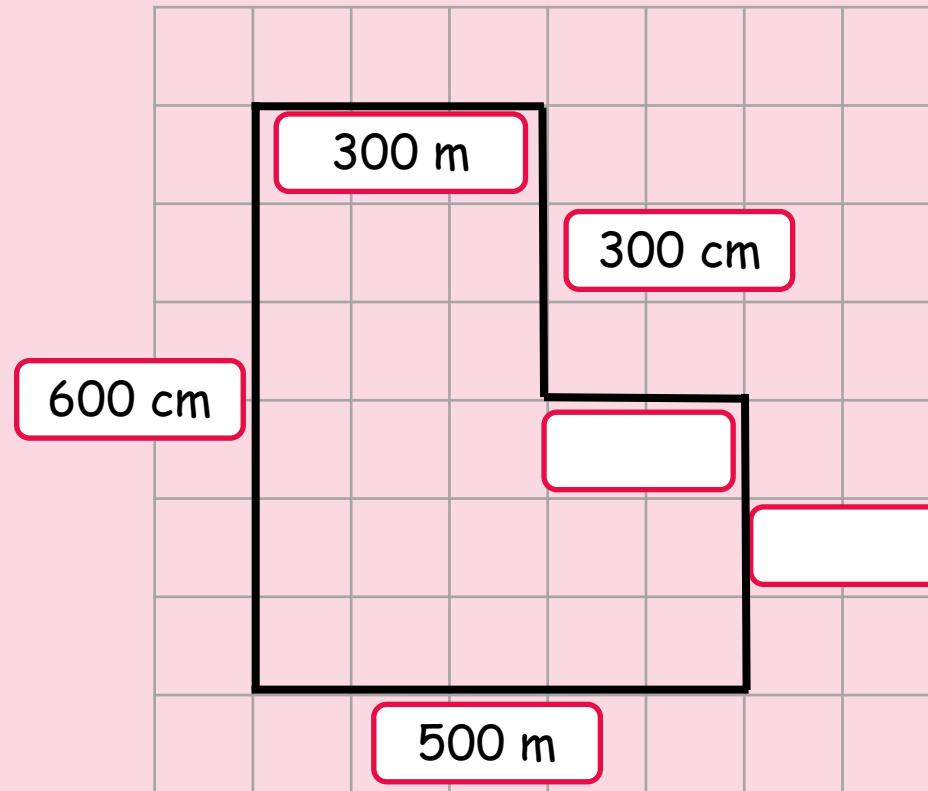
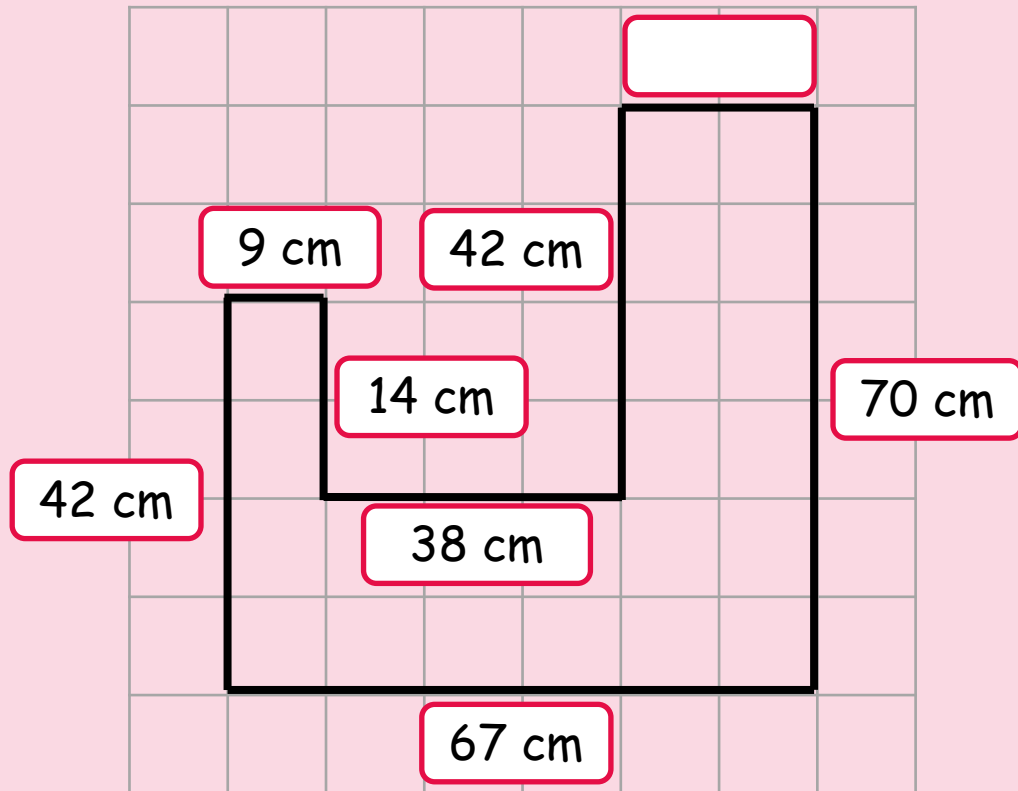


Star Words



Calculating perimeter

Find the missing lengths to find the total perimeter of each shape.



