

Scale Drawing - Worksheet

Skill

Group A - Identifying the scale factors

Write the following scales as a ratio in their simplest form:

1) $2\text{cm} : 2\text{m}$

2) $2\text{cm} : 0.2\text{m}$

3) $5\text{cm} : 1\text{m}$

4) $5\text{cm} : 1.8\text{m}$

5) $5\text{cm} : 0.8\text{m}$

6) $10\text{cm} : 1\text{m}$

7) $10\text{cm} : 4\text{m}$

8) $2\text{cm} : 1\text{km}$

9) $2\text{cm} : 0.5\text{km}$

10) $4\text{cm} : 0.4\text{km}$

11) $2\text{cm} : 0.2\text{km}$

12) $6\text{cm} : 6\text{km}$

Group B - Calculating real distances from a scale

Calculate the real lengths (in cm) given the scale. Write each answer in centimetres:

1) Scale $1 : 400\,000$

Map distance = 1cm

2) Scale $1 : 400\,000$

Map distance = 2cm

3) Scale $1 : 400\,000$

Map distance = 5cm

4) Scale $1 : 400\,000$

Map distance = 0.2cm

5) Scale $1 : 400\,000$

Map distance = 0.7cm

6) Scale $1 : 400\,000$

Map distance = 2.1cm

7) Scale $1 : 200\,000$

Map distance = 1cm

8) Scale $1 : 200\,000$

Map distance = 2cm

9) Scale $1 : 200\,000$

Map distance = 5cm

10) Scale $1 : 200\,000$

Map distance = 0.2cm

11) Scale $1 : 200\,000$

Map distance = 0.7cm

12) Scale $1 : 200\,000$

Map distance = 2.1cm

Scale Drawing - Worksheet

Group C - Calculating scaled distances from a scale

Calculate the scaled lengths (in cm) given the scale:

1) Scale 1 : 50 000

Real distance = 100m

2) Scale 1 : 50 000

Real distance = 200m

3) Scale 1 : 50 000

Real distance = 600m

4) Scale 1 : 2 000

Real distance = 50m

5) Scale 1 : 2 000

Real distance = 75m

6) Scale 1 : 2 000

Real distance = 150m

7) Scale 1 : 500 000

Real distance = 20km

8) Scale 1 : 500 000

Real distance = 40km

9) Scale 1 : 500 000

Real distance = 60km

10) Scale 1 : 20 000

Real distance = 3km

11) Scale 1 : 20 000

Real distance = 1.5km

12) Scale 1 : 20 000

Real distance = 4.5km

Scale Drawing - Worksheet

Applied

- 1) A map has a scale of $1\text{cm} : 4\text{km}$.
On the map, the distance between two cities is 7cm .
What is the actual distance between the two cities?
- 2) A map has a scale of 2cm represents 5km .
 - (a) Write this scale as a ratio in its simplest form $1:n$.
 - (b) What is the actual length of a road measuring 4.5cm on the map?
Give your answer in kilometres.
- 3) (a) A map has a scale of 1cm represents 60 metres.
Circle the ratio which is equivalent to this.

 $1:60$ $1:600$ $1:6000$ $1:60000$ $1:600000$ $1:6000000$
 - (b) The distance between two churches on the map is 4.5cm .

What is the actual distance between the churches?
Give your answer in metres.
- 4) A scale drawing has a scale of $1:3000$.
On the drawing, the distance between two points is 9cm .

What is the actual distance between the points?
Give your answer in metres.
- 5) A scale drawing has a scale of $1:2000$. In real life the length of a yacht is 150m .

What is the length of the yacht on the scale drawing?

Scale Drawing - Exam Questions

- 1) A model lorry has a length of 6cm .
The scale of the model is 1:200.

Work out the real length of the lorry.
Write your answer in metres.

.....m
(3 marks)

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- 2) A map has the scale of 1:50000.
The distance between two points on the map is 20cm .

Work out the real distance between the two points.
Give your answer in kilometres.

.....km
(3 marks)

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- 3) (a) A map has a scale of 5cm represents 2km .
Write this scale as a ratio in its simplest form 1: n .

.....
(2)

- (b) What is the actual length of a road measuring 8.5cm on the map?

.....km
(2)
(4 marks)

Scale Drawing - Answers

	Question	Answer
	Skill Questions	
Group A	<p>Write the following scales as a ratio in their simplest form:</p> <p>1) $2\text{cm} : 2\text{m}$</p> <p>2) $2\text{cm} : 0.2\text{m}$</p> <p>3) $5\text{cm} : 1\text{m}$</p> <p>4) $5\text{cm} : 1.8\text{m}$</p> <p>5) $5\text{cm} : 0.8\text{m}$</p> <p>6) $10\text{cm} : 1\text{m}$</p> <p>7) $10\text{cm} : 4\text{m}$</p> <p>8) $2\text{cm} : 1\text{km}$</p> <p>9) $2\text{cm} : 0.5\text{km}$</p> <p>10) $4\text{cm} : 0.4\text{km}$</p> <p>11) $2\text{cm} : 0.2\text{km}$</p> <p>12) $6\text{cm} : 6\text{km}$</p>	<p>1) $1 : 100$</p> <p>2) $1 : 10$</p> <p>3) $1 : 20$</p> <p>4) $1 : 36$</p> <p>5) $1 : 16$</p> <p>6) $1 : 10$</p> <p>7) $1 : 40$</p> <p>8) $1 : 50\,000$</p> <p>9) $1 : 25\,000$</p> <p>10) $1 : 10\,000$</p> <p>11) $1 : 10\,000$</p> <p>12) $1 : 100\,000$</p>

