2024 Parents' Engagement Session

Study Skills and Expectations of Primary Mathematics (Primary 3 & 4)

Saturday, 13 Apr 2024

Objectives

- To better equip you with knowledge and skills in coaching your child in Mathematics by creating an awareness of the expectations for Primary 3 & 4 Mathematics

- To increase collaboration between parents and the school

Aims of Primary Mathematics: Laying a strong foundation

- ✓ Acquire mathematical concepts and skills for everyday use and continuous learning in mathematics
- ✓ Develop thinking, reasoning, communication, application and metacognitive skills through a mathematical approach in problem-solving
- ✓ Build confidence and foster interest in mathematics

Mathematics Curriculum

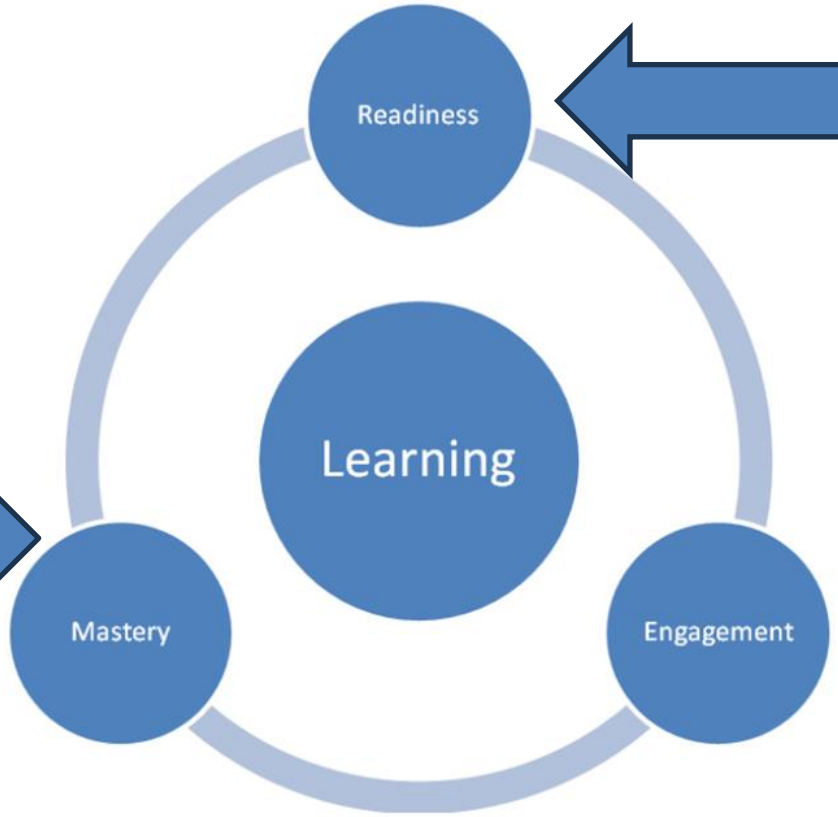
Primary 3

Number & Algebra	Measurement & Geometry	Statistics
• Whole Numbers • Fractions • Money	• Length, Mass &Volume • Time • Area & Perimeter • Angles • Perpendicular & Parallel lines	• Bar Graph

Primary 4

Number & Algebra	Measurement & Geometry	Statistics
• Whole Numbers • Fractions • Decimals	• Area & Perimeter • Symmetry • Squares & Rectangles • Angles • Nets	• Tables & Line Graphs • Pie Chart

Mathematics Curriculum



Boost student readiness for learning by considering prior knowledge, using engaging contexts, and fostering an optimal learning environment .

During the final phase of learning, we will consolidate and expand upon their understanding.

Using a variety of teaching approaches to effectively engage students in acquiring new concepts and skills.

Passionate Learners, Gracious Citizens

Topic: Whole Numbers

PRIMARY 1	PRIMARY 2	PRIMARY 3	PRIMARY 4	PRIMARY 5
Numbers up to 100	Numbers up to 1 000	Numbers up to 10 000	Numbers up to 100 000 Rounding off Factors and Multiples	Numbers up to 10 million
Addition and Subtraction within 100	Addition and Subtraction up to 3-digits	Addition and Subtraction up to 4-digits		
Concepts of multiplication and division	Multiplication and Division (Multiplication tables of 2, 3, 4, 5 & 10)	Multiplication and Division (Multiplication tables of 6, 7, 8, 9) 3D by 1D	Multiply 4D by 1D and 4D by 1D Divide 4D by 1D	Order of Operations Multiply and divide by 10,100,1000 and its multiples

Topic: Whole Numbers

- Pupils need to remember multiplication tables, especially multiplication tables of **6, 7, 8 and 9.**
- Pupils need to know how to perform Division of Whole Numbers especially long division algorithm
- Parents can help by **revising** with your child and ensure that they have mastered their multiplication tables.

Factual Fluency

Ability to recall the answers to basic Math facts automatically without hesitation.

Level	Number Facts
P1 Term 1	Number Bonds up to 10
End of P1	Addition and Subtraction within 20
P2	Multiplication tables of 2, 3, 4, 5 and 10
P3	Multiplication tables of 6, 7, 8 and 9

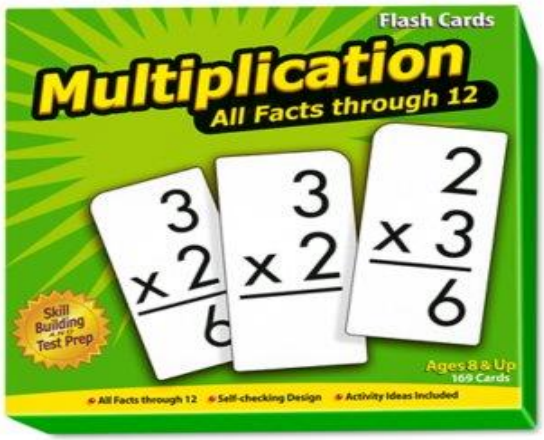
How to develop Factual Fluency?

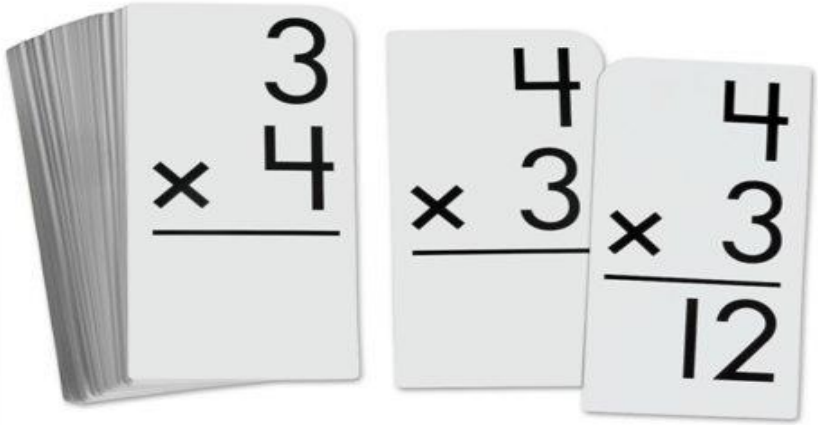
- ✓ Practice
- ✓ Learning using concrete materials
- ✓ Games

