YEARS 1–6

Ready-to-progress aligned Sumdog tests - Progression Framework

Teacher Handbook

Contents

Introduction

What are the ready-to-progress criteria?

In June 2020, the ready-to-progress criteria were published as non-statutory guidance for the National Curriculum by the Department for Education and the National Centre for Excellence in the Teaching of Mathematics (NCETM). The guidance aimed to bring greater coherence to the National Curriculum by highlighting core concepts and knowledge and demonstrating progression and connections between year groups and topics.

The ready-to-progress criteria identify the most important knowledge and understanding that pupils need as they progress from year 1 to year 6, and provide a coherent, linked framework to support pupils' mastery of the maths curriculum.

The criteria are organised into 6 strands, each of which has its own code for ease of identification, which we have listed below.

Ready-to-progress criteria strands	Code
Number and place value	NPV
Number facts	NF
Addition and Subtraction	AS
Multiplication and Division	MD
Fractions	F
Geometry	G

How has the Sumdog NCETM Assessment Library been created?

At Sumdog, we have a range of over 2,000 question steps, and the breadth and variety of these question steps has allowed us to use our existing content to align to the ready-to-progress criteria. We have grouped our steps to match those criteria, and developed our own library of tests that assess understanding of the core concepts identified in them. To clarify the precise content covered by our ready-to-progress aligned tests on a more granular level, we have broken down the criteria into our own 'Sumdog assessment milestones'. This document details these assessment milestones and the corresponding criteria, and highlights the strength of the alignment between the two.

How should teachers use the Sumdog Assessment Library alongside the ready-to-progress criteria?

If you already refer to the ready-to-progress criteria for your teaching, the Sumdog Assessment Library can be used to complement your existing teaching process. The tests are named to match the criteria and provide a way for you to assess your pupils against them in a low-stakes, formative manner as they progress through the ready-to-progress framework.

For example, if you are teaching the addition and subtraction concepts covered by the ready-to-progress criteria 2AS-3 (Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract only ones or only tens to/from a two digit number.), you could set your children the corresponding test in the Sumdog Assessment Library. The Sumdog assessment milestones for this test are as follows:

- Add 1-digit numbers to a multiple of 10
- Add multiples of 10 (within 100)
- Add a 1-digit to a 2-digit number (within 100) without carry
- Add 10 to a 2-digit number
- Add to next 10 (within 100)
- Add multiple of 10 to a 2-digit number
- Subtract multiples of 10 (within 100)
- Subtract 10 from a 2-digit number
- Subtract from 2-digit number to reach previous 10
- Add three 1-digit numbers and a ten, within 100, where two or more combine to make 10
- Subtract multiples of 10 (within 100)
- Subtract 10 from a 2-digit number

In this example, the Sumdog test would provide you with an opportunity to check progress against the ready-to-progress criteria that you are teaching and equip you with the information required to plan appropriate next steps. It could be used for a complementary in-class learning activity, an easily set home assignment, a same day intervention following a maths mastery approach, or as an extension activity for a smaller cohort of learners. Our tests give you the flexibility to use them in whichever way best suits your learners and makes your life easier.

How should teachers use the Sumdog Assessment Library if their school or establishment does not refer to the ready-to-progress criteria?

If you do not assess your pupils against the ready-to-progress criteria, you can still use our Assessment Library to find tests that suit your teaching, as we have created a bank of tests that are aligned to a wide range of schemes of work and curricula.

In addition, as it is good practice to assess using a range of sources, by setting Sumdog ready-to-progress tests which cover content corresponding to your teaching, you will obtain key information on your pupils' ability to apply their learning.

The content within our ready-to-progress tests can be easily identified from their titles and this framework will provide you with additional insight into each one; enabling you to select a pre-made test that matches your requirements.

Of course, you always have the option to create your own custom test; giving you access to our range of skills and allowing you to create the perfect Sumdog test for your teaching needs.

Are Sumdog tests summative or formative?

Really, the choice is yours. Sumdog is a familiar platform for students with the key benefit of learner engagement. We have therefore deliberately kept our tests short and informal in appearance, with rewards for students on completion. However you use the assessments, your pupils will earn coins for each correct answer that they can then spend on items for their 3D house, garden or avatar.

You may wish to use the test at the start or end of a unit, or prefer to set formatively throughout your teaching cycle. Sumdog tests can be used to complement traditional paper-based summative assessments or to differentiate a unit of work and assess throughout. However you choose to use them, our enhanced reporting will give you invaluable insights into your pupils' progress.

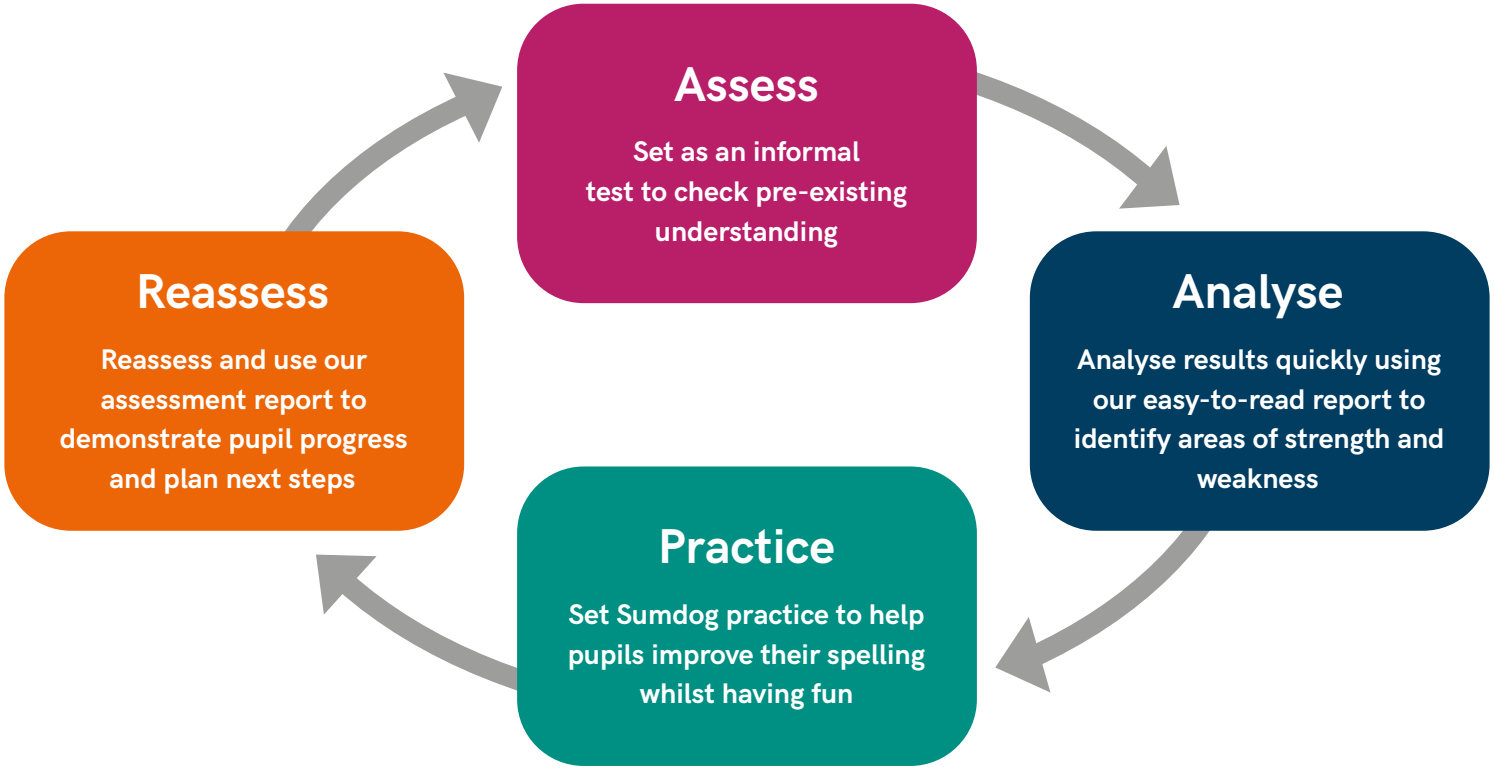
Unlike traditional assessments where pupils are made to sit down and complete a written test, these low-stakes quizzes are an informal means of reliably gauging where children need extra support and additional practice. Our enhanced student chooser also allows you to differentiate with ease, so you can set different tests for your pupils without them ever knowing what level they are sitting – you can even give them a friendly name!

