fs4u

Functional Skills Mathematics 'How To' Booklets
Full Contents

Booklet No.	Overall Contents
1	**Using Fractions** ▪ Will be able to use fractions ▪ Add meaning to stats, i.e. pie charts, by using these fractions to describe sections of a circle. ▪
2	**Using Decimal Fractions** ▪ Use decimals for measurement, i.e. 3.15m instead of 3m 15cm. ▪ Changing mm to cm, cm to m, m to km ▪ ml to cl, cl to ltrs ▪ £ to decimals, e.g. £0.89 ▪
3	**Using Percentages** ▪ comparing percentages with stripes ▪ comparing percentages with pie charts ▪ estimating percentages ▪ drawing pie charts and showing percentages
4	**Using Ratios** ▪ Working out ratios e.g. using recipes 1:2 ▪ Dividing ratios down to make it easier to compare
5	**Using Negative Numbers** ▪ To describe temperatures below 0 degrees, low lying land and a loss of money or debt ▪ Graphs showing break even and negative equity ▪ Use negative nos. to describe everyday situations, e.g. overdrafts ▪ Estimating lowest temperatures, highest temperatures ▪ Estimating highest and lowest water levels

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6	**Using Approximations** ▪ Looks at approximate answers to problems, e.g. expressed to the nearest ten or hundred or thousand ▪ Calculating to a number of decimal places, e.g. 36.5823 to 2 decimal places, i.e.36.58 ▪ Rounding up large numbers, i.e. 3750.284 to 3800 ▪ Measuring height, length, circles, money
7	**Using Estimation to check results** ▪ Estimating lengths, widths, distances, then use a tape measure ▪ Estimating kgs to lbs.
8	**Working with Addition, Subtraction, Multiplication & Divisionr** ▪ Writing large amounts of money in full ▪ Writing metres in centimetres i.e. multiply to 100 ▪ Addition & subtractions ▪ Multiplying and dividing
9	**Calculating with Fractions** ▪ Comparing fractions ▪ Which fractions are larger ▪ Adding and subtracting fractions
10	**Calculating with Decimals** ▪ Adding, subtracting, multiplying and dividing decimals ▪ Multiplying fractions by 10, 100, 1000 ▪ Dividing fractions by 10, 100, 1000 ▪ Multiplying decimals, e.g. 6.35x8.5 ▪ Division of Decimals
11	**Calculating Using Simple Percentages** ▪ Calculating percentages using populations ▪ Calculating percentages using money ▪ Calculating percentages using kg ▪ Calculating percentages using ml ▪ Calculating percentage increases ▪ Calculating percentage decreases
12	**Calculations using Ratios** ▪ Using ratios to calculate costs ▪ Comparing ratios, .e.g 3:1 and 5:2
13	**Calculating using Simple Formulae** ▪ Calculating profits ▪ Calculating expenditure

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	▪ Calculating time ▪ Calculating speed ▪ Calculating area ▪ Calculating perimeters ▪ Calculating Fahrenheit to Centigrade ▪ Calculating using mathematical formulae
14	**Calculating Using Common Units** ▪ Measuring in cm, m, km ▪ Converting measurements
15	**Using Perimeter and Area** ▪ Calculating perimeters ▪ Calculating areas ▪ Calculating trapezium areas ▪ Calculating parallelogram areas ▪ Calculating using composite shapes, i.e. splitting shapes into separate shapes, then calculating areas and adding areas to find total area ▪ Applying perimeter and area calculations to everyday situations ▪ Calculating the area of borders
16	**Using Volume** ▪ Calculating the volume of a cube ▪ Calculating the volume of a prism ▪ Calculating the volume of a cylinder
17	**Practical Drawing & Measuring** ▪ Drawing plans from 3 dimensional objects e.g. dice, ▪ Measuring rooms, measuring space using a tape, e.g garden shed
18	**Converting using Scales & Tables** ▪ Converting kph to mph ▪ Converting fahrenheit to centigrade ▪ Converting lbs to kg ▪ Using graphs to convert
19	**Using Probability** ▪ Using probability to describe the likelihood of a situation occurring ▪ Using prediction to calculate e.g. sales, annual growth ▪ Using probability to calculate equally likely outcomes, i.e. the chance of picking up a red card from a pack of cards ▪ Calculating probability in fractions

