

Curricular targets: Mathematics Year 6

These materials have been designed to support teaching mathematics in Year 6. This leaflet identifies some possible high-value curricular targets for mathematics, and associated children's targets, which are linked to key Primary National Strategy (PNS) teaching resources and QCA *National Curriculum Tests: Implications for Teaching and Learning leaflets*. Accompanying this material is a leaflet for parents and carers, about activities they can do with their children at home that are designed to complement teachers' own work with the children. The leaflet outlines some of the children's targets and suggests a variety of activities that can be done at home to support children in achieving these targets.

Curricular target setting

Curricular targets are drawn from learning objectives in the Primary Framework. They are based on age-related expectations; they steer improvements, guide teaching and set the focus for assessments linked to what has been taught. Basing the targets on children's personal achievements helps them to recognise how well they are doing and make their own assessments of what they need to do next in order to progress.

The process of curricular target setting is already well established and effective in many primary schools and settings. Curricular targets are informed by the analysis of children's work, discussions with children, teacher assessment information and test performance. These curricular targets are translated into school and class targets. Most schools that are successfully using curricular targets have embedded their use within literacy and mathematics.

The focus is deliberately on a small number of curricular targets that can be applied both within literacy and mathematics lessons and across other areas of the curriculum. Curricular target setting has been a particularly effective part of the Intensifying Support Programme (ISP), where focusing on four targets a term (two targets for literacy and two for mathematics) has helped teachers to focus their teaching and to help their class achieve age-related expectations.

Using these materials

These materials support the curricular target setting process already established in many primary schools. Curricular targets have been identified for literacy and mathematics, and it is expected that teachers would probably focus on about four targets each term. These materials also offer a structure to support teachers to set their own curricular targets.

The process of using these curricular targets would be as follows.

- Identify two mathematics curricular targets to focus on during a term.
- The aim is that as many children as possible in the class are working at age-related expectations (or above). The targets will need to be personalised for children with diverse needs, so, as appropriate, to differentiate the year-group target into targets for different groups and/or individuals (based on the teacher's specific knowledge of the class and individuals).

The examples of possible children's targets have been exemplified into age-related targets and above age-related (extension) targets. Teachers should refer to the relevant strands in the Primary Framework for mathematics to track back to earlier year groups for children working below or well below age-related expectations. However, reaching at least age-related targets for all children should be the starting point and it is important to avoid the assumption that there are three fixed ability groups in a class. These targets have been turned into language accessible to children in the 'I can' statements.

Example Year 6 mathematics targets – multiplication

| Year group curricular targets/learning objectives | Examples of possible children's targets* | Example questions to support planning, teaching and assessment | Success criteria | PNS Useful Resources/References |
|---|---|---|---|--|
| <p>Use written methods of short multiplication of numbers including decimals (U.t and U)</p> <p><i>Related objectives from Framework</i></p> <p><i>Strand: Knowing and using number facts</i></p> <ul style="list-style-type: none"> Use knowledge of place value and multiplication facts to 10 x 10 to derive related multiplication and division facts involving decimals, e.g. 0.8 x 7, 4.8 ÷ 6 Use approximations, inverse operations and tests of divisibility to estimate and check results <p><i>Strand: Calculating</i></p> <ul style="list-style-type: none"> Calculate mentally with integers and decimals: $U.t \pm U.t, TU \times U, TU \div U,$ $U.t \times U, U.t \div U$ | <p>I can use compact written methods for multiplication with decimals</p> <p>I can approximate before carrying out my calculation to help me check my answer</p> <p>Possible extension: I can multiply three-digit and two-digit numbers by decimals with one or two decimal places, e.g. 562×1.7</p> | <p>Here are some calculations that are not complete – can you complete them with me?</p> $\begin{array}{r} 6.4 \\ \times 2 \\ \hline 9.7 \\ \times 6 \\ \hline 27.3 \\ \times 8 \\ \hline 5.67 \\ \times 5 \end{array}$ <p>These calculations have some missing numbers which are replaced with question marks. Can you help me to find these missing numbers?</p> $\begin{array}{r} 3.? \\ \times 4 \\ \hline 17.4 \\ \times 8 \\ \hline 2??0 \end{array}$ <p>What two numbers multiplied together will give an answer of 370? Can you find other pairs of numbers?</p> <p>Give the children some worked examples that are incorrect. Are they correct? How do you know? How could we put them right?</p> <p>If we know $357 \times 27 = 9639$, what other multiplication and division facts can we derive? e.g. $357 \times 2.7 = 963.9$</p> <p>Zapran says that if you multiply a number with one decimal place by a single-digit whole number, you always get a number with one decimal place. Do you think he is correct? Show me some calculations to help me decide.</p> | <p><i>The children:</i></p> <ul style="list-style-type: none"> are aware that approximating first enables them to check whether the answer is realistic understand that an appropriate written method should be chosen to reflect the numbers involved are secure in using mental methods, jottings, informal methods or standard written methods and can decide when each is appropriate to the problem | <p>Primary Framework Year 6: Block A Counting, partitioning and calculating Units 1, 2 and 3. Block B Securing number facts and understanding shape Unit 2 Block D Calculating, measuring and understanding shape Units 1,2 and 3. PNS ITP: Multiplication Grid Springboard 6: Lessons 2, 3 and 4. Supporting children with gaps in their mathematical understanding: Wave 3 4 Y6 \times / \div 2 Y6 $+$ / $-$</p> |

