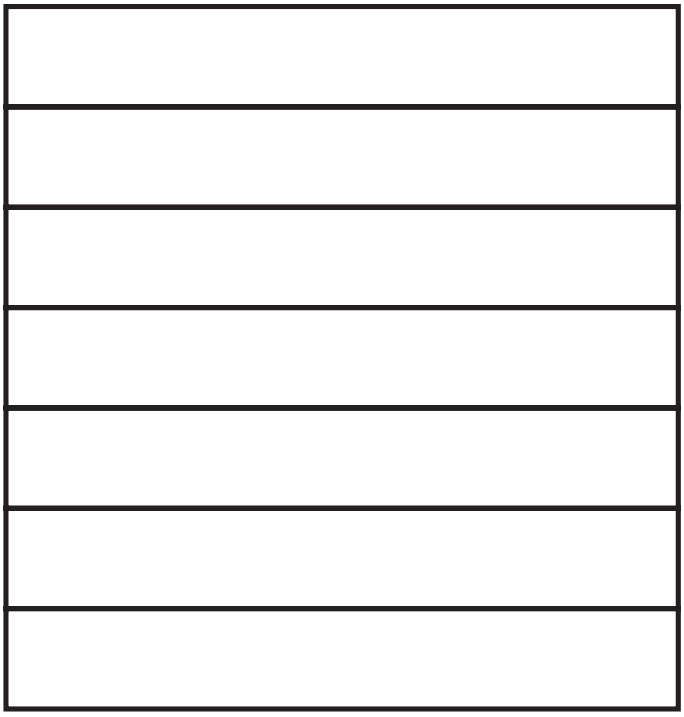
Resource sheet FR1

Seven stack



Seven stack in thirds

$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$
$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$
$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$
$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$
$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$
$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$
$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$

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Resource sheet FR2

Seven stack in quarters

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

Seven stack in fifths

$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$
$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$
$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$
$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$
$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$
$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$
$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$

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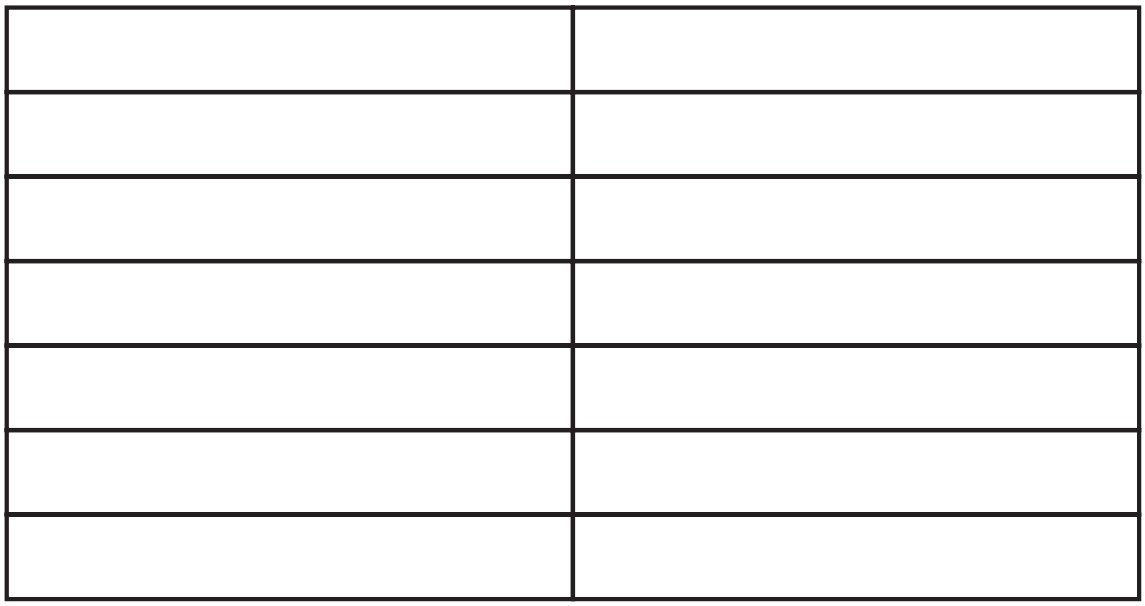
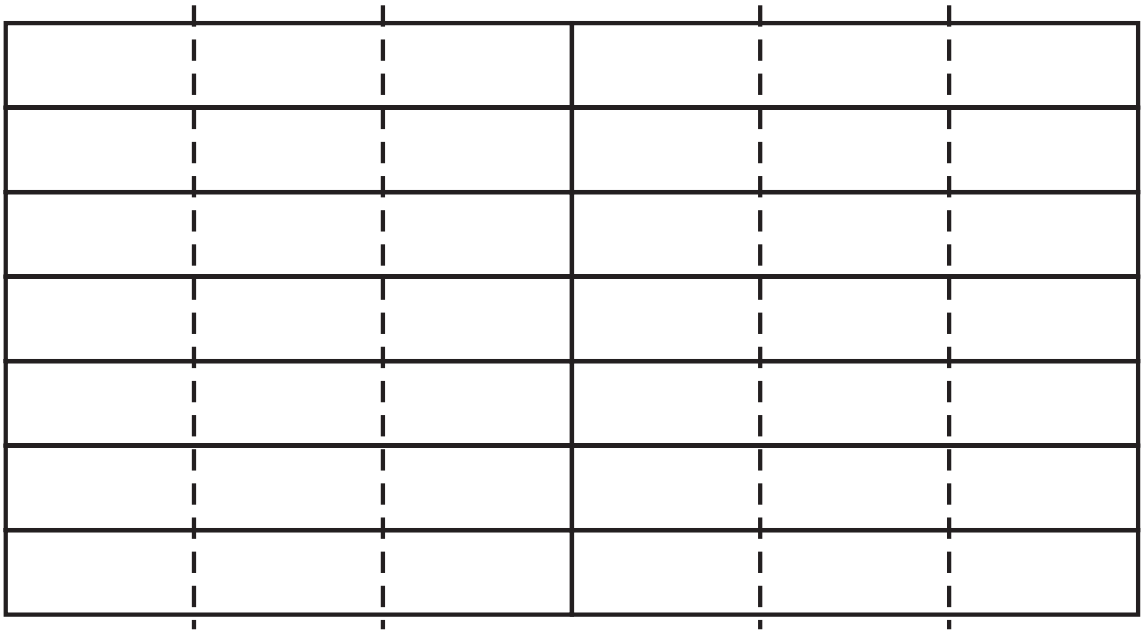
Resource sheet FR3

