

St Ninian's High School



N4 Lifeskills Logbook

TJ Book

- I understand this part of the course = 👍
- I am unsure of this part of the course = 🤔
- I do not understand this part of the course = 🗨️

Name _____ Class _____ Teacher _____

Geometry & Measure

Pupil Signature _____

Parental Signature _____

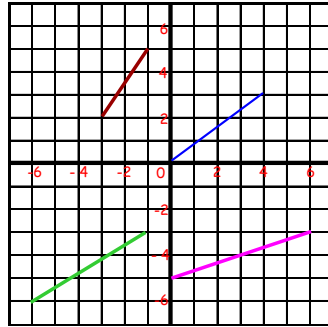


Topic 1 - Gradients (Chapter 13)

1. Gradient

The Gradient is the measure of how steep a slope is.

$$m = \frac{\text{Vertical Height}}{\text{Horizontal Distance}}$$



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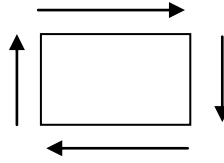
Parental Signature _____

Topic 2 – Perimeters (Chapter 14)



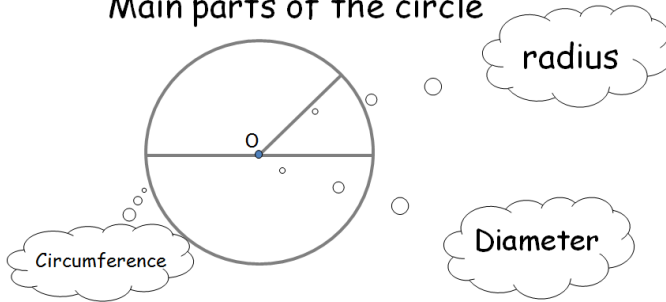
1. **Perimeter of rectilinear Shapes**

The outside of a shape



2. **Parts of a Circle**

Main parts of the circle

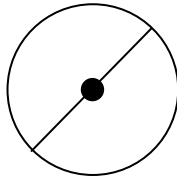


3. **Circumference of a Circle**

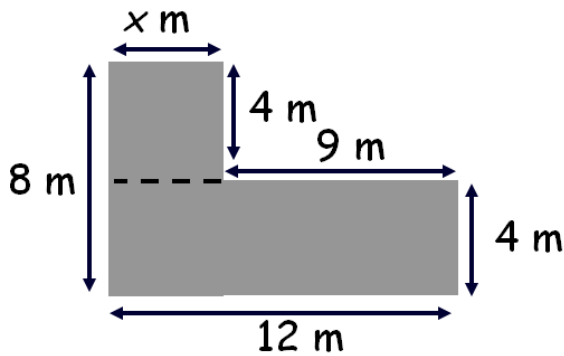
$$C = \pi D$$

OR

$$C = 2\pi r$$



4. **Finding a length given Perimeter**



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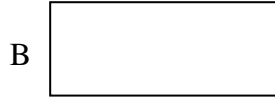
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Topic 3 – Area 1 (Chapter 15)

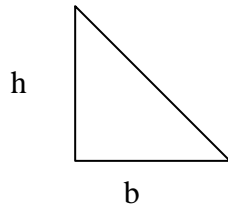


1. **Area of a Rectangle**



L
Area = Length × Breadth

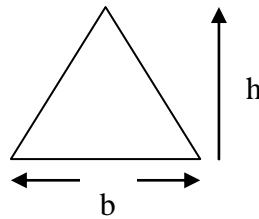
2. **Area of a RAT (Right-Angled Triangle)**



Area = $\frac{1}{2} \times \text{base} \times \text{height}$

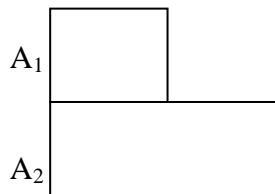
3. **Area of ANY Triangle**

$A = \frac{1}{2}bh$



4. **Composite Area**

Area that is made up from basic shapes



Area = A₁ + A₂

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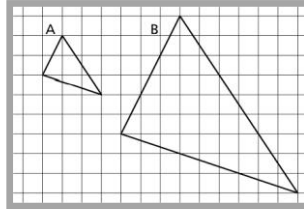
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Topic 4 – Scale Drawings 1 (Chapter 16)



1. Enlargement & Reduced shapes



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2. Scale Drawings to work out real-life values



The scale of this drawing is
 $1\text{cm} = 5\text{m}$

6cm

What is the actual length
of the tree ?

