

MathSeeds

Between Years 3 and 4

BACK ON TRACK

MATHS • WEEK 3

Open the
door to
Year 4!



www.mathseeds.co.uk

Let's start Week 3

Fluency in operations – addition, subtraction, multiplication and division – is an essential mathematical building block.

Maths fact fluency is the ability to automatically recall basic maths facts, including number bonds to 10 or 20, their subtractive opposites, the times tables and related division facts. There are four elements of fluency: flexibility, appropriate strategy use, efficiency and accuracy. These elements differentiate maths fact fluency from traditional rote learning.

Improvements in this area flow through to all other maths lessons. Students who know their number facts are more confident and engaged mathematicians. This week we begin to suggest levels for your child to complete in our maths fact fluency section: **Mental Minute**.

The **Mathseeds** lessons teach concepts and strategies for operations and give children plenty of opportunities to practise their skills. However, the **Mental Minute** section is purely focused on developing fluency with maths facts. It provides regular practise for short periods of time – a key to developing maths fact fluency.

The **Mathseeds Mental Minute Sprints** are a powerful tool to improve maths fact fluency. In one minute, students focus on one set of maths facts and are motivated to improve their score to earn badges. They can only do this by improving both their *speed and accuracy*. The **Mental Minute** online format is fun, full of rewards and, most importantly, easy to play.

- 145 carefully sequenced sprints.
- All students start from the beginning to ensure complete fact mastery.
- As students make progress, the question sets become more challenging.
- Each **Mental Minute** set takes one minute to complete.
- Each new set includes new questions while also revising previous facts.
- Students will be motivated to earn the colourful badges as they build number fact fluency.
- With one-, two- and three-star levels to earn, students are focused and challenged to improve their instant recall of essential maths facts.

Encourage your child to earn a badge or two every time they log in to **Mathseeds**.

This booklet is the third of ten weekly booklets. The **Mathseeds** Back On Track programme provides a great way to make sure that your child knows the essentials they need. We know your child will enjoy learning on **Mathseeds** because **Mathseeds** makes learning fun!

Back On Track for Year 4

Week 3

Day 1 focus: Place Value

Online lesson: Lesson 161 – Partitioning Numbers

Worksheets: Place Values, Place Value Investigation

Day 2 focus: Time to the Minute

Online lesson: Lesson 162 – Time to the Minute

Worksheets: Time in Minutes, Passing Time

Day 3 focus: Equivalent number sentences

Online lesson: Lesson 163 – Equivalent Number Sentences

Worksheets: Equivalent Number Sentences, Equivalence Problems

Day 4 focus: Coordinate Grid Maps

Online lesson: Lesson 164 – Reading a Map

Worksheets: Map Reading, Map Problems

Day 5 focus: Division

Online lesson: Lesson 165 – Division

Worksheets: Related Division Equations, Division Equation Work

Week 3 Bonus

Online: Mental Minute + – Badges 97, 98 101, and $\times \div$ Badges 93, 99, 100, 103, 104

Sheets: Time Problems, Equivalent Question, Puppy-Bot 3000

Hands-on: Battleship Game



Week 3 • Answers

Week 3 Day 1: Place Values

- 1 a 4 b 50 c 300 d 5000 e 70
f 3000 g 8 h 700 i zero
- 2 a 9000, 400, 70, 2 b 3000, 300, 20, 9
c 8000, 400, 10, 5 d 9000, 700, 30, 7
- 3 a 7442 b 9850 c 5320 d 8631 e 2447
f 5089 g 2035 h 1368

Week 3 Day 1: Place Value Investigation

- 1 a 4321 b 9420 c 8751 d 9653 e 8760
f 9630 g 8541 h 7720
- 2 a 1234 b 2049 c 1578 d 3569 e 6078
f 3069 g 1458 h 2077
- 3 a 9812 b 9734 c 6530 d 8512
- 4 a 2089 b 5665 c 1367 d 1483
- 5 Parent to check
- 6 Zero represents a place value of nothing so it cannot go at the front of a number – if there are no thousands we don't put a digit there at all.