Do Now



Finding possible perimeters

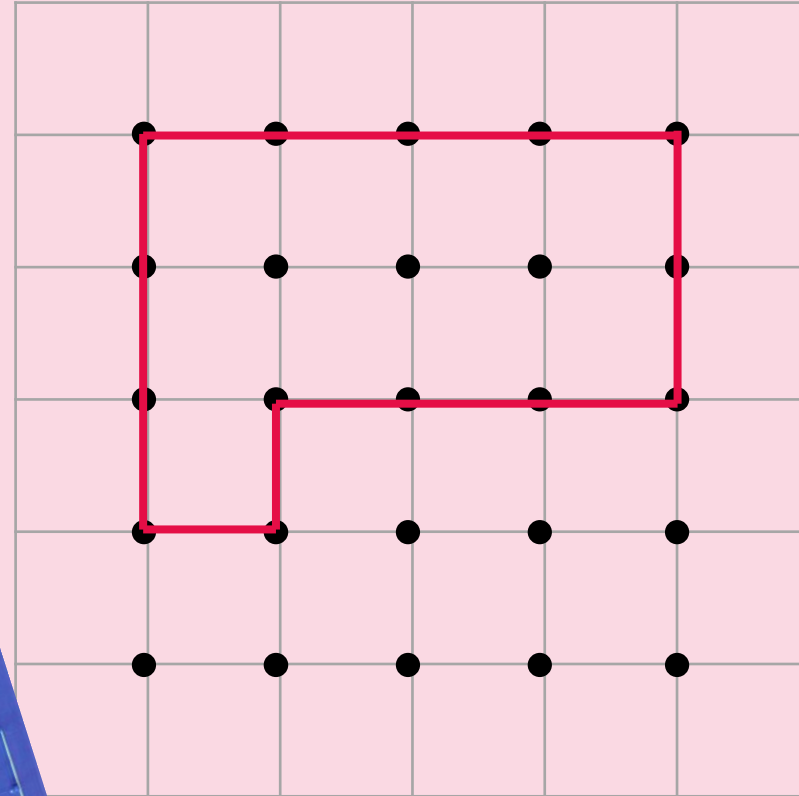
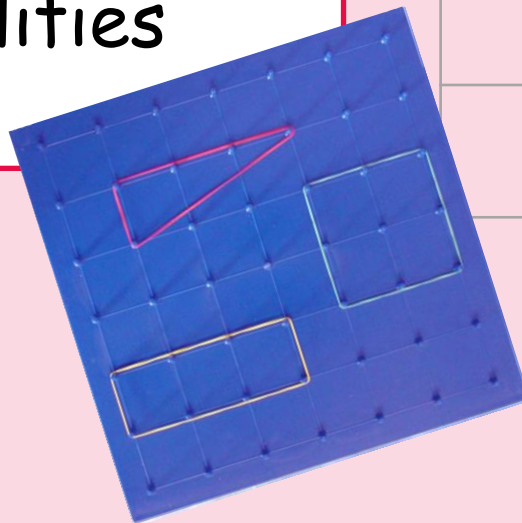
The Olympic planning committee now needs to plan the Olympic village. However, there are strict guidelines that must be followed.