Two seven stacks



Each seven stack in thirds



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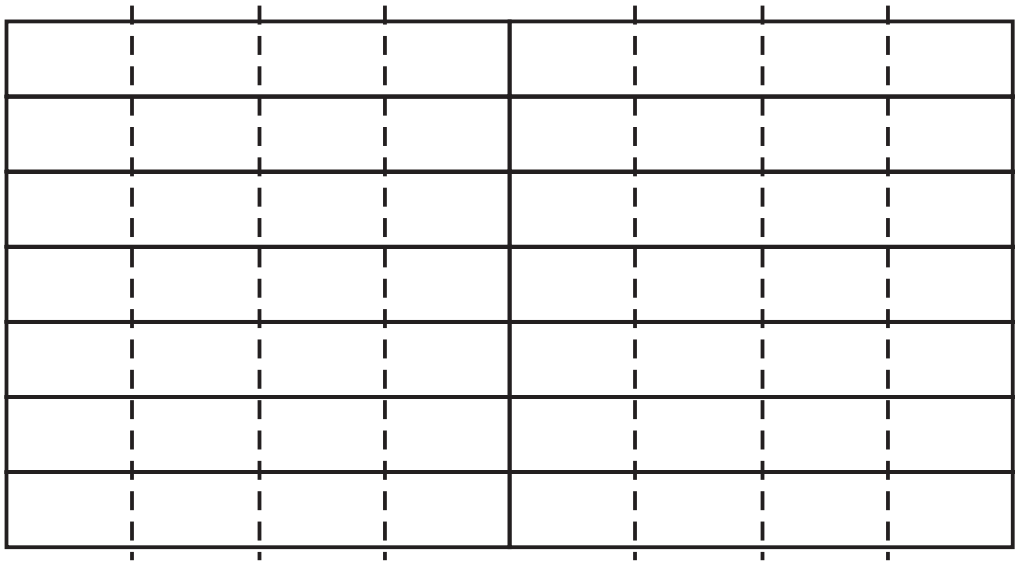
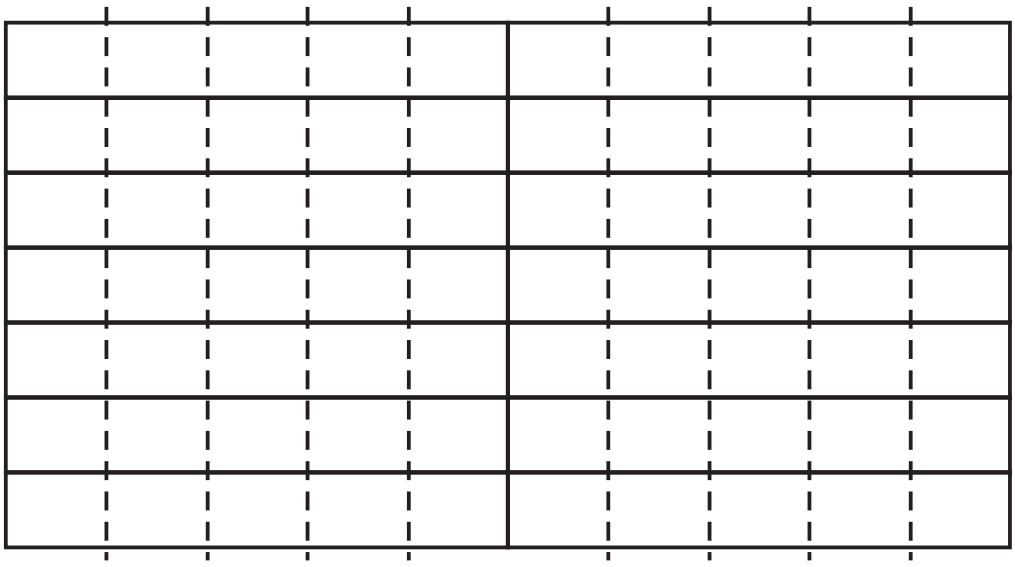
Resource sheet FR4