Week 3 Day 2: Time in Minutes

- 1 a one minute past five
b thirty-eight past eleven or twenty-one to twelve
c thirteen past eight
d twenty-seven past nine
e forty-two past three or eighteen to four
f fifty-nine past seven or one minute to eight
- 2 Parent to check

Week 3 Day 2: Passing Time

- 1 a 2 hours, 28 minutes b 9 hours, 7 minutes
c 2 hours, 38 minutes d 3 hours, 24 minutes
- 2 a 1 hour, 26 minutes b 6 hours, 25 minutes
c 49 minutes d 3 hours, 43 minutes

Week 3 Day 3: Equivalent Number Sentences

- 1 a ✓ b ✗ c ✗ d ✓ e ✓
f ✗ 2 a 5 b 1 c 30 d 20
e 93 f 30 g 32 h 33
- 3, 4 Parent to check

Week 3 Day 3: Equivalence Problems

- 1 a 10 b Max 16, Bella 9 c Lim 15, Yee 7
- 2 a $9 - 4 = 3 + 2$
b 12 minutes, $17 + 8 = 13 + 12$

Week 3 Day 4: Map Reading

- 1 a A5 b D3 c C1 d F2 e A3 f C4
- 2 a flamingo b ticket booth c squirrel d gift shop
e parrot f elephant
- 3 F1 & F6
- 4 D1 & A6
- 5 E1 & E6
- 6 A1 & A2
- 7 (b) a path

Week 3 Day 4: Map Problems

- 1 Parent to check
- 2 A4 → D4 → D2 → F2 → F1 → C1 → C3 → A3
- 3 a North b 16 c 1600 m d B2
e Parent to check

Week 3 Day 5: Related Division Equations

- 1 a 6 b 4 c 8 d 10 e 8
f 7 g 7
- 2 a $18 \div 6 = 3$ b $12 \div 4 = 3$
c $16 \div 8 = 2$ d $20 \div 10 = 2$
e $24 \div 8 = 3$ f $28 \div 7 = 4$
g $14 \div 7 = 2$

Week 3 Day 6: Division Equation Work

- 1 a 2 b 7 c 5 d 6 e 6 f 7
g 3 h 3 i 4 j 4 k 7 l 5
- 2 a ✓ b ✗ c ✓ d ✗ e ✓
f ✗ g ✗ h ✓ i ✗ j ✓
k ✗ l ✓
- 3 a 5, $20 \div 5 = 4$ b 4, $36 \div 4 = 9$
c 9, $63 \div 9 = 7$ d 8, $48 \div 8 = 6$
e 9, $27 \div 3 = 9$ f 6, $54 \div 9 = 6$
g 10, $40 \div 4 = 10$ h 9, $72 \div 8 = 9$

Week 3 Bonus: Time Problems

- 1 a, b Parent to check
c Roller coaster 3 mins, Carousel 14 mins, Dodgem cars 20 mins
- 2 a 9 mins
b Walked from one ride to the next, joined the line, and paid to ride.
- 3 Parent to check

Week 3 Bonus: Equivalent Question

- 1 a, b Parent to check
c $0 + 16, 1 + 15, 2 + 14, 3 + 13, 4 + 12, 5 + 11, 6 + 10, 7 + 9, 8 + 8, 9 + 7, 10 + 6, 11 + 5, 12 + 4, 13 + 3, 14 + 2, 15 + 1, 16 + 0$
d Yes e Parent to check
- 2 a $16 - 0, 17 - 1, 18 - 2, 19 - 3, 20 - 4, 21 - 5, 22 - 6, 23 - 7, 24 - 8, 25 - 9, 26 - 10$ and so on
b No
c There were only 17 ways to add, but there are lots of ways to subtract. The list could keep going forever.
- 3 Parent to check

Week 3 Bonus: Puppy-Bot 3000






- 1 a, b Parent to check c (E, 5)
d (C,1)
e Parent to check
- 2 Parent to check
- 3 a 5 squares b Parent to check c (B,2) (C,4) (D,4)
d They are sand and water. I didn't want Puppy-Bot to get stuck or wet.






Week 3

Incentive chart for:

Colour each one when you have completed each day's work.

