

Index of Major Mathematical Concepts and Terms in *Biology in a Box* Units & Exercises

Note: This document can serve as a starting point for selection of *Biology in a Box* units & exercises for use in the classroom to address Tennessee curriculum standards. In some cases, terms may not be addressed specifically in particular exercises listed, but provide ample opportunity for using units to help illustrate said terms.

Absolute frequency

See **frequency (occurrence)**

Accuracy

Unit 4 – all exercises

Unit 6 – Exercise 8

Unit 7 – Exercise 1

Addition*

Unit 1 – Exercises 3 & 4

Unit 2 – Exercises 2 & 3

Unit 3 – Exercises 2 & 3

Unit 4 – Exercise 1

Unit 5 – Exercises 2 & 3

Unit 7 – Exercise 1

Unit 8 – Exercises & 8

Unit 10 – Exercises 1 & 3

* Note that these exercises do not necessarily involve *simple* addition. However, the materials provided in each unit (e.g. skulls, teeth, leaves, shells, etc.) can easily be used with younger students as manipulatives to model simple addition.

Algebraic expressions

Unit 1 – Exercises 2, 3, & 4

Unit 2 – Exercise 3

Unit 3 – Exercise 3

Unit 4 – Exercises 1, 2, & 3

Unit 6 – Exercises 8 & 9

Unit 7 – Exercises 1 & 4

Unit 8 – Exercises 3 & 8

Amplitude

See **periodic functions**

Angles

Unit 2 – Exercise 3

Unit 5 – Exercise 4

Unit 6 – Exercises 2 & 9

Unit 8 – Exercise 8

See also **geometry & triangles**

Area

Unit 2 – Exercise 3

Unit 3 – Exercises 2 & 3

Unit 4 – Exercises 2, 3, & 4

Unit 6 – Exercise 8

Unit 7 – Exercise 1

Unit 8 – Exercise 8

Unit 9

Associative property

Asymptotes

Unit 1 – Exercise 3

Attributes

Unit 1 – Exercises 1 & 4

Unit 2 – all exercises

Unit 3 – all exercises

Unit 4 – all exercises

Unit 5 – Exercises 2, 3, & 4

Unit 6 – Exercises 2, 3, 4, 5, 6, & 7

Unit 7 – all exercises

Unit 8 – all exercises

Unit 9 – Exercise 2

Unit 10 – Exercises 1, 2, 3, & 4

Axes in graphs

See **bar graphs, Cartesian coordinate system, line plots**

Bar graphs

Unit 1 – Exercise 3
Unit 2 – Exercises 2 & 3
Unit 6 – Exercise 1
Unit 8 – Exercise 3
Unit 9 – Exercise 6

Binomials

See **algebraic expressions & functions**

Bivariate data

Unit 7 – Exercise 1

Calculators, using

Unit 1 – Exercises 3 & 4
Unit 6 – Exercises 8 & 9
Unit 7 – Exercises 1 & 4
Unit 8 – Exercises 3 & 8

Calculus

As calculus is usually taken by seniors, and biology courses are typically taken earlier in high school, there are no formal calculus exercises in *Biology in a Box* units. However, several units (particularly Units 3, 4, 6, 7, 9, & 10) present exercises that can easily be adapted to incorporate calculus.

Capacity

See **volume**

Cartesian coordinate system

Unit 1 – Exercises 3 & 4
Unit 6 – Exercise 9
Unit 7 – Exercise 1
Unit 10 – Exercises 4 & 5

Central tendency, measures of

Unit 1 – Exercises 3 & 4
Unit 2 – Exercise 3
Unit 3 – Exercise 2
Unit 6 – Exercise 9
Unit 7 – Exercise 1
Unit 8 – Exercises 3 & 8

Central tendency, measures of (cont.)