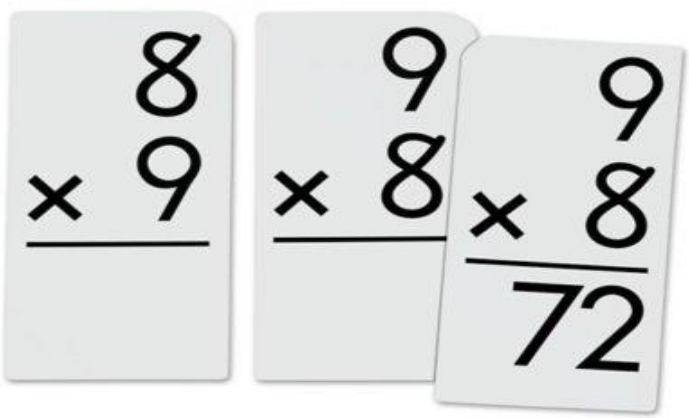
Strategies for learning multiplication tables

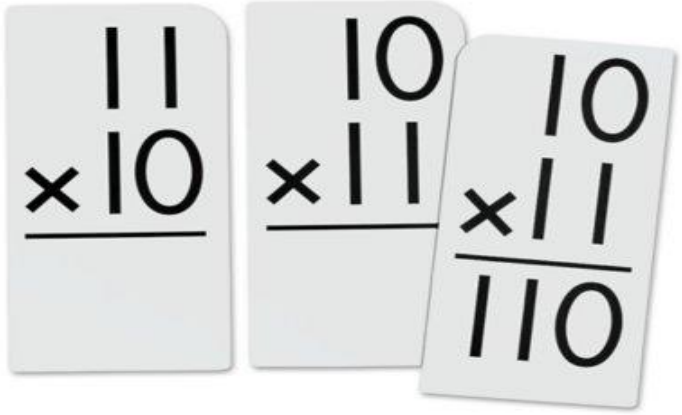
- **Multiplication Fact Cards**
- Multiplication Songs
- Show patterns/fingers for 9 times table
- Games or Online resources

Multiplication Fact Cards



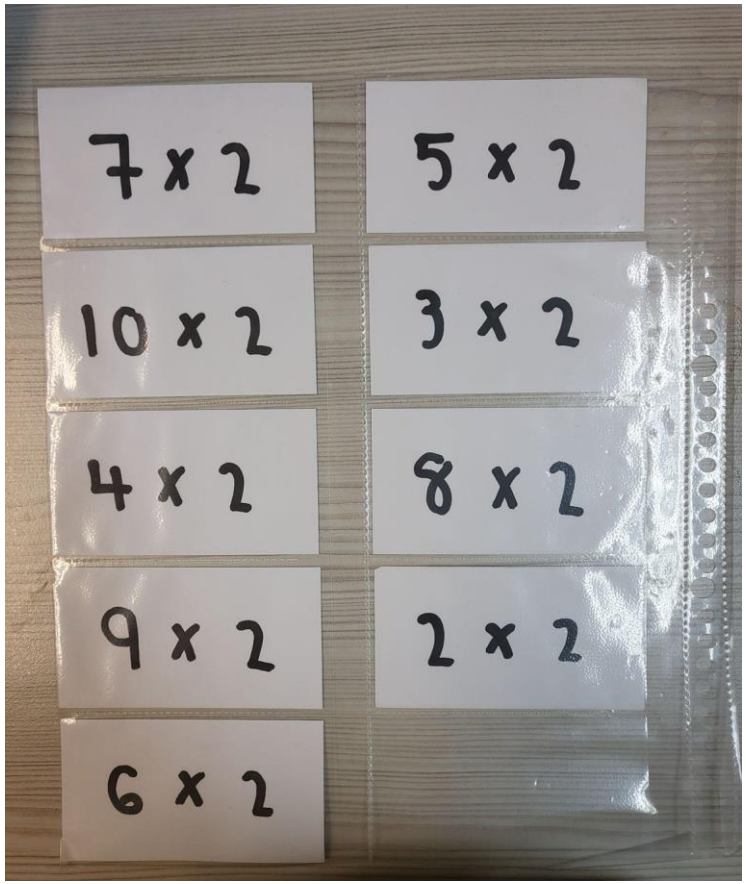






Passionate Learners, Gracious Citizens

Multiplication Fact Cards



Passionate Learners, Gracious Citizens

Strategies for learning multiplication tables

- Multiplication Fact Cards
- **Multiplication Songs**
- Show patterns/fingers for 9 times table
- Games or Online resources

Multiplication Songs

6 Times-Table
(Sing to the tune of Six Little Ducks)

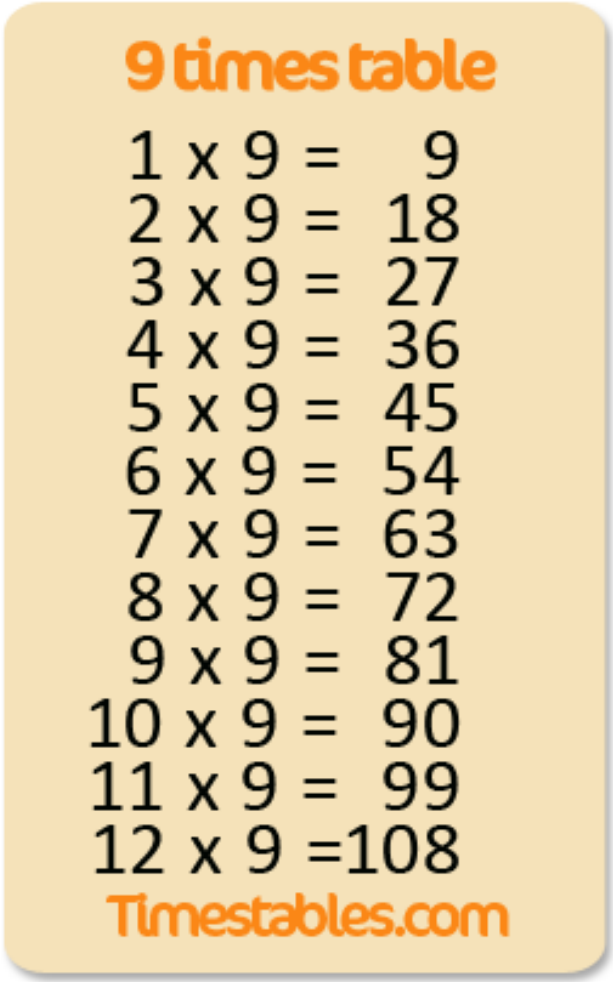
6, 12, 18, 24
30 and 36
42 and 48
54 and 60

Strategies for learning multiplication tables

- Multiplication Fact Cards
- Multiplication Songs
- **Show patterns / using fingers for 9 times table**
- Games or Online resources

