



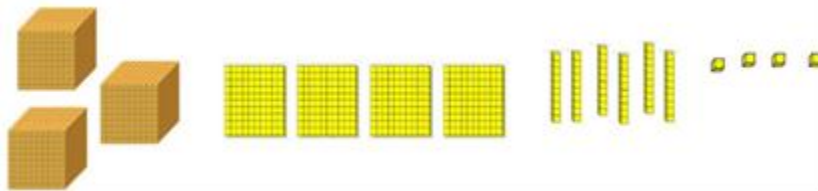
Grade 3 Required Material for The Entrance Exam

1- Represent 4-digit numbers:

Objectives:

- Understand base ten blocks.
- Write numbers in expanded, standard and word form up to thousands.
- Find the value and place of a digit in a 4-digit number.
- Compare and order numbers through thousands.
- Order numbers from least to greatest through thousands.
- Order numbers from greatest to least through thousands.
- Create the least or greatest 4-digit number using 4 digits.

Example:



Standard Form	3,464
Expanded Form	$3,000 + 400 + 60 + 4$
Word Form	Three thousand, four hundred sixty-four.

- **Indicate the place and value of the underlined digit in the 4-digit number.**

Number	Place	Value
5, <u>9</u> 67	Hundreds	900

- **Order the following 4-digit numbers from the least to the greatest.**

5,111 – 5,050 – 4,999 – 5,150

4,999 – 5,050 – 5,111 – 5,150

2- Rounding to the nearest 10 and 100:

Objectives:

- Round to the nearest ten and hundred through thousands using **Place Value Method**.
- Round to the nearest ten and hundred through thousands using **Number Line Method**.

Example:

- 78 rounded to the nearest 10 using number line method = 80



- 347 rounded to the nearest 100 using place value method = 300

3- Addition:

Objectives:

- Solve addition equations using base 10 blocks.
- Know the parts of an addition equation.
- Add 3- digit numbers through thousands with regrouping.
- Add 4 -digit numbers through thousands with regrouping.
- Use partial sums to add 3- digit numbers through thousands.
- Understand associative property.
- Understand identity property.
- Understand commutative property.

- Understand addition patterns.
- Understand horizontal and vertical formats to add partial sum.
- Use adjusting to add 3- digit numbers through thousands.
- Solve addition word problems

Example:

A. Addition Patterns.

- Even + Even = Even
- Even = Odd + Odd
- Odd = Even + Odd
- $355 + 0 = 0 + 355$
- $112 + 53 + 888 = 888 + 112 + 53$

B. Show two ways to group the addends and solve the equation.

1st Way: $254 + 66 + 133 = 320 + 133 = 453$

2nd Way: $254 + 66 + 133 = 254 + 199 = 453$

C. Use partial sums (Vertically) to find the sum.

$344 + 520 =$

$344 = 300 + 40 + 4$

$520 = 500 + 20 + 0$

Add the hundreds: $300 + 500 = 800$

Add the tens: $40 + 20 = 60$

Add the ones: $4 + 0 = 4$

Add all together: $800 + 60 + 4 = 864$

D. Use partial sums (Horizontally) to find the sum.

	3	3	2
	5	7	3
hundreds	8	0	0
tens	1	0	0
ones			5
total	9	0	5

E. Use adjusting to find the sum.

$$224 + 109 = ?$$

$$\begin{array}{cc} -1 & +1 \\ \downarrow & \downarrow \end{array}$$

$$223 + 110 = 333$$

4- Subtraction:

Objectives:

- Solve subtraction equations using base 10 blocks.
- Subtract 3 -digit numbers through thousands with regrouping.
- Subtract across zeroes through thousands.
- Use decomposing to subtract 3- digit numbers through thousands.
- Use adjusting to subtract 3- digit numbers through thousands.
- Solve subtraction word problems.

