



Day 3

- 1 On the playground, Tom, Bob and Matt are passing a ball. Tom is the first one to pass the ball. Given that they pass the ball 3 times, how many different ways are there to pass the ball?

- 2 Lucy, Bud and Alice pass the ball to each other. The first pass starts from Lucy. After 4 passes, the ball returns to Lucy's hands. how many different ways are there to pass the ball? _____

- 3 Pip, Bud and Ross are playing ball games. They are passing balls to each other. Ross starts it. Given that Ross gets the ball after they pass the ball five times. How many different ways can they pass the ball? _____

4 A, B, C, and D pass the ball to each other. The first pass starts from A to B, and after 4 passes, the ball returns to A's hands. There are _____ different passing routes.

5 Denny, Owen and Robin are passing balls to each other. Denny makes the first pass. Given that the ball does not come back to Denny after four passes. How many different ways can they pass the ball?



Day 4

- 1 As shown below, a frog is hopping between four lily pads. It always jumps from one pad to the adjacent pad. It starts on pad A. How many different patterns can it jump in if it jumps 4 times? _____

A B C D

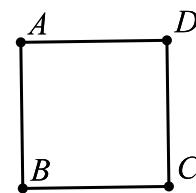
- 2 As shown below, a frog is hopping between four lily pads. It always jumps from one pad to the adjacent pad. It starts on pad C. How many different patterns can it jump in if it jumps 4 times? _____

D
A B C

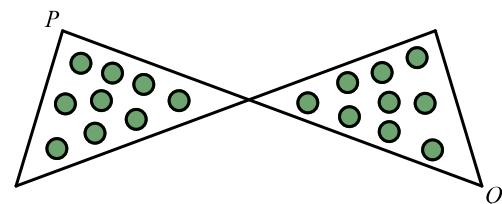
- 3 As shown below, a frog is hopping between five lily pads. It always jumps from one pad to the adjacent pad. It starts on the pad A. How many different patterns can it jump in if it jumps 4 times? _____

A
B
C D E

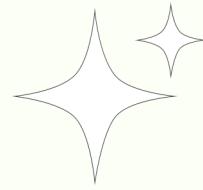
- 4 As shown below, a frog is hopping between four points: A , B , C and D . It always jumps from one point to an adjacent point. It starts at point A . How many different ways can it jump 3 times? _____



- 5 A lady bird has landed at point P on Sam's bow-tie. If it travels only along the edges of the bow-tie, but cannot travel along one edge more than once, how many different ways are there for it to get from P to Q ?



- A. 1 B. 2 C. 3 D. 4



Lesson 6

BIDMAS (2)



Let's Look Back

Short Division

About this Lesson

BIDMAS

Let's Look Ahead

Long Multiplication

Objectives

- Learn the order of four operations
- Learn the order of operations with brackets
- Add brackets to make the equation correct

Let's Get Ready

1 Calculate:

$$(1) 22 + 56 - 32$$

$$(2) 127 - 45 - 31$$

2 Calculate:

$$(1) 12 \times 3 \div 4$$

$$(2) 32 \div 4 \times 5$$

In Class

Learn and Discover

Let's think about which part should be calculated first. Mark this part by " _____ " and then calculate .

$$(1) \quad 2 \times 7 + 3$$

=

=

$$(2) \quad 10 - 4 \times 2$$

=

=

$$(3) \quad 42 \div 6 + 1$$

=

=

$$(4) \quad 20 - 16 \div 2$$

=

=



Exploration 1

Calculate.

$$(1) 100 + 64 - 64 \div 4$$

$$(2) 12 \times 4 + 24 \div 3 + 126 \times 0$$

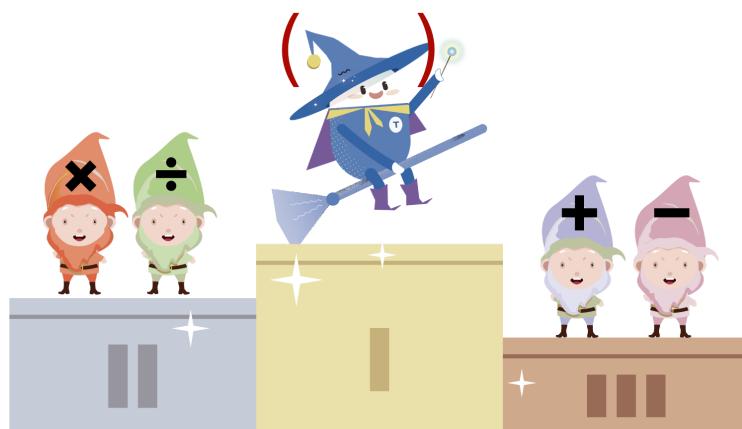
$$(3) 240 - 25 \div 5 \times 6 + 10$$

Learn and Discover

Analyse the following order of operations and then calculate.