9 times table – Pattern

09
18
27
36
45
54
63
72
81
90



9 times table – Using fingers

1 x 9 = 9

1st finger is down

2 x 9 = 18

2nd finger is down

3 x 9 = 27

3rd finger is down

4 x 9 = 36

4th finger is down

5 x 9 = 45

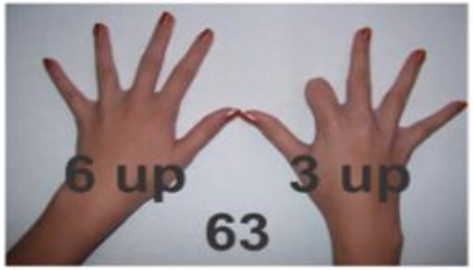
5th finger is down

6 x 9 = 54

6th finger is down

9 times table – Using fingers

7 x 9 = 63



7th finger is down

8 x 9 = 72

8th finger is down

9 x 9 = 81

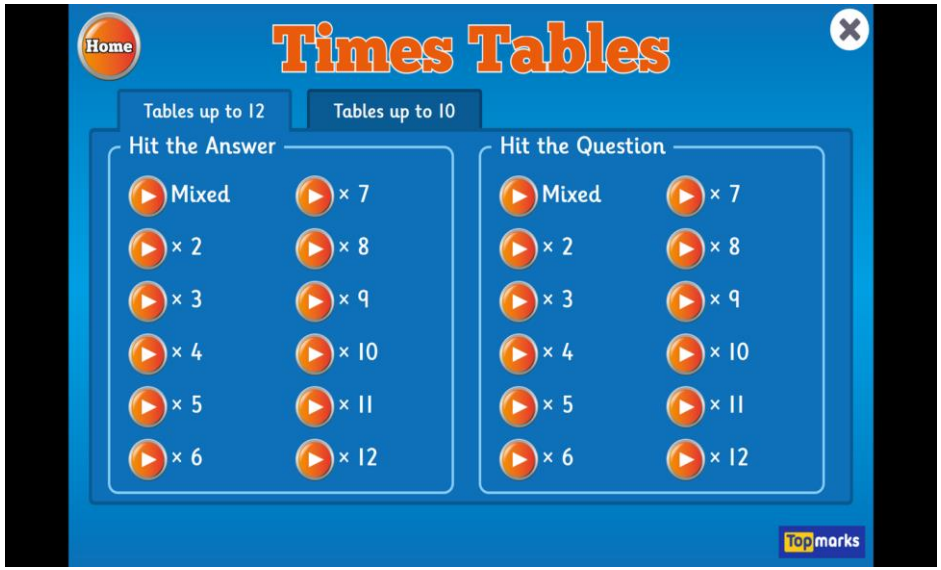
9th finger is down

Strategies for learning multiplication tables

- Multiplication Fact Cards
- Multiplication Songs
- Show patterns/fingers for 9 times table
- **Games or Online resources**

Games or Online Resources

- https://www.topmarks.co.uk/maths-games/hit-the-button



Mathematical Language

Mathematical terms/ phrases	Part-Whole	Combine	Compare
Sum / Difference Product / Multiply Quotient / Divide Remainder Factor / Multiple Groups of Equal groups 3 times as many as	Some of them $\frac{1}{3}$ of them Remaining Left Shared equally	Total In all Altogether	More Less/ Fewer Heavier Lighter Taller Shorter

Mathematical Language

Q1) The difference between two numbers is 25.

The smaller number is 17.

What is the greater number?

Q2) The difference between two numbers is 25.

The greater number is 57.

What is the smaller number?

Q3) The sum of two numbers is 68.

One of the numbers is 56.

What is the other number?

Mathematical Language

Q1) The difference between two numbers is 25.

The smaller number is 17.

What is the greater number? [25 + 17 = 42]

Q2) The difference between two numbers is 25.

The greater number is 57.

What is the smaller number? [57 – 25 = 32]

Q3) The sum of two numbers is 68.

One of the numbers is 56.

What is the other number? [68 – 56 = 12]

Problem-Solving

At a carnival, every 4th child gets a free party hat. Every 6th child gets a free balloon. If there are 40 children at the carnival, how many children will get both the free gifts?

Marking Scheme

Multiples of 4: 4, 8, **12**, 16, 20, **24**, 28, 32, **36**, 40

[M1] *for listing multiples of 4*

Multiples of 6: 6, **12**, 18, **24**, 30, **36**

[M1] *for listing multiples of 6*

Ans: <u>3</u> [A1]

Solution 1

1, 2, 3, **4**, 5, 6, 7, **8**, 9, 10
11, **12**, 13, 14, 15, **16**, 17, 18, 19, **20**
21, 22, 23, **24**, 25, 26, 27, **28**, 29, 30
31, **32**, 33, 34, 35, **36**, 37, 38, 39, **40**
[M1]

Ans: 3 [A1]

Solution 2

1, 2, 3, **4**, 5, 6, 7, **8**, 9, 10
11, **12**, 13, 14, 15, **16**, 17, 18, 19, **20**
21, 22, 23, **24**, 25, 26, 27, **28**, 29, 30
31, **32**, 33, 34, 35, **36**, 37, 38, 39, **40**
[M2]

Ans: 6 [A0]

Solution 3

1, 2, 3, 4, 5, 6, 7, 8, 9, 10
11, 12, 13, 14, 15, 16, 17, 18, 19, 20
21, 22, 23, 24, 25, 26, 27, 28, 29, 30
31, 32, 33, 34, 35, 36, 37, 38, 39, 40
[M0]

