

Author: HIAS Maths Team
Published: November 2023
Final Version

Year 6 Maths Revision Plan 2023

Year 6 Maths Revision Plan with Key Teaching Points

This is a 14-week suggested coverage programme (approx. 70 lessons). The table below is a suggested programme of study for the final weeks leading up to Y6 SATs (2022). It includes key teaching foci and references to 2022 SATs questions as possible anchor tasks. Teachers should adapt these to ensure pupils experience the 'type' more than once. Teachers should draw on questions from previous years in addition to the 2022 set as required.

There is no assumption that all pupils are secure in all areas. Teachers should adjust the suggested times to suit the needs of their pupils. Teachers should use **formative assessment** and **professional judgement** to make informed decisions about what needs to be covered and when.

The schedule draws on 2022 KS2 SATs questions for pitch and ideas for **anchor tasks**. There is no expectation that all questions listed are covered. The questions are roughly sorted into similar concepts, **but not fixed**. Anchor tasks are used for whole class input and exploration. Pupils work collaboratively on these anchor tasks to establish the most efficient way to calculate and present a solution. The teacher should **always model** a 'good' solution so that pupils see how to get the most marks. Pupils and teachers should always **estimate before calculating** so that we know the **size of the answer we should expect**.

The lesson can be shaped around the anchor task using conceptual and procedural variation. Variation means, in this case, using the anchor task, to build up a logical sequence of problems that are linked to the anchor task. Teachers should take the anchor task and change one small thing in that question each time, so that pupils see the same question in the same format but need to rethink the solution in some way.

For example: 2018 P1, Q10. **Always use the exact question so pupils become familiar with the appearance and layout of the papers.** Use a bar model to show that these are the two parts, and we need to find the whole.

298	10

10 - 10 = 298

1 mark

Share and discuss strategies with pupils

Now design **similar problems** such as $\Delta - 10 = 297$; $\Delta - 10 = 397$; $\Delta - 100 = 397$ and so on.

Always use appropriate models, images, and multi-representations to ensure ACCESS AND SUCCESS FOR ALL Find everyday opportunities to develop fluency with a broad range of arithmetic strategies in the context of each unit of work. Revise and consolidate key facts for measurement and conversion of units regularly beyond the daily maths lesson.

Problem Solving, Reasoning and Thought-Provoking Questioning

Opportunities should be provided throughout to reason and problem solve using key strategies such as 'being systematic', 'trial and improvement', 'draw a diagram or make a model' or 'find a simpler example first'.

Always encourage pupils to consider:

- what is the same and what is different?
- what happens when we change....?
- if we know this, then what else do we know?
- can we show a different way, representation, or method?
- can we estimate ~ about how much are we expecting?

	Week starting:	Overview Content	Key teaching Focus	2022 SATs Qs as anchor tasks (Other examples should be used in addition to these suggestions)	Teacher Notes: Include models and images, variations of the questions you use, questions you will ask and the different representations you will exemplify
1	09-01-23	Number and Place Value including decimals-representations and partitioning	Round to the nearest 0.1;1;10;100;1000 up to 10,000,000. Partition for place value. Know/calculate 0.1;1;10;100; 1000 up to 10,000,000 more or less and use this to find missing numbers (PV). Use PV knowledge and patterning to calculate with decimals. (If I know this, then what else do I know?). Order decimals. Use knowledge of PV to reason about scale	P1: 5, 6, 14, 23, 26. P2: 1, 3, 4, 12, 16 P3: 8	

2	16-01-23	Formal and informal strategies Four rules of arithmetic (Whole numbers and decimals) addition and subtraction number lines and negatives estimating and rounding Link to decimals and fractions as appropriate	Practise and develop the most appropriate mental or informal strategy for a range of addition and subtraction calculations. Identify the parts and the whole each time so that pupils get used to looking for this aspect. Use jottings, bar models and number lines to develop pupils' sense of number and PV Avoid formal methods at the start of this week to encourage flexibility and fluency alongside looking for alternative working methods.	P1: 1, 3, 5, 6, 9, 14, 23, 26 P2: 3, 6, 18, 20, 21, 23 P3: 3, 5, 6, 7, 10, 12, 17	
3	23-01-23	Formal and informal strategies Four rules of arithmetic (Whole numbers and decimals) multiplication and division number lines, factors and multiples, estimating and rounding Link to decimals and fractions as appropriate	Explore different processes for division, particularly for those who unable to complete long division. Chunking is an acceptable alternative method in the Mark Scheme. Know key multiplication and associated division facts and use these to generate more complex solutions (If I know this then what else do I know?). Know that multiplication by zero results in zero and division by zero is not possible. Use arrays to model grid and long multiplication (expanded and contracted). Link arrays to division. Use knowledge of PV to multiply by decimals (2534 x 10 is 100 times larger than 25.34 but the digits are the same, simply different PV). Use number lines to model repeated addition and subtraction and to show remainders as decimals, fractions, and leftovers.	P1: 2, 4, 7, 8, 10, 11, 13, 15, 16, 17, 19, 20, 29, 33, 35. P2: 2, 9, 14, 15, 17, 22 P3: 2, 9, 10, 11	

