

Heinemann Active Maths 2019 Benchmark edition

The 2019 edition of Heinemann Active Maths has been updated to ensure that there is complete coverage of all the CfE Benchmarks. These pages show a summary of the changes, listing:

- revisions and additions to Teacher Activity Cards (TACs) where needed
- new Practice Photocopy Masters (PPMs) where needed
- additional Question Banks (QBs) where needed.

In each case, the text of the relevant Benchmark is shown.

All TACs will show the appropriate Question Bank references for previously existing Question Banks.

Early Level

A new **TAC T0.4** has been produced to introduce children to the idea of telling the time digital and analogue clocks.

Heinemann Active Maths Outcome	Benchmark addressed	TAC revision
NC0.4 I am beginning to use words to help me put pictures, objects and ourselves in order	Uses ordinal numbers in real life contexts, for example, 'I am third in the line'	Extend use of ordinal numbers to tenth
NC0.5 I can compare and talk about amounts of objects	Recognises the number of objects in a group, without counting (subitising) and uses this information to estimate the number of objects in other groups	Teacher activities which explicitly practise estimation skills
NC0.8 When I am counting, I know that the arrangement of objects doesn't matter	Recognises the number of objects in a group, without counting (subitising) and uses this information to estimate the number of objects in other groups	Teacher activities which explicitly practise estimation skills
NC0.10 I can count on and back on an unnumbered track	Identifies the number before, the number after and missing numbers in a sequence within 20.	Model the use of language 'before' and 'after' to describe the position of the items in relation to each other
NC0.11 I can order number labels from 0 to 5 and beyond	Uses ordinal numbers in real life contexts, for example, 'I am third in the line'	Extend use of ordinal numbers to tenth
NC0.13 I can count on and back in ones on a numbered track	Orders all numbers forwards and backwards within the range 0 - 20	Extend range of numbers to 20

Heinemann Active Maths Outcome	Benchmark addressed	TAC revision
NC0.14 I can compare two quantities and tell you which is more and which is less	Recognises the number of objects in a group, without counting (subitising) and uses this information to estimate the number of objects in other groups.	Consolidation activities fro estimation of quantity
NC0.15 When I combine two quantities I can work out how many I have altogether	Uses appropriately the mathematical symbols +, – and =	Introduce and use the + symbol
NC0.16 I have explored taking away quantities from a bigger amount	Uses appropriately the mathematical symbols +, – and =	Introduce and use the – and = symbols
NC0.18 I can add on one by counting on from any given number	Uses appropriately the mathematical symbols +, – and =	Use the + symbol
NC0.20 I can count back one or two and relate this to taking away one and two	Uses appropriately the mathematical symbols +, – and =	Use the – symbol
NC0.21 I can create the set of addition facts for each number to five	Uses appropriately the mathematical symbols +, – and =	Use the + symbol
NC0.25 I have explored numbers from 0 to 30	Recalls the number sequence forwards within the range 0 - 30, from any given number.	Extend number range to 30
T0.4 I can tell the time on digital and analogue clocks – o'clock	Reads analogue and digital o'clock times (12 hour only) and represents this on a digital display or clock face Uses appropriate language when discussing time, including before, after, o'clock, hour hand and minute hand	New TAC
MSI0.4 I can ask questions to help gather information and display findings in different ways	Applies counting skills to ask and answer questions and makes relevant choices and decisions based on the data Interprets simple graphs, charts and signs and demonstrates how they support planning, choices and decision making	Extend discussions and activities for displaying and interpreting data, including use of digital technology

First Level

Heinemann Active Maths Outcome	Benchmark addressed	TAC revision	new PPM	additional QB
Exploring Number				
NP1.9a I can round numbers up or down – Nearest 10	Rounds whole numbers to the nearest 10 and 100 and uses this routinely to estimate and check the reasonableness of a solution.		PPM 45a Rounding for estimation - nearest 10	
NP1.9b I can round numbers up or down – Nearest 100	Rounds whole numbers to the nearest 10 and 100 and uses this routinely to estimate and check the reasonableness of a solution.		PPM 48a Rounding to estimate - nearest 10 or 100 PPM 48b Rounding and adjusting	
AS1.4a I can create complete number sequences by repeatedly adding or subtracting a number – Steps of 1 and 2	Counts forwards and backwards in 2s, 5s and 10s from any whole number up to 1000.	Extend the range of numbers to 100s and 1000s	PPM 62a Counting in 1s PPM 62b Counting in 2s	
AS1.4b I can create and complete number sequences by repeatedly adding or subtracting a number – Steps of 10 and 5	Counts forwards and backwards in 2s, 5s, 10s and 100s.	Extend counting on and back in 5s and 10 within the range of numbers to 100s and 1000	text PPM 64a Counting on and back in 5s PPM 64b Counting on and back in 10s	
AS1.4c I can create and complete number sequences by repeatedly adding or subtracting a number – Multiples of 10 and other helpful numbers	Counts forwards and backwards in 2s, 5s, 10s and 100s.	Extend counting on and back in multiples of 10 and 100s within the range of numbers to 100s and 1000	text PPM 66a Counting on and back in 100s	