Each seven stack in quarters



Each seven stack in fifths



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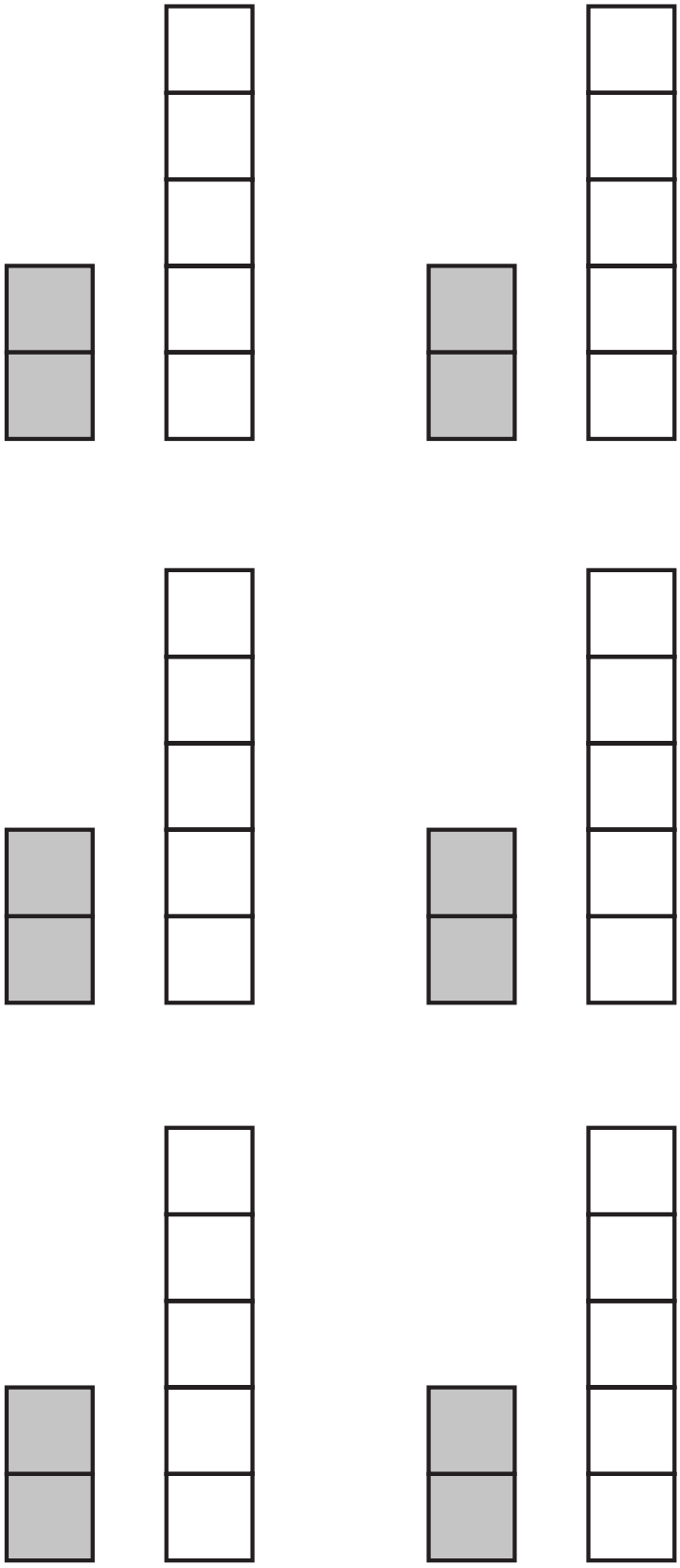
Resource sheet FR5

