

Ministry of Education



# MATHEMATICS

YEAR 3



REVISED 2015

Curriculum Development Unit



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# Numbers and Numeration

## Strand 1: Numbers

## Unit 1.1 Whole Numbers

★ Achievement Indicator:

Count, order and record the elements within a collection of things.

### Sets

#### Sets:

A set is a collection of things. For example, here is a set of colours.



We can also write this set in *another* way: {blue, red, green, purple, orange}

*Show the elements of the sets in the Venn diagram.*

a) Set W



Set W = {Anna, Bella, Luisa, Mary}

b) Set X



Set X = {a, e, i, o, u}

c) Set Y



Set Y = {○, ☆, △, ◇}



## Strand 1: Numbers

## Unit 1.1 Whole Numbers

★ Achievement Indicator:

Count, order and record the elements within a collection of things.

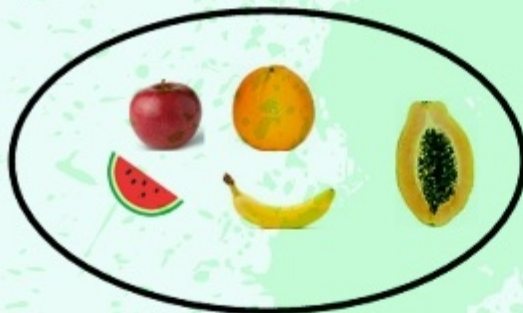
*Study the Venn Diagram and list the elements of the sets given below in the space provided.*

a) Set Q

John Ben Mark  
Thomas Steven

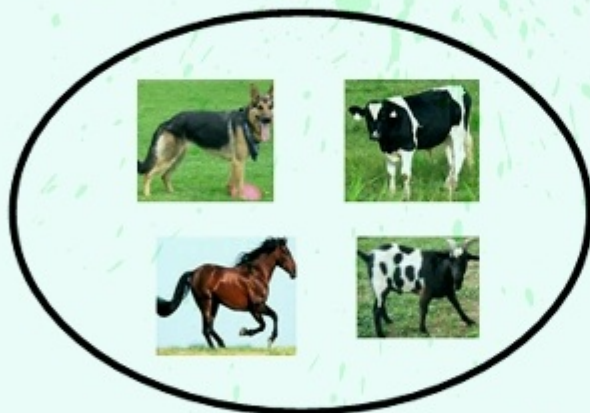
\_\_\_\_\_

b) Set R



\_\_\_\_\_

c) Set Q



\_\_\_\_\_



# CARDINAL NUMBERS

## Cardinal numbers:

Cardinal numbers tell us how many members are in the set.

Example: 7

Set A



The cardinal number of Set A is 7

*Show the elements of the sets in the Venn diagram.*

1. Set X



The cardinal number of Set X is \_\_\_\_\_

2. Set Z



The cardinal number of Set Z \_\_\_\_\_

3. Set R = {10, 20, 30, 40, 50, 60, 70, 80, 90, 100}

The cardinal number of Set R is \_\_\_\_\_



## Strand 1: Numbers

## Unit 1.1 Whole Numbers

★ Achievement Indicator:

Identify and show ordinal numbers to express position in a sequence.

# ORDINAL NUMBERS

**Ordinal numbers:**

Ordinal numbers tell position. Position numbers like first (1<sup>st</sup>), second (2<sup>nd</sup>), and third (3<sup>rd</sup>) are ordinal numbers.

Look at this: {a, b, c, d} The *third* letter in this sequence is c.

*Study this*



1. *What colour is the:*

- a. 6<sup>th</sup> square .....
- b. Last square .....
- c. 2<sup>nd</sup> square .....
- d. 1<sup>st</sup> square .....
- e. 5<sup>th</sup> square .....

2. *Study these animals*



- a. The fourth animal is a \_\_\_\_\_
- b. The first animal is a \_\_\_\_\_
- c. The last animal is a \_\_\_\_\_

★ Achievement Indicator: Write the numerals in the correct order.

## ORDERING NUMBERS

1. Arrange numbers in smallest to the largest.

a) **31, 89, 150, 91, 260**

\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

b) **450, 339, 270, 295, 393**

\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

2. Arrange numbers from largest to smallest.

a) **76, 91, 52, 101, 85**

\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

b) **524, 155, 355, 245, 711**

\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

3. Use the given rules to complete the counting patterns.

a) Forwards by 30

70	100					150	250			
----	-----	--	--	--	--	-----	-----	--	--	--

b) Forwards by 100

c) Backwards by 50

650		550				700		500		
-----	--	-----	--	--	--	-----	--	-----	--	--

d) Backwards by 100



# ROUNDING NUMBERS

## Rounding Off Numbers to the nearest 10:

When we round off to the nearest ten we look at the ones. If it is 5 or more, we round it up but when it is 4 or less we round it down.

Example: 32 (32 is in between 30 and 40)

30

32



.....40.....

2 is less than 5 so round it down to 30

1. Round off the underlined numbers to its nearest ten by drawing a circle round the answer

a. 40

47

50

b. 20

24

30

c. 50

55

60

d. 70

79

80

e. 10

13

20

# ROUNDING NUMBERS

## Rounding Off Numbers to the nearest 100

When we round off to the nearest *hundred* we look at the tens and ones. If it is 50 or more, we round it up but when it is 49 or less we round it down.

Example: 327

.....300.....

367

.....400.....

67 is more than 50 so we round it up to 400

2. Round off the underlined numbers to its nearest hundred.

a. 400

429

500

b. 300

380

400

c. 100

199

200

d. 700

775

800

e. 500

542

600

## Word Problem

1. **81** rounding off to the nearest **10** is \_\_\_\_\_
2. **109** rounding off to the nearest **100** is \_\_\_\_\_
3. **457** rounding off to the nearest **100** is \_\_\_\_\_
4. **76** rounding to the nearest **10** is \_\_\_\_\_



## Strand 1: Numbers

## Unit 1.1 Whole Numbers

★ Achievement Indicator:

Expand any three digit numbers in terms of hundreds, tens and ones.

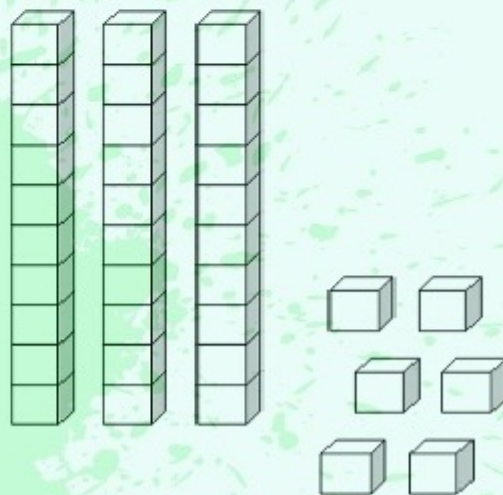
# PLACE VALUE

### Place Value (Ones and Tens).

Our number system works with groups of 10. Dienes blocks are used to show the number system value.

We first separate the number into its value. The **ones** are at the far right then the **tens**.

Tens	Ones
3	6



1. Write the following numbers in its ones and tens places.

*The first one is done for you.*

a. **34** = **3** tens + **4** ones

b. **59** = \_\_\_\_\_ + \_\_\_\_\_

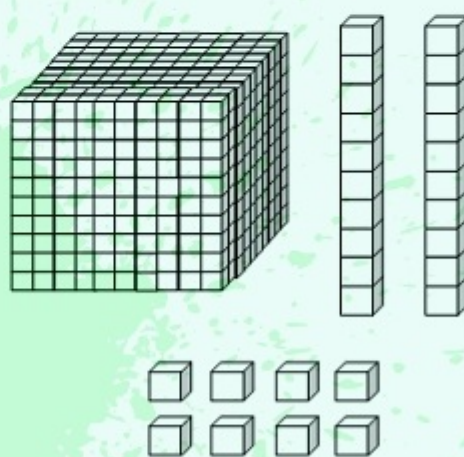
c. **72** = \_\_\_\_\_ + \_\_\_\_\_

d. **48** = \_\_\_\_\_ + \_\_\_\_\_

# PLACE VALUE

## Place Value (Ones, Tens and Hundreds)

Place values can be displayed by the use of Dienes Blocks. It will show that different digits take on different values according to its position.