Unit 10 – Exercise 7

Change, rate of

Unit 1 – Exercises 3 & 4
Unit 2 – Exercise 3
Unit 3 – Exercise 2
Unit 4 – Exercise 1
Unit 5 – Exercise 1
Unit 6 – Exercise 8
Unit 7 – Exercise 1
Unit 10

See also **calculus, rates, & slope of a line**

Chi-square distribution

Unit 2 – Exercise 2 (not addressed directly, but this would be a good place to have students use it)
Unit 5 – Exercises 2, 3, & 4 (not addressed directly, but this would be a good place to have students use it)

Circle graphs

Unit 2 – Circle graphs of tooth types could easily be constructed in Exercise 2
Unit 6 – Exercise 1

Circles

Unit 2 – Exercise 3
Unit 6 – Exercises 1, 2, & 9
Unit 7 – Exercise 1
Unit 8 – Exercise 8
Unit 9 – Exercise 1

Classifying/sorting numbers/objects

Unit 1 – Exercise 1
Unit 2 – Exercise 1
Unit 3 – Exercise 1
Unit 5 – Exercises 2, 3, & 4
Unit 6 – Exercises 1, 3, 4, 5, & 6
Unit 7 – Exercises 1, 2, & 3
Unit 8 – Exercises 1, 2, 3, 4, 5, 6, & 8
Unit 9 – Exercises 1, 2, 3, & 4
Unit 10 – Exercises 1, 2, 3, & 4

Clocks, using

Unit 1 – Exercise 2

Unit 3 – Exercise 2

Unit 7 – Exercise 1

Combinations

See **probability**

Commutative property

Comparative words, using

See **qualitative description & quantitative description**

Complimentary events

See **probability**

Composing/decomposing shapes

Unit 4 – Exercises 2, 3, & 4

Unit 6 – Exercises 2 & 9

Unit 7 – Exercise 1

Unit 8 – Exercise 8

Composite numbers

See **division & multiplication**

Concrete objects, using

See **manipulatives, using**

Cones

Unit 2 – Exercise 3

Unit 4 – Exercise 2

Unit 6 – Exercise 9

Unit 8 – Exercise 8

Congruence, geometric property of

Unit 6 – Exercise 9

Coefficients

See **algebraic expressions & functions**

Combinations

See **probability**

Commutative property

See **addition & multiplication**

Compass, using

See **circles**

Concavity

See **calculus**

Constants

See **algebraic expressions & functions**

Continuous functions

See **calculus**

Convexity

See **calculus**

Coordinate plane

See **Cartesian coordinate system & polar coordinates**

Correlation

Unit 2 – Exercise 3

Unit 6 – Exercise 8

Unit 7 – Exercise 1

Unit 8 – Exercises 3 & 8

Cosine

See **trigonometric functions**

Counting

Unit 1 – Exercises 1 & 3

Unit 2 – Exercise 2

Unit 3 – Exercise 1

Unit 5 – all exercises

Unit 6 – Exercises 1, 3, 4, & 5

Unit 7 – all exercises

Unit 8 – Exercises 1, 2, 3, 4, 5, & 6

Unit 9 – Exercises 1, 5, & 6

Unit 10 – Exercise 1

Critical points

See **calculus**

Cubes (exponents)

See **exponents, functions, & multiplication**

Cubes (solids)

Unit 2 – Exercise 3

Unit 4 – Exercise 2

Cylinders

Unit 2 – Exercise 3

Unit 4 – Exercise 2

Data, bivariate

Unit 1 – Exercise 3

Unit 4 – Exercise 1

Unit 7 – Exercise 1

Unit 8 – Exercise 8

Data, collecting

All thematic units contain exercises with active collection of data by students.

Data, comparing

All thematic units contain exercises with active comparison of data by students.

Data, displaying

See **graphs, constructing & tables, constructing**

Data, multivariate

Unit 2 – Exercise 3

Unit 7 – Exercise 1

Unit 10 – Exercise 7

Data, univariate

Unit 7 – Exercise 1

Unit 8 – Exercise 3

Deciles

See **distributions of data**

Decimals

Unit 1 – Exercises 2, 3, & 4

Unit 2 – Exercises 2 & 3

Decimals (cont.)

Unit 3 – Exercises 2 & 3

Unit 5 – Exercises 1, 2, 3, & 4

Unit 6 – Exercises 8 & 9

Unit 7 – Exercise 1

Unit 8 – Exercise 3 & 8

Unit 9

Unit 10 – Exercises 5 & 7

Decomposing shapes

See **composing/decomposing shapes**; see also **geometry**

Degree measurements of angles

See **angles, geometry, & triangles**

Density

Unit 3 – Exercise 2

Unit 4 – Exercises 3 & 4

Unit 9 – Exercise 2

Dependent events

See **probability**

Dependent variables

See **functions, linear; graphs, constructing; line plots, & scatter plots**

Derivatives

See **calculus**

Description, qualitative

See **qualitative description**

Description, quantitative

See **quantitative description**

Diagrams, Venn

See **Venn diagrams**

Digits, significant

Unit 2 – Exercises 2 & 3

Unit 3 – Exercises 2 & 3

Unit 4 – Exercises 1, 2, & 3

Digits, significant (cont.)