How can I view the results of tests set?

The best part of Sumdog tests is that we do the marking for you.

Not only will you have access to a grid overview of score distribution on each individual question, we also report which questions your pupils have found tricky and how those areas for improvement correlate to the curriculum. You can find further information on our Assessment Library reporting at the end of this document.

At the touch of a button you can print your results off, or export them to a spreadsheet for further analysis.



YEAR 1
Number and Place Value

Ready-to-progress criteria	**1NPV–1 (15 questions)** Count within 100, forwards and backwards, starting with any number.	**1NPV–2 (10 questions)** Reason about the location of numbers to 20 within the linear number system, including comparing using < > and =
Sumdog assessment milestones	• Count objects (0 to 5) • Count up/down by 1 (within 5) (initial number missing) • Interpret picture graphs (values up to 5) • Count with 10 frames five wise layout • Express numbers in words (within 10) • Count up by 1 (within 10) (initial number missing) • Count down by 1 (within 20) only one number given • Count up or down by 1 within and a ten • Express numbers in words (within 100) • Count blocks (1s and 10s)	• Order object sets up to 5 • Identify position of picture in a line • Count up by 1 (within 10) only one number given • Compare numbers within 10 • Order numbers up to 10 • Add 1 (within 20) • Estimate, within 20, where on a number line a value should sit

Ready-to-progress criteria	**1NF–1 (10 questions)** Develop fluency in addition and subtraction facts within 10	**1NF–2 (15 questions)** Count forwards and backwards in multiples of 2, 5 and 10, up to 10 multiples, beginning with any multiple, and count forwards and backwards through the odd numbers
Sumdog assessment milestones	• One more (blocks, within 5) • Add/Subtract within 5 • Count more with doubles to 10 • Change within 10p • Add three within 10 • Add three within 10 – word problems • Identify true or false equations (addition up to 10) • Match subtraction questions that give the same answer (within 10) • Add four 1-digit numbers within 10 • Add four 1-digit numbers where two add up to 10	• Add 10 to multiples of 10 • Doubling up to 10 • Count ten more or ten less using a number square (within 100) • Identify 10 more within 100 (one number only) • Count 5/10 less to/from 50 • Count more in 5s from a multiple of 5 within 100 • Count up by 2 (up to 20) • Skip count in 2s • Identify an array by a description (groups of, sets of, boxes of, etc.) (2s, 5s, 10s) • Identify an array by an expression (x) (2s, 5s, 10s)

YEAR 1
Addition and Subtraction

Ready-to-progress criteria	**1AS-1 (19 questions)** Compose numbers to 10 from 2 parts, and partition numbers to 10 into parts, including recognising odd and even numbers.	**1AS-2 (10 questions)** Read, write and interpret equations containing addition (+), subtraction (-) and equals (=) symbols, and relate additive expressions and equations to real-life contexts.
Sumdog assessment milestones	• Add to make a number 5 (counters) • Identify two numbers that combine to make a third (within 5) • Identify two numbers that combine to make a third (within 10) • Add to make a number 10 (counters and numerals) • Match addition questions that give the same answer (within 10) • Add doubles within 10 • Subtract doubles within 10 • Identify even / odd (up to 10); pictorial representation showing even / not even collections • Identify even / odd numbers up to 10	• Add up to 10 – word problems • Subtract within 10 – word problems • Match inverse relationships + / – within 10 • Match addition questions that give the same answer (within 10) • Match subtraction questions that give the same answer (within 10)

Ready-to-progress criteria	**1G-1 (10 questions)** Recognise common 2D and 3D shapes presented in different orientations, and know that rectangles, triangles, cuboids and pyramids are not always similar to one another.	**1G-2 (Coming Soon)** Compose 2D and 3D shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations.
Sumdog assessment milestones	• Match simple shapes (2D) • Compare the length of four straight edged shapes using longer, shorter or about the same as • Match shapes to a given word (2D) • Identify the 2D shape of everyday objects • Match simple shapes (3D) • Match shapes to a given word (3D) • Identify the 3D shape of everyday objects • Compare sides and vertices • Identify polygons (up to hexagons) • Sides and corners of polygons (up to hexagons)	• Match 2x 2D shapes match a compound shape • Match 3x 2D shapes match a compound shape • Decompose standard 2D shapes (i.e. a square can be made from 2 triangles) • Compose/decompose 3D shapes • Make/match shapes (using tangrams) • Match pictures of 2D shapes with rotated pictures, match the correct picture • Match pictures of 3D shapes with rotated pictures of 3D shapes, match the correct picture

Ready-to-progress criteria	**2NPV–1 (20 questions)** Recognise the place value of each digit in two-digit numbers, and compose and decompose two-digit numbers using standard and nonstandard partitioning	**2NPV–2 (10 questions)** Reason about the location of any twodigit number in the linear number system, including identifying the previous and next multiple of 10
Sumdog assessment milestones	• Convert a number to place value (below 20) • Convert between standard and expanded form (below 20) • Convert a number to place value (below 100) • Convert between standard and expanded form (below 100) • Identify place value (up to 2 digits) • Regroup place values (within 100)	• Estimate where on a multiple decade number line a non-decade value should sit • Compare numbers within 20 • Order numbers up to 20 • Compare numbers in standard and place value forms using >, < and = (within 100) • Compare values (expanded form) using different representations – within 100 • Estimate number of object 1 that are needed to equal the length of object