Hundreds

Tens

Ones

Example: 128 First separate it into its place value: ones, tens then hundred

Hundreds	Tens	Ones
1	2	8

1. Write the following numbers in its ones and tens places. The first one is done for you.

a. **234** = **2** hundreds   **3** tens   and   **4** ones

b. **409** = \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_

c. **620** = \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_

d. **987** = \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_



## Strand 1: Numbers

## Unit 1.1 Whole Numbers

★ Achievement Indicator:

Able to break numbers into parts to give a sum of a total required.

# PARTITIONING NUMBERS

Partitioning???

I know how  
to partition  
numbers

$$\begin{aligned}39 &= 30 + 9 \\30 &= 20 + 10 \\30 &= 10 + 20\end{aligned}$$



1. Partition these numbers

a	28	=		+	
b	36	=		+	
c	42	=		+	
d	57	=		+	
e	93	=		+	

a	175	=		+		+	
b	297	=		+		+	
c	345	=		+		+	
d	468	=		+		+	
e	892	=		+		+	

**ADDITION WITHOUT REGROUPING**

When we add two digit numbers, we will always:  
Add the ones first, then the tens

Tens	Ones
2	7
+ 3	1
	8

Tens	Ones
2	7
+ 3	1
5	8

1. Add the following two digit numbers

a

Tens	Ones
5	4
+ 2	3

b

Tens	Ones
8	1
+ 1	5

c

Tens	Ones
6	4
+ 2	2

d

Tens	Ones
3	3
+ 5	2

e




Tens	Ones
2	4
+ 6	0

f

Tens	Ones
1	3
+ 3	5



**ADDITION WITHOUT REGROUPING***2. Word Problem*

	Problem	Working	Answer
a.	 <p>64 story books are in the book case. 22 more story books are added. How many story books are there in all?</p>		
b.	 <p>Fane has 50 beads. Aruna has 40 beads. How many beads have they altogether?</p>		
c.	 <p>Timodi caught 34 fish on Monday and he caught 25 fish on Wednesday. How many fish did he catch altogether?</p>		

## ADDITION WITHOUT REGROUPING

Add the ones first, then the tens, then the hundreds

H	T	O
2	7	6
+3	1	1
<hr/>		
		7

H	T	O
2	7	6
+3	1	1
	8	7

H	T	O
2	7	6
+3	1	1
5	8	7

1. Add the following three digit numbers

a.

H	T	O
5	4	3
+ 2	3	4

b.

H	T	O
2	8	1
+ 3	1	5

c.



H	T	O
2	3	3
+ 5	2	6

d.

H	T	O
6	4	5
+ 2	2	4



**ADDITION WITHOUT REGROUPING***2. Word Problem*

	Problem	Working	Answer
a	 Mr Noa planted 321 dalo tops on Tuesday and another 115 dalo tops on Thursday. How many dalo tops did he plant altogether?		
b	The office lady printed 408 newsletters on Thursday. She was asked another 130 copies on Friday. How many newsletters did she print in all?		
c	 In a rugby match, 678 people watched the games. There were 250 female and the rest were male. How many males watched the rugby match?		

## Strand 1: Numbers

## Unit 1.2 Operations

★ Achievement Indicator:

Subtract two or three digit numbers without regrouping

### SUBTRACTION WITHOUT REGROUPING

Subtract the 2 digit numbers without regrouping.

Subtract the ones

Tens	Ones
5	9
- 3	5
	4

Subtract the tens

Tens	Ones
5	9
- 3	5
2	4

1. Subtract

a.

Tens	Ones
2	9
- 1	6

b.

Tens	Ones
6	8
- 4	5

c.

$$\begin{array}{r} 97 \\ - 33 \\ \hline \end{array}$$

d.

$$\begin{array}{r} 86 \\ - 25 \\ \hline \end{array}$$

e.

$$\begin{array}{r} 63 \\ - 12 \\ \hline \end{array}$$

f.

$$\begin{array}{r} 99 \\ - 42 \\ \hline \end{array}$$



## Strand 1: Numbers



## Unit 1.2 Operations

★ Achievement Indicator:

Subtract two or three digit numbers  
without regrouping

### SUBTRACTION WITHOUT REGROUPING

#### 2. Word Problem

	Problem	Working	Answer
a	 Tomasi had 98 chickens. He sold 54 during Christmas. How many were left?		
b	 Jasmine had 78 red and blue marbles. He gave 47 red marble to Joseph. How many blue marbles did she have?		
c	In a class of 45 children, 25 are boys. How many girls are there in the class?		

## Strand 1: Numbers

## Unit 1.2 Operations

★ Achievement Indicator:

Subtract two or three digit numbers without regrouping

### SUBTRACTION WITHOUT REGROUPING

Subtract 3 digit numbers without regrouping

Subtract the ones

H	T	O
8	7	9
-3	5	7
		2

Subtract the tens

H	T	O
8	7	9
-3	5	7
	2	2

Subtract the hundreds

H	T	O
8	7	9
-3	5	7
5	2	2

1. Subtract

a.

H	T	O
9	6	5
-8	5	1

b.

H	T	O
6	4	8
-3	0	6

c.

H	T	O
5	9	8
-4	6	7

d.

H	T	O
6	6	5
-3	1	2

e.  $\begin{array}{r} 987 \\ -807 \\ \hline \end{array}$



f.  $\begin{array}{r} 746 \\ -325 \\ \hline \end{array}$

g.  $\begin{array}{r} 459 \\ -128 \\ \hline \end{array}$

h.  $\begin{array}{r} 884 \\ -413 \\ \hline \end{array}$



**SUBTRACT WITHOUT REGROUPING***2. Word Problem*

	Problem	Working	Answer
a	 <p>Kamlesh had 756 bean seedlings. He planted 342 on Monday afternoon. How many seedlings were not yet planted?</p>		
b	 <p>Mr Chang collected 879 coconuts. He sold 506 during the weekend. How many coconuts were not sold?</p>		
c	<p>Jovesa collected 574 bottles during the holiday. He sold 353 to a bottle shop. How many bottles were not sold?</p>		

## Strand 1: Numbers

## Unit 1.2 Operations

**Achievement Indicator:**

Add two or three digit numbers with regrouping

# ADDITION WITH REGROUPING

Add two 2-digit numbers - regrouping ones

Add the ones

Think of the 13 ones as

1 ten and 3 ones

Tens	Ones
2	8
+ 1	5
	3

Tens	Ones
12	8
+ 1	5
4	3

1. Add

a.

Tens	Ones
2	7
+ 5	5

b.

Tens	Ones
3	5
+ 2	6

c.

Tens	Ones
5	8
+ 1	7

d.

3	5
+ 3	9

e.

4	8
+ 2	7

f.

1	8
+ 7	4

g.

4	5
+ 2	5

2. Add a 1-digit number to a 2-digit number with regrouping

a.

1	9
+ 4	
2	3

b.

4	8
+ 9	

c.

4	5
+ 7	

d.

2	8
+ 8	

e.

7	9
+ 3	



## Strand 1: Numbers

## Unit 1.2 Operations

★ Achievement Indicator:

Subtract two or three digit numbers  
with regrouping

# SUBTRACTION WITH REGROUPING

Subtract 2-digit numbers with regrouping

Subtract the ones

Think of the 4 tens 5 ones  
as 3 tens and 15 ones

Tens	Ones
<sup>3</sup> 4	<sup>5</sup> 5
- 2	7
	8

Tens	Ones
<sup>3</sup> 4	<sup>5</sup> 5
- 2	7
1	8

2. Subtract

a.

Tens	Ones
6	1
- 4	3

b.

Tens	Ones
6	4
- 2	9

c.  $\begin{array}{r} 65 \\ -47 \\ \hline \end{array}$

d.  $\begin{array}{r} 70 \\ -45 \\ \hline \end{array}$

e.  $\begin{array}{r} 94 \\ -59 \\ \hline \end{array}$

f.  $\begin{array}{r} 71 \\ -19 \\ \hline \end{array}$

**SUBTRACTION WITH REGROUPING**

1. Word Problem - Solve a problem using this chart

Marbles Collected


Name	Green	Red	Blue
Keith	25	13	31
Kathy	17	28	19
Ted	32	25	14
Gail	24	33	27

1. How many blue marbles do Keith and Kathy have in all? \_\_\_\_\_
2. How many more green marbles does ted have than Kathy?  
\_\_\_\_\_
3. How many red marbles do Ted, Gail and Keith have altogether? \_\_\_\_\_
4. How many more blue marbles will Gail give Ted, so that Ted has the number of marbles as Keith?
5. How many marbles are there altogether?





