

Aim

- I can convert metric measures involving length (kilometres and metres).

Success Criteria

- I can multiply by 1000 to convert measurements from kilometres to metres.
- I can divide by 1000 to convert measurements from metres into kilometres.
- I can convert between metres and kilometres to solve problems.

Metres in Kilometres and Kilometres in Metres



Multiplying and Dividing by 1000

$$5\text{km} = 5000\text{m}$$

What calculation did we do to convert from kilometres to metres?

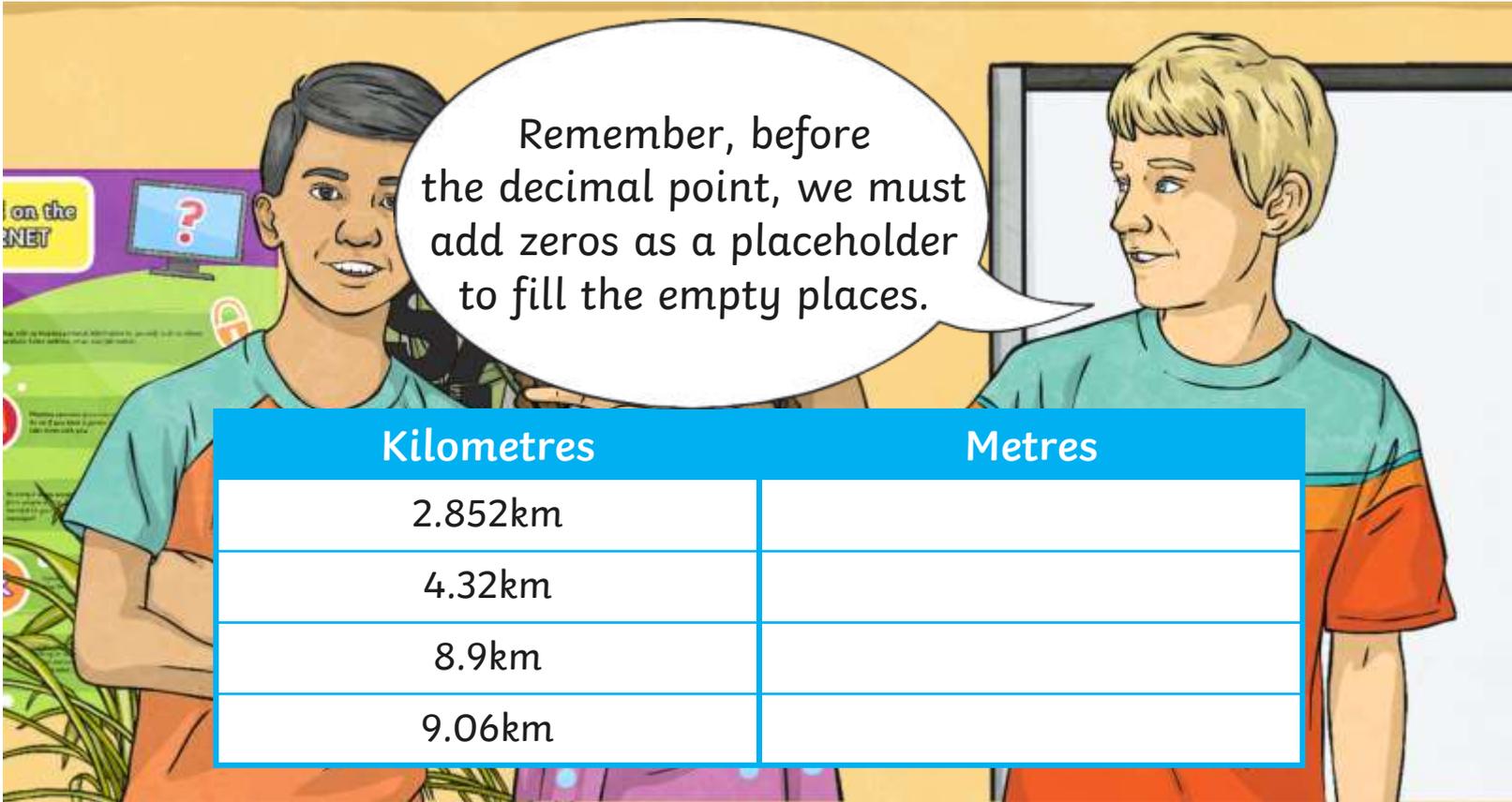
We multiply by 1000 to convert kilometre measurements with decimal numbers in the same way.