Heinemann Active Maths Outcome	Benchmark addressed	TAC revision	new PPM	additional QB
Exploring Number				
AS1.8d I can use number facts and a variety of mental models to work out addition and subtraction calculations – Multiples of 10, 100, 1000			PPM 92a 100 more than and 100 less than PPM 92b Spin a number	QB AS1.8d Adding multiples of 10, 100
MD1.5a I have explored how times-tables are built up and can discuss the patterns within and between them – 2, 4 and 8	Applies strategies to determine multiplication facts, for example, repeated addition, grouping, arrays and multiplication facts.	Use doubling and halving strategies in times tables	PPM 109a Doubling and halving	
MD1.9a I can use my table facts and a variety of mental methods to work out multiplication calculations – Pairs of multiples of 10 and 100	Uses correct mathematical vocabulary when discussing the four operations including, subtract, add, sum of, total, multiply, product, divide and shared equally.	The term 'product' is added to essential vocabulary and included in activities where appropriate		
MD1.9b I can use my table facts and a variety of mental methods to work out multiplication calculations – 2-digit numbers multiplied by 1-digit numbers	Uses correct mathematical vocabulary when discussing the four operations including, subtract, add, sum of, total, multiply, product, divide and shared equally.	The term 'product' is added to essential vocabulary and included in activities where appropriate		
MD1.11 I can select and use the most appropriate strategy for solving multiplication and division problems	Uses correct mathematical vocabulary when discussing the four operations including, subtract, add, sum of, total, multiply, product, divide and shared equally.	Use the term 'product' where appropriate		
F1.5 I can talk about finding hundredths				
F1.6a I can compare and order simple fractions – Halves, quarters, fifths and tenths				

Heinemann Active Maths Outcome	Benchmark addressed	TAC revision	new PPM	additional QB
Exploring Number				
F1.6b I can compare and order fractions – Other simple fractions	Demonstrates understanding that the greater the number of equal parts, the smaller the size of each share	Use fraction wall to demonstrate the greater the number of equal parts, the smaller the size of each share		

Heinemann Active Maths Outcome	Benchmark addressed	TAC revision	new PPM	additional QB
Beyond Number				
T1.2 I can talk about days, months and seasons and can relate this to how they are shown on different calendars	Records the date in a variety of ways, using words and numbers	Extend ways in which dates are recorded	PPM 180a Matching dates PPM 180b Writing dates	
T1.4 I can estimate what I can do in different lengths of time and can check my estimates using a variety of different timers and units of time	Selects and uses appropriate timers for specific purposes	Use different types of timers for different purposes		
M1.4a I can estimate, measure and compare different quantities – Length				QB M1.4a Converting metric units (length)
M1.4b I can estimate, measure and compare different quantities – Weight			PPM 217a Reading scales - using fractions	

Heinemann Active Maths Outcome	Benchmark addressed	TAC revision	new PPM	additional QB
Beyond Number				
M1.4d I can estimate, measure and compare different quantities – Area			PPM 220a Same area, different shape PPM220b Counting areas using half squares PPM220c Area of irregular shapes	
SPM1.8 I have explored how to check shapes and patterns for lines of symmetry and can create my own	Creates symmetrical pictures and designs with more than one line of symmetry		PPM 249a Two lines of symmetry	
SPM1.9 I have explored different grid systems and can use them to describe and locate positions	Describes, plots and uses accurate two figure grid references, demonstrating knowledge of the horizontal and vertical location	Introduce the terms 'horizontal' and 'vertical' and use appropriately		
SPM1.14 I have explored how to use right angles to help me describe turns	Knows that a right angle is 90°	Know that a right angle is 90°		
SPM1.15 I can use my knowledge of right angles to help me compare and describe the angles in 2D shapes	Knows that a right angle is 90°	Know that a right angle is 90°		
MF1.1 I can talk about and act out how and why money is used in everyday life and can recognise, name and order a range of coins and notes	Demonstrates awareness of how goods can be paid for using cards and digital technology.	Extend range of digital technologies used for payments		

Heinemann Active Maths Outcome	Benchmark addressed	TAC revision	new PPM	additional QB
Beyond Number				
IH1.5 I can talk about how likely something is to happen, and can justify my choices	Uses mathematical vocabulary appropriately to describe the likelihood of events occurring in everyday situations including, probable, likely/unlikely, certain/uncertain, possible/impossible, and fair/unfair.	Extend the range of vocabulary to include 'uncertain', 'fair', 'unfair', 'probable', 'improbable'		
IH1.6 I have extended my knowledge of graphs and their features	Uses a variety of different methods, including the use of digital technologies, to display data, for example, as block graphs, bar graphs, tables, Carroll diagrams and Venn diagrams.	Extend use of technology to create and display graphs		