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| <ul style="list-style-type: none"> Use efficient written methods to add and subtract integers and decimals, to multiply and divide integers and decimals by a one-digit integer, and to multiply two- and three-digit integers by a two-digit integer | | <p>What is an approximate answer to 4.96×3? What is the exact answer?</p> <p>Which of these calculations do you think will give the larger answer: 13.7×8 or 13.8×7? Carry out the calculations to see if you were right.</p> <p>Can you make up a calculation that has the answer 12.6?</p> <p>What number multiplied by 6 equals 4.2?</p> | | |
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Example Year 6 mathematics targets – division

| Year group curricular targets/learning objectives | Examples of possible children's targets* | Example questions to support planning, teaching and assessment | Success criteria | PNS useful resources/ references |
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| <p>Use written methods of short division of numbers including decimals</p> <p><i>Related objectives from the Framework</i></p> <p><i>Strand: Knowing and using number facts</i></p> <ul style="list-style-type: none"> Use knowledge of place value and multiplication facts to 10×10 to derive related multiplication and division facts involving decimals, e.g. 0.8×7, $4.8 \div 6$ Use approximations, inverse operations and tests of divisibility to estimate and check results <p><i>Strand: Calculating</i></p> <ul style="list-style-type: none"> Calculate mentally with integers and decimals: $U.t \pm U.t$, $TU \times U$, $TU \div U$, $U.t \times U$, $U.t \div U$ | <p>I can use my knowledge of division facts to carry out division mentally and to find an approximate answer to those I cannot do in my head</p> <p>I can calculate the answer to $HTU \div U$ and $U.t \div U$ to one, or two decimal places.</p> <p>Possible extension: I can solve division problems involving decimals using compact written methods and interpret the answers to division calculations when using a calculator</p> | <p>What is $56 \div 8$? How does this help you to work out: $560 \div 8$ $56.8 \div 8$ $56 \div 0.8$ $568 \div 0.8$?</p> <p>What is an approximate answer to $50.38 \div 6.85$?</p> <p>Will the answer be bigger or smaller than 7?</p> <p>A piece of rope is 25.9 m long; I want to cut it into 7 equal pieces. What will be the length of each piece?</p> <p>The answer to a division problem is 1.4. What could the question have been? Can you think of another question that will give the same answer?</p> <p>Work out $87.5 \div 7$. Could you have worked this out in a different way? What other methods do you know?</p> <p>Find the missing numbers in:</p> <p>$? \div 5 = 5.4$ $259.2 \div ? = 81$ $25.44 \div 7 = ?$</p> <p>How can we use our knowledge of multiplication and division to work out: $? \div 7 = 14.7$ $? \div 7 = 2.2$ $? \div 8 = 31.2$, $? \div 8 = 4.9$ $? \div 9 = 14.4$ $? \div 9 = 2.6$</p> | <p><i>The children:</i></p> <ul style="list-style-type: none"> have secure recall of division facts related to their knowledge of multiplication tables to 10×10 can use known division facts to work out related division facts involving HTU and numbers with one decimal place can decide when to use a mental method or written method apply their knowledge and understanding of division to short division involving HTU and decimals recognise how approximating first helps them to decide whether their answer makes sense | <p>Primary Framework Year 6: Block A Counting, partitioning and calculating Units 1, 2 and 3. Block D Calculating, measuring and understanding shape Units 1, 2 and 3. Supporting children with gaps in their mathematical understanding: Wave 3 $1 Y6 \times / \div$ $4 Y6 \times / \div$</p> |

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| <ul style="list-style-type: none"> Use efficient written methods to add and subtract integers and decimals, to multiply and divide integers and decimals by a one-digit integer, and to multiply two- and three-digit integers by a two-digit integer | <p>Look at these calculations. They have mistakes in them.</p> <p>$12 \div 5 = 2.2$ $21.6 \div 8 = 27$ $48 \div 0.6 = 0.8$</p> <p>Tell me what is wrong with each calculation. How should it be corrected?</p> <p>What division calculations involving decimals can you do in your head? Can you give me some examples?</p> <p>What type of division calculations involving decimals do you prefer to use jotting for? Show me how you make jottings and tell me how they help you.</p> <p>Give me an example of a division calculation you use a written method to carry out. Explain how your method works.</p> | |
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* It is important that teachers plan, teach and assess children's progress towards the achievement of the learning objective from the relevant strand from the Primary Framework. The 'I can' statements are simply a communication device to share the learning with children, parents and carers. The achievement of these is therefore only an indication of overall progress towards the achievement of the learning objective from the Primary Framework.