Varied Fluency
Step 5: Using Scale Factors

National Curriculum Objectives:

Mathematics Year 6: (6R3) Solve problems involving similar shapes where the scale factor is known or can be found

Differentiation:

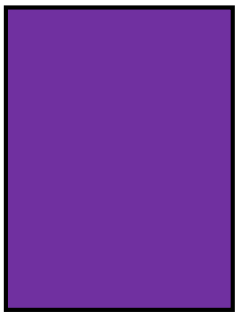
Developing Questions to support using scale factors. Involving whole numbers only.
Expected Questions to support using scale factors. Involving whole numbers and decimals to one decimal place and some scaled factors can increase by a half.
Greater Depth Questions to support using scale factors. Involving whole numbers and decimals to two decimal places in measurements and some scaled factors can increase by a half.

More Year 6 Ratio resources.

Did you like this resource? Don't forget to review it on our website.

Using Scale Factors

1a. Enlarge this shape by a scale factor of 3.

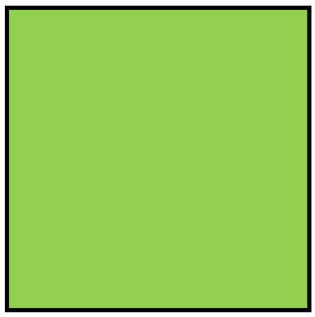


Not to scale

VF

Using Scale Factors

1b. Enlarge this shape by a scale factor of 4.



Not to scale

VF

2a. Rebecca says,

A scale factor of two means you multiply each side of the original shape by two.

Is she correct?

VF

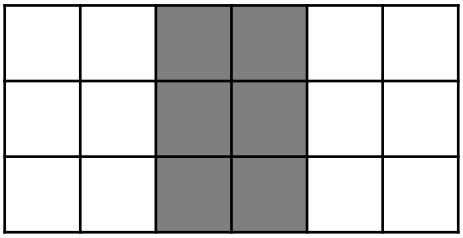
2b. Nasir says,

A scale factor of three means the new shape is twice as big as the original shape.

Is he correct?

VF

3a. Copy this shape onto squared paper. Draw it using a scale factor of 2.



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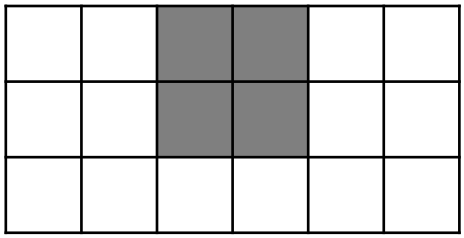
3b. Copy this shape onto squared paper. Draw it using a scale factor of 3.



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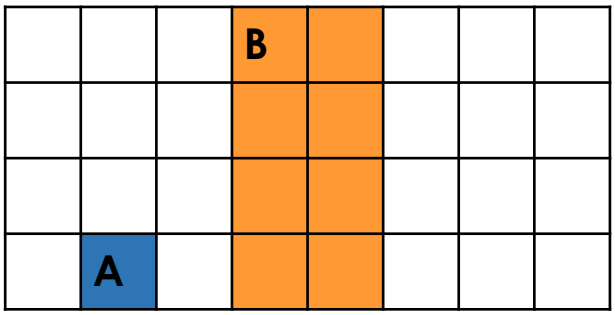
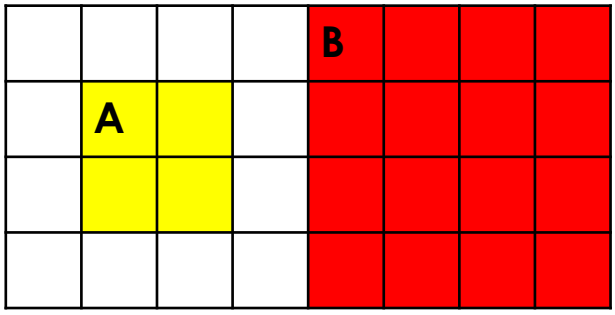
4a. True or false?
Shape A has been increased by a scale factor of 3 to create shape B.



VF

4b. True or false?
Shape A has been increased by a scale factor of 2 to create shape B.