Ans: 3 [A0] {Answer marked as wrong method}

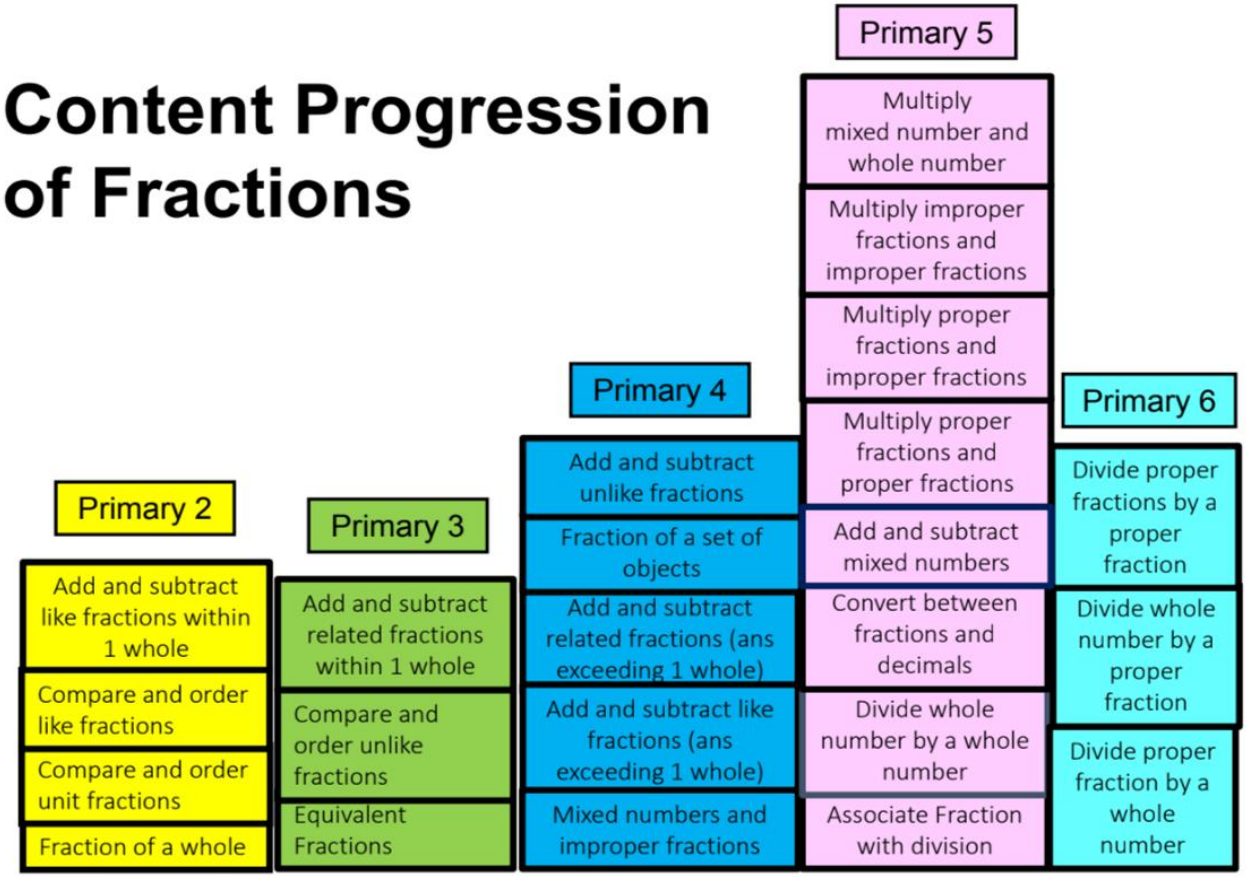
Topic: Fractions

- Pupils generally have difficulty understanding the concept of Fractions

- Important to grasp concept of equivalent fractions as it will help in understanding future topics like ratio, percentage and decimals.

Topic: Fractions

Content Progression of Fractions



Equivalent Fractions

- Fractions that look different but have the same value

- Basis for comparing fractions and addition and subtraction of fractions

Equivalent Fractions

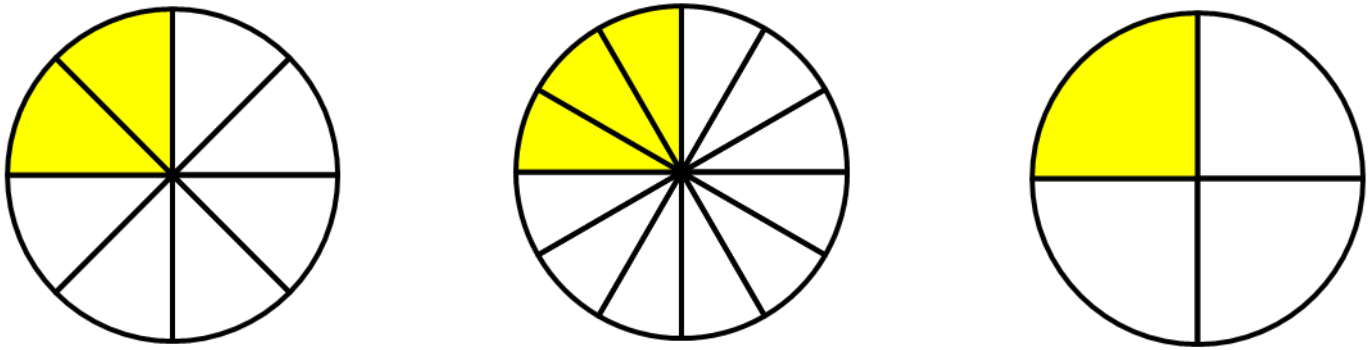
- Do you think these are equivalent fractions?

$\frac{2}{8}$ $\frac{3}{12}$ $\frac{1}{4}$

Equivalent Fractions

- Do you think these are equivalent fractions?

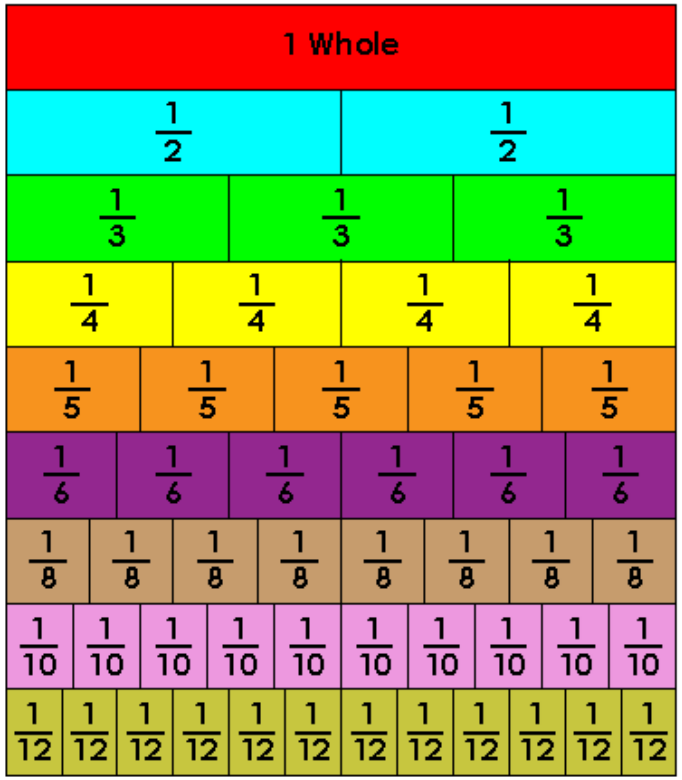
$\frac{2}{8}$ $\frac{3}{12}$ $\frac{1}{4}$