To convert from kilometres to metres, we multiply by 1000. To multiply by 1000, each digit moves three places to the left:

thousands	hundreds	tens	ones	tenths	hundredths	thousandths

Multiplying and Dividing by 1000

Convert each measurement from kilometres to metres by multiplying the number by 1000.



Remember, before the decimal point, we must add zeros as a placeholder to fill the empty places.

Kilometres	Metres
2.852km	
4.32km	
8.9km	
9.06km	

Multiplying and Dividing by 1000

$$3000\text{m} = 3\text{km}$$

What calculation did we do to convert from metres to kilometres?

To convert from metres to kilometres, we divide by 1000. To divide by 1000, each digit moves three places to the right:
Sometimes dividing by 1000 gives us a decimal answer:

thousands	hundreds	tens	ones	tenths	hundredths	thousandths

Multiplying and Dividing by 1000

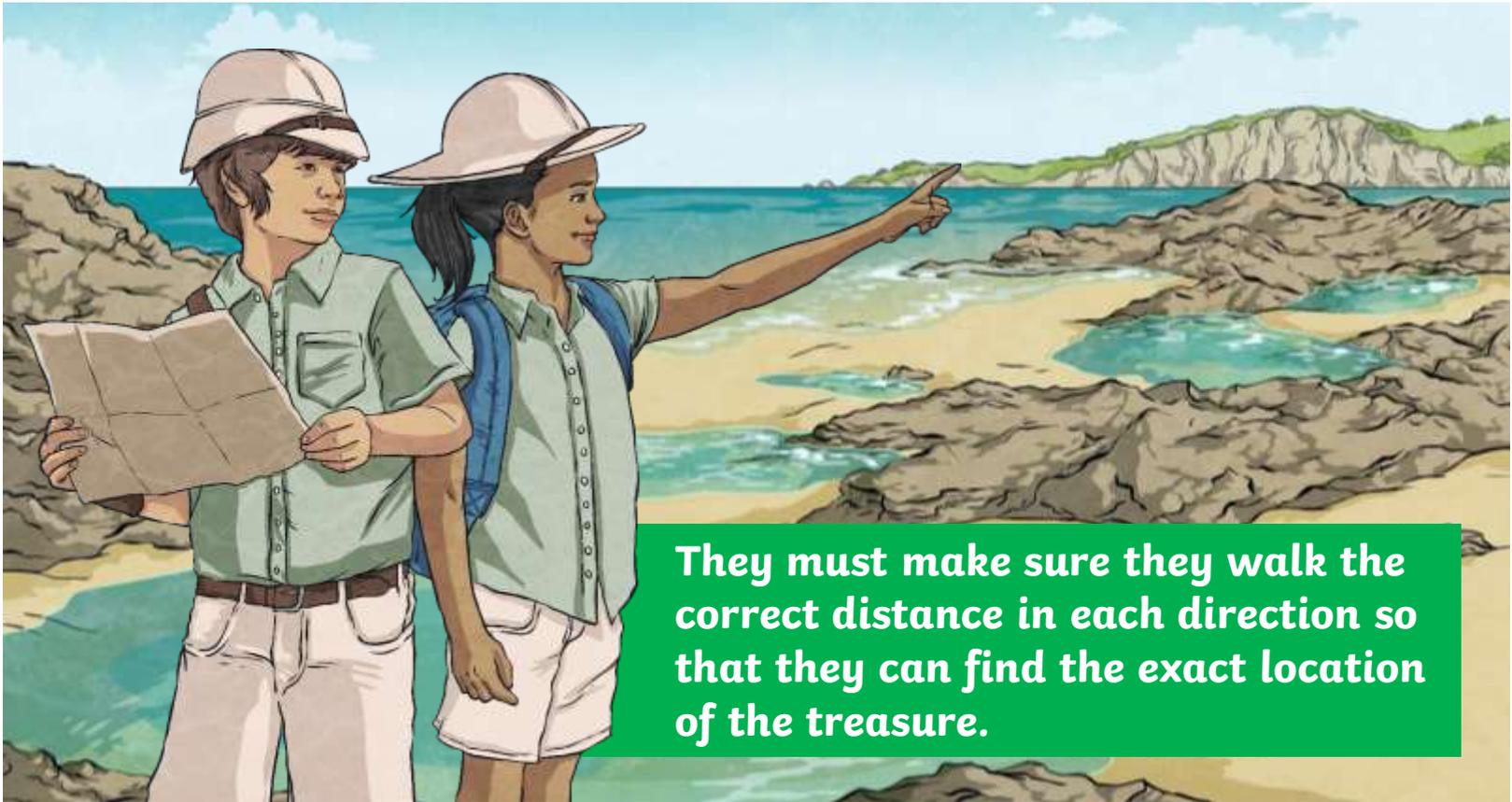
Convert each measurement from metres to kilometres by dividing the number by 1000.