**SUBTRACTION WITH REGROUPING***2. Word Problem - Things We Found*

	Shells 	Rocks 
Arnold	29	34
Josh	18	46
Miki	23	37

**Write the numbers**

1. Arnold has \_\_\_\_\_ rocks.
2. Miki has \_\_\_\_\_ shells.
3. Josh has \_\_\_\_\_ rocks.
4. Josh has \_\_\_\_\_ shells.
5. They have \_\_\_\_\_ rocks in all.
6. Miki has \_\_\_\_\_ more shells.

## Strand 1: Numbers

## Unit 1.2 Operations

★ Achievement Indicator:

Add two or three digit numbers without regrouping

# ADDITION WITH REGROUPING

Add two 3-digit number or a 3 digit and a 2-digit number with regrouping.

Add the ones

Think of the 15 ones as  
as 1 ten and 5 ones

H	T	O
1	2	6
+ 1	3	9
		5

H	T	O
1	2	6
+ 1	3	9
	6	5

H	T	O
1	2	6
+ 1	3	9
2	6	5

1. Add

a.

H	T	O
3	5	3
+ 2	2	8

b.

H	T	O
4	0	7
+ 2	8	3

c.

H	T	O
5	2	8
+	5	5

d.

6	5	4
+ 1	3	6

e.

4	4	7
+ 3	4	7

f.

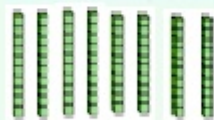
2	2	9
+ 5	2	5



## SUBTRACTION WITH REGROUPING

Subtract two 3-digit numbers or a 3-digit and a 2-digit number with regrouping.

Think of the 8 tens and 2 ones as 7 tens and 12 ones



and



and



H	T	O
2	6	4
-	5	7

Subtract the ones

H	T	O
4	8	2
-3	5	3
		9

Subtract the tens

H	T	O
4	8	2
-3	5	3
	2	9

Subtract the hundred

H	T	O
4	8	2
-3	5	3
1	2	9

1 Subtract

a.

H	T	O
8	9	5
-2	3	9

b.

H	T	O
5	5	0
-1	1	7

c.

$$\begin{array}{r} 693 \\ - 376 \\ \hline \end{array}$$

d.

$$\begin{array}{r} 381 \\ - 135 \\ \hline \end{array}$$

e.

$$\begin{array}{r} 735 \\ - 426 \\ \hline \end{array}$$

# MULTIPLICATION

It is making a number bigger by a number of times  
It is the short form of repeated addition.

Example

$$2 \times 14 = 14 + 14 = 28$$

Tens	Ones
1	4
x	2
	8

Tens	Ones
1	4
x	2
4	8

1. Add

a)  $\begin{array}{r} 11 \\ \times 6 \\ \hline \end{array}$

b)  $\begin{array}{r} 12 \\ \times 3 \\ \hline \end{array}$

c)  $\begin{array}{r} 22 \\ \times 4 \\ \hline \end{array}$

d)  $\begin{array}{r} 33 \\ \times 3 \\ \hline \end{array}$

e)  $\begin{array}{r} 74 \\ \times 4 \\ \hline \end{array}$

f)  $\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$

g)  $\begin{array}{r} 23 \\ \times 2 \\ \hline \end{array}$

h)  $\begin{array}{r} 4 \\ \times 5 \\ \hline \end{array}$

i)  $\begin{array}{r} 10 \\ \times 5 \\ \hline \end{array}$

j)  $\begin{array}{r} 33 \\ \times 3 \\ \hline \end{array}$



# Multiplication

## 1' Problem Solving



**Multiply. Mark the rows.**

There are 3 rows of seats.

There are 5 seats in each row.

How many seats are there?

$$\begin{array}{r} 5 \\ \times 3 \\ \hline 15 \end{array}$$

seats

rows

- There are 2 groups of dancers. \_\_\_\_\_ groups
- 5 dancers are in each group. \_\_\_\_\_ dancers
- How many dancers are there altogether? \_\_\_\_\_
- Shelly buys 12 cups of juice. \_\_\_\_\_ cups
- Each cup costs 4cents. \_\_\_\_\_ cents
- How much does Shelly spend? \_\_\_\_\_
- There are 5 tables. \_\_\_\_\_ people
- 9 people seat at each table. \_\_\_\_\_ tables
- How many people are there in all? \_\_\_\_\_

# MULTIPLICATION

1. *Multiply, Write the label.*

## Word Problem

## Working

a)	3 groups of people watch the clowns. There are 13 people in each group. How many people are there altogether?	
b)	There are 8 clowns. Each clown has 2 hats. How many hats are there in all?	
c)	There are 4 kinds of balloons. There are 4 of each kind. How many balloons are there in all?	
d)	The train has 6 cars. Each car holds 4 people. How many people can ride altogether?	
e)	Steve buys 3 tickets. Each ticket costs 5cents How much does Steve spend?	



## Division

What is division?

It is sharing equally between groups or among yourselves.

$$12 \div 3 = 4 \quad \leftarrow \text{quotient}$$



4 coloured pencils in each group

*Division is the opposite of multiplication*

*When we divide by 2, we can think about our 2 times table*



$$12 \div 2 = \square$$

$$2 \times ? = 12$$

$$2 \times \boxed{6} = 12$$

$$12 \div 2 = 6 \quad \leftarrow \text{quotient}$$

## MULTIPLICATION

There are 12 cars

How many groups of four cars in 12?



3 fours



1. Mark the groups Write the number.

a. How many groups of five are in 20?



\_\_\_\_\_ fives

b. How many groups of two are in 8?



\_\_\_\_\_ twos



## Division

How many fours are in 16?



\_\_\_\_\_ fours

How many groups of three are in 9?



\_\_\_\_\_ threes

How many groups of four are in 8?



\_\_\_\_\_ fours

How many groups of five are in 10?



\_\_\_\_\_ fives

## ★ Achievement Indicator:

- Draw half ( $\frac{1}{2}$ ), a quarter ( $\frac{1}{4}$ ), a third ( $\frac{1}{3}$ ) as part of a whole on a circle, square and rectangle
- Write, solve and describe with cardboards/vanguard sheet that  $\frac{1}{2} + \frac{1}{2} = 1$  whole and  $\frac{1}{2} = \frac{1}{2}$

## Fractions

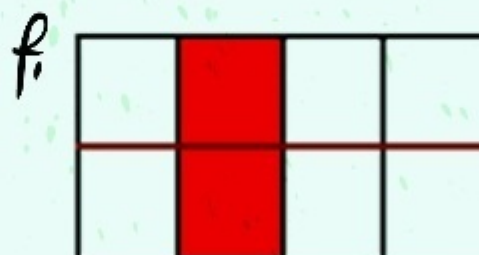
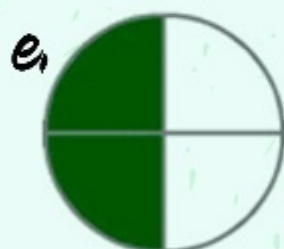
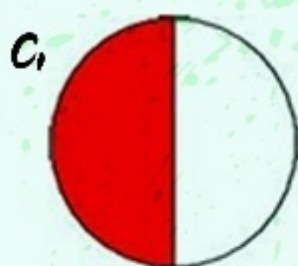
The shape has 2 parts. Both parts are the same size.

Only 1 part is shaded

$\frac{1}{2}$  is shaded

One half is shaded

Mark the shape that show  $\frac{1}{2}$





## Strand 1: Numbers

## Unit 1.3 Fractions

★ Achievement Indicator:

Able to represent halves and quarters

### Fractions

This shape has 4 equal parts. One part out of the four parts is shaded; we say one quarter is shaded. One quarter is written as  $\frac{1}{4}$  in fraction.