Week 3	Monday	Tuesday	Wednesday	Thursday	Friday
Online Lesson	161	162	163	164	165

Worksheets					
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Day Done!					
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Notes/thoughts/ideas

1 What is the value of the bold digit in each number?

- a 82**9**4 _____ b 7**2**51 _____ c 6**3**05 _____
 d **5**021 _____ e 4**9**72 _____ f **3**564 _____
 g 21**4**8 _____ h **1**716 _____ i 94**8**0 _____

2 Colour the place values which make up each number.

a 9472

9000	900	90	9
7000	700	70	7
4000	400	40	4
2000	200	20	2

b 3329

9000	900	90	9
3000	300	30	3
2000	200	20	2
1000	100	10	1

c 8415

8000	800	80	8
5000	500	50	5
4000	400	40	4
1000	100	10	1

d 9737

9000	900	90	9
7000	700	70	7
3000	300	30	3
1000	100	10	1

3 Make the largest possible number using these digits:

a (2)(7)(4)(4) _____ b (8)(5)(9)(0) _____

c (3)(0)(2)(5) _____ d (8)(3)(6)(1) _____

Make the smallest possible number using the same digits:

e (2)(7)(4)(4) _____ f (8)(5)(9)(0) _____

g (3)(0)(2)(5) _____ h (8)(3)(6)(1) _____

1 Make the biggest number possible.

2 Make the smallest number possible using all 4 digits.

a 1 2 3 4

b 0 9 4 2

c 8 5 7 1

d 6 9 3 5

e 8 0 6 7

f 9 6 3 0

g 1 8 4 5

h 7 2 0 7

3 Make the biggest even number possible using these digits.

a 9 2 8 1 _____

b 4 7 3 9 _____

c 3 5 0 6 _____

d 2 8 1 5 _____

4 Make the smallest odd number possible using these digits.

a 9 2 8 0 _____

b 6 5 6 5 _____

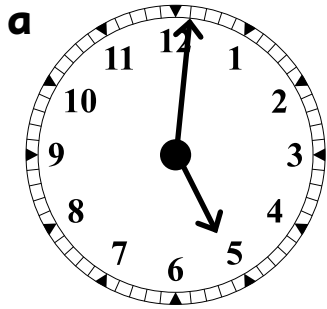
c 6 1 7 3 _____

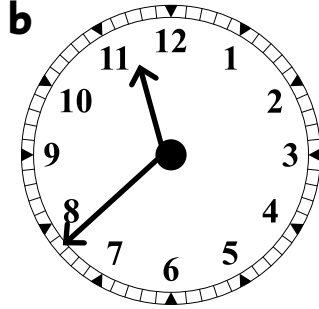
d 4 1 8 3 _____

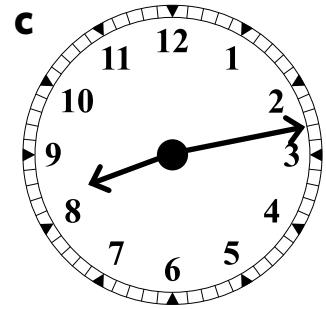
5 How did you make these numbers? What did you need to think about?

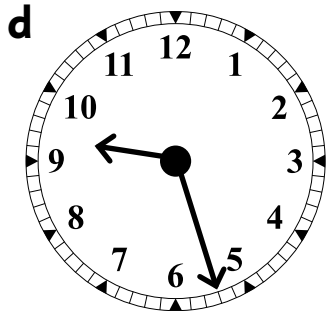
6 What is different about a zero compared to other digits?

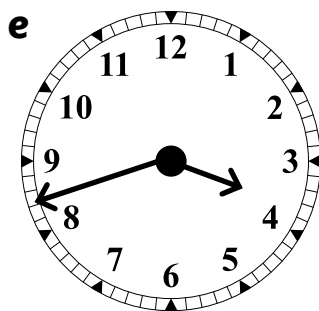
1 Write the time in words.