2 : 5 ratio strips



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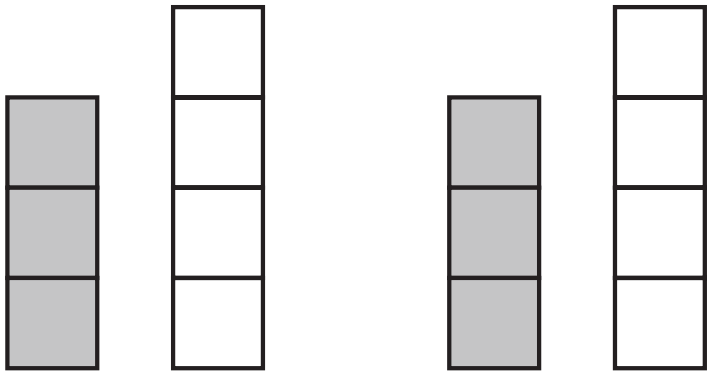
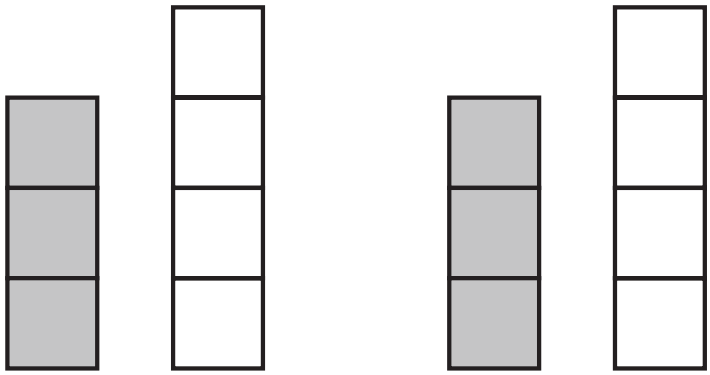
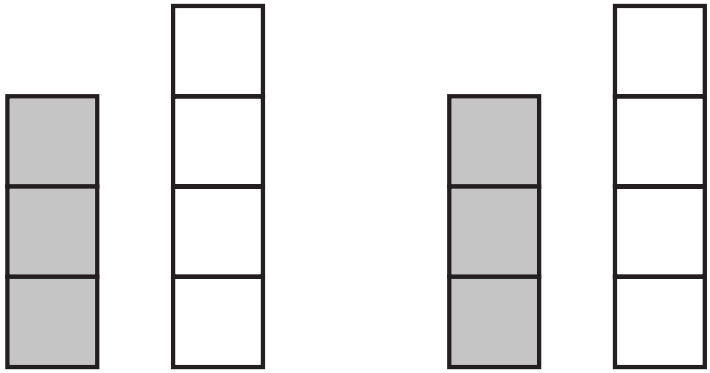
Resource sheet FR6