Remember, after the decimal place, any zeros after the last digit in the number have no value – so we do not need to write them.

Metres	Kilometres
3568m	
4113m	
6580m	
8600m	
7070m	

Hunting for Treasure

Two explorers, Lucy and James, have landed on Dog Kennel Island.

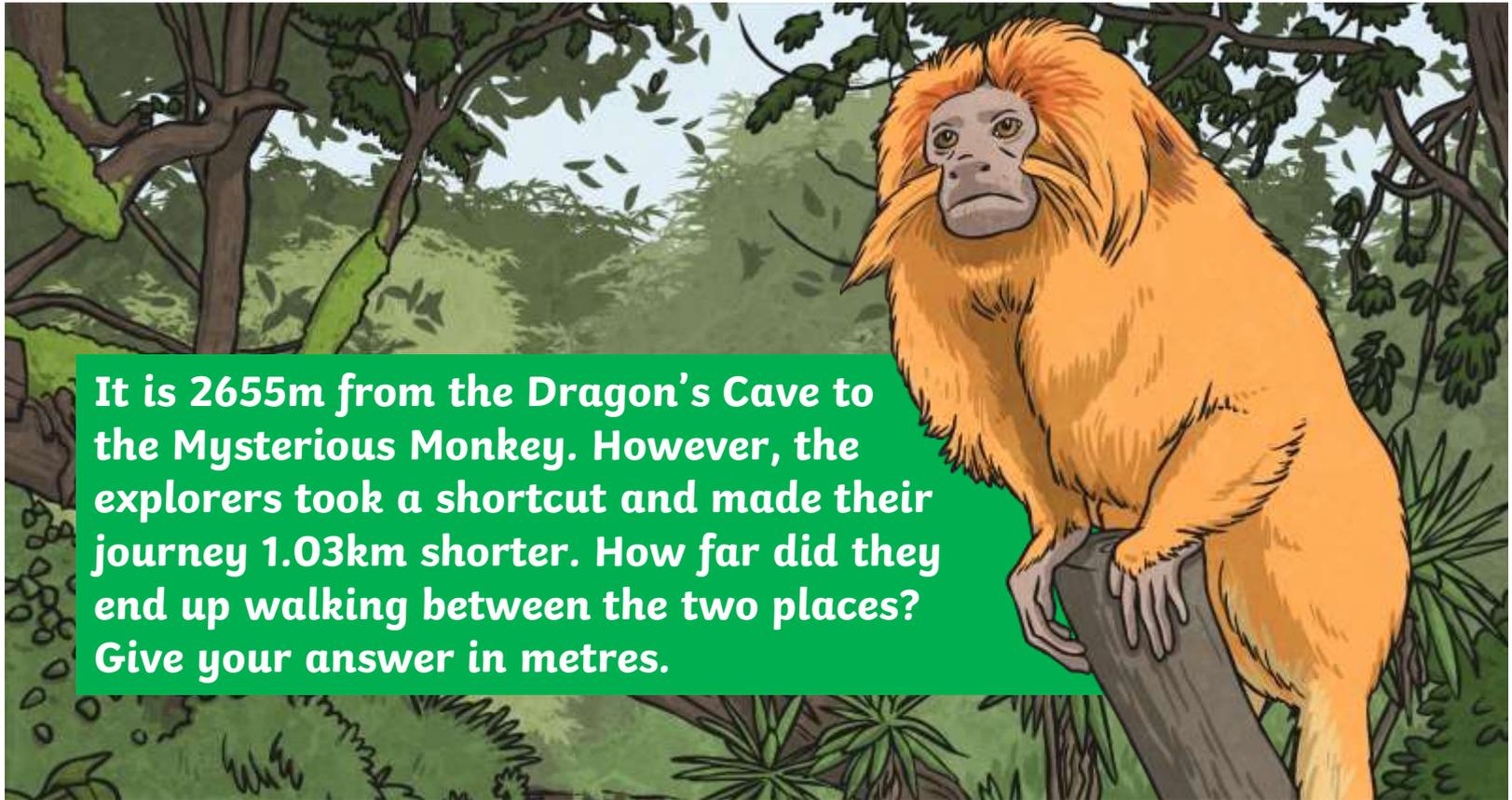


They must make sure they walk the correct distance in each direction so that they can find the exact location of the treasure.