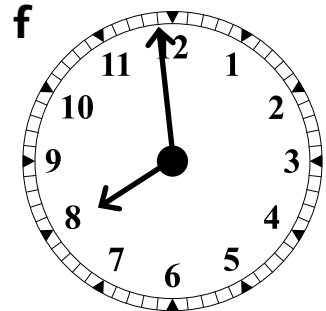




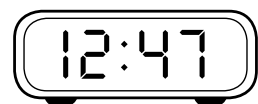
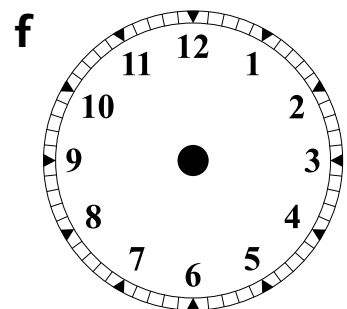
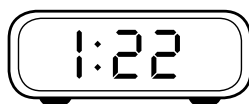
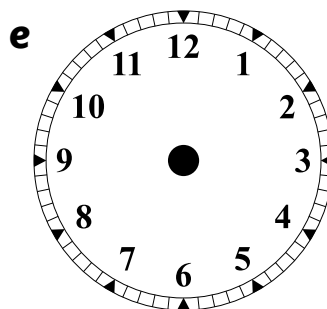
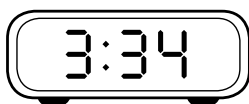
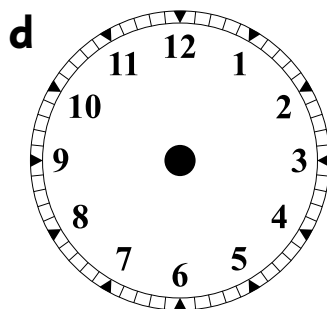
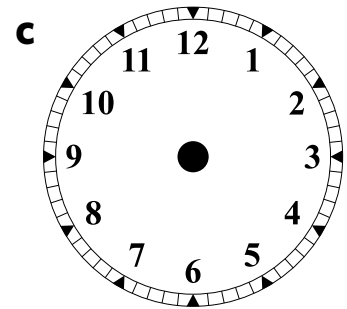
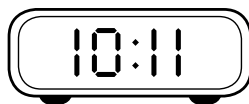
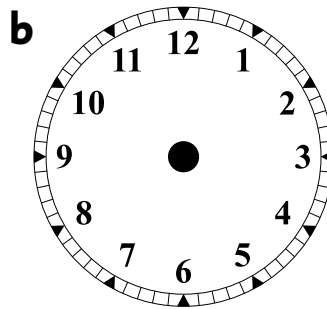
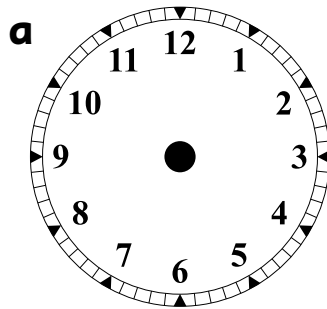