Unit 6 – Exercise 9

Unit 7 – Exercise 1

Unit 8 – Exercise 3

Dilation

See **scale factors**

Distributions of data

Unit 2 – Exercise 2

Unit 6 – Exercise 1

Unit 8 – Exercise 3

Unit 10 – Exercises 1 & 7

Distributive property

See **division & multiplication**

Division

Unit 1 – Exercises 3 & 4

Unit 2 – Exercises 2 & 3

Unit 3 – Exercises 2 & 3

Unit 4 – Exercise 3

Unit 5 – all exercises

Unit 6 – Exercises 8 & 9

Unit 7 – Exercises 1 & 4

Unit 8 – Exercises 3 & 8

Unit 9 – Exercises 2 & 6

Unit 10 – Exercises 1 & 7

Division, remainders

See **decimals, fractions, & numbers, mixed**

Domain of a function

See **functions**

Ellipses

Unit 2 – Exercise 3

Unit 4 – Exercise 2

Unit 7 – Exercise 1

Equations, linear

See **linear equations**

Error, percent

See **percent error**

Estimation

Unit 1 – Exercises 3 & 4

Unit 2 – Exercise 3

Unit 3 – Exercise 3

Unit 4 – all exercises

Unit 5 – all exercises

Unit 6 – Exercises 8 & 9

Unit 7 – Exercise 1

Unit 8 – Exercises 3 & 8

Unit 9 – Exercise 2

Euclidean geometry

See **geometry**

Even numbers

Unit 8 – Exercise 3

Events

Unit 1 – Exercise 3

Unit 5 – Exercises 2 & 3

Unit 8 – Exercise 3

Unit 10 – Exercise 1

See also **probability**

Events, complimentary

See **probability**

Events, compound

See **probability**

Events, dependent

See **probability**

Events, independent

See **probability**

Events, simple

See **probability**

Expanded notation

Unit 1 – Exercise 2

Expanded notation (cont.)

Unit 5 – Exercise 1

Exponents

Unit 1 – Exercises 2 & 3

Unit 5 – Exercise 1

Unit 6 – Exercises 8 & 9

Unit 7 – Exercises 1 & 4

Exponential functions

See **exponents & functions**

Extrapolation

Unit 2 – Exercise 3

Unit 6 – Exercise 8

Factoring

See **functions & multiplication**

Figures, geometric

See **geometry**

Figures, grouping

Unit 8

Fractions

Unit 1 – Exercise 3

Unit 2 – Exercises 2 & 3

Unit 4 – Exercise 1

Unit 5 – all exercises

Unit 6 – Exercises 1, 8, & 9

Unit 8 – Exercises 3 & 8

Unit 10 – Exercises 1 & 7

Frequency (occurrence)

Unit 1 – Exercise 3

Unit 2 – Exercise 2

Unit 5 – all exercises

Unit 8 – Exercises 1 & 3

Unit 9 – Exercises 5 & 6

Frequency (of waves)