$$6 \times 5 = 30\text{m}$$

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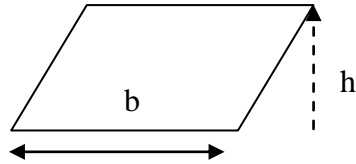
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Topic 5 – Area 2 (Chapter 17)



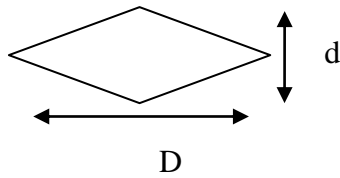
1. Parallelogram

$$A = bh$$



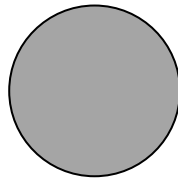
2. Rhombus and Kite

$$A = \frac{1}{2}Dd$$



3. Area of a Circle

$$A = \pi r^2$$



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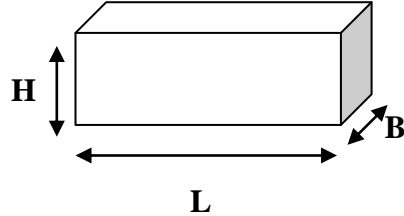
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Topic 6 – Volume (Chapter 18)



1. **Volume Cuboid**



$$\text{Volume} = \text{Length} \times \text{Breadth} \times \text{Height}$$

2. **Liquid Volume**

$$1 \text{ litre} = 1000 \text{ ml} = 1000\text{cm}^3$$

$$1\text{ml} = 1 \text{ cm}^3$$

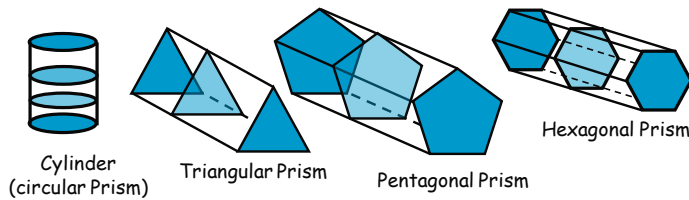


3. **Volume of Prisms**

$$\text{Volume} = \text{Area} \times \text{Height}$$

or

$$\text{Volume} = \text{Area} \times \text{Length}$$



4. **Volume of a Cylinder –**

$$V = \pi r^2 h$$



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Topic 7 –Pythagoras (Chapter 19)



1. Squares and roots

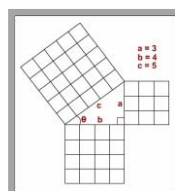
$$6^2 = 36 \quad \sqrt{49} = 7$$

2. Pythagoras Theorem

(Right angled triangles **ONLY**)

Hypotenuse is always the longest side

which is always opposite the right angle.



$$(\text{Hypotenuse})^2 = (\text{smaller side})^2 + (\text{other smaller side})^2$$

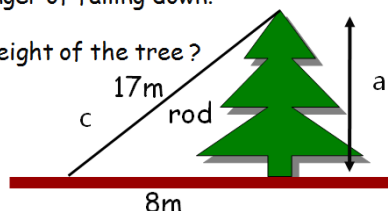
3. Calculating – Hypotenuse.

$$(\text{Hypotenuse})^2 = (\text{smaller side})^2 + (\text{other smaller side})^2$$

4. Real - Life Problems involving Pythagoras

A steel rod is used to support a tree which is in danger of falling down.

What is the height of the tree?



5. Calculating – smaller side.

$$(\text{smaller side})^2 = (\text{Hypotenuse})^2 - (\text{other smaller side})^2$$

6. Mixed questions

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Topic 8 – Time & Timetables (Chapter 20)



- Converting between 12 / 24 clock**
7.30pm ⇒ 1930 2215 ⇒ 1015pm



- Time Intervals**
Counting Method

- Interpreting Timetables**

Saturday	Pop	Pop	Pop	Pop	Pop
07:00	07:00	07:00	07:00	07:00	07:00
08:00	08:00	08:00	08:00	08:00	08:00
09:00	09:00	09:00	09:00	09:00	09:00
10:00	10:00	10:00	10:00	10:00	10:00
11:00	11:00	11:00	11:00	11:00	11:00
12:00	12:00	12:00	12:00	12:00	12:00
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19:00	19:00	19:00	19:00	19:00	19:00
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Topic 9 – Rules & Formulae (Chapter 21)



1. **Formulae expressed in Words**

Multiply the temperature in °C by 1.8 then add 32

2. **Evaluating Formulae with Symbols**

$V = \pi r^2 h$ $F = ma$ $y = 2x + 1$ etc.....

