Number Sense

In grade 4, we

- identify and make fractions and mixed numbers
- understand and show the relationship between decimals and fractions (\(\frac{4}{10}\) can also be represented as 0.4)
- compare fractions, decimals, and whole numbers and put them in order
- \((0.5 = 0.50\) or \(\frac{50}{100}\))
- rename fractions \((\frac{2}{3} = \frac{4}{6}\))
- model and record numbers with up to five digits
Operation Sense

In grade 4, we

• add and subtract decimals using tenths and hundredths and whole numbers to five digits
• use models to show how to add simple fractions that have common denominators \(\frac{1}{5} + \frac{2}{5}\)
• solve and create word problems that add and subtract decimals to hundredths (i.e. two decimal places) and whole numbers
• estimate sums and differences of decimals and whole numbers
• use a calculator for problems that involve large whole numbers or many decimal places
• multiply 2-digit numbers by 10 or 100 in our heads
• demonstrate that we understand various meanings of “division”: (a) sharing, (b) finding how many groups, (c) rate, (d) comparison, and (e) combinations
• divide 2- and 3-digit whole numbers by a single digit number (divisor)
• show what to do with remainders in division problems
• estimate the quotient (result) of 2- or 3-digit numbers divided by a single digit number (e.g. 333 ÷ 8)
In Grade 4, we

- compare adding decimals and adding whole numbers
- identify a pattern and use it to multiply by 10, 20, 30 and so on. Use patterns to solve problems (+, −, ×, ÷)
- understand how changing parts of number sentences will affect the answers
  
  \[a \times b = \_\_\_, \quad a \times \_ = c, \quad a \div b = \_\_\_, \quad a \div \_ = c\]
Measurement

In Grade 4, we

• recognize and demonstrate that different objects can have the same inside space (area)
• recognize and demonstrate that objects with the same area can have different perimeters (distance around the outside)
• estimate and measure area in square centimetres
• connect the dimensions and area of rectangles to multiplication and arrays
• measure volume using non-standard units
• estimate and then determine the volume of rectangular prisms using centimetre cubes
• solve problems that involve millilitres and litres
• recognize that an angle means an amount of turn (90 degrees means a quarter turn).
• estimate and measure angles using non-standard units
• read temperatures on a thermometer
• estimate and measure in millimetres, centimetres, decimetres, metres, and kilometres
• solve problems involving measurement
GEOMETRY

IN GRADE 4, WE

• draw nets for rectangular prisms and cubes
• construct models for cylinders, cones, prisms, and pyramids
• look at drawings of shapes and then build the shapes
• explore 3-D shapes and their relationships
• find shapes that can be made from other shapes
• name, describe, and construct equilateral, isosceles, and scalene triangles
• investigate quadrilaterals (squares, rectangles, parallelograms, rhombi, trapezoids, and kites) and describe their patterns and properties
• sort quadrilaterals according to different properties
• predict and confirm what will happen to various 2-D shapes when we slide, reflect, and turn them (transformational geometry)
• find lines of symmetry for different quadrilaterals
• investigate pyramids, prisms, cones, and cylinders to see the differences in the number of vertices, edges, and faces of each
• name, describe, and draw acute and obtuse angles
Data Management and Probability

In grade 4, we

• recognize and use different ways of collecting and organizing data
• describe what is meant by “data,” “maxima,” “minima,” “range,” and “frequency”
• read and interpret bar graphs, line graphs, pictographs, and stem-and-leaf plots
• use ordered pairs (for example, (2, 4)) and display the position on a grid
• construct bar graphs, pictographs, and stem-and-leaf plots
• find information about a situation that was not specifically provided by the data but can be found on the graph
• describe data using the mean or the average to give a general sense of what a set of data means
• explore real world issues and then collect data to answer questions that we have
• recognize that a probability close to 0 means that an event rarely occurs, and that a probability near 1 means that an event almost always occurs
• explore situations with probability of about \( \frac{1}{2} \)
• give examples of everyday events with very high or very low probabilities
• predict whether one outcome is more or less likely than another
• use fractions to describe probabilities