See **periodic functions**

Frequency tables, constructing

Unit 1 – Exercise 3

Unit 2 – Exercise 2

Unit 5 – all exercises

Unit 7 – Exercise 1

Unit 8 – Exercises 3 & 8

Unit 9 – Exercise 6

Unit 10 – Exercises 1 & 7

Functions

Unit 1 – Exercises 3 & 4

Unit 2 – Exercises 2 & 3

Unit 3 – Exercises 2 & 3

Unit 4 – Exercises 1, 2, & 3

Unit 6 – Exercises 8 & 9

Unit 7 – Exercises 1 & 4

Unit 8 – Exercises 3 & 8

Unit 9 – Exercise 1

Unit 10 – Exercises 4 & 5

See also **algebraic expressions, linear equations, & non-linear functions**

Geometry

Unit 1 – Exercise 4

Unit 2 – Exercise 3

Unit 4 – Exercise 2

Unit 6 – Exercises 8 & 9

Unit 7 – Exercise 4

Unit 8 – Exercise 8

Unit 9 – Exercises 1 & 2

Graphs, constructing & interpreting

Unit 1 – Exercises 2, 3, & 4

Unit 2 – Exercises 2 & 3

Unit 3 – Exercise 2

Unit 4 – Exercise 1

Unit 5 – Exercises 3 & 4

Unit 6 – Exercises 1, 8, & 9

Unit 7 – Exercises 1 & 4

Unit 8 – Exercises 3 & 8

Unit 9 – Exercises 2 & 6

Unit 10 – Exercises 5 & 7

See also **bar graphs, line plots, & scatter plots**

Greatest common factor

See **division & multiplication**

Histogram

See **absolute frequency, bar graphs, frequency, & relative frequency**

Hypotheses, forming

All thematic units contain exercises involving use of the scientific method, which includes forming a hypothesis as one of the steps.

Hypotheses, testing

All units contain exercises for *empirical* testing of hypotheses. However, Unit 8 involves formal statistical testing of hypotheses (in Exercise 3), and Unit 2 (Exercise 2) and Unit 5 (Exercises 3 & 4) present good opportunities for use of the Chi-square test.

Identity elements

See **addition, division, functions, multiplication, & subtraction**

Improper fractions, converting to mixed numbers or decimals

See **decimals & fractions**

Independent events

See **probability**

Inequalities, linear

See **linear equations**

Inflection points

See **calculus**

Integrals

See **calculus**

Intercepts

Unit 2 – Exercise 3

Unit 6 – Exercise 8

Unit 7 – Exercise 1

Interpolation

Unit 2 – Exercise 3

Intersecting line segments

See **angles, geometry, & linear measurement**

Inverse operations

See **addition, division, exponents, laws of exponents, functions, logarithms, multiplication, radicals, & trigonometric functions**

Large numbers, law of

See **probability**

Law of cosines

See **trigonometric functions**

Law of large numbers

See **probability**

Law of sines

See **trigonometric functions**

Laws of exponents

Unit 1 – Exercise 2

Unit 6 – Exercises 8 & 9

Unit 7 – Exercises 1 & 4

Least common multiple

See **division & multiplication**

Length, estimating

Unit 1 – Exercises 2 & 4

Unit 2 – Exercise 3

Unit 3 – Exercise 2

Unit 4 – Exercises 1, 2, & 3

Unit 5 – Exercise 1

Unit 6 – Exercises 8 & 9

Unit 7 – Exercise 1

Unit 8 – Exercises 1 & 8

Unit 9

Length, measuring

See **linear measurement**

Likelihood of events

See **probability**

Limits

See **calculus**

Line plots

Unit 1 – Exercises 3 & 4

Unit 2 – Exercise 3

Unit 3 – Exercise 2

Unit 4 – Exercise 1

Unit 6 – Exercise 8

Unit 7 – Exercise 1

Unit 8 – Exercise 8

Unit 10 – Exercises 5 & 7

See also **linear equations**

Lines & line segments

See **linear measurement**

Linear equations

Unit 1 – Exercises 2, 3, & 4

Unit 2 – Exercise 3

Unit 3 – Exercises 2 & 3

Unit 4 – Exercise 1

Unit 6 – Exercise 8

Unit 7 – Exercise 1

Unit 8 – Exercise 8

Linear measurement

Unit 1 – Exercises 2 & 4

Unit 2 – Exercise 3

Unit 3 – Exercise 2

Unit 4 – Exercises 1, 2, & 3

Unit 6 – Exercises 8 & 9

Unit 7 – Exercise 1

Unit 8 – Exercises 3 & 8

Unit 9 – Exercises 1 & 2

Lines of symmetry

See **symmetry**

Liquids, measuring

Unit 4 – Exercises 2 & 3

Unit 9 – Exercise 2

Liquids, measuring (cont.)

Unit 9

Logarithms

Unit 1 – Exercise 3

Unit 6 – Exercises 8 & 9

Manipulatives, using

All thematic units incorporate exercises involving extensive use of manipulatives.