Example:

A. Decompose $353 - 184 =$

$$353 - 100 = 253$$

$$253 - 80 = 173$$

$$173 - 4 = 169.$$

B. Use adjusting to find the answer.

$$524 - 219 = ?$$

$$\begin{array}{ccc} \boxed{+1} & & \boxed{+2} \\ \downarrow & & \downarrow \\ \boxed{525} & - & \boxed{220} = \boxed{305} \end{array}$$

5- Multiplication:

Objectives:

- Multiply using repeated addition.
- Multiply using equal groups.
- Multiply using arrays.
- Know the parts of a multiplication equation.
- Solve multiplication equations using the commutative property of multiplication.
- Recalling Multiplication facts of 0 to 10.
- Solve word problems using multiplication and division.
- Decompose factors to multiply using distributive property.
- Create a word problem.

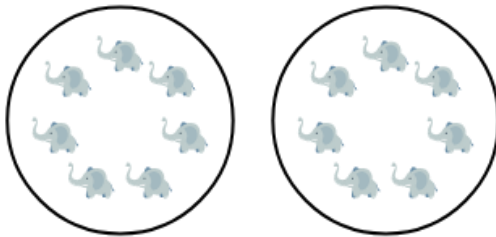
Example:

A. Fill in the blanks.



B. How can you represent the following equal groups.

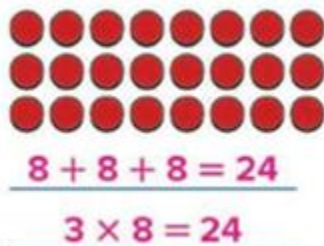
2 equal groups of 7



C. What equation represents the equal groups.



D. Write one addition equation and one multiplication equation.




E. Commutative Property: $5 \times 6 = 6 \times 5 = 30$

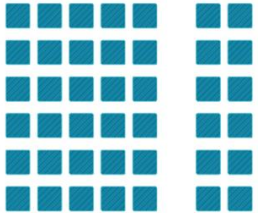
F. Distributive Property:

$$6 \times 7 = ?$$

Decompose 6 into 5 and 1.

$$\begin{aligned} 6 \times 7 &= 1 \times 7 + 5 \times 7 \\ 6 \times 7 &= 7 + 35 \\ 6 \times 7 &= 42 \end{aligned}$$


Decompose 7 into 5 and 2.

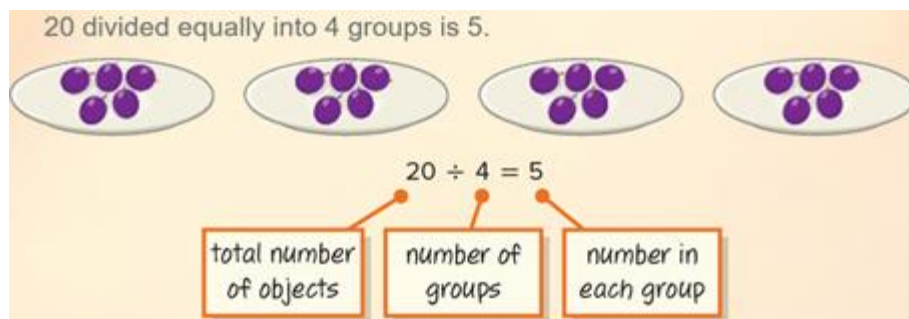
$$\begin{aligned} 6 \times 7 &= 6 \times 5 + 6 \times 2 \\ 6 \times 7 &= 30 + 12 \\ 6 \times 7 &= 42 \end{aligned}$$


6- Division:

Objectives:

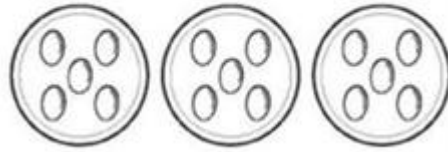
- Divide using equal groups.
- Divide using arrays.
- Know the parts of a division equation.
- Recalling division facts.
- Relate multiplication and division facts.
- Solve word problems using multiplication and division.
- Understand fact family triangle.
- Create a word problem.