Ready-to-progress criteria	**2NF–1 (15 questions)** Secure fluency in addition and subtraction facts within 10, through continued practice.
Sumdog assessment milestones	• Count objects arranged in a line (0 to 5) • Count up/down by 1 (within 5) only one number given • Count objects (0 to 10) • Count down by 1 (within 10) (start at 10 each time) • Add four 1-digit numbers within 10 • Subtract within 10 (including unknowns) • Add within 10 (including unknowns) • Subtract within 5 (including unknowns) • Add within 10 • Subtract within 10

YEAR 2
Addition and Subtraction

Ready-to-progress criteria	**2AS-1 (15 questions)** Add and subtract across 10.	**2AS-2 (10 questions)** Recognise the subtraction structure of 'difference' and answer questions of the form, "How many more...?".	**2AS-3 (15 questions)** Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract only ones or only tens to/ from a two-digit number.	**2AS-4 (15 questions)** Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract any 2 two-digit numbers.
Sumdog assessment milestones	• Subtract 10 from within twenty • Addition up to 20 – word problems • Add three numbers where the first two add up to 10 • Coin amounts within 20p • Compare collections of coins within 20p • Change within 20p • Identify true / false questions for 2-digit column addition without carry • Solve 2-digit column addition without carry • Identify correct layout for 2-digit column subtraction without regrouping • Add 10 to a 1-digit number • Count more with doubles to 20 • Add a 1-digit and a 2-digit number up to 20	• Calculate difference in tables (within 10) • Calculate the difference in a picture graph (numbers up to 10) • Calculate difference in picture graphs (within 20) • Calculate difference in tally charts (within 20) • Compare values in a table using words like more or less than • Subtraction within 20 – word problems • Subtract customary lengths (within 20) – word problems • Subtract durations – word problems	• Add 1-digit numbers to a multiple of 10 • Add multiples of 10 (within 100) • Add a 1-digit to a 2-digit number (within 100) without carry • Add 10 to a 2-digit number • Add to next 10 (within 100) • Add multiple of 10 to a 2-digit number • Subtract multiples of 10 (within 100) • Subtract 10 from a 2-digit number • Subtract from 2-digit number to reach previous 10 • Add three 1-digit numbers and a ten, within 100, where two or more combine to make 10 • Subtract multiples of 10 (within 100) • Subtract 10 from a 2-digit number	• Add 1-digit to 2-digit number (within 100) with carry • Add three 1-digit numbers and a ten, within 100 • Add three 1-digit numbers and a 2-digit number, within 100, where two or more combine to make a 10 • Add a 2-digit number and two or three 1-digit numbers within 100 • Add two 1-digit numbers and two tens, within 100, where two numbers combine to make a 10 • Add two 1-digit numbers and two tens, within 100 • Add 2-digit numbers (within 100) without carry • Add 2-digit numbers (within 100) with carry • Add 2-digit numbers (within 100) with carry • Subtract 2-digit number within 100 • Addition up to 100 – word problems • Subtraction within 100 – word problems

Ready-to-progress criteria	**2MD-1 (10 questions)** Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables.	**2MD-2 (Coming Soon)** Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotitive division).
Sumdog assessment milestones	• Describe an array as repeated addition (within 10) • Describe an array as repeated addition (within 10) • Describe an array as repeated addition (within 25) • Express an array up to 25 as a repeated addition question (word problems) • Identify how many items are displayed in each group from a collection (array) (up to 25) • Identify an array by an expression (x) (2s, 5s, 10s) • Solve an equation (x) given an array (2s, 5s, 10s) • Count collections up to 25 arranged in an array	• 2,5,10 tables • Missing number questions within 2,5,10 tables • Doubles • Recognise repeated addition • Link repeated addition with multiplication

Ready-to-progress criteria	**2G–1 (15 questions)** Use precise language to describe the properties of 2D and 3D shapes, and compare shapes by reasoning about similarities and differences in properties.
Sumdog assessment milestones	• Count sides and corners of shapes • Count faces, edges and vertices (3D) • Identify parts of a 3D shape: faces, edges, vertices • Compare sides and vertices • Identify polygons (up to hexagons) • Match defining attributes to 2D shape (picture) • Identify irregular shapes that have / do not have identified attributes • Match defining attributes to 2D shape (picture) • Match defining attributes to 3D shape (picture) • Identify a 2D shape on a 3D shape's face

Ready-to-progress criteria	**3NPV–1 (Coming Soon)** Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10; apply this to identify and work out how many 10s there are in other three-digit multiples of 10.	**3NPV–2 (15 questions)** Recognise the place value of each digit in three-digit numbers, and compose and decompose three-digit numbers using standard and non-standard partitioning.	**3NPV–3 (15 questions)** Reason about the location of any three-digit number in the linear number system, including identifying the previous and next multiple of 100 and 10.	**3NPV–4 (Coming Soon)** Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts.
Sumdog assessment milestones	• x a 2-digit number by 10 • ÷ a 2-digit number by 10 • Find numbers ten times bigger than a number • Find numbers ten times smaller than a number • Find multiples of 10 • Convert between centimetres and metres • Missing number questions	• Identify place value (up to 3 digits) • Identify place value of a multiple of 10 (up to 3 digits) • Convert a number to place value (up to 3 digits) • Convert between standard and expanded form (up to 3 digits) • Regroup place values within 1,000 • Compare numbers within 1,000 • Express hundreds in words (within 1,000) • Express numbers on the decade with words (within 1,000) • Express numbers in words up to 1,000 • Compare collections of 100s within 1,000	• Estimate where on a multiple decade number line a non-decade value should sit (within 1000) • Estimate where on a multiple century number line a value should sit • Order numbers up to 100 (within a decade) • Order numbers up to 100 (decades) • Correctly use <,< or = to compare two numbers within 100 • Order numbers up to 100 • Comparison within 100 – word problems • Order 100s and 10s within 1,000 • Order numbers up to 1,000 • Compare collections within 1,000 • Compare numbers up to 1,000 using <,> or =	• Multiply and divide by 2,4,5,10 • Count in 2s, 4s, 5s 10s • Count in multiples of 2s, 4s, 5s 10s • Worded problems • Solve questions using the bar model, based on 100 split into 2,4, 5, or 10 parts • Solve questions using a number line 0-100 split into 2,4, 5, or 10 parts. • Solve questions involving scales 0-100 split into 2,4, 5, or 10 parts. Arrow pointing to a missing part

YEAR 3
Number Facts

Ready-to-progress criteria	**3NF–1 (15 questions)** Secure fluency in addition and subtraction facts that bridge 10, through continued practice.	**3NF–2 (20 questions)** Recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number	**3NF–3 (Coming Soon)** Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10).
Sumdog assessment milestones	• Add single-digit numbers • Rewrite addition as 10 plus one other number (where two numbers add to 10) • Add three numbers where two numbers add up to 10 • Add numbers up to 20 using number lines • Add doubles to 20 • Take away 10 from a collection • Subtract doubles (within 20) • Subtract 10 from within twenty • Add four 1-digit numbers where first two add up to 10	• Identify related x questions (2s) • Identify the unknown number in a x question (2s) • Identify inverse relationships x / ÷ (2s, 5s and 10s) • Time sequences 5 min accuracy (using analog clocks) • 2 Division table • 5 Division table • 10 Division table	• Multiply 1-digit numbers by 10s or 100s • Divide 100s by 1-digit number • Derive known addition facts multiplied by multiples of 10 (i.e. 30+40 from knowing 3+4) • Derive known multiplication facts multiplied by multiples of 10 (i.e. 30x4 from knowing 3x4) • Understand the inverse relationship (addition and multiplication) • Understand the inverse relationship with multiples of 10 (addition and multiplication)