Second Level Exploring Number

Heinemann Active Maths Outcome	Benchmark addressed	TAC revision	new PPM	additional QB
WN2.1 I can use my knowledge of place value to count, read, write, partition and order numbers	Partitions a wide range of whole numbers and decimal fractions to three decimal places, for example, $3.6 = 3$ ones and 6 tenths = 36 tenths.			QB WN2.1 Place value to thousandths
WN2.5b I can use an extended range of numbers - Negative numbers	Orders numbers less than zero and locates them on a number line. Identifies familiar contexts in which negative numbers are used.	Use of number lines for ordering negative numbers	PPM 19a Ordering negative numbers PPM 19b Goal difference	
WN2.13 I can round a wide range of whole numbers to the nearest 10, 100, 1000, 10 000 and 100 000 and can use this to estimate	Rounds whole numbers to the nearest 1000, 10 000 and 100 000.	Extends range of numbers to hundreds of thousands		QB WN2.13 Rounding to 10 000 and 100 000
WN2.15b I can use a range of mental strategies for addition and subtraction for an extended range of numbers - Counting on and back	Adds and subtracts multiples of 10, 100 and 1000 to and from whole numbers and decimal fractions to two decimal places.		PPM 36a + and – Multiples of 10, 100 and 1000	
WN2.17 I can work out and record addition and subtraction calculations using formal methods for any whole numbers	Adds and subtracts whole numbers and decimal fractions to two decimal places, within the number range 0 to 1 000 000.	Extend range of addition and subtraction to 6-digit numbers	PPM 41a 6-digit numbers	
WN2.20d I can work out and record my division calculations in a variety of different ways - Formal method using sharing (2-digit \div 1-digit and 3-digit \div 1-digit)	Divides whole numbers and decimal fractions to two decimal places, by a single digit, including answers expressed as decimal fractions, for example, $43 \div 5 = 8.6$.		PPM 70a Remainders – whole number and decimal fractions	

Heinemann Active Maths Outcome	Benchmark addressed	TAC revision	new PPM	additional QB
FDP2.9b I can convert a fraction to a decimal fraction and can talk about the position and value of the digits – Hundredths and thousandths	Reads, writes and orders sets of decimal fractions to three decimal places.	Extend range of decimal fractions to three decimal places	PPM 95a Place value to thousandths PPM 95b Place value to thousandths	QB FDP2.9b Place value to thousandths
FDP2.11 I can round decimals to the nearest whole number or nearest tenth	Rounds decimal fractions to the nearest whole number, to one decimal place and two decimal places.			QB FDP2.11 Rounding to 2 d.p.
FDP2.17a I can add and subtract decimals using my mental strategies and written methods - Tenths	Adds and subtracts multiples of 10, 100 and 1000 to and from whole numbers and decimal fractions to two decimal places.		PPM 111a + and – multiples of 10, 100 and 1000	
FDP2.17b I can add and subtract decimals using my mental strategies and written methods - Tenths and hundredths	Adds and subtracts multiples of 10, 100 and 1000 to and from whole numbers and decimal fractions to two decimal places.		PPM 114a + and – hundredths PPM 114a + and – millions to hundredths	
AT2.1 I have explored a range of patterns using the same steps	Applies knowledge of multiples, square numbers and triangular numbers to generate number patterns	Link multiple with multiplication tables and the sequences they generate		
AT2.2 I have explored a range of patterns using different steps	Applies knowledge of multiples, square numbers and triangular numbers to generate number patterns	Link multiple with multiplication tables and the sequences they generate		