Example:



A. Complete the equation.

$$\underline{15} \div 3 = 5$$



$$16 \div 4 = \underline{4}$$



B. Draw a representation for the following equation.

$$24 \div 3 = 8$$

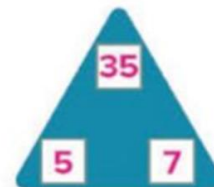


$$14 \div 2 = 7$$

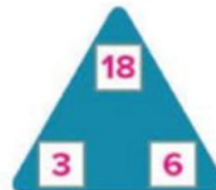


How can you complete the fact family?
Use the fact triangle to help you.

1. $35 \div 7 = \underline{5}$
 $35 \div \underline{5} = 7$
 $7 \times \underline{5} = 35$
 $\underline{5} \times 7 = 35$



2. $18 \div 3 = \underline{6}$
 $18 \div \underline{6} = 3$
 $3 \times \underline{6} = 18$
 $\underline{6} \times 3 = 18$


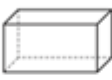
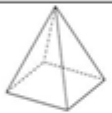





3. $32 \div 8 = \underline{4}$
 $32 \div \underline{4} = 8$
 $8 \times \underline{4} = 32$
 $\underline{4} \times 8 = 32$



7- 3D Shapes:

- Determine 3-D Shapes attributes (number of edges, faces, and vertices).

3D Shapes		Number of Edges	Number of Faces	Number of Vertices
CUBE		12	6	8
RECTANGULAR PRISM		12	6	8
SQUARE PYRAMID		8	5	5
CONE		1	2	1
CYLINDER		2	3	0
TRIANGULAR PYRAMID		6	4	4


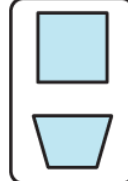
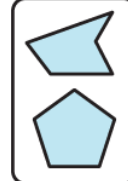
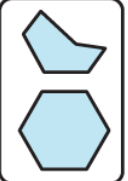
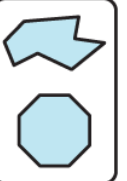
8- 2D Shapes:

Objectives:

- Classify and describe Polygons.
- Classify and describe Quadrilaterals.

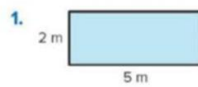
Example:

- A polygon is a closed 2-dimensional shape formed by 3 or more straight sides that do not cross.

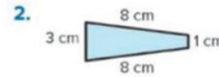
Triangle	Quadrilateral	Pentagon	Hexagon	Octagon
				
3 sides	4 sides	5 sides	6 sides	8 sides
3 angles	4 angles	5 angles	6 angles	8 angles

2- A quadrilateral is a polygon made of 4 sides and 4 angles.

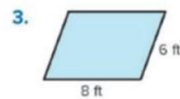
How many pairs of equal side lengths and right angles does each quadrilateral have?



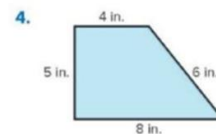
2 pair(s) of equal side
4 right angle(s)



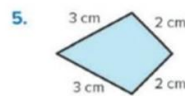
1 pair(s) of equal sides
0 right angle(s)



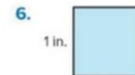
2 pair(s) of equal sides
0 right angle(s)



0 pair(s) of equal sides
2 right angle(s)



2 pair(s) of equal sides
1 right angle(s)



2 pair(s) of equal sides
4 right angle(s)

9- Graphs:

Objectives:

- Interpret the data in a scaled picture graph.
- Interpret the data in a scaled bar graph.

