IPK Mathematics Expectations

2020-2021

Kindergarten Two (KG2)

- Count to and across 100 from any number
- Count, read and write numbers to 100 in numerals
- Read and write mathematical symbols: +, - and =
- Identify "one more" and "one less"
- Use number bonds and subtraction facts within 20
- Add and subtract 1-digit and 2-digit numbers to 20, including zero
- Recognise, find and name a half
- Recognise, find and name a quarter
- Measure and begin to record length, mass, volume and time
- Recognise and know the value of all coins and notes
- Use language to sequence events in chronological order
- Recognise and use language relating to dates
- Tell the time to the half-hour, including drawing clocks
- Recognise and name common 2-D shapes
- Recognise and name common 3-D shapes

Grade One (G1)

- Count in steps of 2s, 3s and 5s, and steps of 10
- Recognise place value in two-digit numbers
- Compare and order numbers up to 100 using <, > and =
- Recall and use number addition/subtraction facts to 20, and derive related facts
- Add and subtract mentally and with objects one- and two-digit numbers
- Understand and use the inverse relationship between addition and subtraction
- Know 2×, 5× and 10× tables, including recognising odd & even numbers
- Calculate mathematical statements using x and ÷ symbols
- Recognise, find, name and write 1/3, 1/4, 1/2 and 3/4 of size, shape or quantity
- Write simple fraction facts, e.g. 1/2 of 6 = 3
- Combine amounts of money to make a value, including using £ and p symbols
- Tell the time to the nearest 5 minutes, including drawing clocks
- Describe properties of 2-D shapes, including number of sides and symmetry
- Describe properties of 3-D shapes, including number of edges, vertices and faces
- Interpret and construct simple tables, tally charts and pictograms

Grade Two (G2)

- Count in multiples of 4, 8, 50 and 100
- Compare and order numbers up to 1000
- Add and subtract numbers mentally, including round numbers to HTU
- Add and subtract using standard column method
- Estimate answers to calculations and use the inverse to check answers
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- Count up and down in tenths
- Understand that tenths are objectives or quantities divided into ten equal parts
- Compare and order simple fractions
- Recognise and show equivalent fractions
- Find and write fractions of a set of objects
- Add and subtract fractions with common denominators (less than one)
- Measure, compare and calculate measures using standard units
- Measure the perimeter of simple 2-D shapes
- Add and subtract money, including giving change
- Tell and write the time from an analogue clock, including using Roman numerals
- Estimate and read time to the nearest minute
- Identify horizontal, vertical, parallel and perpendicular lines
- Identify whether angles are greater or less than a right angle
- Interpret and present data using bar charts, pictograms and tables

Grade Three (G3)

- Count backwards through zero, including negative numbers
- Recognise place value in four-digit numbers
- Round any number to the nearest 10, 100 or 1000
- Know tables up to 12 × 12
- Use place value and number facts to carry out mental calculations
- Use factor pairs and commutativity in mental calculations
- Use short multiplication method
- Recognise and use hundredths
- Recognise and write decimal equivalents to ¼, ½ and ¾
- Divide one- or two-digit numbers by 10 and 100, using tenths and hundredths
- Round decimals with one decimal place to the nearest whole number
- Compare numbers up to two decimal places

- Convert between different units of metric measurement, including money
- Find the area of rectilinear shapes by counting squares
- Solve problems converting units of time
- Compare and classify shapes, including quadrilaterals and triangles
- Complete a simple symmetric figure with respect to a specific line of symmetry.
- Describe positions on a 2-D grid using co-ordinates
- Describe translations using a given unit to the left/right and up/down
- Interpret and present discrete and continuous data on appropriate graphs

Grade Four (G4)

- Interpret negative numbers in context
- Read Roman numerals to 1000, including years
- Recognise and use square and cube numbers, and know the notation
- Use rounding to check answers and determine accuracy
- Identify multiples and factors, including finding factor pairs and common factors
- Use vocabulary: prime numbers, prime factors and composite numbers
- Know prime numbers up to 19
- Multiply and divide numbers by 10, 100 or 1000, including decimals
- Use long multiplication for multiplying numbers of up to 4 digits by one or two digits
- Divide numbers using standard written short division
- Convert between mixed numbers and improper fractions
- Compare and order fractions whose denominators are multiples of the same number
- Identify, name and write equivalent fractions including tenths and hundredths
- Add and subtract fractions with denominators that are multiples of the same number
- Multiply proper fractions and mixed numbers by whole numbers with support
- Read and write decimal numbers as fractions
- Round decimals with 2 decimals places to whole number or to one decimal place
- Read, write, order and compare numbers with up to 3 decimal places
- Recognise % symbol and explain as a fraction with denominator 100 (parts out of 100)
- Understand and use common approximate conversions between metric and imperial
- Measure and calculate the perimeter of composite rectilinear shapes
- Calculate the area of rectangles, and estimate the area of irregular shapes
- Use the properties of rectangles to find missing lengths and angles
- Distinguish between regular and irregular polygons
- Identify 3-d shapes from 2-d representations
- Know angles are measured in degrees and compare acute, obtuse and reflex angles
- Draw and measure angles to the nearest degree

- Identify angles at a point, in a turn and on a straight line
- Describe and represent the result of a reflection or translation
- Complete, read and interpret information in tables, including timetables

Grade Five (G5)

- Use negative numbers to calculate intervals across zero
- Divide numbers using long division, interpreting the remainders as appropriate
- Use order of operations to carry out calculations
- Use common factors to simplify fractions
- Compare and order fractions of any size
- Add and subtract fractions with different denominators and mixed numbers
- Multiply simple pairs of proper fractions
- Divide proper fractions by whole numbers
- Calculate decimal fraction equivalents for simple fractions
- Multiply a number with up to two decimal places by whole numbers
- Use written division with answers of up to two decimal places
- Solve problems involving the calculation of percentages
- Recall and use equivalences between fractions, decimals and percentages
- Solve problems using ratio using multiplication and division facts
- Solve problems involving similar shapes where the scale factor is known
- Solve problems involving proportion, using knowledge of fractions and multiples
- Use simple formulae
- Generate and describe linear number sequences
- Express missing number problems algebraically
- Convert units of measure between smaller and larger units
- Convert between miles and kilometres
- Calculate the area of parallelograms and triangles
- Calculate and compare volume of cubes and cuboids
- Illustrate and name parts of a circle
- Finding missing angles in triangles, quadrilaterals and regular polygons
- Recognise vertically opposite angles and find missing angles
- Describe positions on the full co-ordinate grid
- Translate shapes on a co-ordinate grid and reflect in the axes
- Construct and interpret pie charts
- Calculate the mean as an average