Scale Drawing - Answers

Group B	<p>Calculate the real lengths (in cm) given the scale. Write each answer in centimetres:</p> <p>1) Scale 1 : 400 000, Map distance = 1cm</p> <p>2) Scale 1 : 400 000, Map distance = 2cm</p> <p>3) Scale 1 : 400 000, Map distance = 5cm</p> <p>4) Scale 1 : 400 000, Map distance = 0.2cm</p> <p>5) Scale 1 : 400 000, Map distance = 0.7cm</p> <p>6) Scale 1 : 400 000, Map distance = 2.1cm</p> <p>7) Scale 1 : 200 000, Map distance = 1cm</p> <p>8) Scale 1 : 200 000, Map distance = 2cm</p> <p>9) Scale 1 : 200 000, Map distance = 5cm</p> <p>10) Scale 1 : 200 000, Map distance = 0.2cm</p> <p>11) Scale 1 : 200 000, Map distance = 0.7cm</p> <p>12) Scale 1 : 200 000, Map distance = 2.1cm</p>	<p>1) 400 000 cm</p> <p>2) 800 000 cm</p> <p>3) 2 000 000 cm</p> <p>4) 80 000 cm</p> <p>5) 280 000 cm</p> <p>6) 840 000 cm</p> <p>7) 200 000 cm</p> <p>8) 400 000 cm</p> <p>9) 1 000 000 cm</p> <p>10) 40 000 cm</p> <p>11) 140 000 cm</p> <p>12) 420 000 cm</p>
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Scale Drawing - Answers

Group C	<p>Calculate the scaled lengths (in cm) given the scale:</p> <p>1) Scale 1 : 50 000, Real distance = 100m</p> <p>2) Scale 1 : 50 000, Real distance = 200m</p> <p>3) Scale 1 : 50 000, Real distance = 600m</p> <p>4) Scale 1 : 2 000, Real distance = 50m</p> <p>5) Scale 1 : 2 000, Real distance = 75m</p> <p>6) Scale 1 : 2 000, Real distance = 150m</p> <p>7) Scale 1 : 500 000, Real distance = 20km</p> <p>8) Scale 1 : 500 000, Real distance = 40km</p> <p>9) Scale 1 : 500 000, Real distance = 60km</p> <p>10) Scale 1 : 20 000, Real distance = 3km</p> <p>11) Scale 1 : 20 000, Real distance = 1.5km</p> <p>12) Scale 1 : 20 000, Real distance = 4.5km</p>	<p>1) 0.2cm</p> <p>2) 0.4cm</p> <p>3) 1.2cm</p> <p>4) 2.5cm</p> <p>5) 3.75cm</p> <p>6) 7.5cm</p> <p>7) 4cm</p> <p>8) 8cm</p> <p>9) 12cm</p> <p>10) 15cm</p> <p>11) 7.5cm</p> <p>12) 22.5cm</p>
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Scale Drawing - Answers

	Question	Answer
	Applied Questions	
1)	A map has a scale of $1\text{cm} : 4\text{ km}$. On the map, the distance between two cities is 7cm . What is the actual distance between the two cities?	28km
2)	<p>a) A map has a scale of 2cm represents 5km. Write this scale as a ratio in its simplest form $1:n$.</p> <p>b) What is the actual length of a road measuring 4.5cm on the map? Give your answer in kilometres.</p>	<p>a) $1 : 250\,000$</p> <p>b) 11.25km</p>
3)	<p>a) A map has a scale of 1cm represents 60 metres. Circle the ratio which is equivalent to this.</p> <p style="text-align: center;"> $1:60$ $1:600$ $1:6000$ $1:60000$ $1:600000$ $1:6000000$ </p> <p>b) The distance between two churches on the map is 4.5cm.</p> <p>What is the actual distance between the churches? Give your answer in metres.</p>	<p>a) $1:6000$</p> <p>b) 270m</p>
4)	<p>A scale drawing has a scale of $1:3000$</p> <p>On the drawing, the distance between two points is 9cm.</p> <p>What is the actual distance between the points? Give your answer in metres.</p>	270m
5)	<p>A scale drawing has a scale of $1:2000$</p> <p>In real life the length of a yacht is 150m</p> <p>What is the length of the yacht on the scale drawing?</p>	7.5cm

Scale Drawing - Mark Scheme

	Question	Answer	
	Exam Questions		
1)	A model lorry has a length of 6cm . The scale of the model is 1:200. Work out the real length of the lorry. Write your answer in metres.	6×200 1200cm 12m	(1) (1) (1)
2)	A map has the scale of 1:50000 The distance between two points on the map is 20cm . Work out the real distance between the two points. Give your answer in kilometres.	50000×20 $1000000 \div 100 \div 1000$ 10km	(1) (1) (1)
3) (a)	A map has a scale of 5cm represents 2km . Write this scale as a ratio in its simplest form 1: n .	(a) $5 : 200\,000$ $1 : 40\,000$	(1) (1)
(b)	What is the actual length of a road measuring 8.5cm on the map?	(b) $8.5 \times 40\,000$ 3.4km	(1) (1)

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