Mass

Unit 1 – Exercise 3

Unit 4 – Exercises 1, 3, & 4

Unit 9 – Exercise 2

Unit 10 – Exercise 1

Mathematical symbols

See **symbols, mathematical**

Maxima

See **calculus**

Mean

See **central tendency, measures of**

Measurement, linear

See **linear measurement**

Measurements, converting

See **units, converting**

Measures of central tendency

See **central tendency, measures of**

Measures of spread

See **spread, measures of**

Measuring temperature

See **temperature, measuring**

Measuring time

See **time, measuring & clocks, using**

Median

Unit 8 – Exercise 3

Minima

See **calculus**

Missing values, finding

See **functions, patterns, & variables**

Mixed numbers

See **decimals & fractions**

Mode, determining

Unit 8 – Exercise 3

Models, mathematical

See **functions**

Multiplication

Unit 1 – Exercises 2, 3, & 4

Unit 2 – Exercises 2 & 3

Unit 3 – Exercise 3

Unit 4 – all exercises

Unit 5 – all exercises

Unit 6 – Exercises 8 & 9

Unit 7 – Exercises 1 & 4

Unit 8 – Exercises 3 & 8

Unit 9 – Exercise 1

Unit 10 – Exercises 1, 5, & 7

Multivariate data

See **data, multivariate**

Negative numbers

See **numbers, negative**

Non-linear functions

Unit 1 – Exercise 3

Unit 3 – Exercises 2 & 3

Unit 4 – Exercises 2 & 3

Unit 6 – Exercises 8 & 9

Non-linear functions (cont.)

Unit 7 – Exercise 4

Unit 8 – Exercises 3 & 8

Unit 10 – Exercise 5

Non-standard units of measurement

See **units of measurement**

Normal distribution

See **distribution of data**

Number lines

Unit 1 – Exercise 2

See also **Cartesian coordinate system**

Number sentences

All quantitative exercises in each unit lend themselves well to having students use & create number sentences.

Numbers, cardinal

See **counting**

Numbers, composite

See **division & multiplication**

Numbers, composing/decomposing

See **division & multiplication**

Numbers, even

Unit 8 – Exercise

See also **fractions**

Numbers, irrational

See **logarithms, square roots, & triangles**

Numbers, mixed

See **decimals & fractions**

Numbers, negative

Unit 2 – Exercise 3

Unit 6 – Exercise 9

Unit 7 – Exercise 4

Unit 8 – Exercise 3

Numbers, negative (cont.)