VF

Using Scale Factors

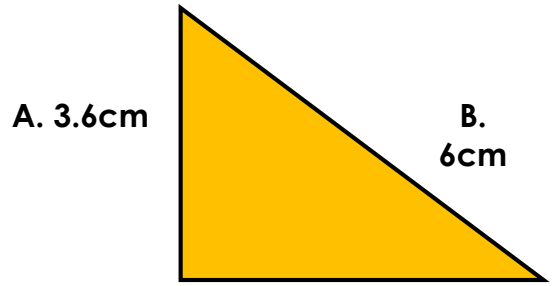
5a. Enlarge this shape by a scale factor of 2.

Not to scale

VF

Using Scale Factors

5b. Enlarge this shape by a scale factor of 3.



Not to scale

VF

6a. Jake says,

A scale factor of 3.5 means you multiply each side of the original shape by 3.5.

Is he correct?

VF

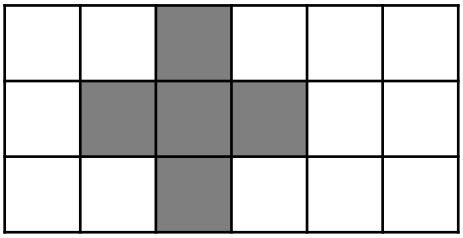
6b. Hannah says,

Only one side of a shape is enlarged when using a scale factor.

Is she correct?

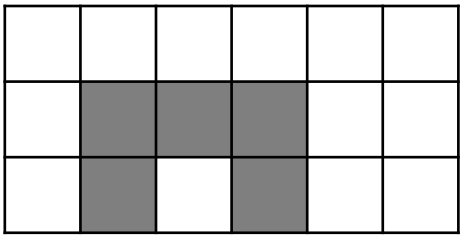
VF

7a. Copy this shape onto squared paper. Draw it using a scale factor of 3.



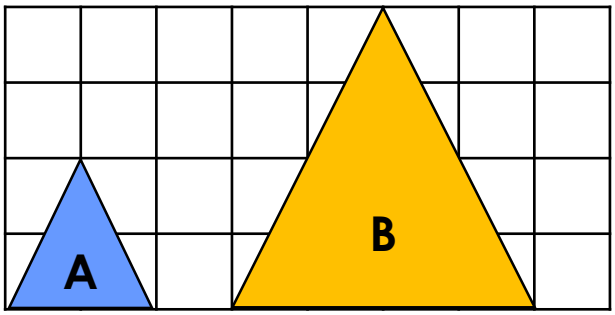
VF

7b. Copy this shape onto squared paper. Draw it using a scale factor of 2.



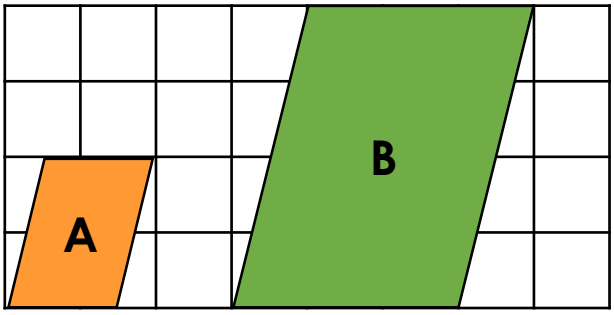
VF

8a. True or false?
Shape A has increased by a scale factor of 2 to create shape B.



VF

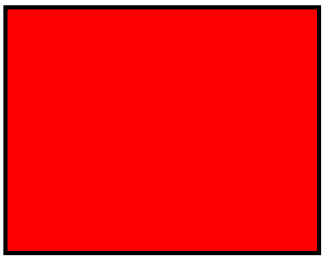
8b. True or false?
Shape A has increased by a scale factor of 2.5 to create shape B.



VF

Using Scale Factors

9a. Enlarge this shape by a scale factor of 3.

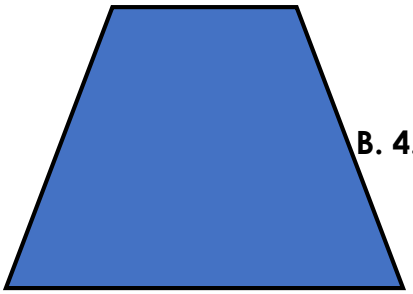


Not to scale

VF

Using Scale Factors

9b. Enlarge this shape by a scale factor of 2.