Equivalent Fractions

1. Paper Folding

2. Fraction bars / discs



Equivalent Fractions

Paper Folding Activity

Passionate Learners, Gracious Citizens

Equivalent Fractions

$\frac{1}{4}$ $\frac{2}{8}$ $\frac{3}{12}$

Comparison of fractions: same denominator

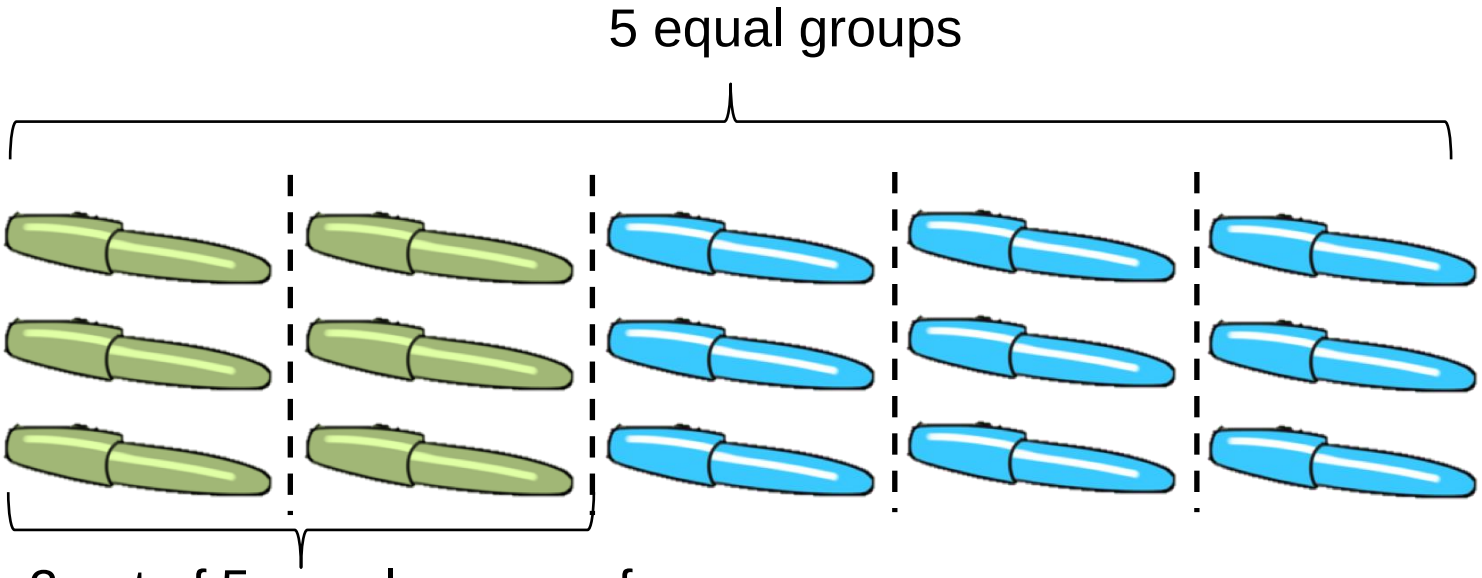
✓ **Multiply** both the numerator and denominator by the same number

Express fractions in simplest form

✓ **Divide** both the numerator and denominator by the same number

Fraction of a set

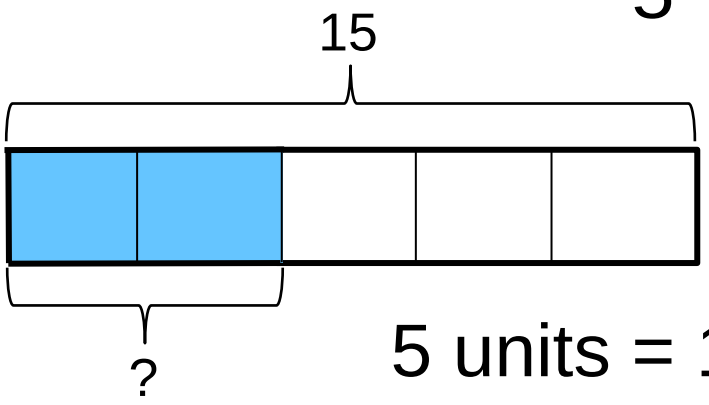
Danial has 15 pens.



$\frac{2}{5}$ of the pens are green

Fraction of a set

Find the value of $\frac{2}{5}$ of 15.



Divide 15 into 5 equal parts. One part is $\frac{1}{5}$ of 15.

5 units = 15

1 unit = 15 ÷ 5

= 3

2 units = 3 × 2

= 6

So, $\frac{2}{5}$ of 15 is 6.

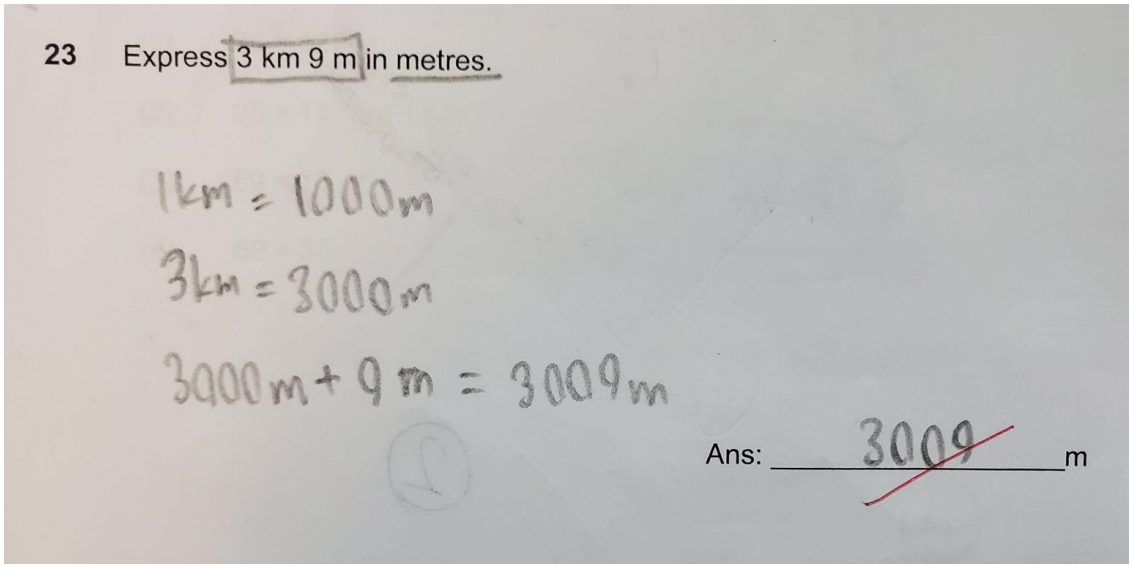
Measurements

- ✓ Conversion of units
- ✓ Importance of using timeline
- ✓ Difference between area and perimeter
- ❖ Wrong or no units written
- ❖ Difficulty applying concept of perimeter and area

Length, Mass and Volume

Conversion of units

- ✓ 100 cm = 1m
- ✓ 1000 m = 1km
- ✓ 1000 g = 1 kg
- ✓ 1000 mℓ = 1ℓ



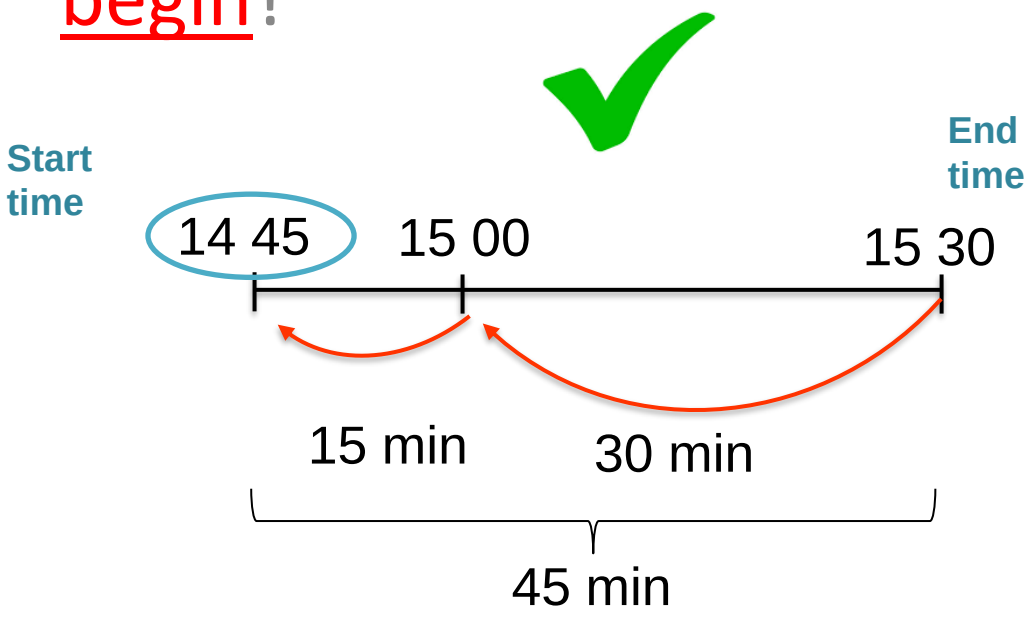
Length, Mass and Volume

Have conversations with your child on :

- how heavy things are e.g. packet of rice, salt, sugar
- length of the items e.g. door, window, cupboard
- capacity of bottles or containers e.g. milk, fruit juice

Time

Q1) Cindy's piano lesson ended at 15 30. It lasted 45 minutes. What time did the piano lesson begin?