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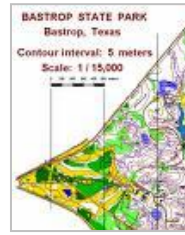
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Topic10 –Scale Drawings 2 (Chapter 22)



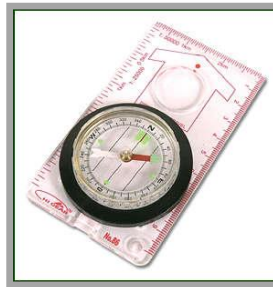
1. **Simple Scale Drawing**

1cm represents 2m etc.....



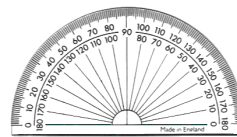
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2. **Compass Points**



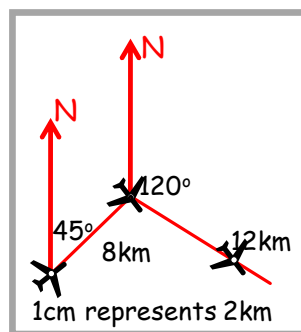
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3. **Scale Drawing using a protractor**



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4. **Bearings and Scale Drawings**



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Topic 11 – Problem Solving Area & Volume (Chapter 23)



7. The term Fraction

$$\frac{\text{numerator}}{\text{denominator}} = \frac{4}{5}$$

8. Equivalent Fraction

$$\frac{3}{6} = \frac{3^{+3}}{6^{+3}} = \frac{1}{2}$$

9. Fraction of a Quantity

$$\frac{3}{4} \text{ of } 20 \quad 4 \overline{)20} \quad 5 \times 3 = 15$$

10. The term Percentage

Out of a 100

$$\frac{4}{5} \rightarrow 4 \div 5 \times 100 = 80\% \quad (80 \text{ out of } 100)$$

11. Finding a Percentage using a calculator

29% of £250

$$\frac{29}{100} \times 250 = \text{£}72.50$$

12. Finding a Percentage without a calculator

30% of 80

10% \Rightarrow 8

30% \Rightarrow 8x3 = 24

13. Common Percentages / Fractions

1%, 10%, 20%, 25%, 50%, 75%

$$\frac{1}{100}, \frac{1}{10}, \frac{1}{5}, \frac{1}{4}, \frac{1}{2}, \frac{3}{4}$$

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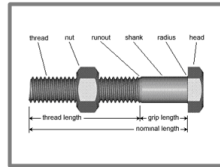
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Topic 12 – Tolerance (Chapter 24)



1. Tolerance
A builder needs 50mm bolts



Tolerance is written as (50 ± 2) mm

He might be prepared to accept any bolt as long as it lies between 48mm and 52mm

This means he will accept a bolt which is within 2mm of the 50mm he asked for.

This is referred to as the TOLERANCE for the measurement.

2. Tolerance Notation

Example : An acceptable size of apples on sale at Asda must have a diameter between 8cm and 12cm. Write the tolerance level in standard notation.

Calculate the middle value

$$\frac{8 + 12}{2} = 10$$

Tolerance is written as (10 ± 2) cm

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For my <i>Geometry & Measure</i> Assessment I will

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<i>Geometry & Measure Assessment</i>	Pass	Failed
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Pupil Signature _____

Parental Signature _____

Finance & Statistics

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Topic 13 – Income (Chapter 25)



1. **Hourly rate**

£7.50 ph means £7.50 for every hour worked

2. **Calculate hourly rate**

£10 for 2 hours work \Rightarrow hourly rate £5 per hour

3. **Weekly / Monthly Pay**

Weekly means $\div 52$ Monthly means $\div 12$

4. **Wages Increase / Decrease (Percentage)**

Kerr earned an annual salary of £ 18 000 last year.
He receives a 4% rise this year.
What is his new salary.

$$\text{Rise : } 4 \div 100 \times \text{£}18\,000 = \text{£ } 720$$

$$\text{New salary } \text{£}18\,000 + \text{£}720 = \text{£ } 18\,720$$

5. **Commission**

Liam sells windows. He is paid a commission of 15% on any Windows he sells. He sold £ 30 000 worth of windows.
How much commission was he paid ?

$$\text{Commission : } 15 \div 100 \times \text{£}30\,000 = \text{£ } 4500$$

6. **Overtime + Bonuses**

Double time $\Rightarrow \times 2$ Time and a half $\Rightarrow \times 1\frac{1}{2}$

7. **Wage Slips – Deductions – gross / net pay**

Name : Joe Bloggs								
Income	Basic	£603.65	O/T	£85.50	Bonus	£50.00	Total	739.15
Deductions	Tax	£142.75	Nat Ins.	£30.72	Pension	£34.29	Total	207.76
							NET PAY	531.39