Ready-to-progress criteria	**3AS-1 (Coming Soon)** Calculate complements to 100.	**3AS-2 (20 questions)** Add and subtract up to three-digit numbers using columnar methods.	**3AS-3 (15 questions)** Manipulate the additive relationship: Understand the inverse relationship between addition and subtraction, and how both relate to the part-part-whole structure. Understand and use the commutative property of addition, and understand the related property for subtraction.
Sumdog assessment milestones	• Find complements to 10 • Find complements to 100 (multiples of 10) • Inverse relationship • Change from £1 • Find complements to 100 (any number)	• Identify correct layout for 2-digit column addition with/without carry • Solve 2-digit column addition • Identify correct layout for 2 and 3-digit column addition with/without carry • Identify correct layout for 3-digit column addition • Identify true and false questions for 3-digit column addition • Column addition for 1/2-digit and 3-digit numbers • Identify correct layout for 2-digit column subtraction • Identify true / false questions for 2-digit column subtraction without regrouping • Solve 2-digit column subtraction with/without regrouping	• Identify true or false equations (addition up to 20) • Match related addition questions (within 20) • Match questions that give the same answer (subtract within 20) • Match related subtraction questions (within 20) • Match inverse relationships +/- (within 20) • Identify inverse relationships + / – within 100 • Identify related addition questions (within 100) • Identify related subtraction questions (within 100) • Add with unknowns within 100 • Subtract with unknowns within 100

Ready-to-progress criteria	**3MD-1 (Coming Soon)** Apply known multiplication and division facts to solve contextual problems with different structures, including quotitive and partitive division.
Sumdog assessment milestones	• 2,5,10 tables • Missing number questions within 2,5,10 tables • Recognise repeated addition • Link repeated addition with multiplication • Link quotative division to grouping (unknown number of groups) • Link partitive division to sharing (known number of groups)

Ready-to-progress criteria	3F–1 (10 questions) Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts	3F–2 (15 questions) Find unit fractions of quantities using known division facts (multiplication tables fluency).	3F–3 (10 questions) Reason about the location of any fraction within 1 in the linear number system.	3F–4 (10 questions) Add and subtract fractions with the same denominator, within 1
Sumdog assessment milestones	• Name the parts of a shape (half/ quarter/fourth) • Fourth / half of an area • Use words to describe how much of a container has been filled • Match description of fraction with a picture (unit fractions) • Identify a shaded shape as being a whole: 2/2, 3/3, etc or two / three out of the number of shares • Express proper fraction model in words	• Identify a unit fraction multiplication question • Match unit fractions with equivalent pictures of fractions • Third of an area • Name one piece from a whole shape that has been cut into parts (halves, thirds, half of, etc.) • Identify thirds and fifths • Identify sixths, sevenths, eighths and ninths • Compare pictorial representations of unit fractions • Compare and order unit fractions • Find a fraction of a number (whole number answer) • Multiply unit fractions by whole numbers	• Identify unit fractions on number lines • Identify tenths on a number line (fraction) • Identify proper fractions on number lines • Multiply unit fractions by whole numbers using number lines • Order fractions with the same numerator • Sequence tenths within 1 • Number sequences with fractions within 1/12s	• Add pictorial representations of fractions within 1 (same denominator) • Subtract pictorial representations of fractions within 1 (same denominator) • Add fractions with like denominators using number lines within 1 • Subtract fractions with like denominators using number lines within 1 • Add tenths within 1 (fractions) • Subtract tenths within 1 (fractions) • Add fractions with like denominators within 1 • Subtract fractions with like denominators within 1 • Identify inverse relationships +/- fractions within 1

Ready-to-progress criteria	**3G–1 (10 questions)** Recognise right angles as a property of shape or a description of a turn, and identify right angles in 2D shapes presented in different orientations.	**3G–2 (10 questions)** Draw polygons by joining marked points, and identify parallel and perpendicular sides.
Sumdog assessment milestones	• Compare angles to right angles • Compass point turns\multiples of 1/4 • Identify angles as being acute, right, or obtuse • Compare angles up to 180 degrees • Order angles up to 180 degrees (pictures) • Compare numerical angles to a right angle • Order angles up to 180 degrees • Identify simple or regular shapes by 1 or more set angles – acute, obtuse or right • Identify an angle as acute, obtuse, right, straight or reflex from a pictorial representation	• Identify single lines as horizontal or vertical • Identify pairs of lines as parallel • Identify pairs of lines as perpendicular • Identify a shape picture that has a specific number of lines of symmetry • Identify a shape by name that has a specific number of lines of symmetry • Identify the unknown part of a shape given one horizontal or vertical line of symmetry • Identify marked lines on shapes as parallel, perpendicular or intersecting

YEAR 4
Number and Place Value

Ready-to-progress criteria	**4NPV–1 (10 questions)** Know that 10 hundreds are equivalent to 1 thousand, and that 1,000 is 10 times the size of 100; apply this to identify and work out how many 100s there are in other four-digit multiples of 100.	**4NPV–2 (10 questions)** Recognise the place value of each digit in four-digit numbers, and compose and decompose four-digit numbers using standard and nonstandard partitioning.	**4NPV–3 (15 questions)** Reason about the location of any four-digit number in the linear number system, including identifying the previous and next multiple of 1,000 and 100, and rounding to the nearest of each.	**4NPV–4 (Coming Soon)** Divide 1,000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1,000 with 2, 4, 5 and 10 equal parts.
Sumdog assessment milestones	• Multiply 1-digit numbers by 10 or 100 • Multiply 2-digit numbers by 10 or 100 • Multiply 3-digit numbers by 10 or 100 • Solve for 4-digit numbers / 10 or 100 (whole number answers) • Divide 2/3-digit number by 10 or 100 with remainders • Divide 4-digit number by 10 or 100 with remainders • Convert between whole metric measures	• Identify and convert a number to place value (up to 4 digits in tens) • Convert a ten between standard and expanded form (up to 4 digits) • Convert between standard and expanded form (up to 5 digits) • Identify and solve the expression of repeated addition for area (metric) • Identify and convert a number to place value (up to 4 digits in tens) • Convert a ten between standard and expanded form (up to 4 digits) • Convert a number to place value (up to 4 digits) • Convert between standard and expanded form (up to 4 digits) • Express hundreds as words (up to 4 digits)	• Identify to which ten a number is closest (within 100) • Estimate metric measurement to the nearest ten • Rounding 2-digit numbers to the nearest 10 • Rounding 2- 3-digit numbers to the nearest 10 or 100 • identify to which power of ten a number is closest (within 10,000) • Rounding 2/3/4-digit numbers to the nearest 10, 100 or 1,000 • Read decimals between 0 and 1 on a number line • Read decimals on a number line up to 10 • Compare decimal tenths within 10 using <, > or = • Order decimal tenths within 10	• Multiply and divide by 2,4,5,10 • Count in 2s, 4s, 5s 10s • Count in multiples of 2s, 4s, 5s 10s • Worded problems • Solve questions using the bar model, based on 1,000 split into 2,4, 5, or 10 parts • Solve questions using a number line 0-1,000 split into 2,4, 5, or 10 parts. • Solve questions involving scales 0-1,000 split into 2,4, 5, or 10 parts. Arrow pointing to a missing part