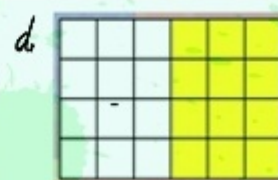


This shape has 4 equal parts. Two parts out of the four parts are shaded; we say two quarters is shaded. Two quarters is written as  $\frac{2}{4}$  or  $\frac{1}{2}$  in fraction.



In class

Tick (✓) the shapes that represents  $\frac{1}{4}$   
(X) the shapes that show  $\frac{2}{4}$



Color the fraction shown under each shape.



$\frac{1}{4}$



$\frac{2}{4}$



$\frac{3}{4}$

# Fractions

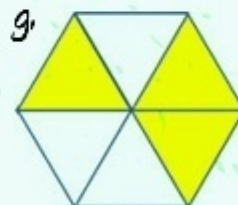
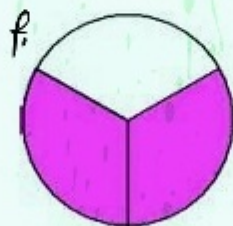
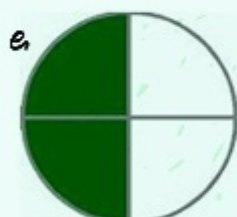
Fraction – one third

The shape has 3 parts.



One part of the shape is shaded.  
One part out of the three parts is shaded; we say one third is shaded.  
One third is written as  $\frac{1}{3}$  in fraction

1. Mark the shape that shows  $\frac{1}{3}$  with a cross (X)

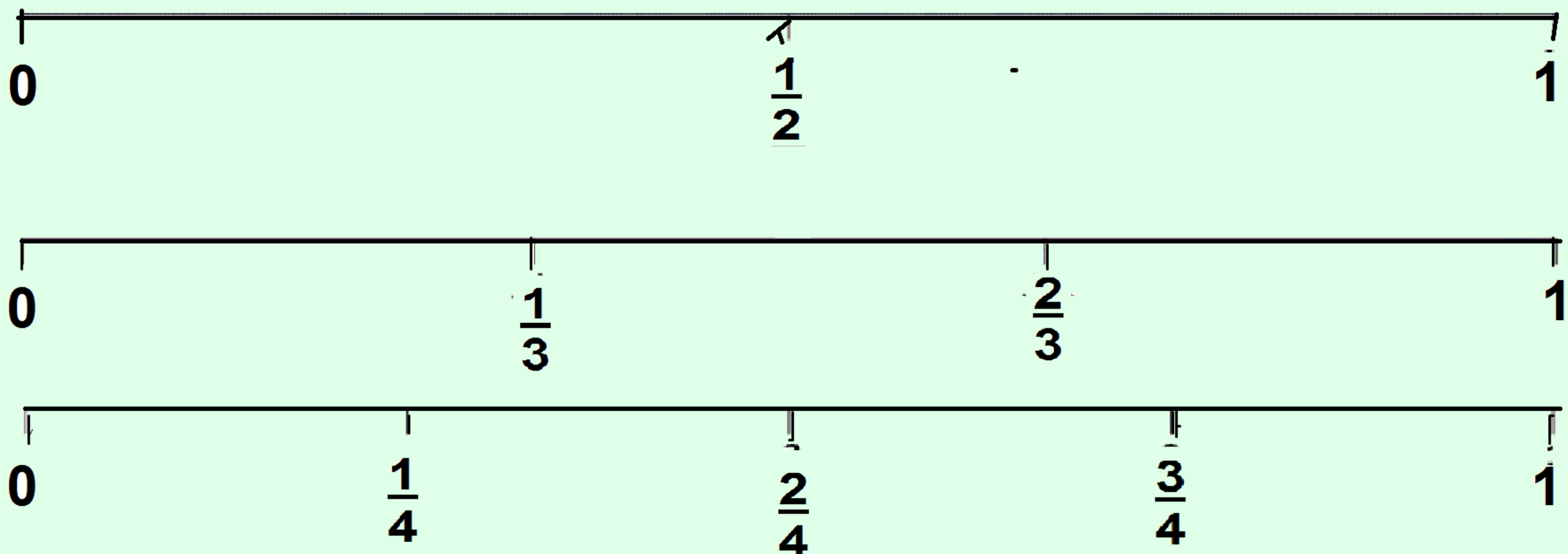




★ Achievement Indicator:

Able to show relationships for the parts of the fractions.

## Fraction Number Lines to 1



Study the number line above and put in the correct sign  $<$ ,  $>$  or  $=$  in the

a)  $\frac{2}{3}$    $\frac{1}{2}$

b)  $1$    $\frac{4}{4}$

c)  $\frac{2}{4}$    $\frac{2}{3}$

d)  $\frac{3}{4}$    $1$

## Word Problem

- How many quaters will equal half?
- If I give one third of pie to my friend, what fraction of the pie is left for me?



# Algebra

## STRAND 2





Achievement Indicator:

- Copy and create patterns with objects

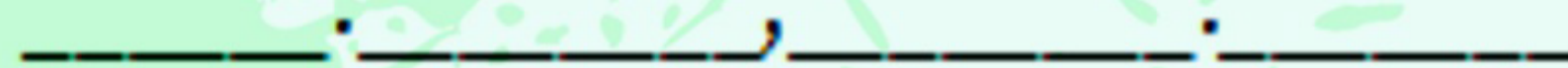
## Creating Patterns

*Complete the patterns that are given below*

1.



2.



3.



*Create your own patterns*

4.



5.



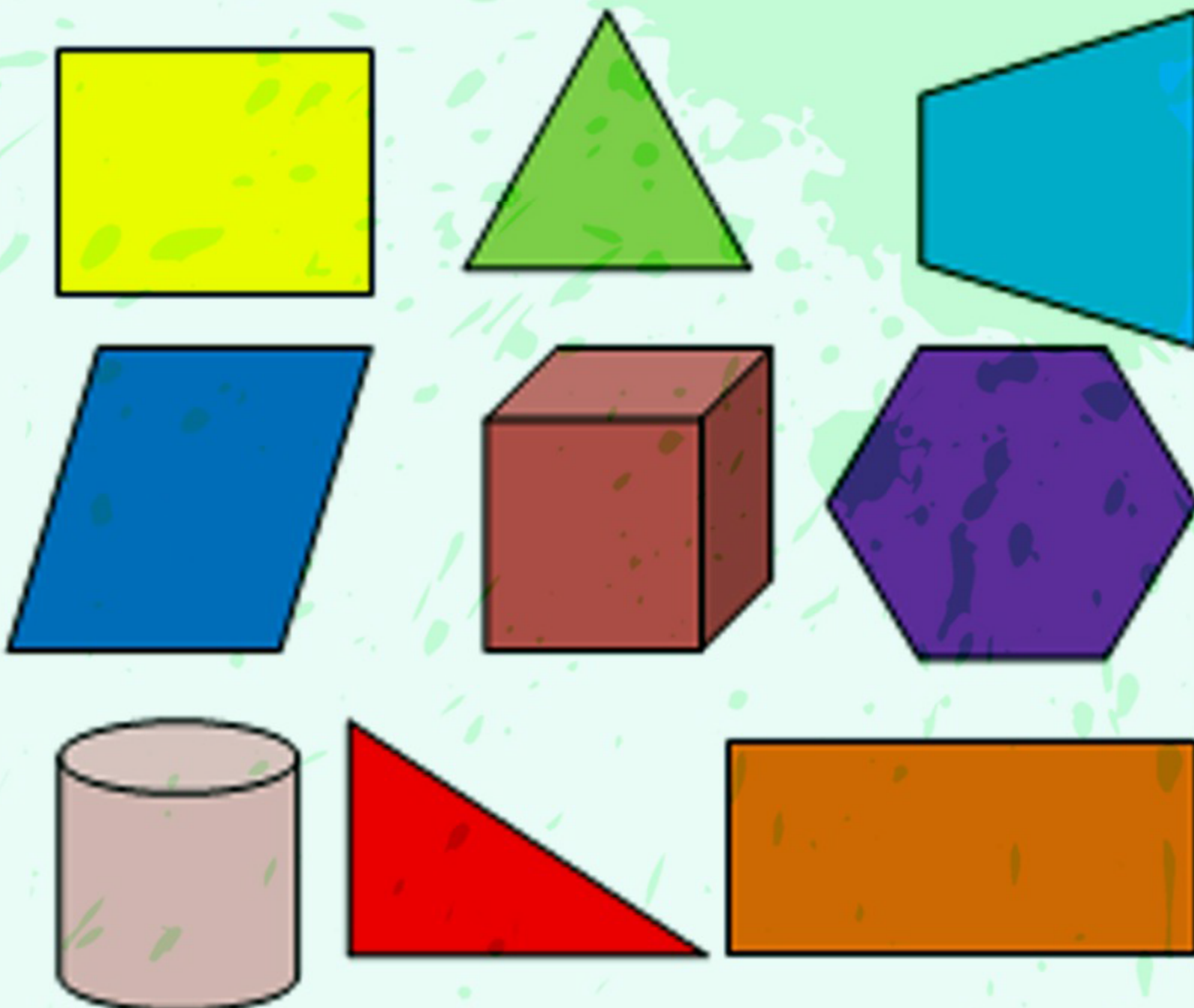





## ★ Achievement Indicator:

- ☒ draw a simple table from a set of information gathered.
- ☒ Read and interpret data as it appears on a table, bar graph or pictograph