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Topic 14 – Foreign Exchange (Chapter 26)



1. Exchanging Pounds for Foreign Currency



2. Exchanging Foreign Currency to Pounds



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Topic 15 – Banking (Chapter 27)



1. **Simple Interest**

How much is earned in interest if I have £60 in the bank for a year if annual interest is paid at 2% p/a.

$$\text{Interest is } \frac{2}{100} \times 60 = \text{£}1.20$$

2. **Credit & Debit Cards**



3. **Borrowing money**

- Where to go to for a loan
- Advantages and disadvantages
- Why would you take out a loan

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Topic 16 – Comparing Prices (Chapter 28)



1. **Better Buy**

Shop A - 700g of Flakes cost £4.90 100g → 70p
Shop B - 500g of Flakes cost £3.60 100g → 72p

2. **Paying for Services**

- Call – Out Charges & Hourly Rates
- Plumber, Joiner, Mechanic etc.....

3. **Rates or Contracts**

- Mobile phone tariffs
- Foreign Exchange Rates
- Loan Rates

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Topic 17 – Budgeting (Chapter 29)



1. **Budgeting 1** – Individual budgeting for a trip
 - Saving by cutting back on non essential
 - Extra jobs to earn

2. **Budgeting 2** – Family Monthly budgeting
 - Income and Expenditure
 - Spreadsheet can help to calculate budgets

3. **Budgeting 3** – Needs and Wants
 - NEEDS – what you need to survive
 - WANTS – nice to have but you don't need

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Topic 18 – Comparing Data Sets (Chapter 30)



1. Range = Highest – lowest
Mean = (Add up all the data) ÷ the number bits of data
Range = Highest – lowest
Median = Middle number when data arranged in order
Mode = The number that occurs the most

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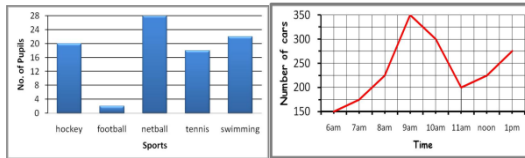
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Topic 19 – Graphs Charts & Tables 2 (Chapter 31)



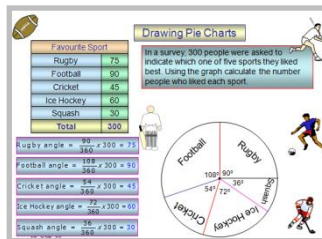
1. Drawing Bar Graphs and Line Graphs



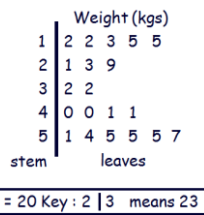
2. Constructing Simple Pie-Charts



3. Constructing Pie Charts



4. Constructing Stem-Leaf Diagrams



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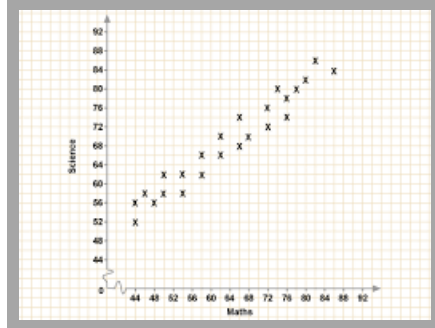
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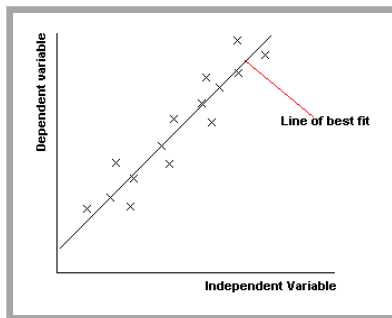
Topic 20 – Scattergraphs (Chapter 32)



1. Scattergraphs



2. Best-Fit Line



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Topic 21 – Statistical Chance (Chapter 33)



1. Simple Probability

To work out a probability

$$P(A) = \frac{\text{Number of favourable outcomes}}{\text{Number possible outcomes}}$$

Probability is ALWAYS in the range 0 to 1

2. Harder Probability

Expressed as a ratio $P(A) = 0.4$ means 2 in 5 chance

Expressed as a fraction $P(A) = 0.4$ means $\frac{2}{5}$

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For my Finance & Statistics Assessment I will
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Finance & Statistics Assessment	Pass	Failed
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Pupil Signature _____

Parental Signature _____

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My Achievements		
Skill	Activity	Date & Teacher Signature

Pupil Signature _____

Parental Signature _____

N4 Lifeskills Logbook

My Achievements		
Skill	Activity	Date & Teacher Signature

Pupil Signature _____

Parental Signature _____