$$(1) 12 \times (15 - 8) + 13$$

$$(2) (12 + 60 \div 15 - 9) \times 10$$



• • • • •

Exploration 2

Calculate.

$$(1) (98 - 96) \times 45 \div 9$$

$$(2) (40 + 82 \times 3) \div 2$$

$$(3) (50 - 35) \times (200 - 197) + 54$$

Practice

1 What is the value of $100 - (36 - 25) \times 7$?

- A. 13 B. 23 C. 33

2 Calculate: $(24 + 5 \times 5 - 10) \div 3$

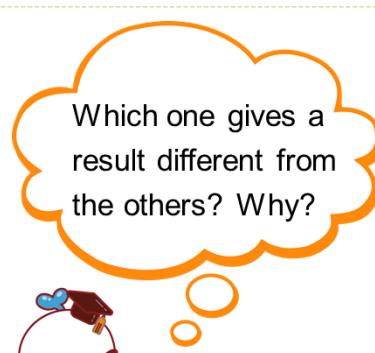
Learn and Discover

A $3 \times 6 \div 2 + 1$

B $(3 \times 6) \div 2 + 1$

C $3 \times (6 \div 2) + 1$

D $3 \times 6 \div (2 + 1)$



A. A

B. B

C. C

D. D

A lined writing area with a vertical margin line on the left and five horizontal lines for writing.

Exploration 3

Insert brackets to make the following correct.

$$(1) 9 \div 2 + 1 \times 4 = 12$$

$$(2) 3 \times 7 - 6 \times 4 - 3 = 15$$

Practice

Insert brackets to make the answer correct.

$$4 + 8 \times 5 - 2 = 28$$

Exploration 4

Put in brackets where needed to make each of these statements true.

$$(1) 8 + 5 \times 6 + 2 = 104$$

$$(2) 11 + 21 \div 7 + 9 = 2$$

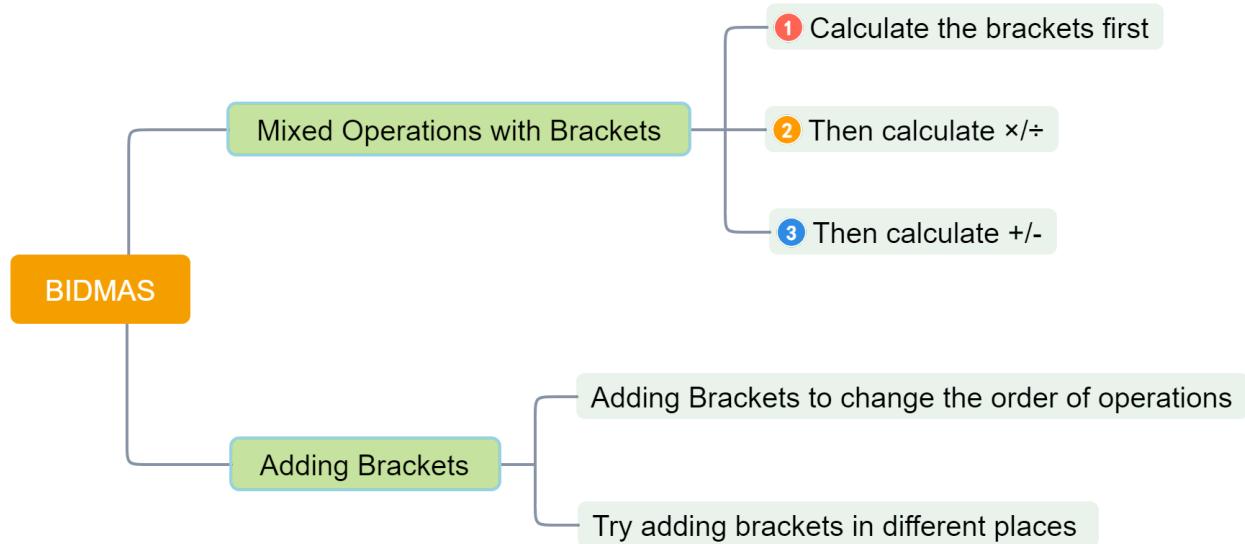
$$(3) 24 - 6 - 3 + 8 = 7$$

Challenge

Insert one or two pairs of brackets in the equations below. How many different results can you work out?