Heinemann Active Maths Outcome	Benchmark addressed	TAC revision	new PPM	additional QB
MF2.1 I can talk about the different ways that money is represented and accessed	Demonstrates understanding of the benefits and risks of using bank cards and digital technologies	Extend discussion to include new payment technologies (contactless, smartphone, etc)		
MF2.7 I can talk about the different ways people keep track of their spending and why this is important	Demonstrates understanding of the benefits and risks of using bank cards and digital technologies	Extend discussion to include credit unions and hacking of accounts		
IH2.2 I can display information in pictograms, bar and bar line graphs and understand the impact of scale on these	Displays data appropriately making effective use of technology and chooses a suitable scale when creating graphs	Extend use of technology to create and display graphs		
IH2.4 I can talk about how likely something is to happen and can order events on a simple probability scale	Uses the language of probability accurately to describe the likelihood of simple events occurring, for example equal chance; fifty-fifty; one in two, two in three; percentage chance; and $\frac{1}{6}$	Extend vocabulary to include 'fifty-fifty'		
IH2.9 I can explore the probability of an event and can represent this numerically	Uses the language of probability accurately to describe the likelihood of simple events occurring, for example equal chance; fifty-fifty; one in two, two in three; percentage chance; and $\frac{1}{6}$	Extend vocabulary to include 'fifty-fifty'		
IH2.11 I can use my knowledge of gathering data and presenting information to solve more complex problems	Draws conclusions about the reliability of data taking into account, for example, the author, the audience, the scale and sample size used.	Extend discussion to include reliability, sample size and author bias	PPM 197a Reliable or not?	
T2.1 I can talk about how people plan their lives using times and dates	Knows the relationships between commonly used units of time and carries out simple conversion calculations, for example, changes 1 3/4 hours into minutes.		PPM 200a Converting units of time	

Heinemann Active Maths Outcome	Benchmark addressed	TAC revision	new PPM	additional QB
T2.2 I can estimate and then measure how long tasks or events will take and what I can achieve in a given time period	Chooses the most appropriate timing device in practical situations and records using relevant units, including hundredths of a second.		PPM 203a Hundredths of a second	
T2.5 I have explored the different time calculations people carry out to help them plan their lives	Knows the relationships between commonly used units of time and carries out simple conversion calculations, for example, changes 1 3/4 hours into minutes			QB T2.5 Converting times
T2.6 I have explored how people plan and make decisions about their time and how these are recorded	Uses and interprets a range of electronic and paper-based timetables and calendars to plan events or activities and solve real life problems	Introduce and demonstrate electronic devices for planning activities		
M2.3a I can estimate and measure items and then check to see how close I was – Length	Reads a variety of scales accurately. Converts between common units of measurement using decimal notation, for example, 550 cm = 5.5 m; 3.009 kg = 3009 g.		PPM 227a Reading measuring scales (length)	QB M2.3a Measuring length
M2.3b I can estimate and measure items and then check to see how close I was – Weight	Converts between common units of measurement using decimal notation, for example, 550 cm = 5.5 m; 3.009 kg = 3009 g.			QB M2.3b Converting weights
M2.3c I can estimate and measure items and then check to see how close I was – Capacity and liquid volume	Reads a variety of scales accurately. Converts between common units of measurement using decimal notation, for example, 550 cm = 5.5 m; 3.009 kg = 3009 g		PPM 231a Reading measuring scales (volume)	QB M2.3c Converting volume
M2.4a I have explored area and perimeter of 2D shapes and the volume of solid 3D objects – Area and perimeter of squares and rectangles	Demonstrates understanding of the conservation of measurement, for example, draw three different rectangles each with an area of 24 cm ² .	Extend discussion and activities for conservation of measurement	PPM 233a Different shape, same area	

Heinemann Active Maths Outcome	Benchmark addressed	TAC revision	new PPM	additional QB
M2.4d I have explored area and perimeter of 2D shapes and the volume of solid 3D objects – Volume of solid objects and their surface area	Calculates the volume of cubes and cuboids in cubic centimetres (cm ³) and cubic metres (m ³).		PPM 238a Finding volume using a formula	QB M2.4d Finding volume using a formula
SPM2.5a I have investigated how to estimate, create and measure angles – Classifying angles using knowledge of right angles	Knows that complementary angles add up to 90° and supplementary angles add up to 180° and uses this knowledge to calculate missing angles.	Detailed coverage of complementary and supplementary angles	PPM 253a Complementary angles PPM 253b Supplementary angles	QB SPM2.5a Complementary and supplementary angles
SPM2.6a I have further explored a variety of 2D shapes – Straight edges	Describes 3D objects and 2D shapes using specific vocabulary including regular, irregular, diagonal, radius, diameter and circumference	Explicit reference to diagonals		
SPM2.6b I have further explored a variety of 2D shapes – Curved edges	Knows that the radius is half of the diameter		PPM 263a Radius and diameter	
SPM2.7a I have further explored a variety of 3D objects – Flat faces	Identifies and describes 3D objects and 2D shapes within the environment and explains why their properties match their function.	Extend discussion to include identification of 3D objects and functionality		
SPM2.7b I have further explored a variety of 3D objects – Curved faces	Identifies and describes 3D objects and 2D shapes within the environment and explains why their properties match their function.	Extend discussion to include identification of 3D objects and functionality		
SPM2.9 I have explored how to create shapes and patterns by reflecting and rotating lines and shapes	Identifies and illustrates line symmetry on a wide range of 2D shapes and applies this understanding to complete a range of symmetrical patterns, with and without the use of digital technologies.	Extend discussion of patterns reflected in an axis, use of digital technologies		