See also **Cartesian coordinate system**

Numbers, odd

Unit 8

Numbers, ordering

Unit 1 – Exercises 2 & 4

Unit 2 – Exercises 2 & 3

Unit 3 – Exercises 2 & 3

Unit 4 – all exercises

Unit 6 – Exercises 1, 8, & 9

Unit 7 – Exercise 1

Unit 8 – Exercises 3 & 8

Unit 9

See also **number lines**

Numbers, rational

See **division & multiplication**

Obtuse triangles

See **triangles & trigonometric functions**

Odd numbers

Unit 8 – Exercise 3

Odds and probability, difference between

See **probability**

Ordered pairs

Unit 1 – Exercises 3 & 4

Unit 2 – Exercise 3

Unit 3 – Exercise 2

Unit 4 – Exercise 1

Unit 6 – Exercises 8 & 9

Unit 8 – Exercise 8

Ordering numbers

See **numbers, ordering**

Outliers

Unit 2 – Exercise 3

Unit 8 – Exercises 2 & 3

Parabolas

Unit 6 – Exercise 8

Parallel line segments

See **geometry & lines & line segments**

Parametric equations

See **functions**

Patterns

Unit 1 – Exercises 3 & 4

Unit 2 – all exercises

Unit 3 – all exercises

Unit 4 – all exercises

Unit 5 – Exercises 2, 3, & 4

Unit 6 – Exercises 2, 6, 8, & 9

Unit 7 – Exercises 1 & 4

Unit 8 – all exercises

Unit 9 – Exercises 5 & 6

Unit 10 – Exercises 3, 5, & 7

Percent error

Unit 4 – Exercise 3

Percentiles

See **distributions of data & percents**

Percents

Unit 1 – Exercises 2 & 3

Unit 4 – Exercise 3

Unit 5 – all exercises

Unit 6 – Exercise 1

Unit 8 – Exercise 3

Unit 9 – Exercises 2 & 6

Unit 10 – Exercises 1 & 7

Perimeter

Unit 2 – Exercise 3

Unit 4 – Exercise 2

Unit 6 – Exercise 9

Unit 8 – Exercise 8

Unit 9 – Exercise

Period

See **periodic functions**

Periodic functions

Unit 7 – Exercise 4

Unit 10 – Exercise 5

Permutations

See **probability**

Perpendicular line segments

See **lines & line segments**

Pi

Unit 2 – Exercise 3

Unit 4 – Exercise 2

Unit 6 – Exercise 9

Unit 7 – Exercises 1 & 4

Unit 8 – Exercise 8

Unit 9 – Exercise 1

Pictographs, constructing

Unit 2 – Exercise 2

Unit 5 – Exercise 4

Picture graphs

See **pictographs, constructing**

Pie charts

See **circle graphs**

Piecewise functions

See **functions**

Place values

See **decimals, expanded notation, & scientific notation**

Plane figures

See **geometry**

Planes

See **geometry**

Platonic solids

See **geometry**; see also **cones, cubes (solids), cylinders, prisms, pyramids, & spheres**

Plots, line

See **line plots**

Plots, scatter

See **scatter plots**

Plots, stem-and leaf

See **stem-and-leaf plots**

Points, graphing

See **graphs, constructing; line plots, & scatter plots**

Point-slope equations of lines

Unit 2 – Exercise 3

Unit 6 – Exercise 8

Unit 7 – Exercise 1

Polar coordinates

Unit 6 – Exercise 9

See also **angles & trigonometric functions**

Polygons

See **geometry**

Polynomials

See **algebraic expressions & functions**

Population parameters, estimating

Unit 8

Positional terms

Unit 1 – Exercises 2, 3, & 4

Unit 2 – Exercise 1

Unit 4 – Exercise 2

Unit 6 – Exercises 2, 3, 4, 5, 6

Unit 7 – Exercise 1

Unit 8 – Exercises 1 & 8

Unit 9 – Exercises 1 & 6

Unit 10 – Exercises 1, 2, 3, 4, & 6

Precision

Unit 2 – Exercise 3
Unit 4 – all exercises
Unit 7 – Exercise 1

Predictions based on data

Unit 2 – Exercise 3
Unit 4 – Exercise 1
Unit 5 – Exercises 2 & 3
Unit 6 – Exercises 8 & 9
Unit 7 – Exercise 1
Unit 10 – Exercise 7
See also **estimation, extrapolation, & interpolation**

Prime numbers

See **division & multiplication**

Prisms

Unit 2 – Exercise 3
Unit 4 – Exercise 2
Unit 9 – Exercise

Protractor, using

See **angles**

Probability

Unit 1 – Exercise 3
Unit 5 – Exercises 2, 3, & 4
Unit 8 – Exercise 3
Unit 10 – Exercises 1 & 7

Properties of circles

See **circles**

Proportionality

See **ratios**

Pyramids

Unit 4 – Exercise 2

Pythagorean theorem

See **triangles & trigonometric functions**

Quadratic equations

See **algebraic expressions & functions**

Quadrilaterals

See **geometry**

Qualitative description

All units have at least some exercises devoted to qualitative description

Quantitative description

All units have at least some exercises devoted to quantitative description. See other topics of interest for examples.

Quartiles

See **distributions of data**

Radians

See **angles, polar coordinates, triangles, & trigonometric functions**

Radicals

See **exponents, laws of exponents, & functions**

Random samples

Unit 5 – Exercise 2
Unit 8 – Exercise 3
Unit 10 – Exercise 1

Range (measure of spread)

See **spread, measures of**

Range of a function

See **functions**

Rates

Unit 1 – Exercises 3 & 4
Unit 2 – Exercise 3
Unit 3 – Exercise 2
Unit 4 – Exercises 1, 2, & 3
Unit 5 – Exercise 1
Unit 6 – Exercises 8 & 9
Unit 7 – Exercise 1

Rates (cont.)