$$285 + 15 \div 5 - 2$$

Knowledge Map



Homework

Teaching Time

Have you learnt everything from the class? Share your thoughts with your family on how to solve the question below.

Calculate:

$$(70 \div 7 - 7) \times 13 = \underline{\hspace{2cm}} .$$



Day 1

1 Calculate:

$$(1) 63 \div 7 + 8$$

$$(2) 4 \times 8 + 42$$

$$(3) 45 + 48 \div 8$$

$$(4) 27 + 36 \div 6$$

2 Calculate:

$$(1) 168 + 15 \div 3 - 22$$

$$(2) 35 - 25 \div 5 + 20$$

3 Calculate

$$(1) 48 \div 2 + 20 \times 4 + 82$$

$$(2) 312 + 27 \div 3 + 23 \times 3$$

4 Calculate:

$$(1) 24 \times 2 \div 4 + 28$$

$$(2) 64 - 24 + 54 \div 6$$

5 Calculate: $36 - 18 \div 2 + 4 \times 6 \div 3$



Day 2

1 Which equation's result is 0? () .

A. $16 \div (8 + 8) \div 1$

B. $16 \times (8 - 8) \div 1$

C. $16 \times (8 \div 8) \div 1$

D. $16 \div (8 \div 8) \div 1$

2 Calculate:

(1) $(22 + 8) \div 5$

(2) $(56 - 49) \times 4$

3 Calculate:

(1) $240 - (40 + 100)$

(2) $240 \div (4 \times 5)$

4 Calculate:

$$(1) 450 \div (129 - 120)$$

$$(2) 140 \div (42 \div 6)$$

5 Calculate:

$$(1) (24 + 16) \div 8 + 20$$

$$(2) 10 + 6 \times (32 - 28)$$



Day 3

1 Calculate:

$$(1) 270 \div (23 - 14) \times 12$$

$$(2) 31 \times (8 - 25 \div 5)$$

2 Calculate:

$$(1) 630 \div (122 - 4 \times 8)$$

$$(2) 400 \div (2 + 36 \div 6)$$

3 Calculate:

$$(1) 2 \times (5 \times 11 - 15) + 18$$

$$(2) (2 \times 18 \div 6 + 4) \div 5 - 1$$

4 Calculate.

$$(1) (302 + 82) \times (320 - 318)$$

$$(2) 12 + 5 \times (40 - 28) \div (22 - 16)$$

5 $(45 \div 9) \times (100 \div 10) + (23 - 19) = \underline{\hspace{2cm}} .$



Day 4

- 1 (1) Work out the answer.

$$2 + (16 \div 2) + 6 = \underline{\hspace{2cm}}$$

- (2) Put brackets in the calculation below to make it correct.

$$2 + 16 \div 2 + 6 = 4$$

- 2 Insert brackets to make the following statement correct:

$$10 - 2 \times 4 - 2 = 6$$

- 3 Insert brackets to make the following statements correct:

$$(1) 9 \times 8 \div 1 + 5 = 12$$

$$(2) 8 \times 5 - 6 \times 1 + 4 = 10$$

4 Insert brackets to make the following statements correct:

(1) $18 - 6 \div 3 + 2 = 6$

(2) $3 + 1 \times 5 - 2 = 12$

5 Zenab does three separate calculations, but leaves out the brackets in two of them.

$2 + 0 + 1 \times 7 = 21$

$2 + 0 + 1 + 7 = 10$

$2 + 0 \times 1 \times 7 = 14$

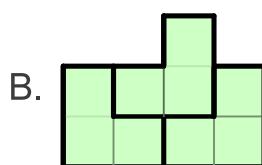
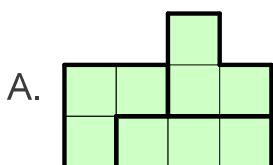
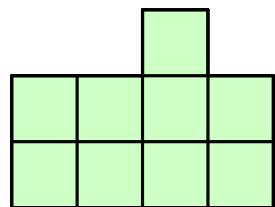
(1) Tick the box beside the calculation that does **not** need brackets.