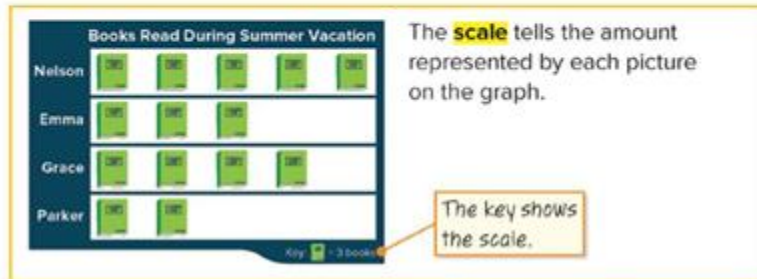
Learn

Emma surveyed three friends about the number of books they read during summer vacation. The table shows the results.

Person	Books Read
Nelson	15
Emma	9
Grace	12
Parker	6

How can you display the data?

You can use a scaled picture graph.



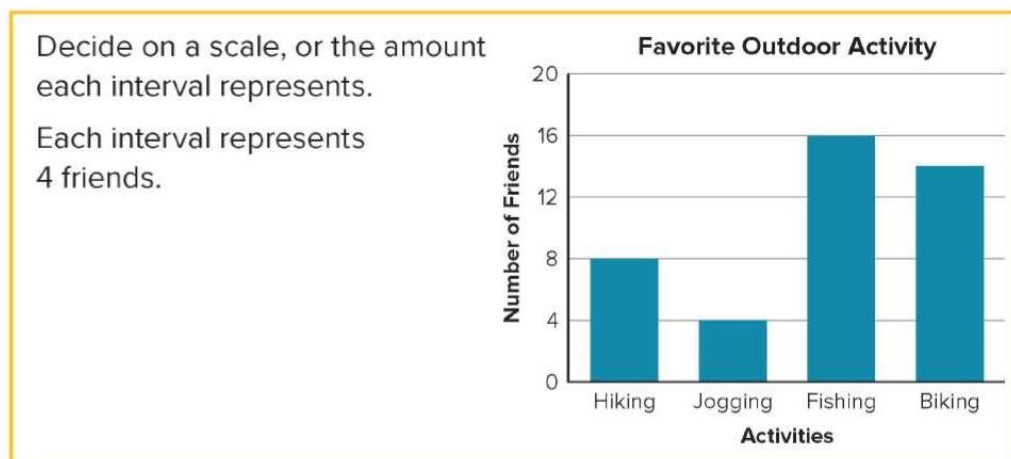
Learn

Duncan surveys his friends about their favorite outdoor activity. He shows the results in a table.

Activity	Number of Friends
Hiking	8
Jogging	4
Fishing	16
Biking	14

How can you display the data in another way?

You can use a scaled bar graph to display the data.



10- Perimeter and Area:

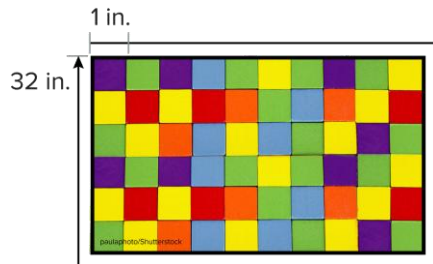
Objectives:

- Define what is a perimeter.
- Calculate the perimeter of regular and irregular shapes.
- Define what is an area.
- Calculate the area of square and rectangle.

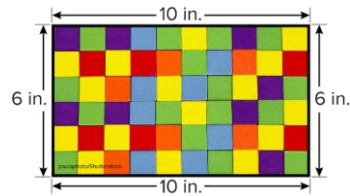
Example:

Perimeter is the distance around the outside of a figure. There is more than one way to find the perimeter of a figure.

One Way Count the number of units around the rectangle.



Another Way Find the sum of the side lengths.



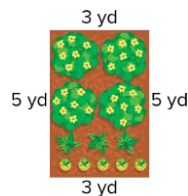
$$10 + 6 + 10 + 6 = 32$$

The perimeter is 32 inches.

3. Bring It Together

You can determine the perimeter of a figure using different strategies.