Ready-to-progress criteria	**4NF–1 (15 questions)** Recall multiplication and division facts up to 12x12 and recognise products in multiplication tables as multiples of the corresponding number.	**4NF–2 (15 questions)** Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders, and interpret remainders appropriately according to the context.	**4NF–3 (10 questions)** Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100)
Sumdog assessment milestones	• Identify related multiplication equations for 3s, 4s and 8s • Identify related division equations for 3s, 4s and 8s • Skip count in 6, 7 and 9s • Solve an equation (x) given an array of 6s, 7s, 9s • 11 Times table and division table • 12 Times table and division table • Identify the unknown number in a 6x, 7x and 9x question • Identify the unknown number in a ÷6, ÷7 and ÷9 question • Solve multiplication word problem to 100	• Halving multiples of 10 and 100 • Identify even / odd numbers up to 20 • Divide 1- or 2- digit numbers by 10 or 100 • Divide 2-digit by 1-digit numbers with remainders	• Identify the 3 number x question that matches the 2 number times question (one factor is a ten) • Match a 3 number x question with a 2 number x question where the first two factors combine to a known product • Multiply 1-digit numbers by 10s or 100s • Divide 100s by 1-digit number • Multiply 10s, 100s, 1000s by single digit

Ready-to-progress criteria	**4MD–1 (Coming Soon)** Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size.	**4MD–2 (10 questions)** Manipulate multiplication and division equations, and understand and apply the commutative property of multiplication.	**4MD–3 (Coming Soon)** Understand and apply the distributive property of multiplication.
Sumdog assessment milestones	• Multiply 1/2/3 digit numbers by 10 or 100 • Solve for 4-digit numbers / 10 or 100 (whole number answers) • Divide 2/3-digit number by 10 or 100 with remainders • Divide 4-digit number by 10 or 100 with remainders • Solve a multi-step division or multiplication word problem without remainder (within 1,000) • Solve for unknown length given area (customary units, word problems) • Solve a multi-step division or multiplication word problem without remainder (within 1,000) • Solve a multi-step division or multiplication word problem (within 1,000)	• Use commutivity • Use the inverse • Apply commutivity and the inverse to calculations involving multiples of 10	• Solve x questions using the associative property • Solve x questions using the distributive property

Ready-to-progress criteria	**4F–1 (Coming Soon)** Reason about the location of mixed numbers in the linear number system.	**4F–2 (Coming Soon)** Convert mixed numbers to improper fractions and vice versa.	**4F–3 (14 questions)** Add and subtract improper and mixed fractions with the same denominator, including bridging whole numbers.
Sumdog assessment milestones	• Express mixed number model in words • Identify larger/smaller mixed number fractions • Identify larger/smaller improper fractions • Find one part less than the whole number • Find one part more/less than any mixed number fraction • Solve worded problems	• Convert between mixed number and improper fractions • Convert between improper fractions and mixed number fractions. • Multiply proper fractions and mixed numbers by whole numbers using number lines	• Add pictorial representations of fractions (like denominators) • Add/subtract proper fractions with like denominators using number lines • Add/subtract proper fractions with like denominators • Identify inverse relationships +/- fractions • Add/subtract decimal tenths using number lines • Add/subtract decimal tenths without carry/regrouping • Add/subtract decimal tenths • Multiply mixed numbers by whole numbers • Solve word problems for addition/subtraction of proper fractions with like denominators

Ready-to-progress criteria	**4G–1 (30 questions)** Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant.	**4G–2 (15 questions)** Identify regular polygons, including equilateral triangles and squares, as those in which the side-lengths are equal and the angles are equal. Find the perimeter of regular and irregular polygons.	**4G–3 (15 questions)** Identify line symmetry in 2D shapes presented in different orientations. Reflect shapes in a line of symmetry and complete a symmetric figure or pattern with respect to a specified line of symmetry.
Sumdog assessment milestones	• Identify ordered pairs in the first quadrant • Identify ordered pair for object located in the first quadrant • Identify vertical/horizontal change of a coordinate in a grid's first quadrant • Identify coordinates used to plot rectangles and triangles with horizontal bases • Identify coordinates used to plot rectangles • Identify coordinates used to plot triangles • Identify coordinates used to plot triangles • Identify if a shape has been translated along a line • Identify if a shape has been translated along a line on a coordinate grid	• Identify polygons (up to decagons) • Sides and corners of polygons (up to decagons) • Classify quadrilaterals • Identify shape as having / not having equal sides • Identify shape as regular or irregular • Sum perimeter (unit squares) • Add for perimeter of composite rectilinear shapes (customary/metric units) • Solve for perimeter of composite rectilinear shapes (customary/metric units) • Perimeter – find the unknown length (metric units)	• Identify one vertical/horizontal line of symmetry on shapes with horizontal bases • Identify one line of symmetry on shapes/objects • Identify number of lines of symmetry • Identify shapes with one line or no lines of symmetry • Identify 1 line of symmetry on named shape (answers might include wrong shape) • Identify shapes with two lines of symmetry • Identify objects with 2 marked lines of symmetry • Identify 2 lines of symmetry on a pictured shape/object • Identify if a shape has been reflected/translated across a line • Identify rotational symmetry