Hunting for Treasure



Use $<$, $>$ or $=$ to compare these measurements:

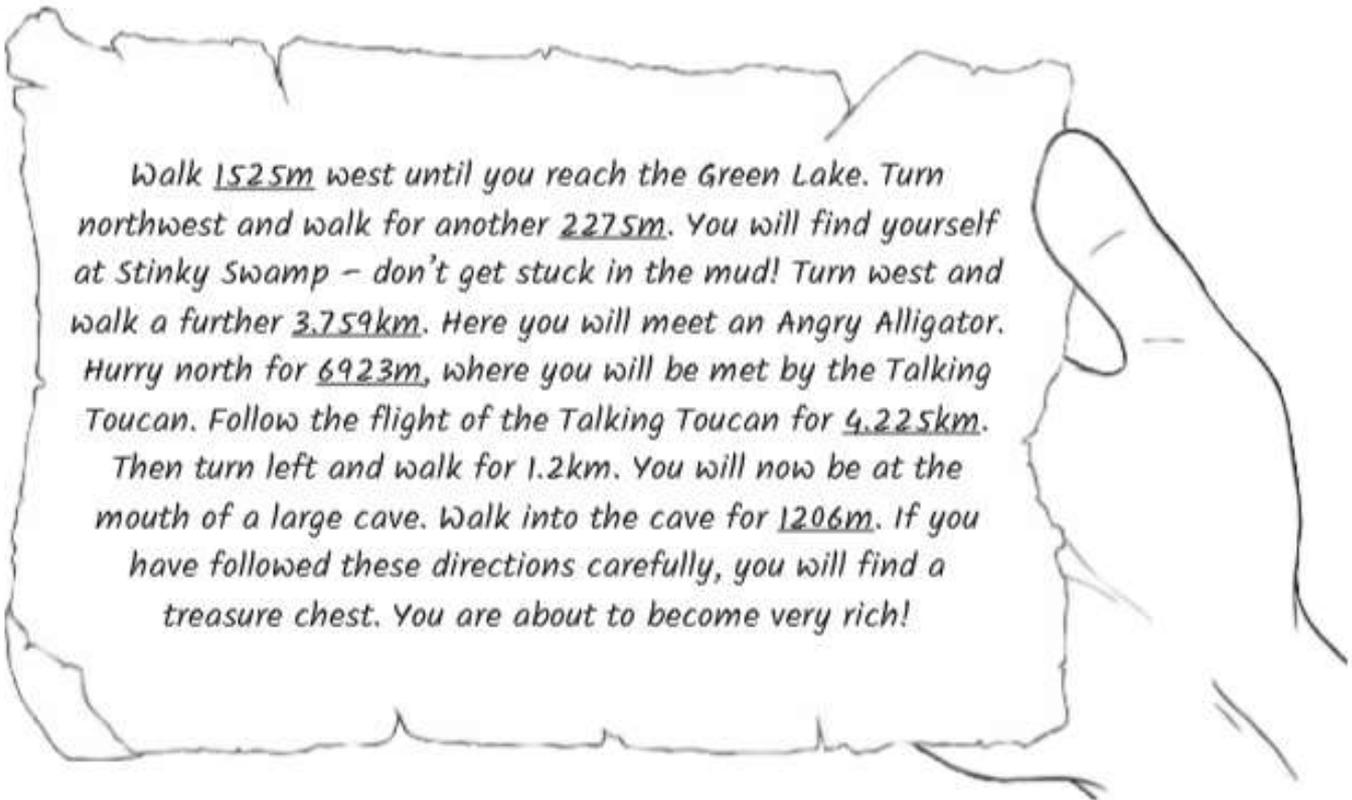


It is 2655m from the Dragon's Cave to the Mysterious Monkey. However, the explorers took a shortcut and made their journey 1.03km shorter. How far did they end up walking between the two places? Give your answer in metres.

Task: ★

Here are some mysterious directions to find buried treasure. Some of the directions have been written in metres and some in kilometres.