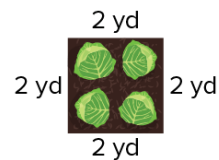
For a rectangle, add all the side lengths.



$$3 + 5 + 3 + 5 = 16$$

The perimeter of the rectangle is 16 yards.

For a square, add all the side lengths or multiply by 4.



$$2 + 2 + 2 + 2 = 8 \text{ or } 2 \times 4 = 8$$

The perimeter of the square is 8 yards.

- Area of a square = Side x Side
- Area of a rectangle = Length x Width

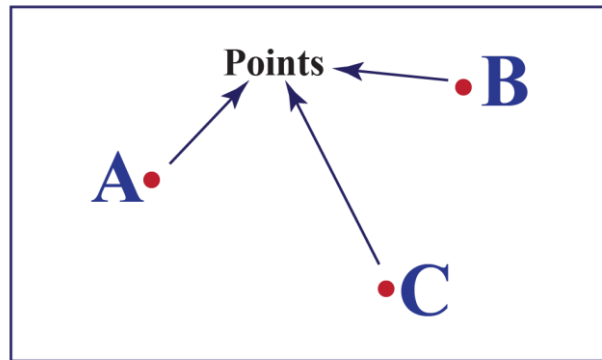
11- Point, line, segment, and midpoint:

Objectives:

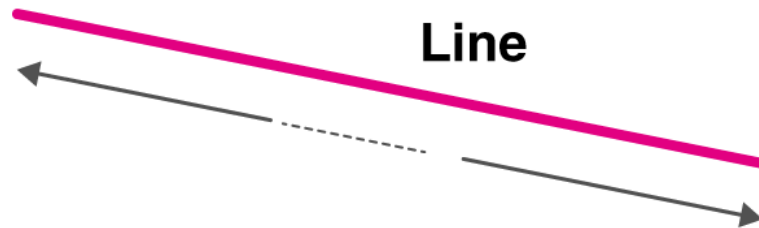
- Identify and describe points, lines, and line segments.
- Types of lines.
- Understand the concept of a midpoint.

Example:

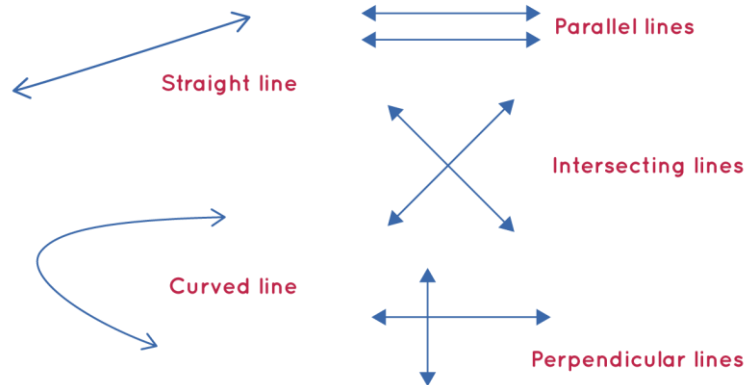
- A POINT is a location, with no size, it is just a dot.



- A line is a straight path that extends in both directions without end.



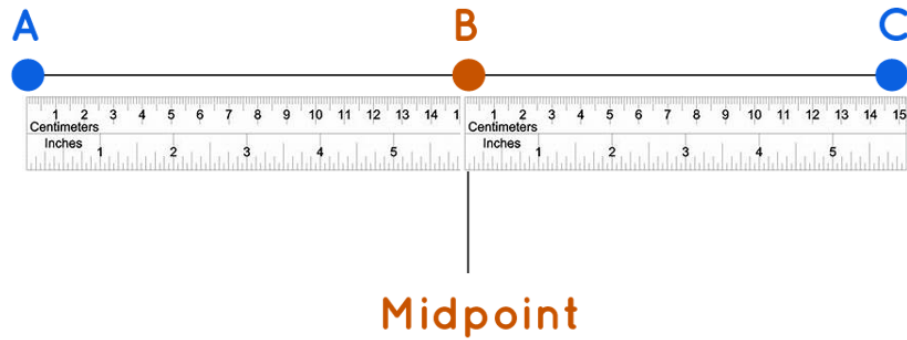
Types of Lines



- A line segment is a part of a line. It has two endpoints, and it doesn't go on forever.



