



Playground

I can solve problems by scaling up and down.



This model playground is made on a scale of **1:4**. It is **4 times smaller** than the real playground. It is **a quarter of the size**. Every 1cm on the model is the same as 4cm on the full size playground.

Work out the full size measurements and write them in the boxes.

I need to multiply every measurement on the model by

Model = 50cm
Full size =
 $50\text{cm} \times \text{ } = \text{ }$

Model = 40cm
Full size =
 $40\text{cm} \times \text{ } = \text{ }$

Model = 70cm
Full size =
 $70\text{cm} \times \text{ } = \text{ }$

Model = 100cm
Full size =
 $100\text{cm} \times \text{ } = \text{ }$

Model = 25cm
Full size =
 $25\text{cm} \times \text{ } = \text{ }$

Design your own model playground frame.

Label it with the measurements for the model playground and the measurements of the real playground, using a scale factor of 1:2.

Everything on the real frame must be 2 times bigger than on the model frame.



Playground

I can solve problems which require scaling using known multiplication and division facts.



1. Can you work out the measurements for this playground equipment?

Equipment	Scale How many times smaller?	Measurement on Model	Full Size Measurement
Slide length	1:4 4 times smaller 1cm on the model = 4cm on the full size slide	50cm	$50\text{cm} \times 4 = 200\text{cm}$
Swing height	1:3 3 times smaller	55cm	$55\text{cm} \times ?$
Climbing ladder height	1:5 5 times smaller	$150 \div ? =$	150cm
Swing width	1:8 8 times smaller	$40 \div ? =$	40cm
Roof height	1:10 10 times smaller	40cm	
Monkey Bar Width	1:4 4 times smaller		48cm



Playground

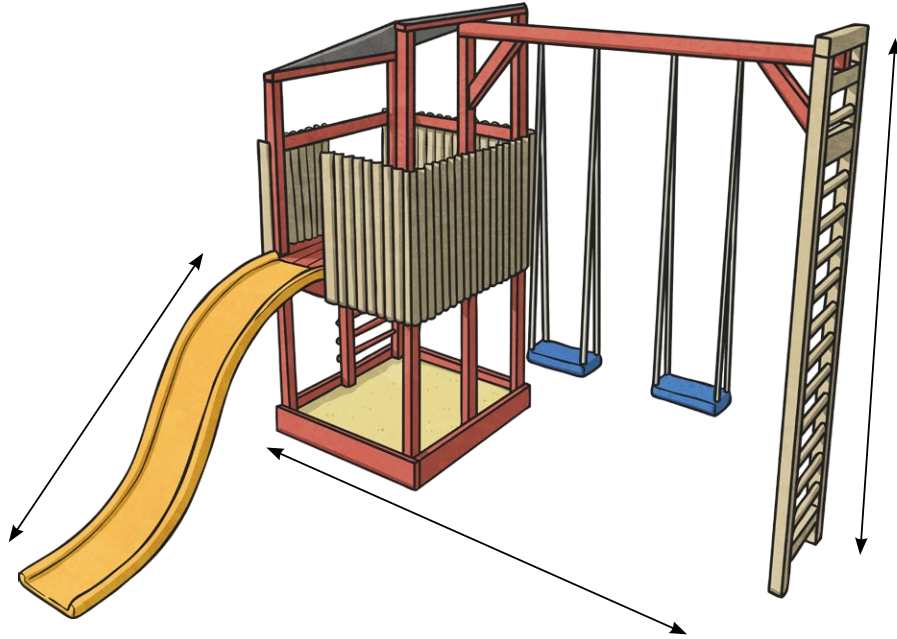
2. Can you work out the measurements and scales for these models?

Equipment	Scale How many times smaller?	Measurement on Model	Full Size Measurement
Slide length	_____ times smaller	80cm	400cm
Swing height	4 times smaller		280cm
Climbing ladder height	_____ times smaller	80cm	320cm
Swing width	8 times smaller		80cm
Roof height	_____ times smaller	40cm	360cm
Monkey Bar Width	9 times smaller		270cm



Playground

3. Design your own playground frame like this one. Put the measurements on your design and the measurements for the full size.





Playground

I can solve problems which require scaling using known multiplication and division facts.



1. Can you work out the measurements for this playground equipment?

Equipment	Scale How many times smaller?	Measurement on Model	Full Size Measurement
Slide length	1:4 4 times smaller 1cm on the model = 4cm on the full size slide	50cm	$50\text{cm} \times 4 = 200\text{cm}$
Swing height	1:3 3 times smaller	54cm	
Climbing ladder height	1:5 5 times smaller		250cm
Swing width	1:8 8 times smaller	14cm	
Roof height	1:8 8 times smaller		160cm
Monkey Bar Width	1:4 4 times smaller	32cm	