(2) Put **one** set of brackets in each of the other two calculations so they are correct.

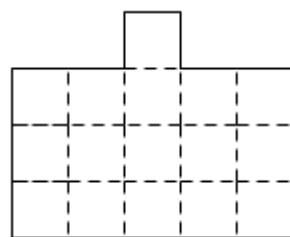


Stage Test (L4-L6)

- 1 Divide the shape into 3 identical parts with all the grids complete. Which one is right?



- 2 Divide the shape into 4 identical parts with all the grids complete. How many unit squares are there in each part?



A. 2

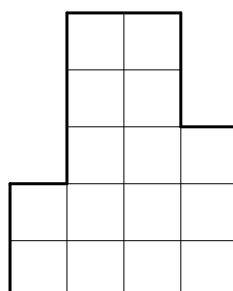
B. 3

C. 4

D. 5

E. 6

- 3 Divide the shape into 3 identical parts with all the grids complete. How many unit squares are there in each part?



A. 2

B. 3

C. 4

D. 5

E. 6

- 4 Linda prepared three books for her four-day vacation:
Don Quixote, The Little Prince, Alice in Wonderland
She plans to read one book each day, and she will not read the same book on two consecutive days. If she reads Don Quixote on the first day, then how many different ways can she read in these four days? _____
- 5 Bud is spending her 4-day holiday in four nearby cities: City *M*, City *N*, City *Q* and City *R*. She spends one day in each city and will not stay in the same city for two consecutive days. If Bud spends her first day and the fourth day in City *M*, how many different traveling options does Bud have? _____
- 6 Alex, Ben, Carl, and Denny are passing a ball to each other. Ben is the first one to pass the ball. After 3 passes, the ball is passed to Alex. There are _____ different passing ways of the ball for the 3 passes.
- A. 2 B. 3 C. 6 D. 7 E. 10

7 $62 \div 2 + 30 \times 6 + 92 = \underline{\quad}$

8 $112 + (87 - 68) \times 4 = \underline{\quad}$

9 $(44 + 24 \times 3) \div 4 = \underline{\quad}$

10 $(12 + 3 \times 5) \div (16 - 7) + 48 \div 3 = \underline{\quad}$

Extensive Challenges



► Lesson 1 Area of Squares and Rectangles



Extensive Challenges

- 1 The perimeter of a rectangle is equal to another square. The length of the rectangle is 10m, and its width is 2m shorter than length. The area of the rectangle is _____. The area of the square is _____.
A. 80m^2 ; 36m^2 B. 80m^2 ; 81m^2 C. 40m^2 ; 81m^2 D. 40m^2 ; 36m^2

- 2 Sketch three rectangles, showing length and width measurements, each with an area of 36cm^2 .

- 3 The area of a rectangle is 30cm^2 . Which could be the perimeter of the rectangle?
Choose the answer. ()
A. 6cm B. 9cm C. 12cm D. 22cm E. 28cm

▶ Lesson 2 Carroll Diagrams



Extensive Challenges

- 1 The chart below shows the favourite food of a group of students.

	Cake	Fried fish	Pizza	Total
Boys		10		32
Girls			12	
Total	22		25	60

Complete the chart above.

- 2 The table shows the number of pupils who wear spectacles in classes 4A to 4C.

How many girls in 4A wear spectacles? ()

	4A	4B	4C	Total
Boys		12		
Girls			8	24
Total	14	22		56

A. 8

B. 7

C. 3

D. 6

- 3 The chart below shows the favourite sports of a group of students.

	Tennis	Football	Hockey	Swimming	TOTAL
Boys	5			6	25
Girls		5	12		
TOTAL	13		14	16	

Complete the chart above.