Ready-to-progress criteria	**5NPV-1 (10 questions)** Know that 10 tenths are equivalent to 1 one, and that 1 is 10 times the size of 0.1. Know that 100 hundredths are equivalent to 1 one, and that 1 is 100 times the size of 0.01. Know that 10 hundredths are equivalent to 1 tenth, and that 0.1 is 10 times the size of 0.01.	**5NPV-2 (15 questions)** Recognise the place value of each digit in numbers with up to 2 decimal places, and compose and decompose numbers with up to 2 decimal places using standard and nonstandard partitioning.	**5NPV-3 (20 questions)** Reason about the location of any number with up to 2 decimals places in the linear number system, including identifying the previous and next multiple of 1 and 0.1 and rounding to the nearest of each.	**5NPV-4 (Coming Soon)** Divide 1 into 2, 4, 5 and 10 equal parts, and read scales/ number lines marked in units of 1 with 2, 4, 5 and 10 equal parts.	**5NPV-5 (15 questions)** Convert between units of measure, including using common decimals and fractions.
Sumdog assessment milestones	• x a 2-digit number by 0.1 • ÷ a 2-digit number by 0.1 • x a 2-digit number by 0.01 • ÷ a 2-digit number by 0.01 • Find numbers a tenth / hundredth of the size of a number • Find multiples of 0.1 and 0.01 • Identify factor needed to convert between tenths, hundredths and thousandths • Convert between cm (tenths) and mm • Convert between m (tenths) and cm	• Identify place value for numbers to 1,000,000 • Convert between expanded and standard form for numbers to 1,000,000 • Compare two numbers with one place value different (<, > or =, within 10,000) • Compare numbers to 10,000 using \u003c, \ u003e and = and different representations • Count in hundredths (1/100) within a whole • Convert between fractional and decimal tenths, hundredths and thousandths	• Round to the nearest 10, 100, 1,000 or power of 10 (numbers up to 6 digits) • Identify on a number line whether a tenth is closer to 1 or 0 • Round tenths to 0 or 1 • Round decimal hundredths to 0 or 1, inlcuding using a number line • Round numbers with 2 decimal places to the nearest whole/tenth • Round decimals to nearest tenth or hundredth • Identify on a number line where a hundredth lies and whether a hundredth is closer to 1 or 0	• Multiply and divide by 2,4,5,10 • Count in 2s, 4s, 5s 10s • Count in multiples of 2s, 4s, 5s 10s • Worded problems • Solve questions using the bar model, based on 1 split into 2,4, 5, or 10 parts • Solve questions using a number line 0-1 split into 2,4, 5, or 10 parts • Solve questions involving scales 0-1 split into 2,4, 5, or 10 parts. Arrow pointing to a missing part	• Decimal money conversion to £5 • Match a fraction of £1 or 1 to a decimal value • Convert between whole metric measures • Match the 'fraction of' question with the correct division and multiplication question • Complete table for metric units of measure (decimal numbers) • Convert mixed meters/ centimeters • Complete table for metric units of measure (mixed units in answer)

Ready-to-progress criteria	5NPV-1 (10 questions)	5NPV-2 (15 questions)	5NPV-3 (20 questions)	5NPV-4 (Coming Soon)	5NPV-5 (15 questions)
Sumdog assessment milestones	• Complete table for whole metric units of measure (whole numbers)	• Express numbers as words to 1,000,000 • Compare numbers to 1,000,000 using <, > and = • Convert between numbers and Roman numerals (up to 1,000 – M) • Express number with up to 2 decimal places in words	• Compare numbers with 2 decimal places within 1 using <, > or = • Order numbers with 2 decimal places within 1 • Compare numbers with 2 decimal places within 10 using <, > or =		• Convert measurements between different units (cm and m; milli and base unit; base unit and kilo • Convert mixed meters/ centimeters; base unit and milli-; kilo- and base unit • Solve unit and non-unit fraction of questions from a word problem

Ready-to-progress criteria	**5NF–1 (25 questions)** Secure fluency in multiplication table facts, and corresponding division facts, through continued practice.	**5NF–2 (Coming Soon)** Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth).
Sumdog assessment milestones	• Identify the unknown number in a 3s, 4s and 8s multiplication question • Identify the unknown number in a 3s, 4s and 8s division question • Identify related division equations for 3s, 4s and 8s • Identify the correct 1-digit equation for the given product / quotient with 3s, 4s and 8s • Identify inverse relationships x / ÷ (3s, 4s and 8s) • Identify half of a collection of objects within 20 • Match whole numbers to equivalent fractions • Identify related questions for division • Identify inverse relationships x / ÷	• Multiply 1-digit numbers by 10s or 100s • Multiply 1-digit numbers by 0.1 or 0.01 • Divide 100s by 1-digit number • Derive known addition facts multiplied by 0.1 (i.e 30+40 from knowing 3+4) • Derive known addition facts multiplied by 0.01 (i.e 30+40 from knowing 3+4) • Derive known multiplication facts multiplied by 0.1 (i.e 30x4 from knowing 3x4) • Derive known multiplication facts multiplied by 0.01 (i.e 30x4 from knowing 3x4) • Understand the inverse relationship (addition and multiplication) • Understand the inverse relationship with multiples of 10 (addition and multiplication)

YEAR 5
Multiplication and Division

Ready-to-progress criteria	**5MD-1 (10 questions)** Multiply and divide numbers by 10 and 100; understand this as equivalent to making a number 10 or 100 times the size, or 1 tenth or 1 hundredth times the size.	**5MD-2 (10 questions)** Find factors and multiples of positive whole numbers, including common factors and common multiples, and express a given number as a product of 2 or 3 factors.	**5MD-3 (19 questions)** Multiply any whole number with up to 4 digits by any one-digit number using a formal written method.	**5MD-4 (20 questions)** Divide a number with up to 4 digits by a one-digit number using a formal written method, and interpret remainders appropriately for the context.
Sumdog assessment milestones	• Divide 2/3-digit number by 10 or 100 with remainders • Solve for 1000s or 100s divided by 1-digit number • Identify the associative, commutative, and distributive properties when given examples • Use the associative, commutative, and distributive properties to generate (identify) equivalent expressions	• Identify the correct 1-digit equation for the given product / quotient • Identify 1 factor of a number within 100 • Identify 1 multiple of a number within 100 • Identify a common factor of 2 numbers • Identify prime numbers (within 100) • Identify next prime number in a sequence within 19	• Solve for 2-digit x 1-digit questions (area model, array support, standard algorithm) • Identify true/false multiplication for 2-digit and 1-digit numbers • Identify an unknown partial product for a 2-digit by 1-digit equation • Solve for 2-digit by 2-digit multiplication with the standard algorithm • Solve the 3-digit x 1-digit question with area model or array support • Identify the correct 3-digit x 1-digit equation for the given product • Identify an unknown partial product for a 4-digit by 1-digit equation • Solve for 4-digit by 1-digit multiplication given an area model or an array	• Identify an unknown partial quotient for 2- and 3-digit / 1-digit question • Solve for 2- and 3-digit / 1-digit question • Mentally solve for 2- and 3-digit / 1-digit questions (without remainder) • Solve for 2- and 3-digit / 1-digit questions • Identify an unknown partial quotient for a 4-digit by 1-digit equation • Solve for 4-digit and 1-digit division given an area model or array • Solve for 4-digit / 1-digit number questions using short division • Solve for 4-digit / 2-digit number questions using short division • Divide numbers where quotient has one decimal place

Ready-to-progress criteria	**5F–1 (10 questions)** Find equivalent fractions and understand that they have the same value and the same position in the linear number system.	**5F–2 (15 questions)** Find equivalent fractions and understand that they have the same value and the same position in the linear number system.	**5F–3 (Coming Soon)** Recall decimal fraction equivalents for 1/2, 1/4, 1/5 and 1/10, and for multiples of these proper fractions.
Sumdog assessment milestones	• Identify the next pictorial fraction in a sequence • Compare fractions with the same denominator, using less or more • Order fractions with the same denominator • Multiply proper fractions by whole numbers • Multiply improper fractions by whole numbers • Compare pictorial representations of fractions against a numeral fraction • Order pictorial representations of fractions • Find a fraction of a number (whole number answer)	• Match unit fractions with equivalent pictures / not equivalent • Match equivalent tenths and hundredths, showing the initial fraction multiplied by 10/10 in the question • Equivalent tenths/hundredths • Express fraction as division question • Recognise equivalent fractions with small denominators • Match fraction words with small denominators with equivalent pictures / numerals • Identify equivalent fractions • Match whole numbers to equivalent fractions • Match unit fractions with equivalent pictures of fractions	• Relate quarter fraction turns of a circle to multiples of 25% • Match a fraction of $1 or 1 to a decimal value • Identify equivalent fraction and decimal hundredths and percentages (including 100/100)