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20	**Interpreting & Constructing 2D Diagrams** ▪ Including the need for drawing up plans and calculating dimensions ▪ How to draw a plan
21	**Interpreting & Constructing 2D Representation of 3D Objects** ▪ Using mathematical terms to describe common 2D and 3D objects ▪ Common 2D and 3D shapes, e.g. cylinders, pyramids, isosceles and equilateral triangles, prisms
22	**Working with Data** ▪ Working with minimum and maximum numbers ▪ Use of Range ▪ Using diagrams to represent data, i.e. tally charts, pictograms, bar charts ▪ Using mean, median and mode ▪ Using Frequency Charts ▪ Drawing Bar Charts
23	**Revising Fractions** ▪ Adding fractions ▪ Subtracting fractions ▪ Multiplying fractions ▪ Dividing fractions ▪ Using calculators to solve fractions
24	**Revising Decimals** ▪ Addition of decimals ▪ Subtraction of decimals ▪ Multiplication of decimals ▪ Division of decimals
25	**Revising Percentages** ▪ Calculating one amount as a percentage of another amt. ▪ A ratio, fraction or decimal as a percentage ▪ Calculating percentage profit and percentage loss ▪ Using Simple Interest
26	**Revising Ratios** Writing a ratio in its simplest form, i.e. 80:120, 8:12 ▪ Dividing an amount in a given ratio, i.e. £140 in a ratio of 3:4 ▪ Expressing a ratio as a fraction ▪ Expressing a ratio as a decimal ▪ Expressing a ratio as a percentage ▪ Expressing a ratio in the form 1:n

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27	**Using Powers & Roots** ▪ Using Squares ▪ Using Cubes ▪ Using Square roots ▪ Using Cube roots
28	**Using Formulas** ▪ Using algebraic formulas ▪ Using everyday formulas
29	**Using Networks** ▪ Using network diagrams e.g. for distance ▪ Using nodes, arcs and regions
30	**Using Bar Charts & Pie Charts** ▪ Presenting data in a Bar Chart ▪ Presenting date in a Pie Chart ▪ Designing a frequency table
31	**Revising Mean, Median & Mode** ▪ Calculating the arithmetric mean ▪ Calculating the mean using a frequency table ▪ Calculating the median ▪ Calculating the mode
32	**Cumulative Frequency** ▪ Using cumulative frequency tables and graphs to find the median, upper and lower quartiles and the inter-quartile range
33	**Accuracy** ▪ Measurement and levels of accuracy ▪ Minimum and maximums in terms of accuracy, .e.g costs ▪ Upper and lower boundaries of accuracy
34	**Estimation** ▪ Quick use of estimation ▪ Rounding up numbers using estimation
35	**Approximation** ▪ Using numbers in approximation ▪ Correcting decimals to a given number of decimal places in approximation ▪ Using significant figures

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36	**Using Numbers of any Size** ▪ Converting numbers to standard form ▪ Converting ordinary numbers to standard form
37	**Collecting and Processing Data** ▪ Using qualitative data ▪ Using quantitative data ▪ Using continuous variables ▪ Using discrete variables ▪ Collecting data using tally charts ▪ Using Bar Charts to represent qualitative data ▪ Using histograms to represent continuous and grouped data
38	**Using Graphs and Conversions** ▪ Simple Line graphs, ▪ Using graphs e.g. to convert £s to francs, Celsius to Fahrenheit ▪ Scatter Diagrams
39	**Using Area, Perimeter and Volume** ▪ Calculating perimeter, e.g. circles ▪ Calculating areas, e.g. circle ▪ Calculating volumes, e.g cuboid, cylinder