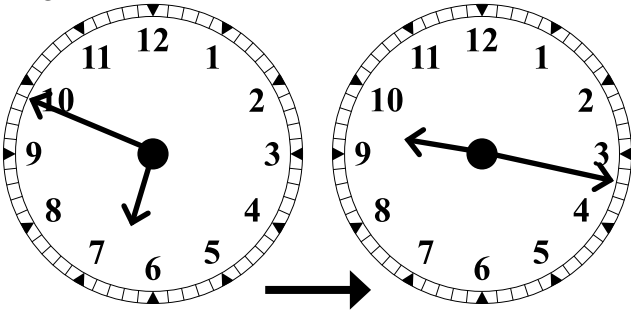


2 Draw the hands on the clocks to match the times.

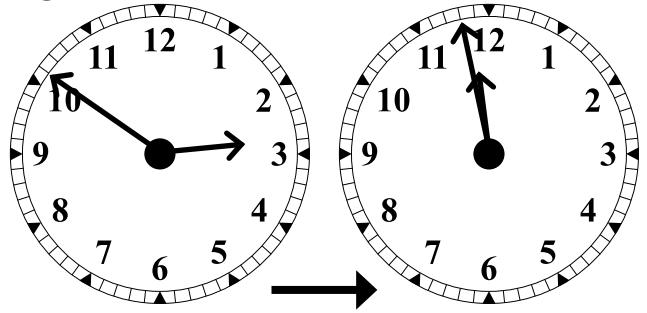


1 How much time has passed?

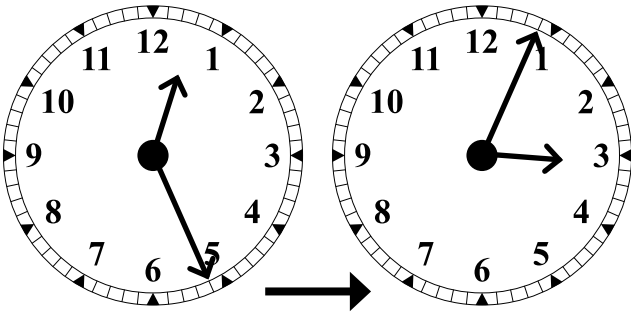
a



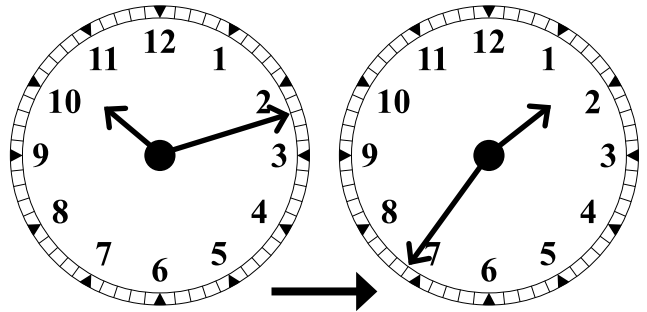
b



c

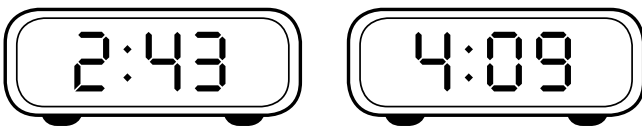


d

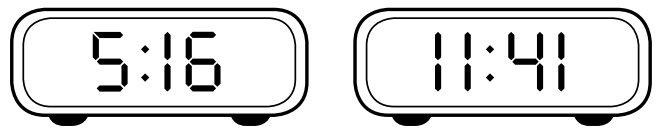


2 How much time has passed?

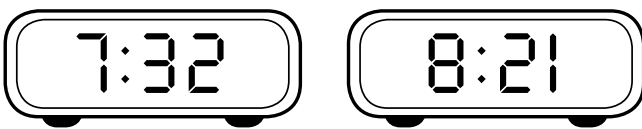
a



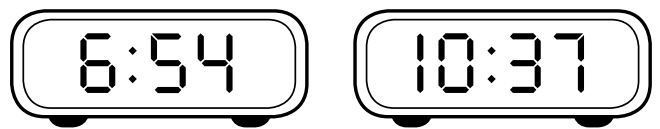
b



c



d



1 Are these equivalent number sentences? ✓ for yes. ✗ for no.

a $8 + 7 = 20 - 5$ b $19 - 8 = 6 + 6$

c $13 + 5 = 18 + 1$ d $22 - 8 = 30 - 16$

e $32 + 25 = 60 - 3$ f $87 - 43 = 22 + 23$

2 Make these number sentences equivalent.

a $13 + 22 = 40 - \square$ b $29 - 13 = 15 + \square$

c $49 + \square = 60 + 19$ d $84 - \square = 79 - 15$

e $56 + 15 = \square - 22$ f $96 - 24 = \square + 42$

g $\square + 56 = 79 + 9$ h $\square - 27 = 83 - 78$

3 Write an equivalent number sentence.

a $9 + 23 = \underline{\hspace{2cm}}$ b $49 - 17 = \underline{\hspace{2cm}}$

c $14 + 52 = \underline{\hspace{2cm}}$ d $95 - 33 = \underline{\hspace{2cm}}$

e $29 + 26 = \underline{\hspace{2cm}}$ f $78 - 39 = \underline{\hspace{2cm}}$

g $64 + 17 = \underline{\hspace{2cm}}$ h $81 - 45 = \underline{\hspace{2cm}}$

4 Make these number sentences equivalent.

a $41 + \square = 71 - \square$ b $29 - \square = 11 + \square$

c $23 + \square = 32 + \square$ d $88 - \square = 95 - \square$

e $\square + 16 = \square - 20$ f $\square - 31 = \square + 10$

g $\square + 37 = \square + 49$ h $\square - 46 = \square - 67$

1 Complete the equivalent equations to find the answers.

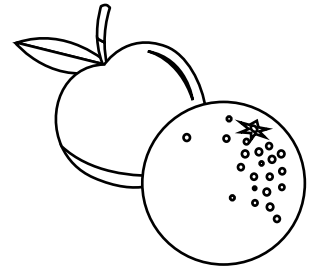
a Gina and Maria picked the same number of pieces of fruit.

Gina picked five apples and seven oranges.

Maria picked two apples and some oranges.

How many oranges did Maria pick? _____

$$5 + 7 = 2 + \square$$



b Max and Bella each get 30 minutes of screen time a day.