Finding possible perimeters

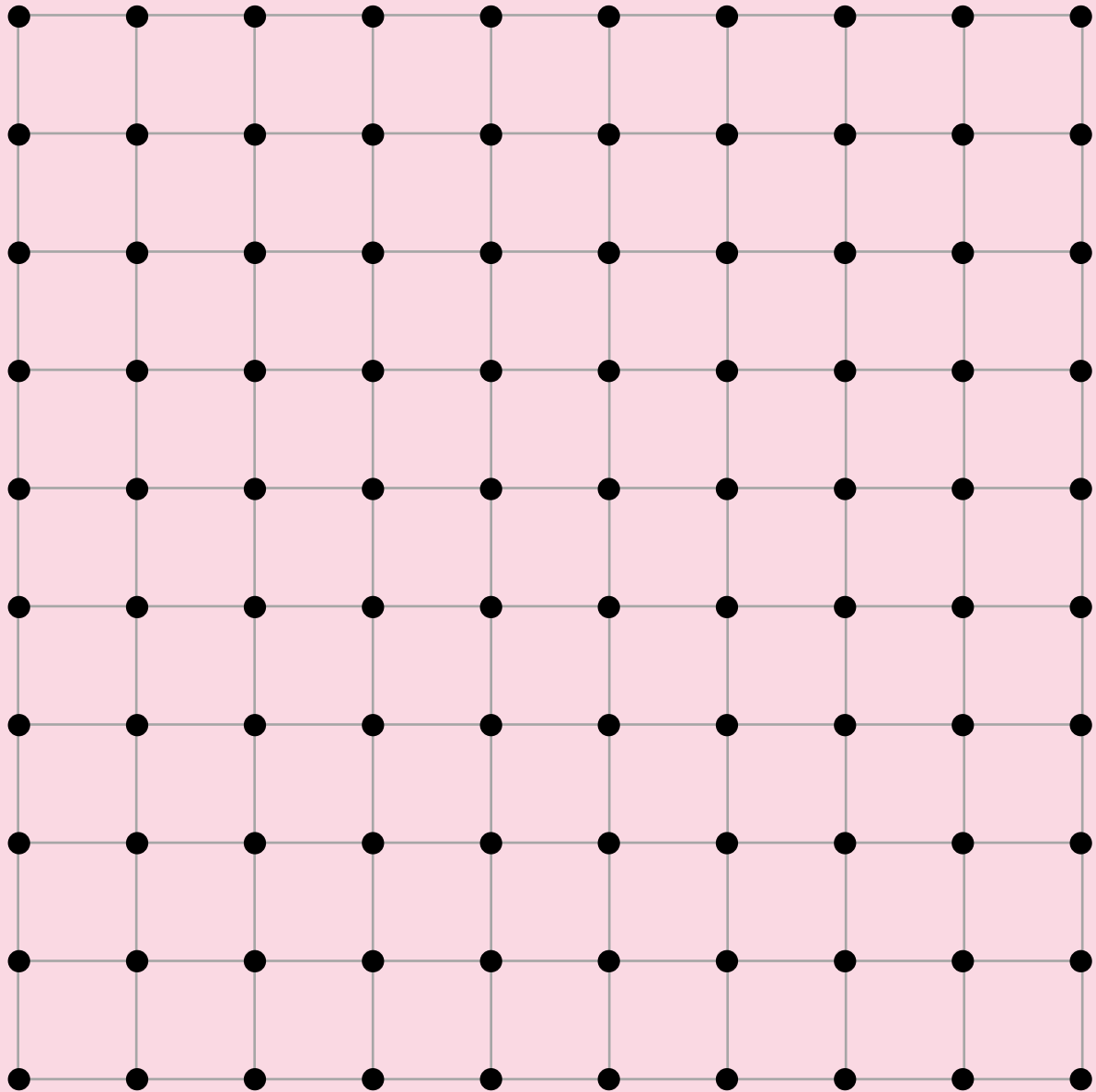
M	●●●	1 2 3
	●●●	1 3 2
	●●●	2 1 3
	●●●	2 3 1
	●●●	3 1 2
	●●●	3 2 1

The pole-vaulting athletes each need a room with a total perimeter of 14 m. One length must be at least 4 m in order to fit in the athlete's equipment safely. How many possibilities are there?



Finding possible perimeters

An Olympic boxing ring must have a perimeter of at least 18 m, with a maximum limit of 24 m. The length and width of the ring cannot have a difference of more than 2 m.