Ready-to-progress criteria	**5G–1 (10 questions)** Compare angles, estimate and measure angles in degrees (°) and draw angles of a given size.	**5G–2 (Coming Soon)** Compare areas and calculate the area of rectangles (including squares) using standard units.
Sumdog assessment milestones	• Convert angles to fractions of a turn • Identify unknown acute angle given total measurement of both angles and the other angle (within 90 degrees) • Add two angles within 180 degrees • Identify unknown angle given total measurement of both angles and the other angle (within 180 degrees) • Identify shape as having / not having equal angles • Order angles up to 360 degrees (pictures) • With transparent protractor (10 degree partitions), estimate pictured angle to the nearest 10 degrees • With transparent protractor (10 degree partitions), estimate pictured angle to the nearest 5 degrees • Estimate angle measurements	• Know 2D definition • Compare size of areas visually • Know area is measured in squared units • Count area of shapes • Count area of rectangles • Calculate area of rectangles • Use formula to find area of rectangles • Find a length given an area

YEAR 6
Number and Place Value

Ready-to-progress criteria	**6NPV-1 (15 questions)** Understand the relationship between powers of 10 from 1 hundredth to 10 million, and use this to make a given number 10, 100, 1,000, 1 tenth, 1 hundredth or 1 thousandth times the size (multiply and divide by 10, 100 and 1,000).	**6NPV-2 (15 questions)** Recognise the place value of each digit in numbers up to 10 million, including decimal fractions, and compose and decompose numbers up to 10 million using standard and nonstandard partitioning.	**6NPV-3 (10 questions)** Reason about the location of any number up to 10 million, including decimal fractions, in the linear number system, and round numbers, as appropriate, including in contexts.	**6NPV-4 (Coming Soon)** Divide powers of 10, from 1 hundredth to 10 million, into 2, 4, 5 and 10 equal parts, and read scales/number lines with labelled intervals divided into 2, 4, 5 and 10 equal parts.
Sumdog assessment milestones	• Identify a multi-digit whole number as being 10 times as much as another whole number • Identify the next number in a multiplication / division sequence (x10) • Multiply whole numbers by a power of 10 • Divide decimal by a power of 10 • Identify the operation (x or / by power of 10) that connects two whole or non-whole numbers • Convert between base unit (tenths) and milli- • Convert between kilo- (tenths) and base unit • Divide 1- or 2- digit numbers by 10 or 100 • Divide numbers with 1 decimal place by 10 • Multiply numbers with up to 2 decimal places by powers of 10	• Round to the nearest 10, 100 or 1,000 (numbers up to 6 digits) • Identify place value for numbers to 10,000,000 • Convert between expanded and standard form for numbers to 10,000,000 • Express numbers as words to 10,000,000 • Identify place value for number to 10,000,000 with 1/2/3 decimal place • Express numbers with fractions as words (tenths and hundredths) • Order numbers to 1,000,000 • Identify mixed numbers from pictorial representation of wholes and fraction • Identify improper fraction from pictorial representation of wholes and fraction • Express number with up to 3 decimal places in words	• Round to the nearest 10, 100 or 1,000 (numbers up to 6 digits) • Round to the nearest power of 10 (numbers up to 6 digits) • Round whole numbers to 7 digits to nearest power of ten • Round whole numbers to 7 digits to nearest multiple of a power of ten (10^x, $2x10^x$, $5x10^x$) • Round numbers to 10^7 and 3 decimal places to nearest power of ten • Order number to 10,000,000",”en-GB”:”Order number to 10 000 000 • Compare number to 10,000,000 using <, > and = • Identify unknown improper fraction on a number line • Identify unknown mixed numbers on a number line • Compare number with 3 decimal places using <, > and =	• Multiply and divide by 2,4,5,10 • Count in 2s, 4s, 5s 10s • Count in multiples of 2s, 4s, 5s 10s • Worded problems • Solve questions using the bar model, based on 10 million split into 2,4, 5, or 10 parts • Solve questions using a number line 0-10 million split into 2,4, 5, or 10 parts. • Solve questions involving scales 0-10 million split into 2,4, 5, or 10 parts. Arrow pointing to a missing part

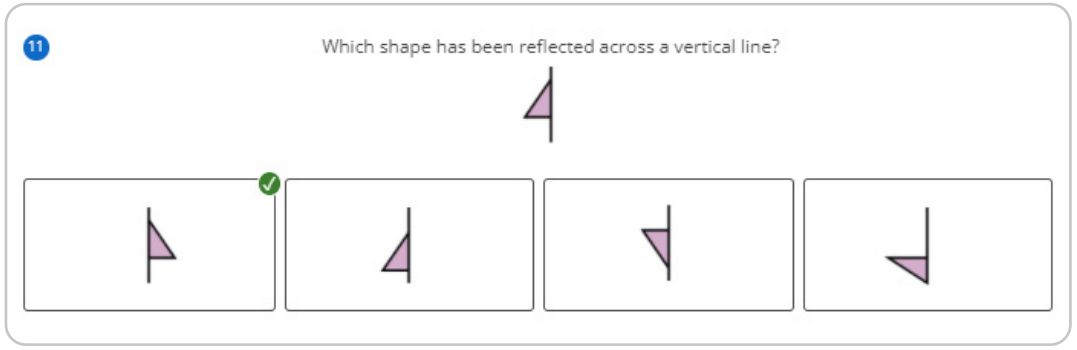
Ready-to-progress criteria	**6AS/MD-1 (15 questions)** Understand that 2 numbers can be related additively or multiplicatively, and quantify additive and multiplicative relationships (multiplicative relationships restricted to multiplication by a whole number).	**6AS/MD-2 (10 questions)** Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding.	**6AS/MD-3 (10 questions)** Solve problems involving ratio relationships.	**6AS/MD-4 (10 questions)** Solve problems with 2 unknowns.
Sumdog assessment milestones	• Solve equation of the form x + p = q • Solve equation of the form px = q • Number sequences with decimals • Interpret the scale for a chart of graph • Calculating and comparing whole number unit rates (whole numbers) • Worded problems for whole number unit rate comparison (whole numbers) • Calculating the whole number unit rate and using it to solve a problem • Additive comparison equations – word problems • Multiplicative comparison equations – word problems	• Match two x questions to 1 x question • Properly order expressions to solve for answer • Divide multi-digit numbers using area models, without remainders • Divide multi-digit numbers using arrays, without remainders	• Simplifying ratios • Simplifying to a whole number unit rate • Identify ratio from table of related values • Solve problems using a given unit rate • Change one unit measure of length to another given its scale. (customary) • Given two units of measures of length, calculate the scale. (customary) • Worded problems for simplification of ratios (whole number) • Complete table given ratio • Apply ratio to number – word problem • Identify ratio from word problem	• Solve problems with 2 unknowns. • Identify unknown values from a table of values • Identify a rule from a table of values • Write simple expressions from descriptions of operations • Use mathematical terms to describe algebraic expressions • Substitute positive integers into expressions • Identify the rule for a number sequence • Write two step questions, from descriptions, using same operator