Today Max had 14 minutes in the morning and Bella had 21.

How much time does each child have in the afternoon?

$$14 + \square = 21 + \square \quad \text{Max } \underline{\hspace{2cm}} \quad \text{Bella } \underline{\hspace{2cm}}$$

c Lim had 40 chocolates. Yee had 32. They each ate some of their chocolates. Then they both had 25 left. How many chocolates did they each eat?

$$40 - \square = 32 - \square \quad \text{Lim } \underline{\hspace{2cm}} \quad \text{Yee } \underline{\hspace{2cm}}$$

2 Find the equivalent number sentences.

a Roshi had nine cards and Adit had three. They were supposed to both have five cards. Write equivalent number sentences to show how they end up with five cards each.
























$$\underline{\hspace{4cm}} = \underline{\hspace{4cm}}$$

b Abdul and Issy have two jobs each, taking the same amount of time. Abdul vacuums for 17 minutes and dusts for 8 minutes. Issy mops for 13 minutes and cleans the sinks. How long does Issy take to clean the sinks?

_____ minutes

$$\underline{\hspace{4cm}} = \underline{\hspace{4cm}}$$



6						
5						
4						
3						
2						
1						
	A	B	C	D	E	F

1 Write the coordinates for these items.

a monkey _____
 c fox _____
 e lion _____

b owl _____
 d bear _____
 f koala _____

2 What is at these coordinates?

a A4 _____
 c C3 _____
 e B1 _____

b B6 _____
 d D6 _____
 f F4-5 _____

3 Where are the restrooms located? _____ & _____

4 Where can you go for first aid? _____ & _____










5 Where can you go to eat? _____ & _____

6 Where are the hippos? _____ & _____

7 What are the empty squares for?

(a) more animals (b) a path (c) it's a mistake

- Draw Sara's usual walking route on the map.
 Start at home in A4 and go east to the corner shop.
 Turn right and head south to the stadium.
 Turn left and head east to the lighthouse.
 Turn right and walk to the hotel, then turn right and go to the bridge.
 Head north to the factory and then walk west to the airport.

4						
3						
2						
1						
	A	B	C	D	E	F



- Write the coordinates for Sara's walking route.

_____ → _____ → _____ → _____ →
 _____ → _____ → _____ → _____

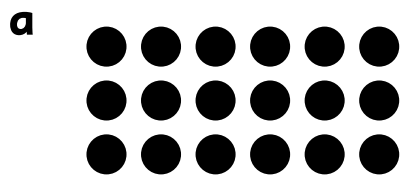
- Use the map to answer these questions.

- Which compass direction does Sara walk in to get home from the airport? _____
- How many squares on the map does Sara walk through? _____
- If each square is 100 m, how far does Sara walk? _____
- What are the coordinates for the school? _____
- Draw a park in the square at A1.

Use the array.