15 30 – 45 min = 14 45
3.30pm – 45 min=2.45pm

Common error:
Presents incorrect mathematical statements

Presentation of working

Check that number sentences are written correctly

★ Time

15 min after 4.30 p.m.

4.30 + 15 = 4.45 p.m.

Ans: 4:45 pm or 16:45

★ Time

15 min after 4.30 p.m.

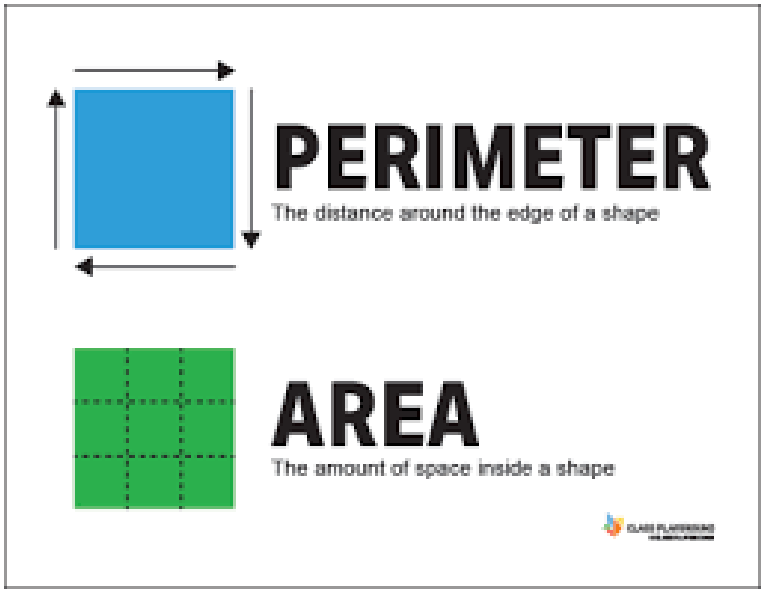
4.30 p.m. → 15 min = 4.45 p.m.

(draw timeline)

Ans: **4.45 pm or 16 45**

Area and Perimeter

- Wrong or no units written for perimeter (cm/m) and area (cm^2 or m^2)
- Difficulty applying concept of perimeter and area

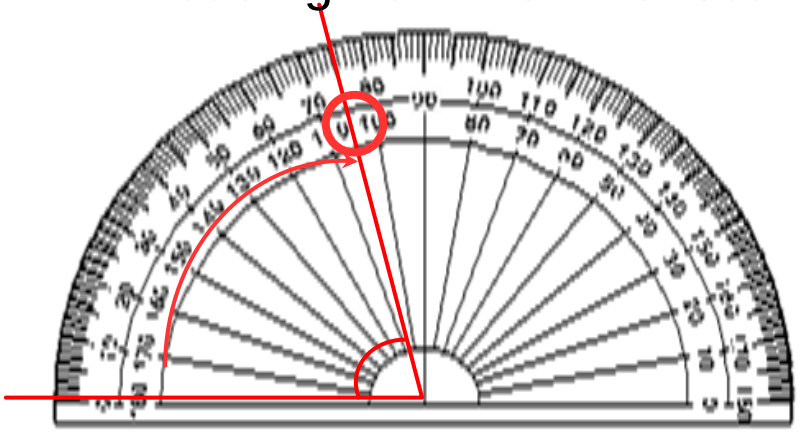


Geometry

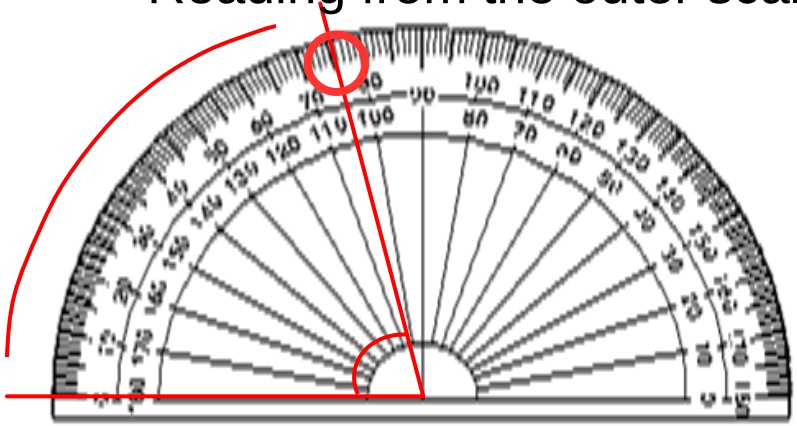
- ✓ For geometry, important to have the mathematical instruments, protractor, ruler and set square.
- ✓ Know how to use the tools eg: ruler starting from zero
- ✓ Accuracy is important for this topic

Geometry

Reading from the inner scale:



Reading from the outer scale:

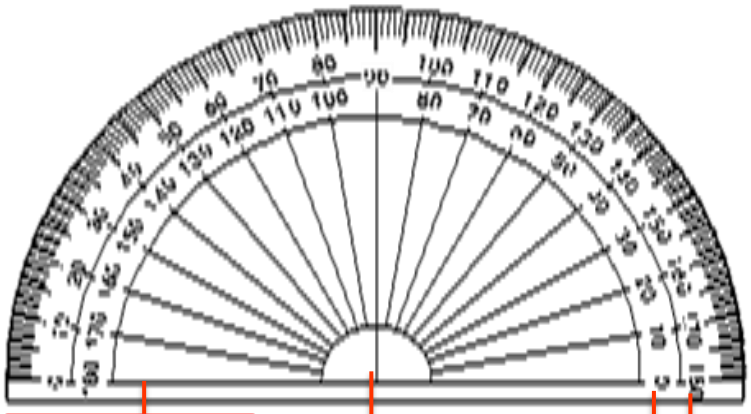


Common error:

Using the wrong scale when measuring angle

Geometry

- Know the parts of the protractor
- Be very accurate when drawing or measuring angles