Change the measurements in kilometres to metres and the measurements in metres to kilometres. Write the conversions on the chart below.



Walk 1525m west until you reach the Green Lake. Turn northwest and walk for another 2275m. You will find yourself at Stinky Swamp – don't get stuck in the mud! Turn west and walk a further 3.759km. Here you will meet an Angry Alligator. Hurry north for 6923m, where you will be met by the Talking Toucan. Follow the flight of the Talking Toucan for 4.225km. Then turn left and walk for 1.2km. You will now be at the mouth of a large cave. Walk into the cave for 1206m. If you have followed these directions carefully, you will find a treasure chest. You are about to become very rich!

Remember: To convert from kilometres to metres, multiply by 1000. To convert metres to kilometres, divide by 1000.

- 1) Convert the measurements given in metres to kilometres, and the measurements given in kilometres to metres:

Measurement (km)	Measurement (m)	Measurement (m)	Measurement (km)
3.759km		2275m	
4.225km		6923m	
	1525m	1206m	

- 2) Use $<$ or $>$ to compare these measurements:

8756m	6.342km	7.841km	2560m	5339m	5.783km
9.875km	9102m	5.443km	5100m	3.2km	4100m
2.3km	2100m	3km	3715m	6800m	6.3km

- 3) Order these measurements from shortest to longest:

5.133km 9.5km 5000m 1.8km 2700m

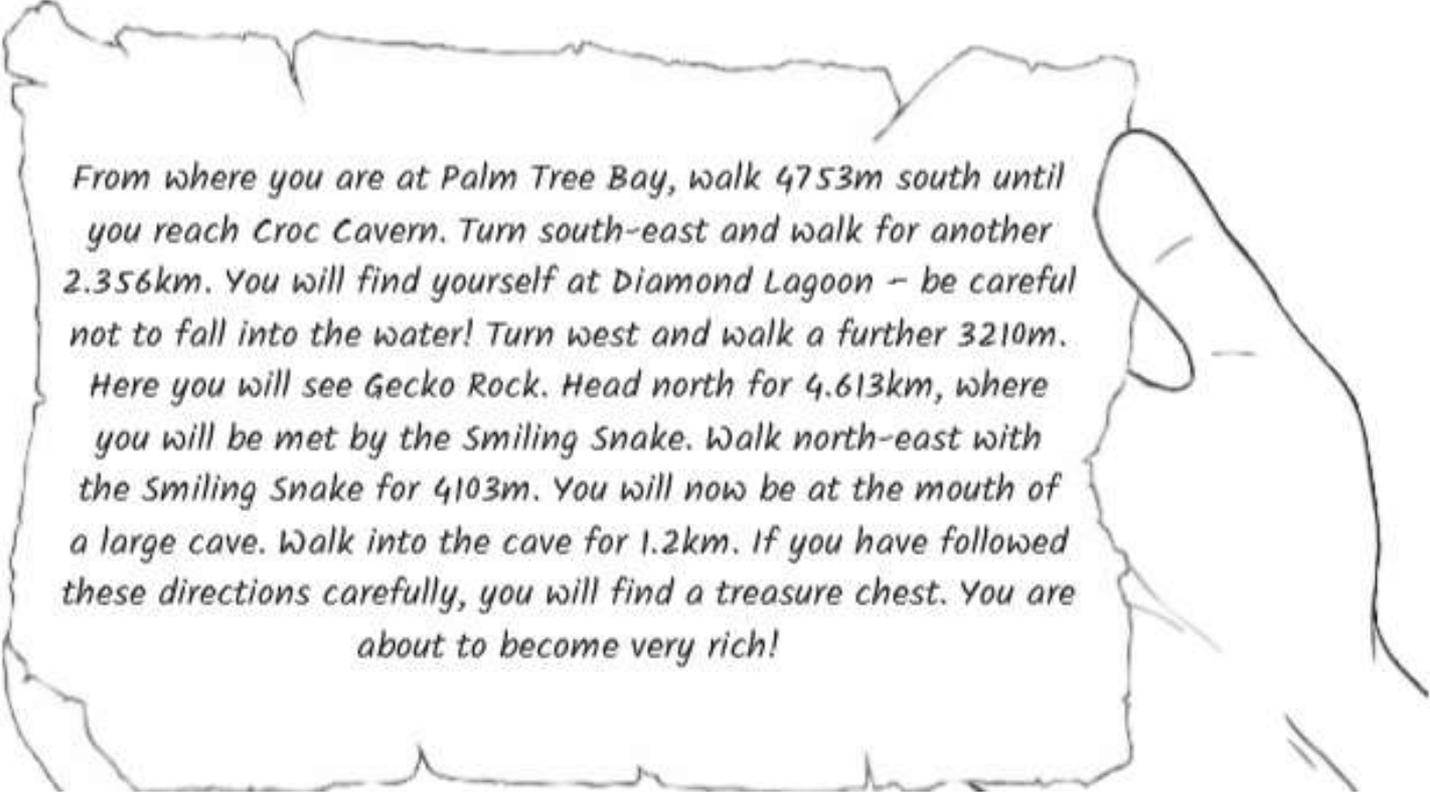
Shortest	←—————→				Longest

- 4) It is 3.755 km from the Stinky Swamp to the Angry Alligator. However, the explorers took a shortcut and cut out 1522m from their journey. How far did they end up walking? Write your answer in metres.

Task: ★★

Here are some mysterious directions to find buried treasure. Some of the directions have been written in metres and some in kilometres.

Change the measurements in kilometres to metres and the measurements in metres to kilometres. Write the conversions on the chart below.



From where you are at Palm Tree Bay, walk 4753m south until you reach Croc Cavern. Turn south-east and walk for another 2.356km. You will find yourself at Diamond Lagoon - be careful not to fall into the water! Turn west and walk a further 3210m. Here you will see Gecko Rock. Head north for 4.613km, where you will be met by the Smiling Snake. Walk north-east with the Smiling Snake for 4103m. You will now be at the mouth of a large cave. Walk into the cave for 1.2km. If you have followed these directions carefully, you will find a treasure chest. You are about to become very rich!

- 1) Convert the measurements given in metres to kilometres, and the measurements given in kilometres to metres:

Measurement (km)	Measurement (m)	Measurement (m)	Measurement (km)
2.356km		4753m	
4.613km		3210m	
1.2km		4103m	

- 2) Use < or > to compare these measurements:

8756m	6.342km	7.841km	2560m	2.3km	2300m
3km	3715m	3.2km	4100m	6800m	6.3km
4.35km	4350m	3.048km	3048m	2.5km	2005m

- 3) Order these measurements from shortest to longest:

4.25km 2075m 4255m 2.75km 6km

Shortest					Longest

- 4) In the table below, James has converted four measurements from kilometres to metres. However, Lucy says he has got some of them wrong. Decide whether each measurement is right or wrong and give it a tick or a cross. If it is wrong, write the correct measurement in the table next to it.

Kilometres	Metres	X or ✓	Correct Measurement
4.744km	4744m		
2.356km	23.56m		
3.21km	321m		
4.63km	4630m		

Task:☆☆☆

Here are some mysterious directions to find buried treasure. Some of the directions have been written in metres and some in kilometres.

Change the measurements in kilometres to metres and the measurements in metres to kilometres. Write the conversions on the chart below.

From where you are at White Shark Bay, walk 2.212km south until you reach the bottom of Monster Mountain. Turn north-west and walk for another 4370m. You will find yourself at Murky Marsh – don't get stuck in the mud! Turn to face east and walk a further 1.9km. Here you will find the Spiky Spider Tree. Turn north-west and walk for 3005m, where you will be met by the Terrible Turtle. Walk east with the Terrible Turtle for 6.95km. You will reach a cluster of coconut trees. You will now be at the mouth of a large cave. Walk into the cave for 1039m. If you have followed these directions carefully, you will find a treasure chest. You are about to become very rich!

- 1) Convert the measurements given in metres to kilometres, and the measurements given in kilometres to metres:

Measurement (km)	Measurement (m)	Measurement (m)	Measurement (km)
2.212km		4370m	
1.9km		3005m	
6.95km		1039m	

- 2) Order these measurements from shortest to longest:

3095m 3.9km 3km 3950m 390m 3.09km

Shortest	←—————→					Longest

- 3) In the table below, James has converted four measurements between kilometres and metres. However, Lucy says he has got some of them wrong. Decide whether each measurement is right or wrong and give it a tick or a cross. If it is wrong, write a short note for him explaining the mistake he made and how he could get it right next time.