1. Put a circle round the object(s) which does not belong to the group and give a reason for your answer

<p>a</p> 	 <p>b</p>
 <p>c</p>	 <p>d</p>





## Achievement Indicator:

- Write the algebraic expression such as more than or less than

## Number Patterns

**Example:** 2, 5, 8, 11, 14 This is a two more pattern  
10, 8, 6, 4, 2, 0 This is a two less pattern

*Complete the list and describe the pattern.*

a. 2, 3, 4, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

What is the pattern? \_\_\_\_\_

b. 4, 7, 10, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

What is the pattern? \_\_\_\_\_

c. 7, 9, 11, 13, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_...

What is the pattern? \_\_\_\_\_

d. 5, 8, 11, 14, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

What is the pattern? \_\_\_\_\_

e. 5, 10, 15, 20, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

What is the pattern? \_\_\_\_\_

f. 10, 20, 30, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

What is the pattern? \_\_\_\_\_



### ★ Achievement Indicator:

- Able to translate given phrase to Algebraic expression.

Translate these phrases into **algebraic expressions**.

For example: 3 times  $f$  Answer:  $3 \times f$

i) 4 is added to  $p$

Answer: \_\_\_\_\_

ii) Take away 2 from  $q$

Answer: \_\_\_\_\_

iii) Sum of 8 and  $z$

Answer: \_\_\_\_\_

iv) 9 minus  $h$

Answer: \_\_\_\_\_

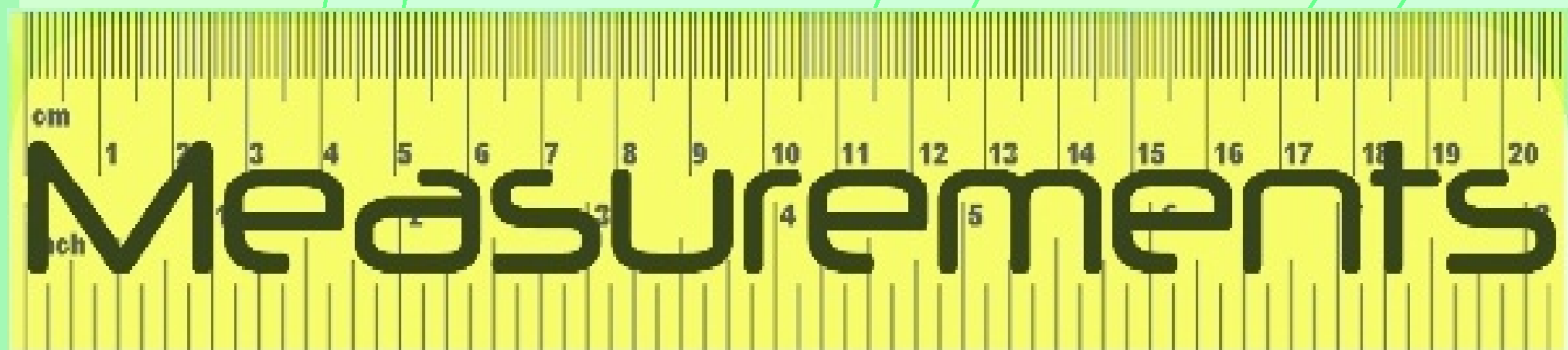
iv) Product of 3 and  $y$

Answer: \_\_\_\_\_

v) 6 less than  $r$

Answer: \_\_\_\_\_





# STRAND 3



## Strand 3: Measurements





### Unit 3.1 Length

#### ★ Achievement Indicator:

- Estimate and record lengths and distances using a standard and non standard units
- Express a measurement by using standard units.(cm, m)
- Express a measurement through the use of non -standard unit.

## Length

Non-standard units are:

Non standard unit	Definition	Illustration
<b>Hand span</b>	The distance between the little finger and the thumb on an outstretched hand	
<b>Step or pace</b>	The number of steps or pace that is taken.	
<b>Arm length</b>	The number of arm length taken for a given distance	
<b>Fathom</b>	The length measured on a person outstretched arms	

**Perimeter** is the distance around a given shape. E.g. A desk top has 4 sides, to find that its **perimeter**, we will measure lengths and widths around the desktop to find its **perimeter**.



★ Achievement Indicator:

Estimate and measure length using non-standard units.

## Length

*Use the non-standard measures to find the Perimeter of the items below.*



1. The length of my desk is \_\_\_\_\_ spans.
2. The width of my desk is \_\_\_\_\_ spans.  
The total distance around the desk is \_\_\_\_\_ spans.



3. The length of the classroom is \_\_\_\_\_ steps/pace.
4. The width of the classroom is \_\_\_\_\_ steps/pace. The total distance around the classroom is \_\_\_\_\_ steps.



5. The length of the blackboard is \_\_\_\_\_ arm length.
6. The width of the blackboard is \_\_\_\_\_ arm length. The total distance around the blackboard is \_\_\_\_\_ arm.

For shorter distance or length we use "span"

For longer distance/length we use "steps/pace", "fathom" or "arm length"



## ★ Achievement Indicator:

- Estimate and record lengths and distances using a standard and non standard units
- Express a measurement by using standard units.(cm, m)
- Express a measurement through the use of non -standard unit.

## Length

*Use the following non-standard units of span, steps, fathom and or arm length for the activity below.*

**Complete the table.**

	Estimated length in steps	Accurate steps	Estimated length in meters	Accurate length in meters
Verandah				
Classroom				
Playing ground				
Flower bed				

*Express a measurement by using standard units (meters and centimeters).*

**Standard Units are:**

- millimeters is written as **mm**
- centimeters is written as **cm**
- meters is written as **m**



**Note:**

10mm	=	1cm	100cm	=	1m
1,000 mm	=	100cm	1,000 cm	=	1km
1,000,000mm	=	1km	10,000mm	=	1,000 m
1000m	=	1km	100,000cm	=	1km



★ Achievement Indicator: Estimate and measure lengths using metres and centimetres.

### Length

*Measure each object with your centimeter ruler.*

a.



\_\_\_\_\_ centimeters.

b.



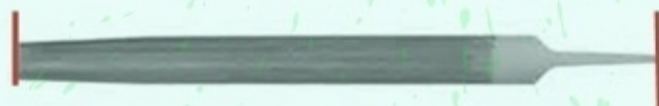
\_\_\_\_\_ centimeters

c.



\_\_\_\_\_ centimeters

d.



\_\_\_\_\_ centimeters



## ★ Achievement Indicator:

- Explain the meaning of area through the use of non-standard unit.
- Explain the meaning of area through the use of non-standard unit.
- Demonstrate the accurate way of measuring areas of shapes using both standard and non-standard units

## Area

How many books will cover the area of this chart?



Try to cover the chart with the books. The total number of books that covers the chart is the area of the chart.



The chart area = \_\_\_\_\_ books



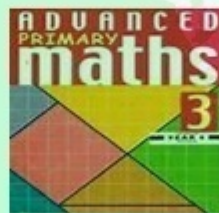
### Achievement Indicator:

- Express capacities using non-standard unit and standard units of volumes.