4	30-01-23	Equivalence (Fractions linking to $\times$ and $\div$ Facts, factors, and multiples)	Generate equivalent fractions. Know multiplication and associate division facts. Derive new facts from known ones.	P1: 18, 25, 31, 32 P2: 8, 11 P3: 4, 13, 16	
5	06-02-23	Formal and informal strategies Four rules of arithmetic Fractions including bar modelling	Understand that fractions of a quantity or shape are equal parts. Model fractions as equal parts to a whole on a bar model. Understand how multiplication facts link to equivalence. Use the bar model to show fractions greater than one. Convert between improper fractions and mixed numbers. Order fractions by changing them to the same denominator. Add and subtract fractions, changing them to the same denominator. Multiply and divide with fractions using arrays and bar models to support understanding. For example, $\frac{2}{3} \div 3$ is the same as asking 'how can we divide two thirds into three equal pieces?' There are only two pieces currently, but if we convert $\frac{2}{3}$ into $\frac{6}{9}$ we can see that each of the three equal pieces is $\frac{2}{9}$ Use a bar model rather than the KS3 algorithm here.	P1: 18, 21, 22, 23, 25, 31, 32, 34, 36 P2: 7, 13	

Notes:
Next steps / misconceptions / key strategies still to be taught / learnt. etc.

Half Term					
6	20-02-23	Geometry Angles, measure, and draw Shape, properties, and sorting Pie charts, calculate, measure, draw and interpret	Calculate and draw angles, know acute, obtuse, right and reflex. Use an angle measurer accurately. Construct / interpret pie charts. Know key angle facts (angles around a point, on a straight line, in a right angle). Know the properties of, and be able to classify, 2-D and 3- D shapes.	P2: 19, 24 P3: 1, 15	

7	27-02-23	Multiplication and division facts (including decimals) Special numbers and Patterns (integer and FDP patterns) Multiples, Factors, Primes Squares, Cubes Algebra Linear sequences Formulae Pattern spotting.	Know multiplication and associated division facts to 12x12 and use inverses Generate multiples of any number Use arrays to show multiples as repeated addition. Identify all the factors of a number Use PV knowledge and patterning (Gattego charts) to support $\times/\div$ with decimals. Use bar models to show the same/ different relationship between $0.3 \div 30 = 0.01$ and $3 \div 30 = 0.1$ and $30 \div 30 = 1$ (there are always 30 equal parts) Patterning for calculation and PV ($7+3 = 10$; $70+30 = 100$ etc). Practise strategies for doubling and halving using knowledge to calculate near doubles Recognise and recall primes to 30, square (up to 12^2) and cube numbers (up to 10^3) Use Gattego charts so pupils can see PV patterns. Sequencing numbers according to a rule, including one step rules such as 'subtract 7' and two steps rules such as 'add 3 and then double'. Do not identify the nth term (also known as position to term rule) but focus on the 'term to term' rule. i.e. 'the rule to get the next number is... 'Q8'. Pattern spotting for number and shape, look for the one before as well as the 'next' one in the pattern.	P1: 2, 4, 7, 8, 10, 11, 13, 15, 16, 20, 24, 35 P2: 2, 5, 9, 14, 15, 17, 22 P3: 2, 9, 10, 11, 14, 19, 21	
---	----------	---	--	--	--

			Understand the idea of a 'variable', something that can change although the relationship, or rule, stays the same (Q3, Q10, Q17). Use letters, symbols, empty boxes, and words to represent variables. Use bar models to identify the parts and the whole to spot the 'missing' section. Use the question 'What if I change...?' to support the idea of a variable. Practise problems with real life scenarios (such as the cooking time for an item of food where there is a set time plus extra added on per kilogram of weight).		
8	06-03-23	Measurement and scales (link to $\times \div 10, 100, 1000$) Money Mass Length (inc. perimeter) Temperature and negative numbers Time	Know key conversion facts and understand how this links to PV ('for every 1 kilo gram there are 1000 grams etc). Know important fraction and decimal equivalences in measure such as $250\text{ml} = \frac{1}{4}$ litre. Know common metric and imperial equivalences such as $8\text{km} = 5\text{miles}$. Know days of the week, how many days in a fortnight, how many days in each month etc. Use number-lines and bar models to show calculations with money and other measures. Consider informal calculation methods as measure problems often include subtraction from a multiple of 10 (e.g. "What is 15 ml less than a litre?" should not be set out as a column subtraction $1000 - 15$).	P1: 10, 16, 20 P2: 5, 6, 12, 13, 14, 23 P3: 3, 6, 9, 10, 14, 17, 20	