Playground

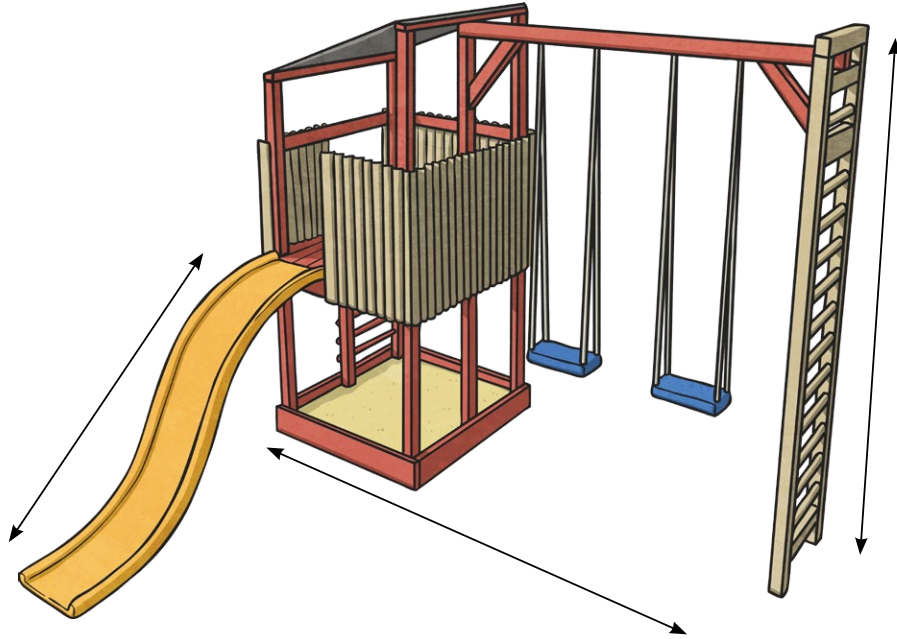
2. Can you work out the scale for these models?

Equipment	Scale How many times smaller?	Measurement on Model	Full Size Measurement
Slide length	_____ times smaller	80cm	400cm
Swing height	8 times smaller		560cm
Climbing ladder height	_____ times smaller	80cm	320cm
Swing width	_____ times smaller	10cm	80cm
Roof height	9 times smaller		360cm
Monkey Bar Width	_____ times smaller	90cm	720cm



Playground

3. Design your own playground frame like this one. Put the measurements on your design and the measurements for the full size.



Playground Answers

This model playground is made on a scale of **1:4**. It is **4 times smaller** than the real playground. It is a **quarter of the size**. Every 1cm on the model is the same as 4cm on the full size playground.

Work out the full size measurements and write them in the boxes.

I need to multiply every measurement on the model by

4

Model = 50cm
Full size =
 $50\text{cm} \times \boxed{4} = \boxed{200\text{cm}}$

Model = 40cm
Full size =
 $40\text{cm} \times \boxed{4} = \boxed{160\text{cm}}$

Model = 70cm
Full size =
 $70\text{cm} \times \boxed{4} = \boxed{280\text{cm}}$

Model = 100cm
Full size =
 $100\text{cm} \times \boxed{4} = \boxed{400\text{cm}}$

Model = 25cm
Full size =
 $25\text{cm} \times \boxed{4} = \boxed{100\text{cm}}$

Design your own model playground frame.

Label it with the measurements for the model playground and the measurements of the real playground, using a scale factor of 1:2.

Everything on the real frame must be 2 times bigger than on the model frame.



Playground Answers

1. Can you work out the measurements for this playground equipment?

Equipment	Scale How many times smaller?	Measurement on Model	Full Size Measurement
Slide length	1:4 4 times smaller 1cm on the model = 4cm on the full size slide	50cm	$50\text{cm} \times 4 = 200\text{cm}$
Swing height	1:3 3 times smaller	55cm	$55\text{cm} \times 3 = 165\text{cm}$
Climbing ladder height	1:5 5 times smaller	30cm	150cm
Swing width	1:8 8 times smaller	5cm	40cm
Roof height	1:10 10 times smaller	40cm	400cm
Monkey Bar Width	1:4 4 times smaller	12cm	48cm



Playground Answers

2. Can you work out the scale for these models?

Equipment	Scale How many times smaller?	Measurement on Model	Full Size Measurement
Slide length	<u>5</u> times smaller	80cm	400cm
Swing height	<u>4</u> times smaller	70cm	280cm
Climbing ladder height	<u>4</u> times smaller	80cm	320cm
Swing width	<u>8</u> times smaller	10cm	80cm
Roof height	<u>9</u> times smaller	40cm	360cm
Monkey Bar Width	<u>9</u> times smaller	30cm	270cm



Playground Answers

Equipment	Scale How many times smaller?	Measurement on Model	Full Size Measurement
Slide length	1:4 4 times smaller 1cm on the model = 4cm on the full size slide	50cm	$50\text{cm} \times 4 = 200\text{cm}$
Swing height	1:3 3 times smaller	54cm	162cm
Climbing ladder height	1:5 5 times smaller	50cm	250cm
Swing width	1:8 8 times smaller	14cm	112cm
Roof height	1:8 8 times smaller	20cm	160cm
Monkey Bar Width	1:4 4 times smaller	32cm	128cm



Playground Answers

Equipment	Scale How many times smaller?	Measurement on Model	Full Size Measurement
Slide length	<u>5</u> times smaller	80cm	400cm
Swing height	8 times smaller	70cm	560cm
Climbing ladder height	<u>4</u> times smaller	80cm	320cm
Swing width	<u>8</u> times smaller	10cm	80cm
Roof height	9 times smaller	40cm	360cm
Monkey Bar Width	<u>8</u> times smaller	90cm	720cm