

Reasoning and Problem Solving

Step 1: Kilometres

National Curriculum Objectives:

Mathematics Year 4: (4M5) [Convert between different units of measure \(for example, kilometre to metre; hour to minute\)](#)

Differentiation:

Questions 1, 4 and 7 (Problem Solving)

Developing Convert given measurements to identify 3 measurements that total a given distance. Includes whole and half units.

Expected Convert given measurements to identify 3 measurements that total a given distance. May include tenths (metres only), quarters, half and whole units.

Greater Depth Convert given measurements to identify 3 measurements that total a given distance. May include tenths, quarter, half, three-quarter and whole units. Also includes a mixture of numbers and words.

Questions 2, 5 and 8 (Reasoning)

Developing Identify and explain if a one-step statement comparing two distances is correct. Includes half and whole units.

Expected Identify and explain if a two-step statement comparing three distances is correct. May include tenths (metres only), quarters, half and whole units.

Greater Depth Identify and explain if a two-step statement comparing three distances is correct. May include tenths, quarter, half, three-quarter and whole units. Also includes a mixture of numbers and words.

Questions 3, 6 and 9 (Reasoning)

Developing Explain if a statement comparing two distances travelled is correct. Includes half and whole units only.

Expected Explain if a statement comparing two distances travelled is correct. May include tenths (metres only), quarters, half and whole units.

Greater Depth Explain if a statement comparing two distances travelled is correct. May include tenths, quarter, half, three-quarter and whole units. Also includes a mixture of numbers and words.

More [Year 4 Length and Perimeter](#) resources.

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Kilometres

1a. Which 3 distances combined make 7km?

4km

2,000m

1km

3,000m

5km



PS

Kilometres

1b. Which 3 distances combined make 9,500m?

$5\frac{1}{2}$ km

3,000m

4,000m

7km

1,000m



PS

2a. Is the following statement correct?

$6,000\text{m} < 6\frac{1}{2}\text{km}$

Explain your answer.



R

2b. Is the following statement correct?

$9\frac{1}{2}\text{km} > 9,500\text{m}$

Explain your answer.



R

3a. Maria has skated 1,500m.

Jack has skated 1km.

Jack says,



I've skated the same distance as Maria.

Is Jack correct? Explain your answer.



R

3b. Mattias has cycled 4,500m.

Hope has cycled $4\frac{1}{2}$ km.

Hope says,



I have cycled further than Mattias.

Is Hope correct? Explain your answer.



R

Kilometres

4a. Which 3 distances combined make $3\frac{1}{2}$ km?

$2\frac{1}{4}$ km

1,000m

500m

3,000m

2km



PS

Kilometres

4b. Which 3 distances combined make $7\frac{1}{4}$ km?

$1\frac{1}{4}$ km

2,000m

1,500m

4km

250m



PS

5a. Is the following statement correct?

8km

>

8,000m

>

$\frac{1}{10}$ of
7,000m

Explain your answer.



R

5b. Is the following statement correct?

$\frac{1}{10}$ of
10,000m

<

9,500m

<

$5\frac{1}{4}$ km

Explain your answer.



R

6a. Jakub has cycled 2,500m.

Morgan has cycled 2km.

Morgan says,



I've cycled the same distance as Jakub.

Is Morgan correct? Explain your answer.



R

6b. Bob and Jo are training to run a long distance race.

Today Jo runs $9\frac{1}{4}$ km. Bob runs 9,250m.

Bob says,



I have run further than Jo.

Is Bob correct? Explain your answer.



R

Kilometres

7a. Which 3 distances combined make $4\frac{3}{4}$ km?

$2\frac{1}{2}$ km

one thousand metres

250m

2,000m

3km



PS

Kilometres

7b. Which 3 distances combined make $5\frac{1}{4}$ km?

$1\frac{1}{4}$ km

3km

1,500m

four kilometres

750m



PS

8a. Is the following statement correct?

$\frac{3}{4}$ km

>

$\frac{1}{10}$ of 7,500m

<

seven hundred and fifty metres

Explain your answer.



R

8b. Is the following statement correct?

$\frac{1}{10}$ of 9,250m

>

three quarters of a kilometre

>

1,250m

Explain your answer.

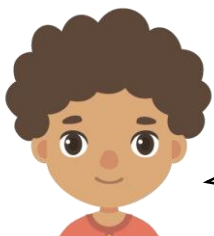


R

9a. Clara has swum 1,250m.

Jackson has swum $1\frac{1}{2}$ km.

Jackson says,



Clara has swum further than me.

Is Jackson correct? Explain your answer.



R

9b. Theo has cycled 8,750m.

Olivia has cycled $8\frac{1}{4}$ km.

Olivia says,



We have cycled the same distance.

Is Olivia correct? Explain your answer.



R

Reasoning and Problem Solving Kilometres

Developing

- 1a. $4\text{km} + 2,000\text{m} + 1\text{km} = 7\text{km}$
2a. Yes because $6,000$ is less than $6\frac{1}{2}$ km/ $6,500\text{m}$.
3a. No, $1\text{km} = 1,000\text{m}$ which is less than $1,500\text{m}$ so Jack has not skated as far as Maria.

Expected

- 4a. $1,000\text{m} + 2\text{km} + 500\text{m} = 3\frac{1}{2}\text{km}$
5a. No because $8\text{km} = 8,000\text{m}$
6a. No, $2\text{km} = 2,000\text{m}$ which is less than $2,500\text{m}$.

Greater Depth

- 7a. $2\frac{1}{2}\text{km} + 2,000\text{m} + 250\text{m} = 4\frac{3}{4}\text{km}$
8a. No because all three distances are equal.
9a. No, Jackson has swum further because $1,250\text{m}$ is less than $1\frac{1}{2}\text{km}/1,500\text{m}$.

Reasoning and Problem Solving Kilometres

Developing

- 1b. $5\frac{1}{2}\text{km} + 3,000\text{m} + 1,000\text{m} = 9\frac{1}{2}\text{km}$
2b. No because $9\frac{1}{2}\text{km}$ is equal to $9,500\text{m}$.
3b. No, $4,500\text{m}$ is equal to $4\frac{1}{2}\text{km}$ so they have both cycled the same distance.

Expected

- 4b. $4\text{km} + 2,000\text{m} + 1\frac{1}{4}\text{km} = 7\frac{1}{4}\text{km}$
5b. No because $9,500\text{m}$ is more than $5\frac{1}{4}\text{km}$.
6b. No, they have both run the same distance.

Greater Depth

- 7b. $3\text{km} + 1,500\text{m} + 750\text{m} = 5\frac{1}{4}\text{km}$
8b. No because $\frac{3}{4}\text{km}$ is less than $1,250\text{m}$.
9b. No, Theo has cycled further as $8,750\text{m}$ is more than $8\frac{1}{4}\text{km}/8,250\text{m}$.