9	13-03-23	Measurement and scales (link to $\times/\div$ 10,100,1000) Area Volume Capacity Shapes and nets	Know how to calculate the area and volume of flat and solid shapes Use knowledge of properties of shapes and geometry to identify (and draw) simple nets Use arrays to link to the area of a rectangle Link cube numbers to the volume of a cube	P2: 6, 14, 22 P3: 1	
10	20-03-23	Coordinates in 4 quadrants Link to properties of shape Reflection Translation	Reflect in horizontal and vertical mirror lines Translation and reflection of 2-D shapes on a coordinate grid in all four quadrants. Correct use of and representation of (x,y) coordinates. Use a range of scales on the x and y axes. Reason about missing points using knowledge of how the x and the y coordinates define the position of a point, shape, or line.	P2: 13, 25 P3: 21	
11	27-03-23	Statistics and scales Mean average Line graph Pie charts Pictograms Bar charts	Interpret and construct different tables, charts, and graphs. Use these to solve real-life problems and pose questions about the data. Given some data, select the best chart or graph to display the data. Understand the difference between discrete (counting) data and continuous (measuring) data. Include bar charts, pictograms, line graphs, pie charts. Calculate the mean average for discrete data. Use a range of scales and axes, including negative numbers.	P2: 4, 9, 13, 20 P3: 5, 6, 20	

Notes:

EASTER BREAK					
12	17-04-23	Percentages (of amounts, as fractions of 100) Ratio and proportion	Find percentages and fractions of amounts Link multiplication to 'of'. Know equivalences of simple fractions, decimals, and percentages. Relate fractions of an amount to the corresponding percentage.	P1: 22, 27, 28, 30, 36 P2: 7 P3: 18	
13	24-04-23	Equivalence of fractions, decimals and percentages Comparing and ordering FDP	Know that the whole amount = 100%. Reasoning about scale (3 times as long means multiply by 3 or dividing a line into equal pieces as in Q23). Be able to divide a quantity into parts and use ratio notation to describe the 'shares'	P2: 8, 11 P3: 4, 13, 16	

			Link knowledge of equivalence to fractions, decimals, and percentages. For example, knowing that 20% is the same as $\frac{20}{100}$, which simplifies to $\frac{2}{10}$ (and $\frac{1}{5}$), shows us that 20% = 0.2. Order FDP by changing into the same format (change all into decimals for example) Use < and > symbols to compare part numbers of different magnitudes (Q 12). Use a range of informal methods to find % of amounts.		
14	01-05-23 (4 days)	Formal and informal strategies Four rules of arithmetic (inc. BODMAS) Estimating and rounding Multi-step problems	Order of operations: 'Brackets, Order, Division, Multiplication, Addition, Subtraction'. Include missing number problems to increase fluency (Q16). Multi-step problems that require a mixture of operations. Model these use bar models and other pictorial representations alongside formal, efficient calculations. Encourage fluency and flexibility by looking at a range of methods. Agree the best or most efficient method and why.	P1: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19, 20, 23, 26, 29 P2: 1, 2, 4, 10, 14, 15, 16, 18, 20, 21, 22, 23 P3: 3, 7, 8, 10, 14, 17, 20, 21	
Notes:					
15	08-05-23 (4 days)	SATS WEEK			

HIAS Maths Team

Jo Lees – Lead Inspector

Email: jo.lees@hants.gov.uk

Kate Spencer – Lead Inspector

Email: kathryn.spencer@hants.gov.uk

Rebecca Vickers – Teaching & Learning Adviser

Email: rebecca.vickers@hants.gov.uk

Nikki Farrage – Teaching & Learning Advisor

Email – Nicola.Farrage@hants.gov.uk

Olivia Humphries – Teaching & Learning Advisor

Email – Olivia.humphries@hants.gov.uk

For further details on the full range of services available please contact us using the following email:

htlcdev@hants.gov.uk

Upcoming Courses

Keep up-to-date with our learning opportunities for each subject through our Upcoming Course pages linked below. To browse the full catalogue of learning offers, visit our new Learning Zone. Full details of how to access the site to make a booking are provided [here](#).

- [English](#)
- [Maths](#)
- [Science](#)
- [Geography](#)
- [RE](#)
- [History](#)
- [Leadership](#)
- [Computing](#)
- [Art](#)
- [D&T](#)
- [Assessment](#)
- [Support Staff](#)
- [SEN](#)