Not to scale

VF

10a. Keeley says,

A scale of factor of 1.5 means you multiply each side of the original shape by 2.

Is she correct?

VF

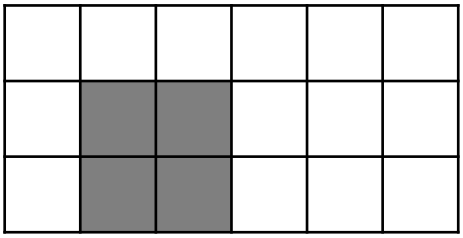
10b. Khushal says,

A scale factor of a half means each side of the original shape is halved.

Is he correct?

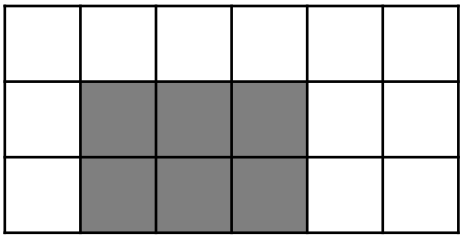
VF

11a. Copy this shape onto squared paper. Draw it using a scale factor of a half.



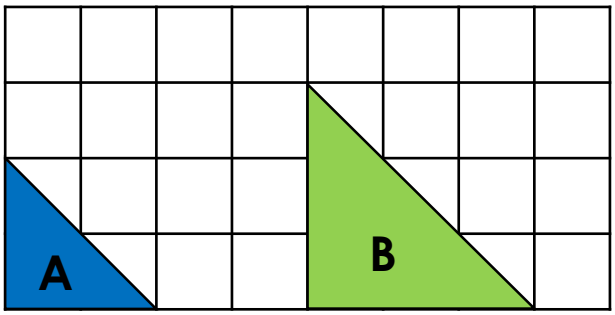
VF

11b. Copy this shape onto squared paper. Draw it using a scale factor of 2.5.



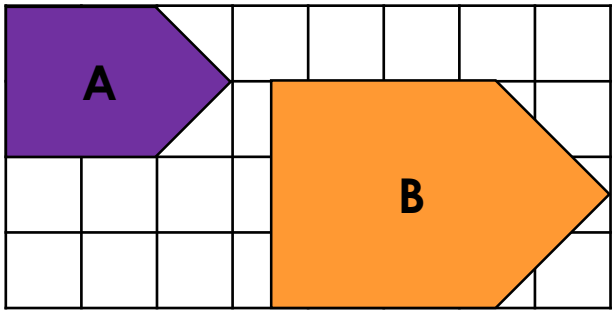
VF

12a. True or false?
Shape A has been increased by a scale factor of 2 to create shape B.



VF

12b. True or false?
Shape A has been increased by a scale factor of 1.5 to create shape B.



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Varied Fluency
Using Scale Factors

Developing

1a. A rectangle; height 9cm; width 15cm

2a. Yes

3a. A rectangle; height 6 squares; width 4 squares (24 squares in total)

4a. False. It has not been enlarged by a scale factor as the width has been doubled, but the height quadrupled.

Expected

5a. A rectangle; height 8.6cm; width 13cm

6a. Yes

7a. The shape should be reproduced using a scale factor of 3. (45 squares in total)

8a. True

Greater Depth

9a. A rectangle; height 9.75cm; width 12.45cm

10a. No. A scale factor of 1.5 means each side of the original shape is multiplied by 1.5.

11a. The square should be reproduced using a scale factor of 0.5; height 1 square; width 1 square (1 square in total)

12a. False. It has been increased by a scale factor of 1.5.

Varied Fluency
Using Scale Factors

Developing

1b. A square; height 16cm; width 16cm

2b. No. A scale factor of three means each side of the original shape is multiplied by three.

3b. A square; height 6cm; width 6cm (36 squares in total)

4b. True

Expected

5b. A triangle; A: 10.8cm B: 18cm C: 14.4cm

6b. No. All sides are enlarged when using a scale factor.

7b. The shape should be reproduced using a scale factor of 2. (20 squares in total)

8b. False. It has increased by a scale factor of 2.

Greater Depth

9b. A trapezium; A: 7cm B: 8.3cm C: 10.5cm

10b. Yes

11b. The rectangle should be reproduced using a scale factor of 2.5; height: 5 squares; width: 7.5 squares (37.5 squares in total)

12b. True