3 : 4 ratio strips







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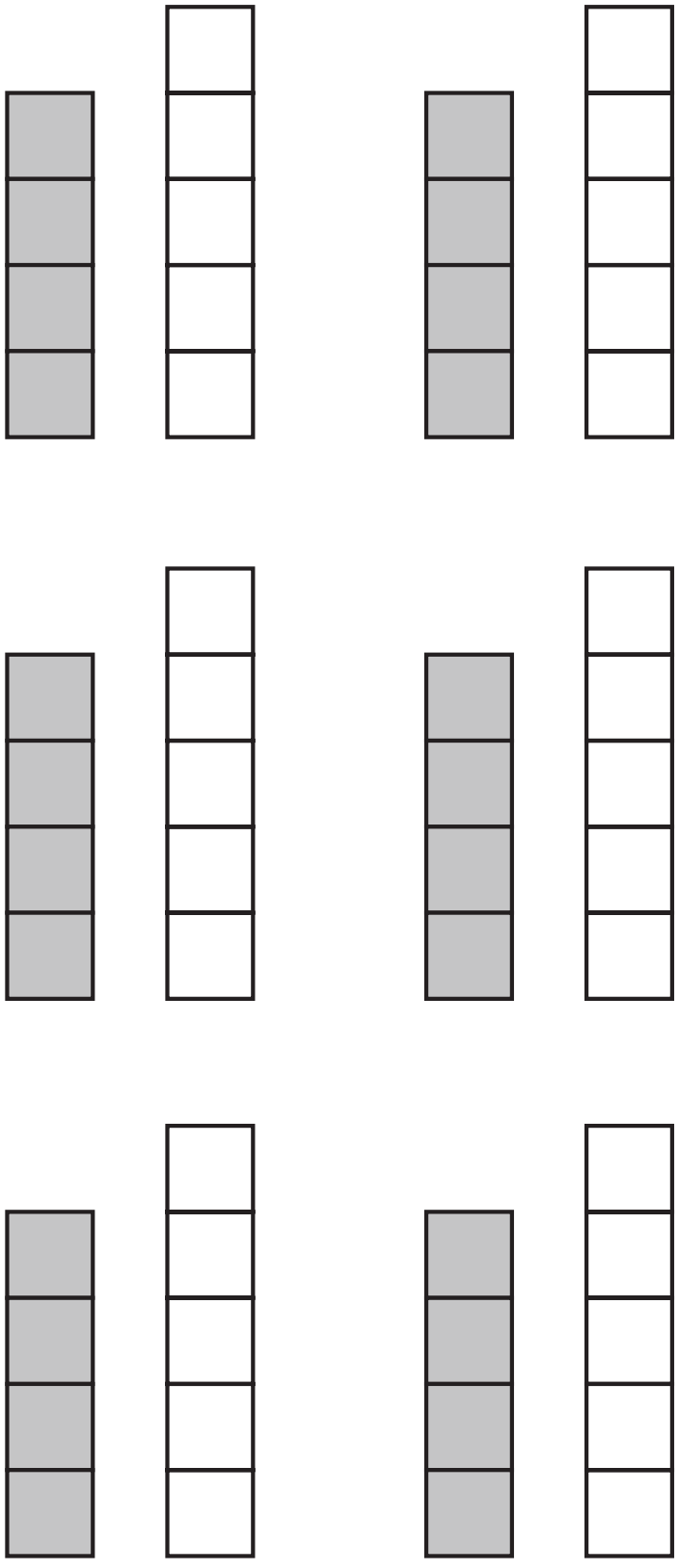
Resource sheet FR7