1 Answer the sum.

2 Write the related sum.



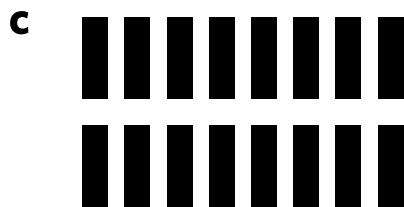
$$18 \div 3 = \square$$

$$\square \div \square = \square$$



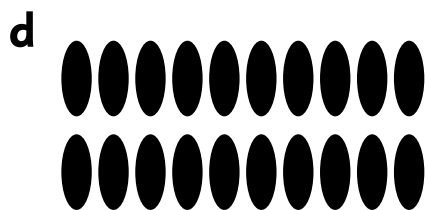
$$12 \div 3 = \square$$

$$\square \div \square = \square$$



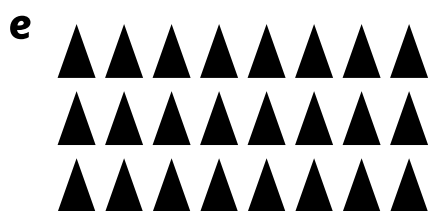
$$16 \div 2 = \square$$

$$\square \div \square = \square$$



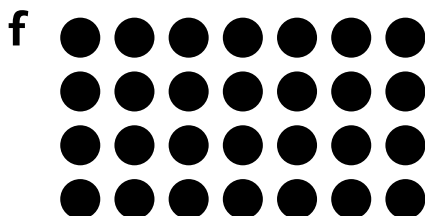
$$20 \div 2 = \square$$

$$\square \div \square = \square$$



$$24 \div 3 = \square$$

$$\square \div \square = \square$$



$$28 \div 4 = \square$$

$$\square \div \square = \square$$



$$14 \div 2 = \square$$

$$\square \div \square = \square$$

1 Answer the division equations.

a $18 \div 9 = \square$

b $14 \div 2 = \square$

c $30 \div 6 = \square$

d $24 \div 4 = \square$

e $12 \div 2 = \square$

f $49 \div 7 = \square$

g $15 \div 5 = \square$

h $30 \div 10 = \square$

i $16 \div 4 = \square$

j $32 \div 8 = \square$

k $21 \div 3 = \square$

l $45 \div 9 = \square$

2 Are these equations correct? ✓ for yes. ✗ for no.

a $12 \div 3 = 4$

b $16 \div 8 = 3$

c $24 \div 8 = 3$

d $24 \div 4 = 4$

e $18 \div 6 = 3$

f $20 \div 5 = 5$

g $28 \div 4 = 9$

h $25 \div 5 = 5$

i $48 \div 6 = 7$

j $36 \div 6 = 6$

k $42 \div 7 = 7$

l $35 \div 7 = 5$

3 Complete the equation. Write the related division.

a $20 \div 4 = \square$

b $36 \div 9 = \square$

c $63 \div 7 = \square$

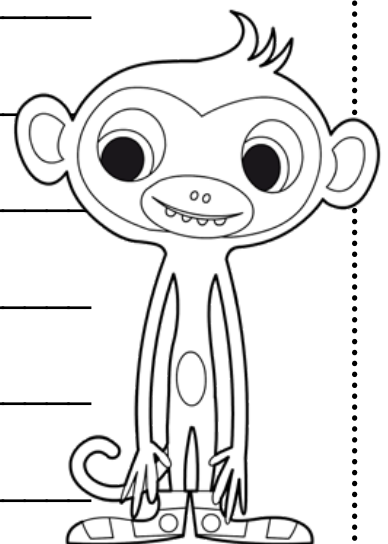
d $48 \div 6 = \square$

e $27 \div \square = 3$

f $54 \div \square = 9$

g $40 \div \square = 4$

h $72 \div \square = 8$



1 In the morning Waldo and Dizzy went on three rides at the fun park. They wrote the time they got on and off each ride. How long did each ride take?

- a** Underline the question. **b** Circle the facts.

Here is the timetable for Waldo and Dizzy's morning.

c How long was each ride?

Ride	Start time	End time	Time taken
Roller coaster	11:05 am	11:08 am	
Carousel	11:17 am	11:31 am	
Dodgem Cars	11:40 am	12:00 pm	

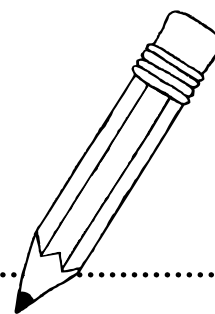
2 There is a gap between one ride and the next.

- a** How long is the gap between the rides? _____
- b** What do you think Waldo and Dizzy did between the rides?
- _____

3 Create your own timetable for Dizzy and Waldo from 12:00 pm to 3:00 pm.

Ride	Start time	End time	Time taken

- 1 Ruby writes this number sentence: $7 + 9 =$
She asks Doc to write an equivalent number sentence.
Doc says, "There are too many to choose from!"
How many equivalent number sentences are there?



- a Underline the question. b Circle the facts.
c Write as many equivalent addition number sentences as you can.

$$7 + 9 =$$

- d Is it possible to find every addition sentence that is equivalent to $7 + 9$?
e Have you found every addition number sentence that is equivalent to $7 + 9$? _____

- 2 a Write as many equivalent subtraction number sentences as you can.

$$7 + 9 =$$

- b Is it possible to find every subtraction sentence that is equivalent to $7 + 9$?
c Have you found every subtraction number sentence that is equivalent to $7 + 9$? _____

- 3 Can you write your own heads and legs problem?
See if anyone in your family can find the answer.

1 You have a Puppy-Bot 3000. You can program it to move using coordinates. Program Puppy-Bot to get to the gate on this map. Can you find two different paths?

a Underline the question.

b Circle the facts.