Unit 9 – Exercise 1

Unit 10 – Exercises 1, 5, & 7

Ratios

Unit 1 – Exercises 2, 3, & 4

Unit 2 – Exercises 2 & 3

Unit 4 – Exercises 1, 2, & 3

Unit 5 – all exercises

Unit 6 – Exercises 1, 8, & 9

Unit 7 – Exercise 1

Unit 8 – Exercises 3 & 8

Unit 9 – Exercises 2 & 6

Unit 10 – Exercises 1 & 7

See also **decimals, division, & fractions**

Reciprocals

See **fractions**

Reflections

Unit 2 – Exercise 2

Unit 6 – Exercise 2

Reflexive property

Relative frequency

See **frequency (occurrence)**

Remainders in division

See **decimals, fractions, & numbers, mixed**

Right triangles

See **triangles & trigonometric functions**

Rotations

Unit 6 – Exercise 9

Unit 8 – Exercise 8

Rounding

See **decimals & digits, significant**

Sample space

Unit 1 – Exercise 3

Unit 5 – Exercises 2, 3, & 4

Sample space (cont.)

Unit 10 – Exercise 1

See also **probability**

Samples, random

See **random samples**

Scale factors

Unit 1 – Exercise 2

Unit 2 – Exercise 3

Unit 4 – Exercise 2

Unit 6 – Exercises 8 & 9

Unit 7 – Exercise 1

Unit 8 – Exercise 8

Scale of axes in graphs, choosing

Unit 1 – Exercises 3 & 4

Unit 2 – Exercise 3

Unit 3 – Exercises 2 & 3

Unit 4 – Exercise 1

Unit 6 – Exercises 1, 8, & 9

Unit 7 – Exercise 1

Unit 8 – Exercises 3 & 8

Unit 10 – Exercises 5 & 7

Scatter plots

Unit 2 – Exercise 3

Unit 4 – Exercise 1

Unit 6 – Exercises 8 & 9

Unit 7 – Exercise 1

Unit 10 – Exercises 5 & 7

Scientific notation

Unit 1 – Exercise 2

Unit 5 – Exercise 1

Sectors of a circle

See **angles, circles, & circle graphs**

Sequences

Unit 6 – Exercise 9

Unit 9 – Exercises 5 & 6

See also **patterns**

Sets

See **classifying/sorting numbers/objects**

Shapes

See **geometry**

Significant digits

Unit 2 – Exercise 3

Unit 3 – Exercise 2

Unit 8 – Exercises 3 & 8

Unit 10 – Exercise 1

Similarity, geometric property of

See **geometry & triangles**

Sine

See **trigonometric functions**

Skip counting

See **counting & multiplication**

Slope of a line

Unit 2 – Exercise 3

Unit 6 – Exercise 8

Unit 7 – Exercise 1

Unit 10 – Exercise 5

Slope-intercept equation of lines

Unit 2 – Exercise 3

Unit 6 – Exercise 8

Unit 7 – Exercise 1

Unit 10 – Exercise 5

Solids, Platonic

See **geometry**; see also **cones, cubes (solids), cylinders, prisms, pyramids, & spheres**

Sorting, describing methods of

Unit 1 – Exercises 1 & 2

Spatial reasoning

See **geometry & positional terms**

Spheres

Unit 4 – Exercise 2

Unit 6 – Exercise 8

Unit 8 – Exercise 8

Spread, measures of

Unit 8 – Exercises 3 & 8

Spreadsheets, using

Unit 1 – Exercise 2

Unit 5 – Exercise 3

Unit 6 – Exercise 9

Square roots

Unit 1 – Exercise 3

Unit 2 – Exercise 3

Unit 4 – Exercise 2

Unit 6 – Exercises 8 & 9

Unit 7 – Exercise 1

Unit 8 – Exercises 3 & 8

Standard deviation, calculating

Unit 8 – Exercises 3 & 8

Standard units of measurement

See **units of measurement & units of measurement, converting**

Statistics

Unit 8 – Exercises

Unit 10 – Exercises 1 & 7

Stem-and-leaf plots

Unit 2 – Exercise 3

Student's t-test

Unit 8 – Exercise 3

Substitution property

See **addition, algebraic expressions, division, functions, multiplication, & subtraction**

Subtraction*

Unit 1 – Exercises 3 & 4

Subtraction* (cont.)