4 : 5 ratio strips



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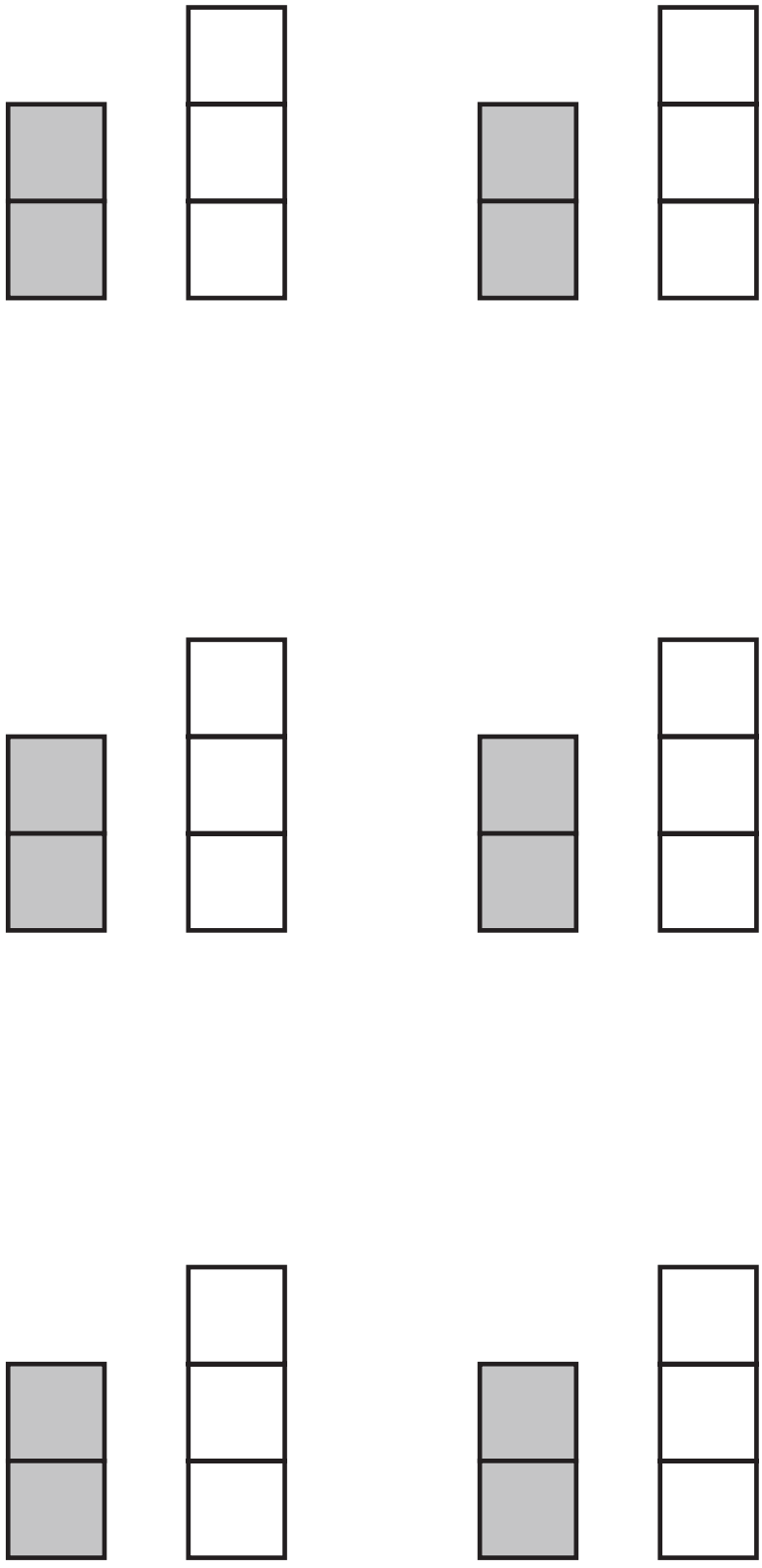
Resource sheet FR8

2 : 3 ratio strips



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Resource sheet FR9

Problems related to ratios 2 : 5 and 3 : 4

1 I spend £4 out of a £10 note. What percentage of my money have I spent?

2 An alternative clothing sale offers jeans at £28. These are £70 in high-street shops. Is this less than half price? How could you use fractions, ratio or percentages to compare the alternative price to the high-street price?

3 A herbal skin remedy uses honey and yoghurt in the ratio 3 : 4. How much honey is needed to mix with 120 g of yoghurt?

4 A health bar sells desserts with chopped apricot and yoghurt in the ratio 2 : 5.

(a) How much chopped apricot will be mixed with 150 g of yoghurt?

(b) Sharon says there is twice as much yoghurt as there is apricot. This is not quite right. What should she have said?

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5 My sister lets me help on her paper round. It pays £10.50 and she shares this between me and her in the ratio 3 : 4.

(a) How much do I get?

(b) How much does my sister get?

6 I want to compile a minidisk so that there are 3 garage music tracks for every 4 hip-hop tracks. So far I have copied 10 of each. I have space for 8 more tracks. What should I choose?

7 At peak times my mobile phone costs 2.5 times as much as it does off-peak. In percentage terms, how does the cost of an off-peak call compare to peak calls?