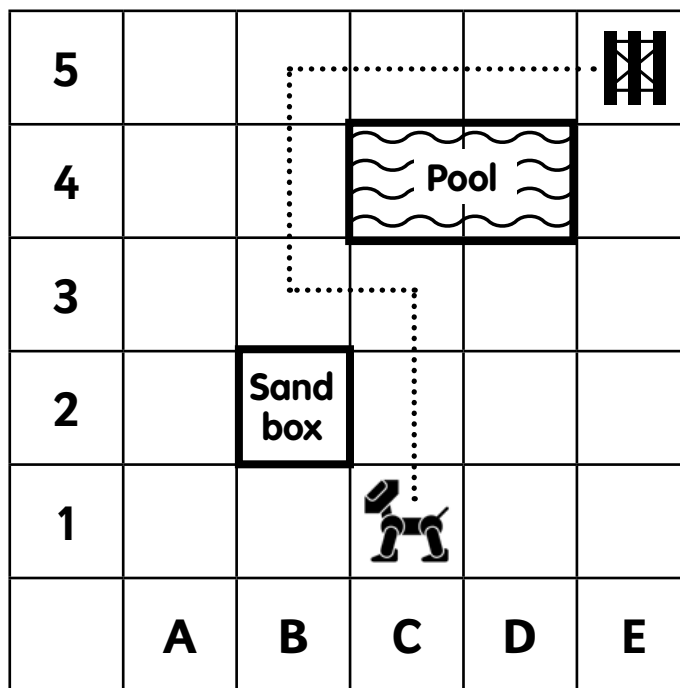
c Where is the gate?

(_____, _____)

d Where is Puppy-Bot?

(_____, _____)

e One path has been drawn for you. Can you draw two more paths?



2 Now fill in the table with the coordinates. The first path has been done for you.

Path 1	(C, 1) (C, 2) (C, 3) (B, 3) (B, 4) (B, 5) (C, 5) (D, 5) (E, 5)
Path 2	(C, 1)
Path 3	(C, 1)

3 a How long is the shortest path? _____

b How long is the longest path? _____

c Which squares did you avoid? _____

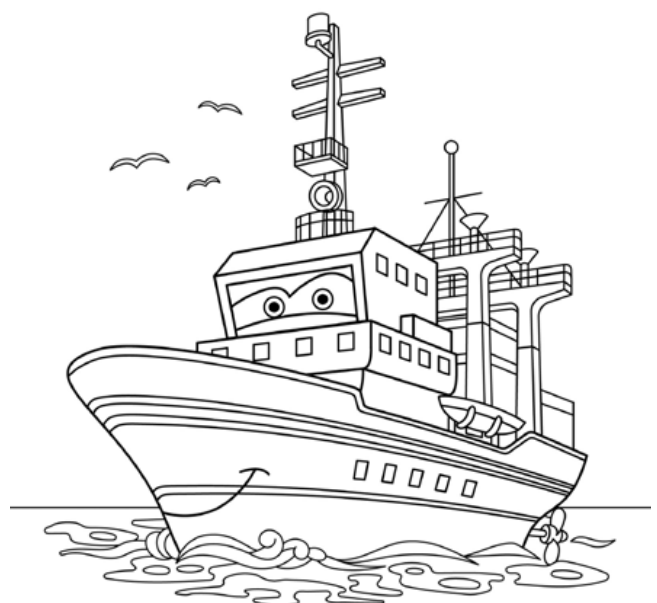
d Why? _____

You will need a partner, 2 coordinate grids each and 2 pencils.

- 1 Hide your grids from each other. Colour a series of squares on one of your grids to make 'battleships' of 2, 3, 4 and 5 squares. The other grid will be for tracking your opponent's ships.
- 2 Player A says a pair of grid coordinates, e.g., F5. If Player B has that square coloured in as part of one of their ships it is a 'hit'. Both players should put a tick on that square. If the square is not a hit, the players should put a cross on it so they know it has been asked already.
- 3 Now it is Player B's turn to say a pair of coordinates. Keep taking turns.
- 4 When someone has hit all the other player's ships – a 2, a 3, a 4 and a 5 square ship – they win.

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	A	B	C	D	E	F	G	H	I	J





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Great work!

You can now start
Week 4!



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