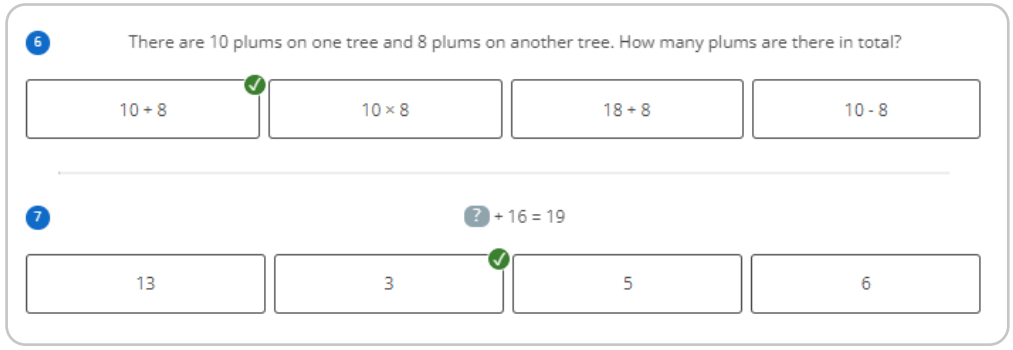
Ready-to-progress criteria	**6F–1 (20 questions)** Recognise when fractions can be simplified, and use common factors to simplify fractions.	**6F–2 (Coming Soon)** Express fractions in a common denomination and use this to compare fractions that are similar in value.	**6F–3 (Coming Soon)** Compare fractions with different denominators, including fractions greater than 1, using reasoning, and choose between reasoning and common denomination as a comparison strategy.
Sumdog assessment milestones	• Add/subtract fractions with related denominators using number lines • Add/subtract improper fractions with like denominators • Add/subtract mixed numbers with like denominators • Add/subtract proper fractions with related denominators • Add/subtract improper fractions with related denominators • Add/subtract mixed numbers with related denominators • Add/subtract fractions • Add/subtract fractions with related denominators and simplify	• Identify the unknown denominator needed to form equivalent fractions • Identify the unknown numerator needed to form equivalent fractions • Compare number fractions (either same numerator or denominator) <, > or =	• Order fractions • Relate eighth fraction turns of a circle to multiples of 12.5% • Solve word problems that require conversion between fractions and decimals • Solve word problems that require conversion between fractions and percentages

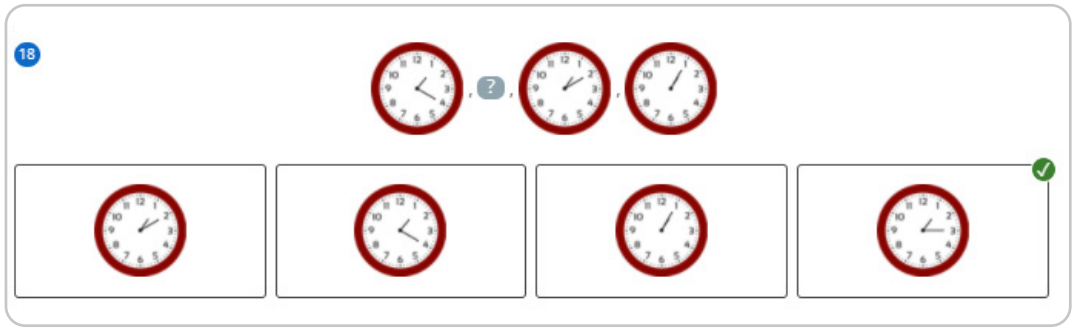
Ready-to-progress criteria	**6G–1 (15 questions)** Draw, compose, and decompose shapes according to given properties, including dimensions, angles and area, and solve related problems.
Sumdog assessment milestones	• Identify net that makes a cube • Identify net that makes a right rectangular prism • Identify net that makes a triangular prism • Identify net that makes a cylinder • Identify net that makes pictured 3D solid • Identify net that makes a squared based pyramid and triangular based pyramid • Identify acute, right or obtuse triangles • Identify triangles • Solve for unknown angle for quadrilateral • Identify a 3D solid from a 2D net

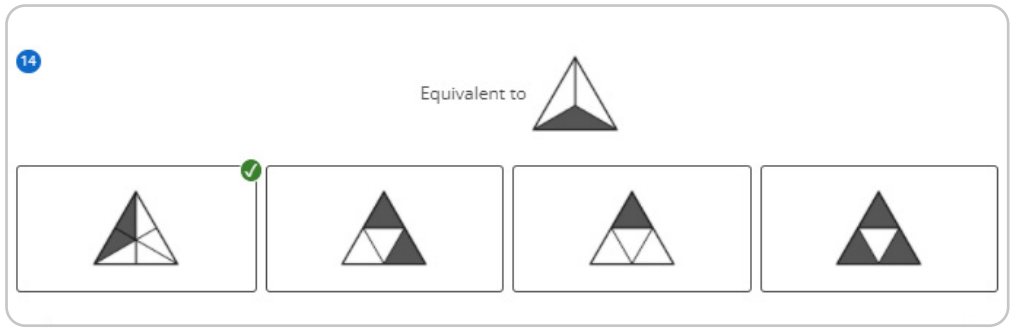
Example Questions

Please note that in these example questions, the green tick indicating the correct answer will not appear on a child's screen when they take the test.









Reporting

Our Assessment Library is supported by in-depth automated reporting so that you can gather the insights you need and plan your teaching accordingly.

We've worked with teachers to enhance our assessment report to ensure you're able to quickly and easily analyse results at class and individual pupil level.

- View results in real-time with our easy-to-interpret class overview.
- See which questions pupils answered correctly and who might need a little extra practice.
- Identify gaps and demonstrate pupil progress.

Most challenging questions

Questions with the lowest number of students answering correctly, among those who have completed the assessment

⌄	11	4.G.PS.2 Identify acute and obtuse angles and compare and order angles up to two right...	4 / 20 / 6
⌃	19	4.N.MD.1a Recall multiplication facts for multiplication tables up to 12 × 12	7 / 21 / 2

6 x 9 = ?

63	45	54 ✓	60	Not answered
5	16	7	0	2
Gemma, Margaret, Michael, Quan, Sanjay	Amanda, Carlos, Consuelo, Gillian, James A, James R, Ji, Minesh, Mohamed, Nicholetta, Paul, Saul, Simon, Tracey, Valerie, Vince	Adam, Daniel, Gerald, Islay, Margarita, Robert, Shaida		Philip, Susan

⌄	6	4.M.2 Measure and calculate the perimeter of a rectilinear figure (including squares)	7 / 20 / 3
⌄	5	4.N.NPV.3 Count backwards through zero to include negative numbers	9 / 21

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