## Weights and Mass



Chalk box



Book



Match Box

1. Compare the mass of each object by holding it in your hands.

- In the same way guess which is the heaviest and which is the lightest of the items given above.
- Write them in order from the lightest to the heaviest.

\_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

- Use a balance scale to check if your guess is correct.

2. Now using the box of chalk, book, crayon and match box,

- The \_\_\_\_\_ is heavier than the \_\_\_\_\_
- The \_\_\_\_\_ is lighter than the \_\_\_\_\_
- Which of the items is the lightest? \_\_\_\_\_
- Which of the items is the heaviest? \_\_\_\_\_



### ★ Achievement Indicator:

- Estimate and show the difference in weight of two objects in using comparable words such as heavy, heavier heaviest, light, lighter, lightest in sensible sentences.
- Show how mass can be measured using standard unit.

## Weights and Mass



Cement block



Wood Block



Stone

1. Compare the mass of the cement block, wood block and stone by holding them in your hands.

- Which do you think is the heaviest? \_\_\_\_\_
- Which do you think is the lightest? \_\_\_\_\_
- Write the mass in order from the heaviest to the lightest.  
\_\_\_\_\_
- Use a balance scale to find out if your guess is correct.

2. Now using the box of chalk, book, crayon and match box.

- The cement block is \_\_\_\_\_ than the wood block.(heavier/lighter)
- The wood block is \_\_\_\_\_ than the stone.(lighter/heavier)
- Which of item is heavy, heavier and the heaviest?  
\_\_\_\_\_ heavy \_\_\_\_\_ heavier \_\_\_\_\_ heaviest

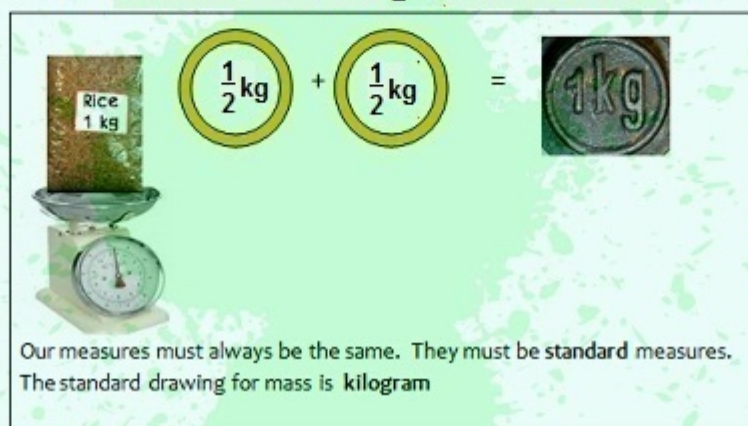


## ★ Achievement Indicator:

- Estimate and show the difference in weight of two objects in using comparable words such as heavy, heavier heaviest, light, lighter, lightest in sensible sentences.
- Show how mass can be measured using standard unit.

## Grams and Kilograms

Activity C: Half a kilogram ( $\frac{1}{2}$  kg); One kilogram (1kg)



1. Collect some items such as sand, soil, sugar, salt etc. Using a scale weigh them in half a kilogram and 1 kilogram
2. Look at the amount of each. What do you notice?  
\_\_\_\_\_
3. Are the amounts the different and the masses the same? \_\_\_\_\_
4. Collect some items and guess their masses. Record it in the table below by placing a tick (✓).

	Guessed mass			
	Items	More than $\frac{1}{2}$ kg	Less than $\frac{1}{2}$ kg	More than 1kg Less than 1kg
a.				
b.				
c.				



## ★ Achievement Indicator:

- Show that the volume is measured in litres and millilitres
- Express capacities using non-standard unit and standard units of volumes.

5. Use the scales and to check your guesses.

6. List all the items at home that are  $\frac{1}{2}$  kg and 1kg and record them in the table below.

	Items	$\frac{1}{2}$ kg	1 kg
a			
b			
c			
d			
e			



### Achievement Indicator:

- Show that the volume is measured in litres and millilitres
- Express capacities using non-standard unit and standard units of volumes.

## Volume and Capacity

### Activity

Collect some large containers, bucket, a bowl, jar etc.



1. Guess how many litres each container will hold.
2. Pour 1 litre of water into each container.

Was your guess correct?

Container	Guess in litres	Measure in litres	Error in litre
<b>Example</b> Bucket			
a			
b			
c			
d			



## Strand 3: Measurements

## Unit 3.4 Time

### ★ Achievement Indicator:

1. Order the days of a week.
2. Order the months of a year.
3. Read the time on the 15 minutes and 30 minutes interval

## Time

### Telling the Time

A clock face has:

1. Numbers 1-12 in order around the clock.
2. There is a long hand and a short hand  
The long hand is the minute hand and the short hand is the hour hand.



The clock face shows the different times in words and digital time.

a



3 o'clock  
3.00

b



a quarter past 3  
3.15

c



a half past 3  
3.30

d



a quarter to 4  
3.45

Write the correct time in words and digital time:

a



\_\_\_\_\_

\_\_\_\_\_

b



\_\_\_\_\_

\_\_\_\_\_

c



\_\_\_\_\_

\_\_\_\_\_



## Strand 3: Measurements

## Unit 3.4 Time

### ★ Achievement Indicator:

1. Order the days of a week.
2. Order the months of a year.
3. Read the time on the 15 minutes and 30 minutes interval

## Time

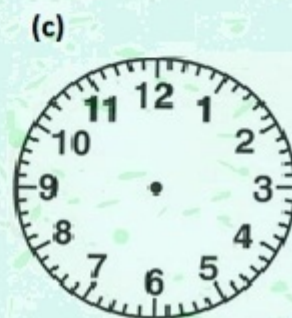
1. Draw the minute hand and hour hands to show the time written under the analogue clock



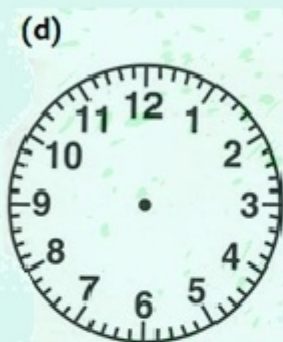
Half past 9



a quarter past 2



11 o'clock



A quarter to 12



4 o'clock



half past 1



## Strand 3: Measurements

## Unit 3.4 Time

### ★ Achievement Indicator:

1. Order the days of a week.
2. Order the months of a year.
3. Read the time on the 15 minutes and 30 minutes interval

## Time

### Word Problem

Eleni left home at 7 o'clock, and reached school after 30 minutes. What time did she arrive at school?

Study the table to Answer the Question

😊 Jack's School Day 😊	
Morning	
Wake up	7:00
Breakfast	7:30
School	8:45
Afternoon	
Lunch	12:30
Club meeting	4:15
Evening	
Bedtime	8:15

Question:

1. What time does Jack has his lunch?
2. How long does Jack spend in sleeping?



## ★ Achievement Indicator:

1. Order the days of a week.
2. Order the months of a year.
3. Read the time on the 15 minutes and 30 minutes interval

### Activity

## Time

- (i) Put a (✓) in the correct box if Jan's is not following his timetable,  
 (ii) Write the correct time that is shown on the clock face.

Example: Is Jan early on time or late?

Wake up time: 7.05



Time	7.05
Early on time	
Late	✓

a. Eat Breakfast



Time	
Early on time	
Late	

b. Arrive at school



Time	
Early on time	
Late	

c. Arrive at club meeting



Time	
Early on time	
Late	

d. Eat Supper



Time	
Early on time	
Late	



## Strand 3: Measurements

## Unit 3.4 Time

### ★ Achievement Indicator:

1. Order the days of a week.
2. Order the months of a year.
3. Read the time on the 15 minutes and 30 minutes interval

## Calendar

There are seven days in a week:

Sunday   Monday   Tuesday   Wednesday   Thursday   Friday   Saturday

30 days has  
September  
April, June and  
November.  
All the rest have 31  
Except February  
alone  
Which has 28 days in  
a year  
And 29 days in a leap  
year.