1 degree or 1°

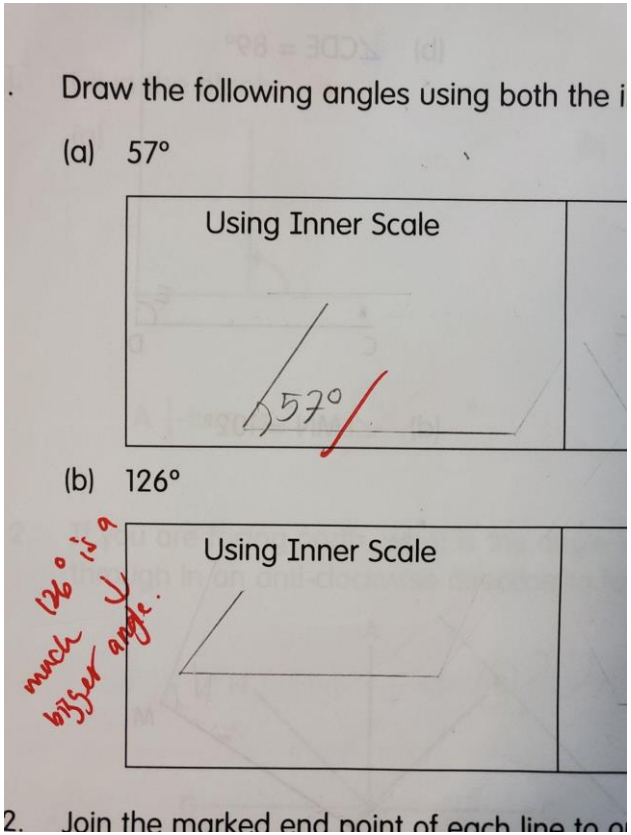
base line

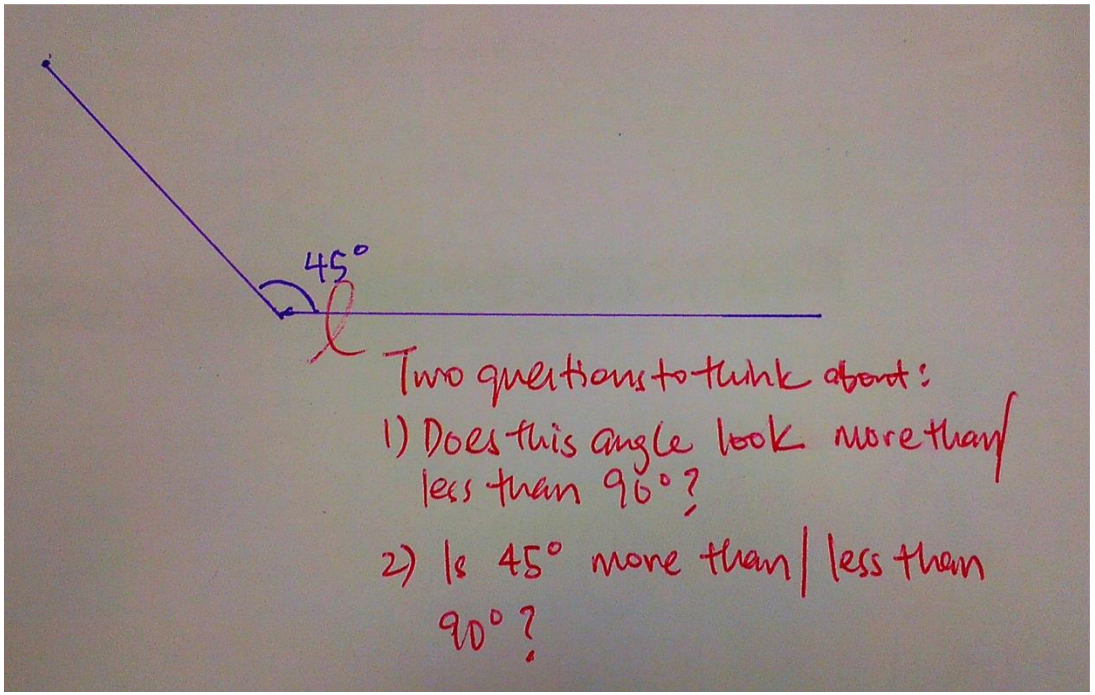
centre mark

inner scale

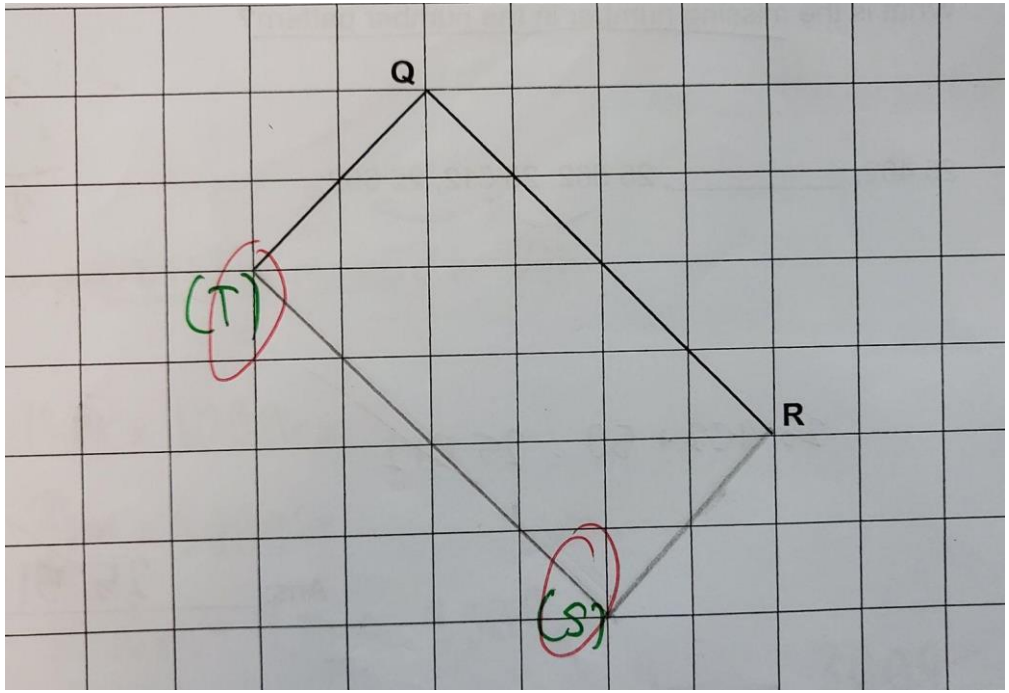
outer scale

Geometry


Draw the following angles using both the i
(a) 57°
Using Inner Scale
57°
(b) 126°
Using Inner Scale
126° is a much bigger angle.
2. Join the marked end point of each line to


45°
Two questions to think about:
1) Does this angle look more than/ less than 90°?
2) Is 45° more than/ less than 90°?