Unit 2 – Exercises 2 & 3

Unit 3 – Exercises 2 & 3

Unit 4 – Exercises 1 & 2

Unit 5 – all exercises

Unit 6 – Exercises 8 & 9

Unit 7 – Exercise 1

Unit 8 – Exercises 3 & 8

Unit 9

Unit 10 – Exercises 1, 5, & 7

* Note that these exercises do not necessarily involve *simple* subtraction. However, the materials provided in each unit (e.g. skulls, teeth, leaves, shells, etc.) can easily be used with younger students as manipulatives to model simple subtraction.

Summation notation

Summation notation is not introduced formally in any unit, but could be easily incorporated into any discussion of calculation of measures of central tendency or spread. See **central tendency, measures of & spread, measures of**

Surface area

Unit 1 – Exercise 4

Unit 2 – Exercise 3

Unit 3 – Exercises 2 & 3

Unit 4 – Exercise 2

Unit 6 – Exercises 8 & 9

Unit 7 – Exercise 1

Unit 8 – Exercises 3 & 8

Unit 9

Symbols, mathematical

All units include exercises involving the use of mathematical language and symbols.

Symmetric property

Symmetry

Unit 2 – Exercise 2

Unit 4 – Exercise 3

Unit 6 – Exercises 2, 3, 4, 5, 6, & 9

t-test, Student's

See **Student's t-test**

Tables, constructing & interpreting

Unit 1 – Exercises 1, 3, & 4

Unit 2 – Exercises 2 & 3

Unit 3 – Exercises 2 & 3

Unit 4 – all exercises

Unit 5 – Exercises 2, 3, & 4

Unit 6 – Exercises 1, 8, & 9

Unit 7 – Exercises 1, 2, & 4

Unit 8 – Exercises 3, 6, & 8

Unit 9

Unit 10 – Exercises 1, 2, 3, 5, & 7

Tangent

See **trigonometric functions**; see also **calculus & lines & line segments**

Temperature, measuring

Unit 3 – Exercise 2

Unit 10 – Exercise 5

Testing hypotheses

See **hypotheses, testing**

Theoretical probability

See **probability**

Thermometers, using

See **temperature, measuring**

Three-dimensional solids

See **Platonic solids & geometry**

Time

Unit 1 – Exercises 2 & 3

Unit 3 – Exercises 2 & 3

Unit 4 – Exercise 1

Unit 7 – Exercise 1

Unit 9 – Exercise 1

Transcendental functions

See **functions**

Transformations

Unit 4

Unit 6 – Exercises 2 & 9

Transitive property

Transitivity of measurement, property of

Unit 1 – Exercises 2 & 4

Unit 2 – Exercise 3

Unit 3 – Exercise 2

Translation

See **geometry & symmetry**

Tree diagrams

Unit 5 – Exercises 2 & 3

Unit 6 – Exercise 6

Unit 8 – Exercise 6

Unit 10 – Exercise 3

Triangle Inequality Theorem

See **triangles**

Triangles

Unit 2 – Exercise 3

Unit 4 – Exercise 2

Unit 6 – Exercise 9

Unit 7 – Exercise 1

Trigonometric functions

Unit 6 – Exercise 9

Unit 7 – Exercise 4

Two-dimensional figures

See **geometry**

Unit circle

See **polar coordinates**

Units of measurement (including conversions)

Unit 1 – Exercises 2 & 4

Unit 2 – Exercise 3

Unit 3 – Exercises 2 & 3

Unit 4 – all exercises

Units of measurement (incl. conversions, cont.)

Unit 5 – Exercise 1

Unit 6 – Exercises 8 & 9

Unit 7 – Exercise 1

Unit 8 – Exercises 3 & 8

Unit 9 – Exercises 1 & 2

Unit 10 – Exercises 1 & 5

Univariate data

See **data, univariate**

Unknowns, finding

See **algebraic expressions & functions**

Variables

See **algebraic expressions & functions**

Variance, calculating

Unit 8 – Exercises 3 & 8

Vectors

Unit 4 – Exercise 1

Unit 6 – Exercise 9

Venn diagrams

Unit 6 – Exercise 4

Volume (capacity)

Unit 2 – Exercise 3

Unit 4 – Exercises 2 & 3

Unit 6 – Exercises 8 & 9

Unit 8 – Exercise 8

Volume (loudness)

Unit 7 – Exercise 4

Unit 10 – Exercise 4

Weight

Unit 1 – Exercise 3

Unit 4 – all exercises

Unit 10 – Exercise 1