**Leap year**- A leap year is a year with 366 days. There is a leap year every four years.

There are twelve months in a year:

January   February   March   April   May   June  
July   August   September   October   November   December



## Strand 3: Measurements

## Unit 3.4 Time

### ★ Achievement Indicator:




1. Order the days of a week.
2. Order the months of a year.
3. Read the time on the 15 minutes and 30 minutes interval

# Calendar

Use the calendar above to answer the question.

July						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4 Lee's Birthday 	5	6
7	8	9	10	11	12	13 
14 Jake's Birthday 	15 	16 	17 	18 	19 	20 
21 	22 	23 	24 	25 	26 	27 
28	29 Ann's Birthday 	30	31			

Use the calendar above to answer the question.

1. The first day of this month is on \_\_\_\_\_.
2. Yesterday was Ann's birthday. Today is \_\_\_\_\_.
3. Today is Tuesday. Tomorrow is \_\_\_\_\_.
4. It  on Friday, Saturday, and \_\_\_\_\_.
5. We went  on \_\_\_\_\_ and Thursday.
6. We  on \_\_\_\_\_.

Write the month that comes just after the month given.

7. July \_\_\_\_\_
8. March \_\_\_\_\_
9. October \_\_\_\_\_

Write the month that comes before the given month.

10. September \_\_\_\_\_
11. February \_\_\_\_\_
12. June, \_\_\_\_\_



## Strand 3: Measurements

## Unit 3.5 Money

### ★ Achievement Indicator:

- Add or subtract dollars and cents.
- Name, compare and order dollars and cents with the total value of a set of notes and coins.
- Read and compare transaction receipts.
- Multiply or divide money by single digits.
- Solve money word problem using any of the four operations.

## Money

*Coins in the Fiji currency*



Write the total value of the coins below.

a.



\_\_\_\_\_ cents

b.



\$ \_\_\_\_\_ cents



## Strand 3: Measurements

## Unit 3.5 Money

### ★ Achievement Indicator:

- Add or subtract dollars and cents.
- Name, compare and order dollars and cents with the total value of a set of notes and coins.

## Money

*Notes in the Fiji Currency.*



Count the total amount of money in the box. Write the total value of notes in the space given.



Total Amount = \$ \_\_\_\_\_



Total Amount = \$ \_\_\_\_\_



## Strand 3.: Measurements

## Unit 3.5 Money

### ★ Achievement Indicator:

- Add or subtract dollars and cents.
- Name, compare and order dollars and cents with the total value of a set of notes and coins.
- Read and compare transaction receipts.
- Multiply or divide money by single digits.
- Solve money word problem using any of the four operations.

3.



Total Amount = \$ \_\_\_\_\_

4



Total Amount = \$ \_\_\_\_\_

Add or Subtract

15c

\$1.53

\$5.42

90c

+ 61c

+ \$2.20

- \$2.20

- 55c

76c

\$3.78

\$3.22

35c

In class

(a) 60c

(b) 46c

(c) 25c

(d) \$3.15

+35c

+ 32c

+50c

+\$4.45





(e) \$8.75

(f) 98c

(g) \$4.62

(h) 70c

- \$3.20

- 67c

-\$1.53

- 43c





## Strand 3: Measurements

## Unit 3.5 Money

### ★ Achievement Indicator:

1. Order the days of a week.
2. Order the months of a year.
3. Read the time on the 15 minutes and 30 minutes interval

	Word Problem	Illustration and Cost	Amount
a.	Inoke bought an ice-cream for 50c. How much did Inoke pay to the shopkeeper?	 50c 50c 50c 50c	$  \begin{array}{r}  50c \\  \times 4 \\  \hline  \$2.00  \end{array}  $
b.	Mother shared \$10.00 among her 5 children. How much did each child get?		$  \begin{array}{r}  \$ 2.00 \\  5 \overline{) \$10.00} \\  \underline{\$10.00} \\  0000  \end{array}  $
Work out the answers			
c.	Lusi spends 75c for 5 pencils. What is the cost of one pencil?		
d.	Satish buys 6 chocolates. One chocolate costs \$1.05 each. How much did Satish pay the shopkeeper?		



## ★ Achievement Indicator:

- Use language of comparison to express how warm or cool the weather.
- Use comparative language to express hotness or coldness of some things.
- Read temperatures in degrees Celsius.

## Temperature

*In Class discuss:*

1. What is the weather like today? Is it warm or cool?
2. What was the weather like yesterday?
3. What was the weather like last night?

*Exercise - Tick the correct answer from the box*

	Activity	Hotness	Coldness
a.	Boiling a kettle on a stove		
b.	Drinking ice water		
c.	Making a lavo for a class party		
d.	Drinking water from the tap/tank		
e.	Swimming in the river/sea/pool		
f.	Cooking food on fire/stove		



## Strand 3: Measurements

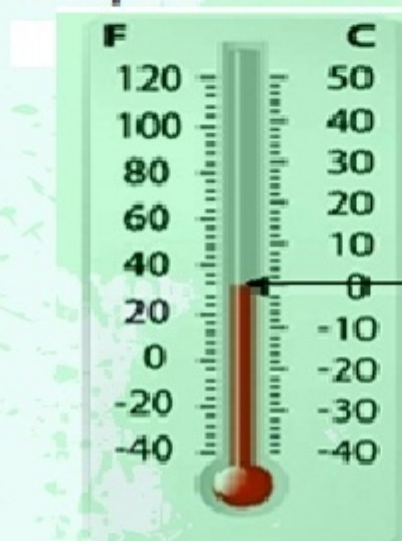
## Unit 3.6 Temperature

### ★ Achievement Indicator:

- Use language of comparison to express how warm or cool the weather.
- Use comparative language to express hotness or coldness of some things.
- Read temperatures in degrees Celcius.

### Thermometer

A thermometer is used to measure temperature.  
Temperature is measured in degree Celcius



The temperature now is 0  
degree Celcius

Using a thermometer find out the temperature of the following:

a	Temperature for the day	
b	Temperature of water	
c	Temperature of boiling water	
d	Temperature of ice water	
e	Temperature of the body	
f	Temperature of the soil/sand	



# GEOMETRY

## STRAND 4



# Geometry

## Strand 4: Geometry

## Unit 4.1 Shapes

### ★ Achievement Indicator:

- Identify and name correctly the number of sides of every 2D shape
- Construct 2D shapes with given lengths
- Identify some 2D shapes around them

### Two Dimensional Shapes (2D)

Plane shapes have only two dimensions: lengths and widths.

Example:



1. Match the shape with the correct properties



Rectangle  
4 sides and 4 corners.

Hexagon  
6 sides and 6 corners.

Square  
4 sides and 4 corners.

Triangle  
3 sides with no corners.





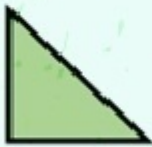


## ★ Achievement Indicator:

- Identify and name correctly the number of sides of every 2D shape
- Construct 2D shapes with given lengths
- Identify some 2D shapes around them

## Shapes

2. Count then record the number of sides and angles on each shape.  
Write the name of each shape on the shapes given.

Shapes	Number of Sides	Number of Angles
a.) 		
b.) 		
c.) 		
d.) 		
e.) 		