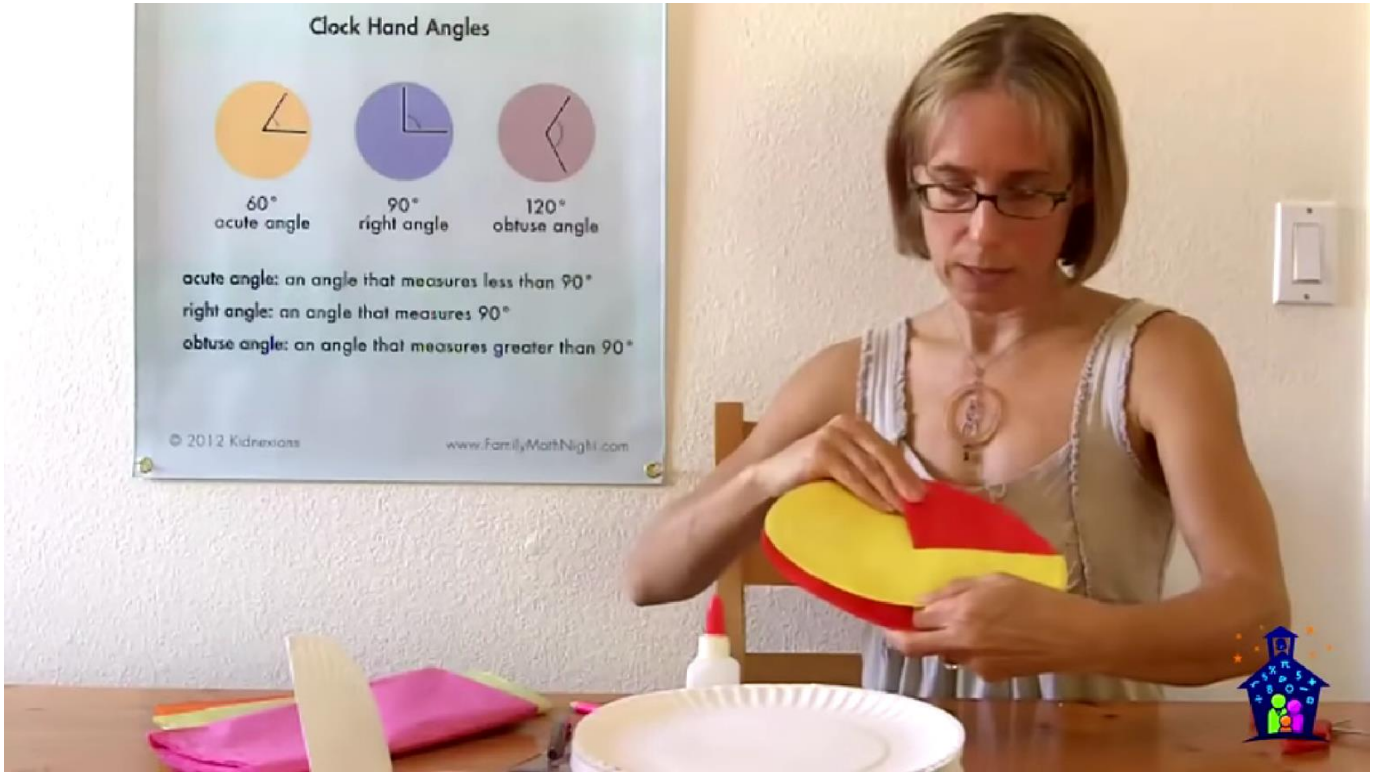
Geometry



Common error:

Diagrams are not labelled accurately

Geometry

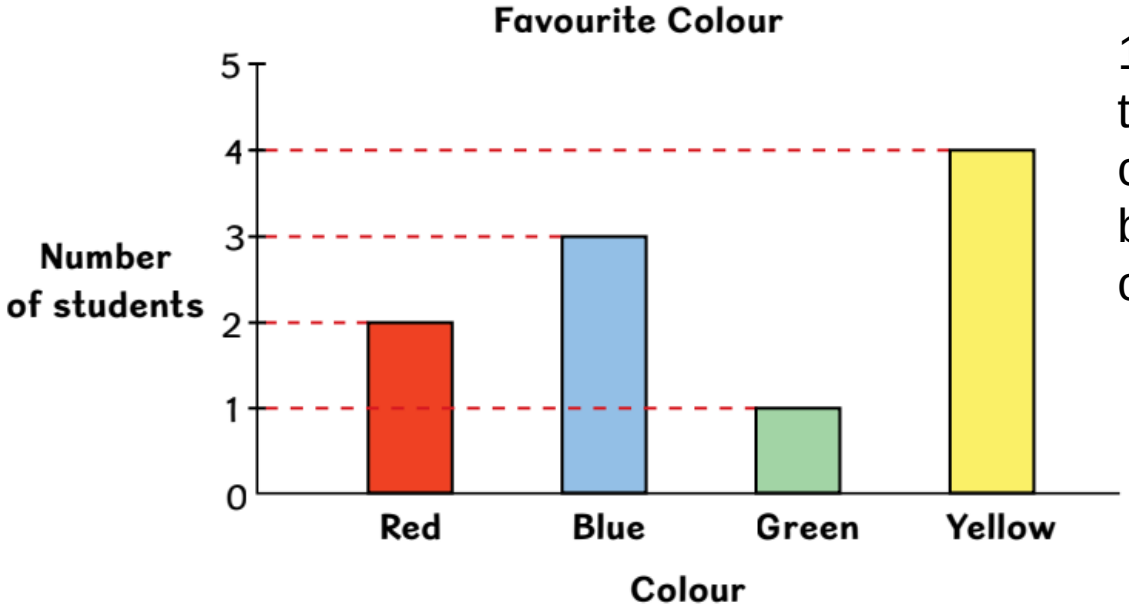


https://youtu.be/1frjfNj5dMc

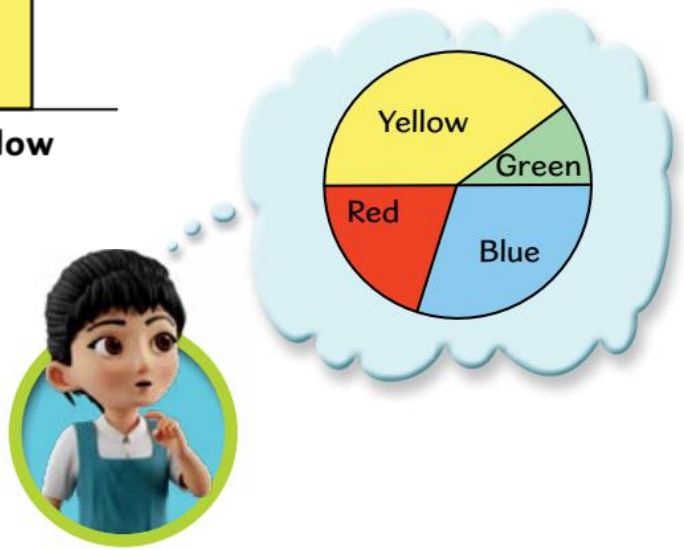
Statistics

Favourite Colours
Number of Students
90
80
70
60
50
40
30
20
10
0
Yellow
Green
Blue
Red
Sizes of PE T-shirts
30
60
50
60
Small
Medium
Large
Extra-Large
I use a bar graph to show the data collected in my survey.
Data can also be represented in a pie chart.

Statistics



10 students were asked to choose a favourite colour. The bar graph below shows their choices.



5 students chose red and blue. 5 students chose yellow and green.

How can you help?

Monitor

- Ensure that homework is completed and presented with logic and accuracy.
- Persevere through challenges

Support

- Create a positive learning environment
- Get students to explain their solutions and reassure them of your unwavering support
- Let them know that you believe in their potential to succeed.

Partner

- Use correct mathematical language at home
- Practice Factual Fluency
- Use the STEP approach in problem solving
- Help us to Follow-up on the STAR Package

We want to hear from you

https://go.gov.sg/wrps2024pew

Thank you!

Passionate Learners, Gracious Citizens