8 Pizza Eater is offering 4 pizzas for £3. How many pizzas do you get for £30? How much pizza do you get for every £1?

9 Jo and Samir collect and paint miniature figures and use them to play adventure games. For every 2 games Jo has won Samir has won 5. If this rate continues and Samir wins 100 games, how many will Jo win? Use this answer to write Jo's win rate as a percentage of Samir's.

10 A piece of software claims to improve music transfer, reducing time by the ratio 4 : 3. What will be the improvement on a collection of tracks previously taking 52 minutes to download?

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Resource sheet FR10

Problems related to ratios 4 : 5 and 2 : 3

1 I borrowed money to upgrade my skateboard. I have agreed to repay £10 for every £8 borrowed. What will be the total repayment if I borrowed £64?

2 An alternative clothing sale offers jackets at £60. These are £75 in high-street shops. What is the alternative price as a fraction of the high-street price?

3 A herbal skin remedy uses wheatmeal and yoghurt in the ratio 3 : 2. How much yoghurt is needed to mix with 120 g of wheatmeal?

4 At peak times my mobile phone costs $1\frac{1}{2}$ times as much as it does off-peak. A peak call costs 90p. What would it have cost off-peak?

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5 Pizza Eater is offering 4 pizzas for £5 with a bonus offer of 6 free slices of garlic bread for every 4 pizzas.

(a) How much pizza do I get for every pound I spend?

(b) How much garlic bread do I get to go with each pizza?

6 A piece of software claims to improve music transfer, reducing download time by the ratio 5 : 4 and disk space by the ratio 3 : 2. What will be the improvement on a collection of tracks previously taking 60 minutes to download and taking up 150 minutes of disk space?

7 I earn two thirds as much as my sister. She says that she earns double my wage. This is not right – what should she say?

8 Luke aims to divide his time so that he does football practice some evenings and homework on other evenings. His dad says that he should do more homework than football. They agree that this will be in the ratio 5 : 4. So far Luke has spent 18 evenings on homework and 10 on football. What should he do for the next 8 evenings to achieve his aim?

9 My sister lets me help on her paper round. It pays £13.50 and she shares this between us in the ratio 4 : 5.

(a) How much do I get?

(b) How much does my sister get?

(c) I deliver 12 of the 36 papers. Is the wage split fair?

10 An ice cream bar sells desserts with shattered honeycomb and ice cream in the ratio 4 : 5.

(a) How much honeycomb will be mixed with 150 g of ice cream?

(b) How much ice cream will be added to 40 g of honeycomb?

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Resource sheet FR11

Mixed problems

1 I spend £48 out of my £60 savings. What percentage of my savings have I spent?

2 An alternative clothing sale offers a tee-shirt at £15. These are £20 in high-street shops. How could you compare the alternative price to the high-street price using fractions, ratio or percentages?

3 A teen magazine article suggests making a relaxing bath soak by mixing rose water and almond oil in the ratio 2 : 3. How much rose water is needed to mix with 6 tablespoons of almond oil?

4 A health bar sells a multi-pack family meal with salad and veggie-burgers available in the ratio 2 : 5.

(a) How many veggie-burgers will be in a multi-pack containing 8 servings of salad?

(b) Assad buys a multi-pack for 15 people for his brother's birthday party. He knows that they will want a veggie-burger each but will share a serving of salad between two of them. Will he need to buy any extra salad?

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5 I copy tracks onto a minidisk so that there is a mix of garage music and hip-hop. On a disk of music there are 68 minutes of garage music and 102 minutes of hip-hop. Write the garage music as a fraction of the hip-hop.

6 At off-peak times my mobile phone costs $\frac{3}{4}$ the cost of peak times. An off-peak call costs £1.80. How much would the same call have cost at peak time?

7 The shop is offering an eight-pack of blank disks for £6. How much is that per disk?

8 A connection pack for unlimited email offers an introductory deal of 5 weeks for the price of 2. What percentage of the usual price is this?

9 I borrowed money to upgrade my computer. I promised to repay an extra £5 for every 4 weeks borrowed. How much extra does this mean I am paying per week?

10 Two brothers split the weekday evenings babysitting their younger sister so that Karl does Thursday and Friday and Marchin does the other three evenings. They split the weekly payment of £60 in proportion to the number of nights they each cover.

(a) What fraction should Karl get?

(b) How much should Marchin be paid?

(c) Later they decide to count Friday as double. What should Karl be paid now?

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