Kilometres	Metres	X or ✓	Notes
3.5km	3005m		
1.9km	1900m		
6.9km	690m		
9.090km	9090m		

4a) It is 4370m from Monster Mountain to the Murky Marsh. However, on the way there, the explorers got slightly lost and ended up walking 1.02km further than they needed to. How far did they end up walking on the way there? Give your answer in kilometres.

b) When they had followed the directions all the way from White Shark Bay to the cave containing the treasure chest, how far had James and Lucy walked in total? (Don't forget the extra distance they walked because they got lost.) Give your answer in metres.

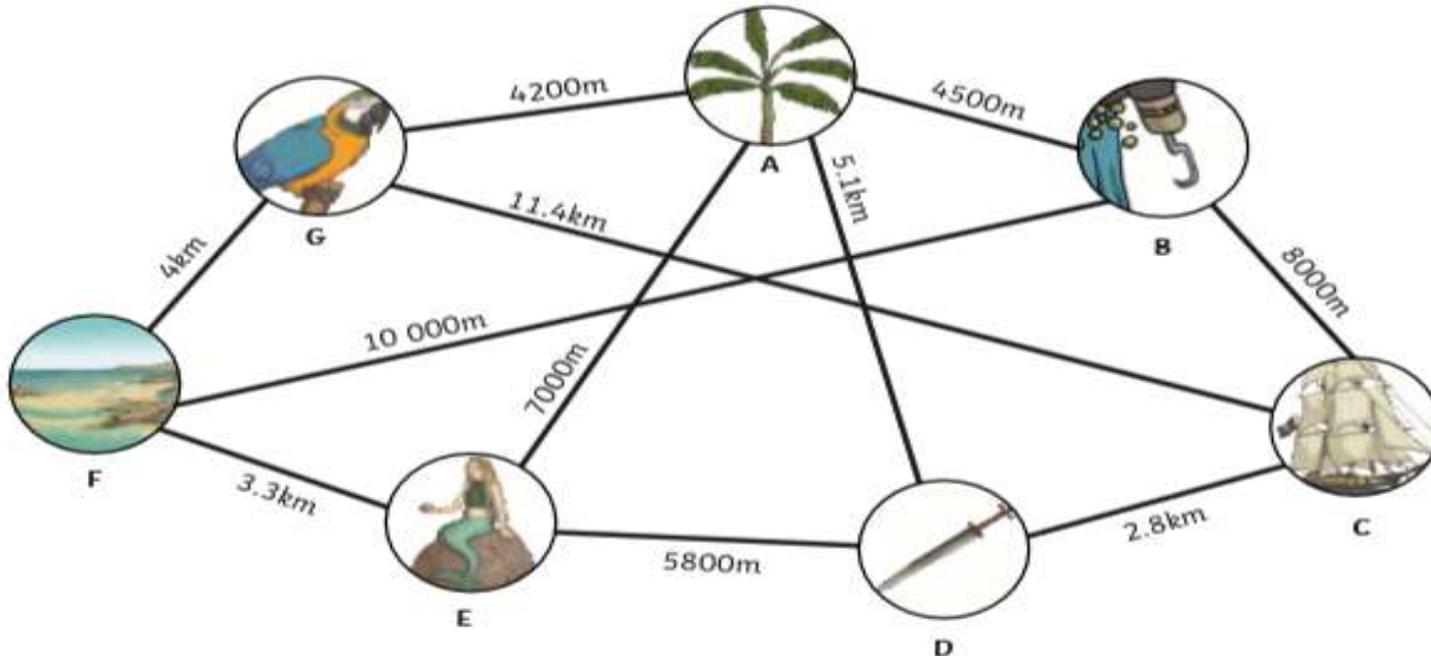
c) On the way back to White Shark Bay, the two explorers managed not to get lost. Instead, they found a shortcut that made their journey 3.5km shorter. Find the difference, in metres, between the distance they walked on the way there and the way back.



Challenge:

Here is a treasure map.

- An explorer travels from the palm tree back to the palm tree.
- They visit each of the other places on the map only once.
- The explorer must visit location B first.
- There are four possible routes for the explorer to take.
- Find the total distances of the possible routes.



- 1) What is the distance of the shortest route in metres? _____
- 2) What is the distance of the longest route in kilometres? _____
- 3) What is the difference between the shortest and longest routes in centimetres? _____

Aim



- I can convert metric measures involving length (kilometres and metres).

Success Criteria

- I can multiply by 1000 to convert measurements from kilometres to metres.
- I can divide by 1000 to convert measurements from metres into kilometres.
- I can convert between metres and kilometres to solve problems.