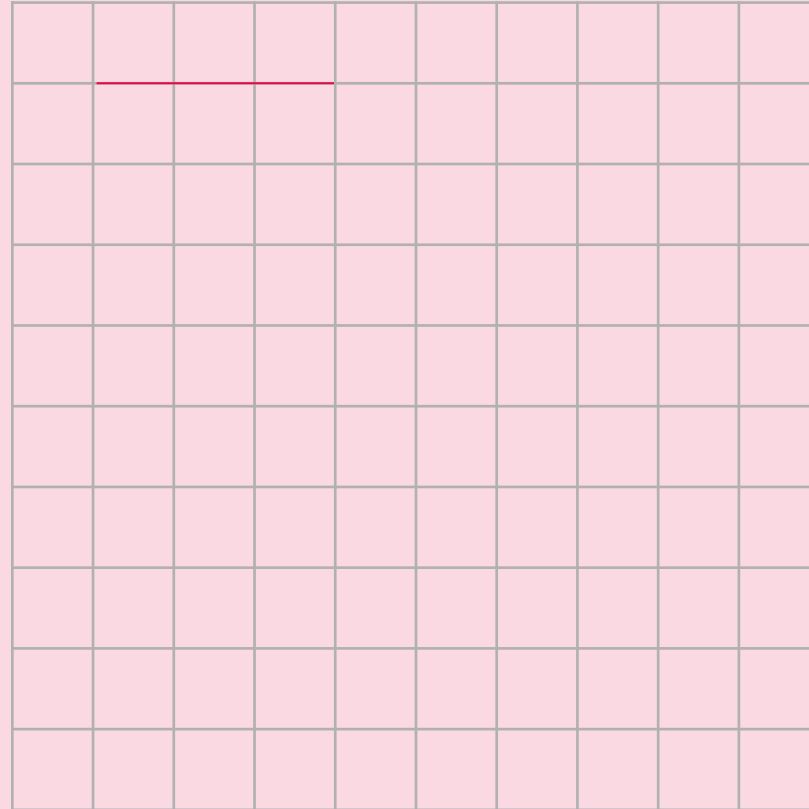
Let's Explore



Solving problems using scale and conversion

What would be an appropriate scale for representing the Olympic village plan on squared paper?

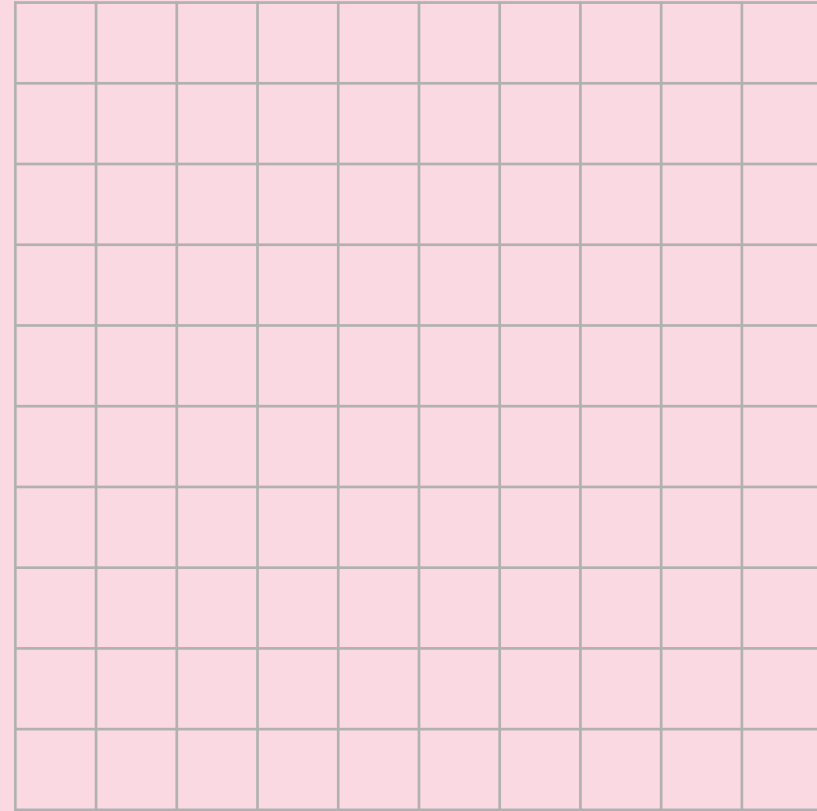
Length of 1 square =
Width of 1 square =



Solving problems using scale and conversion



The pole-vaulting athletes each need a room with a total perimeter of 14 m. One length must be at least 400 cm in order to fit in the athlete's equipment safely.



Reminder:

- How do you convert centimetres to metres?
- How do you convert metres to centimetres?



Key learning: To convert between units of length in the context of perimeter

Olympic village specifications

Use the constraints below and on the next slide to help you to design areas for the Olympic village and stadium. Ensure you have converted all of the units to metres.

The pole-vaulting athletes each need a room with a total perimeter of 14 m. One length must be at least 4 m in order to fit in the athlete's equipment safely.

An Olympic boxing ring must have a perimeter of at least 18 m, with a maximum limit of 24 m.

The length and width of the ring cannot have a difference of more than 2 m.



Key learning: To convert between units of length in the context of perimeter

Olympic village specifications

The archery area needs to be on the outside of the Olympic park, facing no accommodation. The area must be at least 0.15 km in length.

The gymnasts need rooms with six sides. Each side of the room is a different length and the total perimeter is a prime-number measurement under 20,000 cm.

The rowers require a shed for their scull boats. Each scull is 1,000 cm wide and 14 m long. The shed must have space to fit at least eight boats side by side.

The kitchens are specially designed with eight sides. One side is 50,000 mm and the total perimeter is 3,000 cm.



Celebrating success and addressing misconceptions

How many different possibilities did you find for each constraint?



Plenary