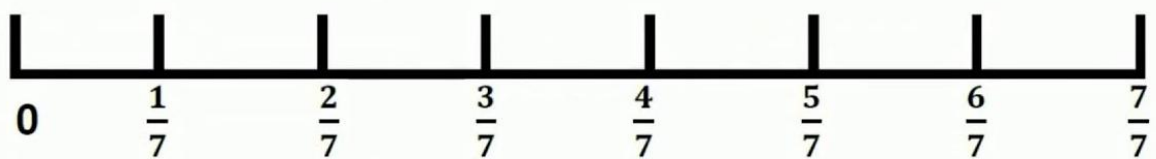
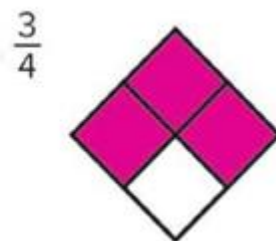
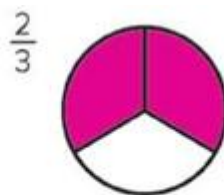
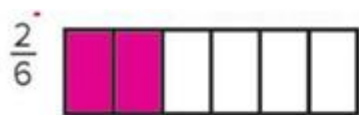
- Midpoint is the point exactly halfway between the two endpoints of a line segment.

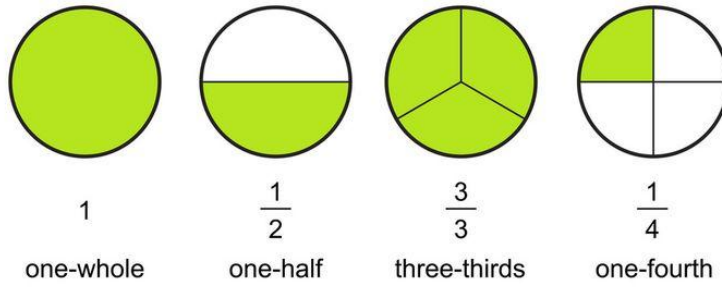
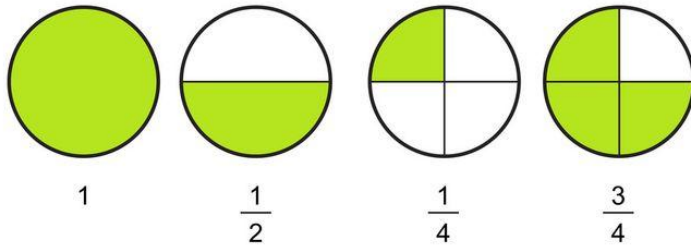


12- Fractions:

Objectives:

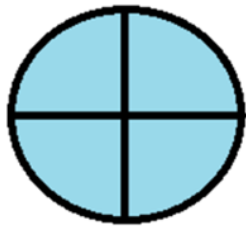
- Divide shapes into equal parts.
- Understand fractions.
- Understand the parts of a fraction.
- Understand unit fraction.
- Write the word form of a fraction.
- Represent fractions on number line.
- Represent one whole as a fraction.
- Compare fractions with same denominator.





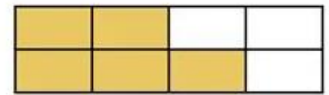
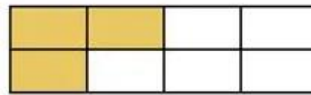
One Whole Fraction

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



Same Denominator

$$\frac{3}{8} < \frac{5}{8}$$



Unit Fractions

