Equivalent lengths (kilometres and metres)

Notes and guidance

In Year 3, children converted between metres and centimetres, and between centimetres and millimetres. In this small step, children use the fact that 1 km is equal to 1,000 m to derive related facts using numbers up to 10,000

Children make links to counting in 1,000s as covered in their earlier learning on place value.

Bar models, part-whole models and double number lines are useful representations to explore the connections between the two units and to support children with conversions.

Children learnt to multiply and divide by 10 and 100 in the previous block and could extend their thinking to multiply and divide by 1,000; if this is not appropriate, they could count up and down in 1,000s instead.

Things to look out for

- Children may mix up the conversions between different metric units, for example thinking that 1 km = 100 m.

- Children may make errors when counting in 1,000s.

- Children may just consider the numbers and not the units and think that, for example, 70 m is greater than 7 km as 70 is greater than 7

Key questions

- How many metres are there in 1 km?
  So how many metres are there in _____ km?

- How can you work out how many metres is equivalent to half a kilometre?
  What other fractions of a kilometre can you convert to metres?

- Which is greater, _____ km or _____ m ? How do you know?

- What is the same and what is different about converting metres to centimetres and converting kilometres to metres?

Possible sentence stems

- There are _____ m in 1 km, so there are _____ m in _____ km.

- Each kilometre is _____ m, so _____ km is the same as _____ m.

- Every 1,000 m is _____ km, so _____ m is the same as _____ km.

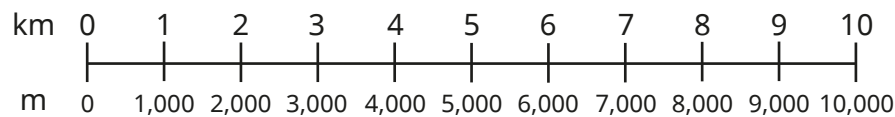- _____ km and _____ m is the same as _____ m.

National Curriculum links

- Convert between different units of measure [for example, kilometre to metre; hour to minute]
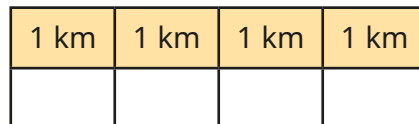
Equivalent lengths (kilometres and metres)

Key learning

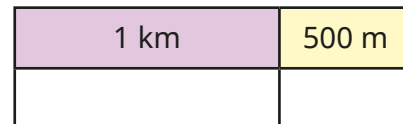- Use the double number line to complete the number sentences.

  km 0   1   2   3   4   5   6   7   8   9   10

  m   0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 8,000 9,000 10,000

  ▶ 1,000 m = _____ km   ▶ _____ m = 4 km

  ▶ 3,000 m = _____ km   ▶ _____ m = 10 km

- Use the bar models to complete the conversions.

1 km	1 km	1 km	1 km

1 km	500 m

  4 km = _____ m   1 km and 500 m = _____ m

1,000 m	1,000 m	1,000 m
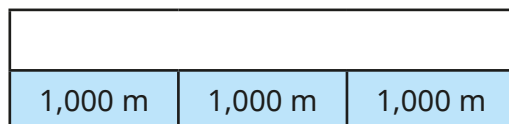
  3,000 m = _____ km

2 km	250 m
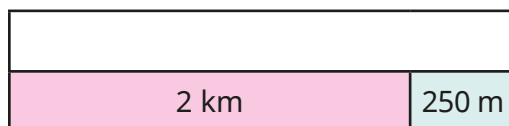
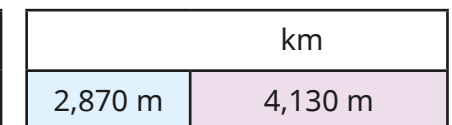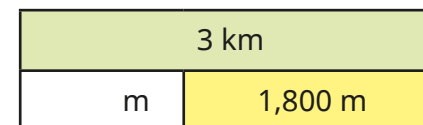 2 km and 250 m = _____ m

- Complete the conversions.

  ▶ 2 km 100 m = _____ m

  ▶ _____ km _____ m = 2,050 m

  ▶ 4 km 300 m = _____ m

  ▶ _____ km _____ m = 4,030 m

- Complete the statement.

  800 m + 600 m = _____ m = _____ km _____ m

- Complete the bar models.

3 km	
m	1,800 m

	km
2,870 m	4,130 m

- Write <, > or = to compare the lengths.

  6 km and 500 m ◯ 6,500 m

  4 km ◯ 350 m

  $\frac{1}{2}$ km ◯ 120 m

Equivalent lengths (kilometres and metres)

Reasoning and problem solving

Tom is running a cross-country race.

He runs 800 m as a warm-up.

The race is 5,600 m.

He then does a cool-down of 1 km 200 m.

How far does Tom run in total?

Give your answer in metres.

7,600 m

1,600 m is greater than 6 km.

Do you agree with Tiny?

Explain your answer.

No

Max and Aisha take part in a charity walk.

They walk 15 km altogether.

Aisha walks twice as far as Max.

How far do they each walk?

Max and Aisha both raise £1 for every 500 m they walk.
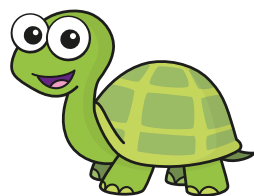
How much money do they each raise?

Max: 5 km
Aisha: 10 km

Max: £10
Aisha: £20

The flying distance from London to Paris is 342 km 760 m.

The driving distance from London to Paris is 475 km 537 m.

How much further is the driving distance than the flying distance?

132 km 777 m