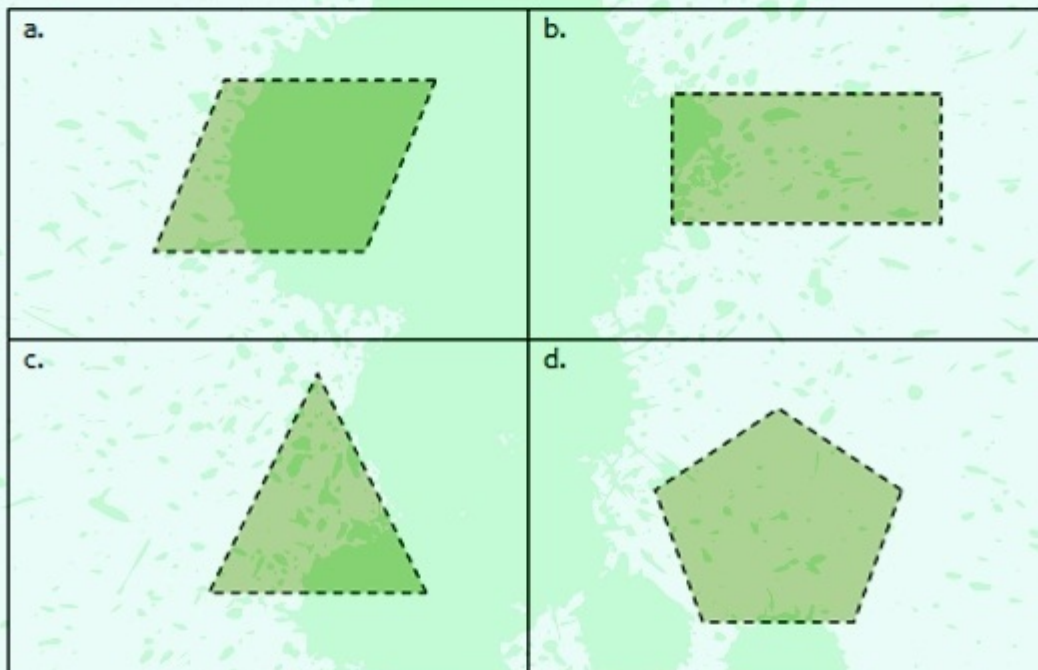
## Strand 4: Geometry

## Unit 4.1 Shapes

### ★ Achievement Indicator:

- Identify and name correctly the number of sides of every 2D shape
- Construct 2D shapes with given lengths
- Identify some 2D shapes around them

3. Join the dots to form the shapes, and then write their names on them.



4. Find and list some things in your classroom that have triangle and rectangle shapes







	Triangle	Rectangle
a		
b		
c		
d		



## Achievement Indicator:

- Show and name a line, ray, line segment and a curve
- List properties of lines, rays, line segments, parallel lines, curves and angles
- Show angles from things around them

## Angles & Directions

Name	Illustration	Properties
Line		A line goes on and on in both directions. It has no end points.
Line segment		A line segment is a part of a line and it has two end points.
Ray		A ray has a line segment with only one end point. It goes in one direction.
Curve		A line which is not straight with any sharp edges. It is a smoothly flowing line.
Angle		An angle has two rays with the same end point.
Parallel lines		Two lines on a plane that never meet. They are always the same distance apart.

1. Write the name of each figure.

a) 

\_\_\_\_\_

b) 

\_\_\_\_\_

c) 

\_\_\_\_\_

d) 

\_\_\_\_\_

e) 

\_\_\_\_\_

e) 

\_\_\_\_\_

f) 

\_\_\_\_\_



## Strand 4: Geometry

## Unit 4.2 Angles and Directions

### ★ Achievement Indicator:

- Identify and name correctly the number of sides of every 2D shape
- Construct 2D shapes with given lengths
- Identify some 2D shapes around them

2. In the spaces provided write down a property the following figures.

	Name	Illustrate	Property
a.	Ray		
b.	Line Segment		
c.	Curve		
d.	an angle		
e.	line		
f.	parallel line		

3. List some angles that are formed around the classroom

- a) \_\_\_\_\_
- b) \_\_\_\_\_
- c) \_\_\_\_\_
- d) \_\_\_\_\_



# Chance and Data



## Strand 5: Chance & Data

## Unit 5.1 Chance

### \*\*\*Achievement Indicator:


- Show and name a line, ray, line segment and a curve
- List properties of lines, rays, line segments, parallel lines, curves and angles
- Show angles from things around them


Roll a dice 20 times and record the results using tally marks (III ).

Use these words to answer the following questions.

unlikely	impossible	certain	likely
----------	------------	---------	--------

i) How would you describe the change of rolling  ?

ii) How would you describe the chance of rolling a  on the first go?

iii) How would you describe the chances of rolling a

 or  on the first go?

iv) Which face came up the most?

v) Which face came up the least?



★ Achievement Indicator:

- ☑ draw a simple table from a set of information gathered.
- ☑ Read and interpret data as it appears on a table, bar graph or pictograph

## Data Representation and Interpretation

1. Apenisa has ten marbles in a bag.

( 2 blue, 4 green, 2 red, 1 yellow and 1 purple)



- (i) Which colour is most likely to be drawn out of the bag ? \_\_\_\_\_

- (ii) Which colour is the least likely to be drawn out of the bag ? \_\_\_\_\_

- (iii) Which colours are equally likely to be drawn out of the bag ? \_\_\_\_\_

- (iv) Which colours has four marbles in the bag ? \_\_\_\_\_

### Class Activity

*Get in pairs and then toss the coin ten times. While you are tossing the coin, let your friend record the number of HEAD and the number of TAIL. Which of the side; head or the tail had the least possibilty of the outcome?*



## Strand 5: Chance & Data

## Unit 5.1 Chance

### Achievement Indicator:

- Show and name a line, ray, line segment and a curve
- List properties of lines, rays, line segments, parallel lines, curves and angles
- Show angles from things around them

## Relative Frequency

i. Colour the label that best describes the chances of the following events.

1. Breakfast



certain

possible

impossible

2. Recess



certain

possible

impossible

3. End of school



certain

possible

impossible

4. What are the chances of the following events?

- a) Playing after school \_\_\_\_\_
- b) Travelling to the sun \_\_\_\_\_
- c) Rain in the afternoon \_\_\_\_\_
- d) Meeting Barrack Obama \_\_\_\_\_
- e) Passing the exam \_\_\_\_\_



## Strand 5: Chance & Data

### Unit 5.1: Data Representation and Interpretation

#### ★ Achievement Indicator:

- ☒ draw a simple table from a set of information gathered.
- ☒ Read and interpret data as it appears on a table, bar graph or pictograph

*Mr Prasad's class did a survey to find out which flower was the most popular.  
This is what they found.*

Names	Rose	Zinnia	Sunflower
Anshu			x
Ana	X		
Losalini			x
Sikeli			x
Tupou		x	
Jagdish		x	
Shivan	X		

#### Results

- 3 people liked sunflower
- 2 people liked zinnia
- 2 people liked rose

1. Draw a bar graph using the information gathered above.
2. Take a survey in your class to find out the class's favourite sports or colour. Draw a pictograph from the information gathered.



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★ Achievement Indicator: Estimate, measure to find out the error for measurement using non standard unit .

## Area

This activity will help the children to use non-standard unit in finding the Area of an object.

1. Each student to trace their hand on a piece of paper several times
2. Cut the traced outline.
3. Use the cut out of his or her hand to measure the area of desktop.
4. Have students explore measuring parts of the desk that are not covered by a complete hand.

*1 Use the activity above to help the children measure the area of the following:*

Item measured	Non-standard unit of measure
1. Teacher's table	
2. Desktop	
3. chair	
4. classroom chart	

## Achievement Indicator:

- Show that the volume is measured in litres and millilitres
- Express capacities using non-standard unit and standard units of volumes.

## Volume and Capacity

### Activity Exercise: Discover capacity (Volumes)

It is interesting to find out how much things can hold, so today we will measure capacity

You will need:

Measuring Cup (for larger items)

Measuring Spoons (for smaller items)

Pen and paper

Water / Sand



Record your results here:

Description of cup or glass	How many?	
	Guess	Actual

Collect cups, bottles containers to include one small one.



1. Do you they hold the same amount water/sand?

2. Which cup / bottle / container holds the most

3. Which cup / bottle / container holds the least?

4. Put them in order. Put the small one first. Now use the small one to fill other ones in turn.



## Achievement Indicator:

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## Achievement Indicator:

- Read the capacity bottles and containers as expressed on the objects
- Explain how a one-litre jug can be used to fill and compare volumes of two different containers

## Volume and Capacity

### Standard unit of Volume

There are two standard units of volume

- Millilitres (ml) – measuring very small amount of liquid  
Example: water in a spoon, tea in a cup, milk in a bottle
- Litres (L) – measuring larger volume of liquids  
Example: water in a bucket,  
1 litre = 1000ml  
 $\frac{1}{2}$  litre = 500ml

### Activity

1. Collect bottles and container and record the volume of each in the table below.

	Container	Unit
a.	Milk in packet	
b.	Coke in a can	
c.	Water in a bucket	
d.	Petrol in a car	
e.	Water in a cup	
f.	Juice in a jar	

We measure most liquids in **LITRES** and **HALF LITRES**.

Why? These are standard measures.