► Lesson 3 Addition and Subtraction Puzzles (2)



Extensive Challenges

- 1 Some of the digits in the following correct addition problem have been replaced by the letters P , Q , R , and S , as shown. How much is $P + Q + R + S$? ()

$$\begin{array}{r} P \quad 4 \quad 5 \\ + \quad Q \quad R \quad S \\ \hline 6 \quad 5 \quad 4 \end{array}$$

A. 14 B. 15 C. 16 D. 17 E. 24

- 2 In this column puzzle, the same letter represents the same digit, and different letters represent different digits. What does each of the letters represent?

$$\begin{array}{r} C \quad A \\ + \quad C \quad A \\ \hline A \quad B \quad B \end{array}$$

$A = \underline{\hspace{1cm}}$, $B = \underline{\hspace{1cm}}$, $C = \underline{\hspace{1cm}}$.

- 3 In the column addition below, some of the numbers are replaced by letters. The same letters represent the same numbers, and different letters represent different numbers. Find the corresponding values of the letters.

$$\begin{array}{r} A \quad B \\ + \quad C \quad C \\ \hline A \quad B \quad C \end{array}$$

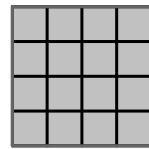
► Lesson 4 Division with Shapes



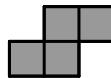
Extensive Challenges

1

Ann has a square sheet of paper:



. She cuts these pieces:

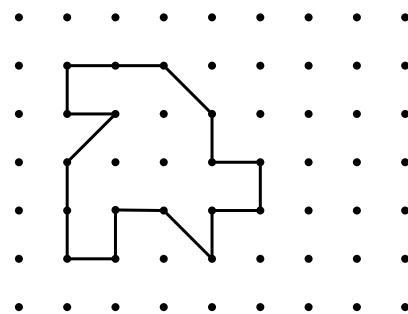


out of the sheet as many as possible. How many pieces does she get? ()

- A. 1 B. 2 C. 3 D. 4 E. 5

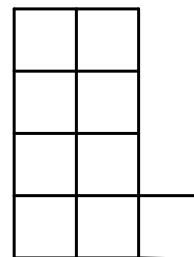
2

Divide these shapes into 3 congruent pieces.



3

Divide the shape into 6 congruent pieces.



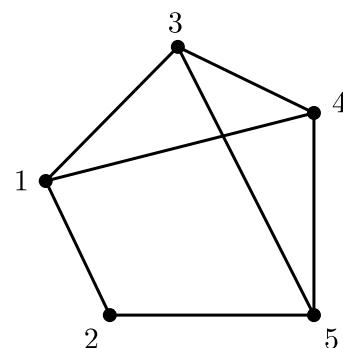
▶ Lesson 5 Counting with Tree Diagrams



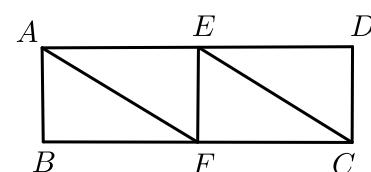
Extensive Challenges

- 1 Jerry, Jerry's brother, Frank and Frank's brother are passing balls to each other. Everyone cannot pass the ball to their brother. Jerry makes the first pass. Given that the ball comes back to Jerry after four passes. How many different ways can they pass the ball?

- 2 Room 1-5 are connected by lines of travel. By only travelling along the lines and visiting each room no more than once on each journey, how many different ways are there to travel from Room 1 to Room 5? _____



- 3 There are 6 points and 9 line-segments in the picture below. An ant starts climbing from point A, and must climb along line segments to point C. The same point or the same line segment can only be passed through once. How many different climbing paths can this ant have?



► Lesson 6 BIDMAS (2)



Extensive Challenges

- 1 Insert brackets to make the following statements correct:

(1) $8 - 5 + 2 = 1$
(2) $12 - 11 + 2 - 1 = 0$

- 2 Insert one or two pairs of brackets in the equations below. How many different results can you work out?

$$64 - 16 \div 4 + 4$$

- 3 In five of the following expressions we can replace each number 8 by another positive number (always using the same number for every replacement) and obtain the same result. Which expression does not have this property? ()

- A. $(8 + 8 - 8) \div 8$ B. $8 + (8 \div 8) - 8$
C. $8 \div (8 + 8 + 8)$ D. $8 - (8 \div 8) + 8$
E. $8 \times (8 \div 8) \div 8$



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