

Calculating

Estimate and use inverse operations to check answers to a simple calculation

Check $173 - 26 = 137$

$137 + 26 = 163$, so incorrect

Recognise and use factor pairs to 20 and commutativity in mental calculations by reversing the multipliers

The factor pairs of 12 are: 1 and 12, 2 and 6, 3 and 4.

Know and use $5 \times 9 = 9 \times 5 = 45$

Number Facts

Recall and use multiplication and division facts for the two, three, four, five and ten multiplication tables

$8 \times 5 =$

$40 \div 4 =$

$9 \times 4 =$

$27 \div 9 =$

$3 \times 6 =$

$48 \div 8 =$

$10 \times 8 =$

$60 \div 10 =$

$4 \times 7 =$

$35 \div 7 =$

Calculation Mat

Working towards Year 4

Solve Problems

Solve addition and subtraction one-step problems in contexts, deciding which operations and methods to use and why

Two children collect all the pencils in a classroom, collecting 76 and 105 each. How many pencils are there altogether?

$76 + 105 = 181$

Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems

Multiply 26×4

$20 \times 4 = 80$

$6 \times 4 = 24$

So $26 \times 4 = 104$

Four bags of potatoes weigh 600g. How much will two bags weigh?

300g

Methods

Add and subtract numbers with up to 3 digits using the formal written methods of columnar addition and subtraction where appropriate

$$\begin{array}{r} 629 \\ + 57 \\ \hline 686 \end{array}$$

$$\begin{array}{r} 167^{13} \\ - 64 \\ \hline 109 \end{array}$$

Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers

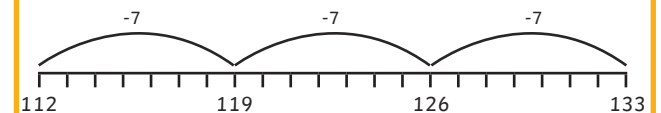
$56 \times 1 = 56$

$56 \times 0 = 0$

$56 \div 1 = 56$

$7 \times 3 \times 5 = 105$

Calculate $133 \div 7$ by counting back in 7s using a number line.



Multiply two-digit numbers by a one-digit number using formal written layout

$$\begin{array}{r} 57 \\ \times 6 \\ \hline 342 \\ 4 \end{array}$$



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Calculating

Estimate and use inverse operations to check answers to a calculation

What calculation might be used to estimate $5762 + 1903$?

$$6000 + 2000 \text{ or } 5800 + 1900$$

Check $4173 - 826 = 3247$

$$3247 + 826 = 4073, \text{ so incorrect}$$

Recognise and use factor pairs and commutativity in mental calculations

The factor pairs of 24 are: 1 and 24, 2 and 12, 3 and 8, 4 and 6.

$2 \times 6 \times 5$ can be written $6 \times 10 = 60$

Number Facts

Recall multiplication and division facts for multiplication tables up to 12×12

$8 \times 7 =$

$44 \div 4 =$

$9 \times 4 =$

$27 \div 9 =$

$7 \times 6 =$

$72 \div 8 =$

$11 \times 8 =$

$24 \div 12 =$

$4 \times 12 =$

$56 \div 7 =$

Calculation Mat

Expected Year 4

Solve Problems

Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why

Two children collect all the pencils in a classroom, collecting 76 and 105 each. The teacher throws away 43 of them, as they are broken. How many pencils are left?

$$76 + 105 = 181, 181 - 43 = 138$$

Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects

There are four boxes of books. Each box contains 22 books. Four more books are added to each box. Explain two ways of calculating the total number of books.

$$22 \times 4 \text{ books and } 4 \times 4 \text{ books added} = 88 + 16 = 104$$

$$22 + 4 \text{ books in each box, } 26 \times 4 = 104$$

Eight bags of potatoes weigh 2kg. How much will three bags weigh?

Methods

Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate

$$\begin{array}{r} 6029 \\ + 457 \\ \hline 6486 \end{array} \qquad \begin{array}{r} \cancel{4}1\cancel{0}\cancel{7}13 \\ - \quad \quad 364 \\ \hline 4809 \end{array}$$

Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers

$56 \times 1 = 56$

$56 \times 0 = 0$

$56 \div 1 = 56$

$7 \times 3 \times 5 = 105$

Calculate $133 \div 7$ by counting back to 70, then in 7s, or recognising $20 \times 7 = 140$, so $133 \div 7 = 19$

Multiply two-digit and three-digit numbers by a one-digit number using formal written layout

$$\begin{array}{r} 457 \\ \times \quad 6 \\ \hline 2742 \\ \underset{3}{4} \end{array}$$

Calculating

Estimate and use inverse operations to check answers to a calculation

Explain how $7209 - 3862$ can be estimated.

Explain with an example why you can use an inverse calculation to check a subtraction.

Recognise and use factor pairs and commutativity in mental calculations

The factor pairs of 48 are: 1 and 48, 2 and 24, 3 and 16, 4 and 12, 6 and 8.

$4 \times 6 \times 5$ can be written:

$$2 \times 2 \times 6 \times 5 = 12 \times 10 = 120$$

Number Facts

Recall and use multiplication and division facts for multiplication tables up to 12×12

$80 \times 7 =$

$440 \div 4 =$

$9 \times 40 =$

$270 \div 90 =$

$70 \times 60 =$

$7200 \div 8 =$

$11 \times 800 =$

$2400 \div 120 =$

$400 \times 12 =$

$5600 \div 700 =$

Calculation Mat

Greater Depth Year 4

Solve Problems

Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why

Write a two-step addition and subtraction problem for this calculation:

$$789 - 345 = 444, 444 + 267 = 711$$

Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects

Explain how the distributive law can help to calculate 173×8 .

An athlete runs 1500m one day. The following day, the athlete runs 6000m. What questions could be asked about the relationship between the two runs?

A school buys 12 bags of balls, which contain 60 balls in all. Class A receives 13 balls. How many bags does class A receive?

Methods

Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate

$$\begin{array}{r} 6029 \\ + 2457 \\ \hline \end{array} \quad \begin{array}{r} 5173 \\ - 1364 \\ \hline \end{array}$$

Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers

Explain the reasoning behind the answers:

$56 \times 1 =$ $56 \times 0 =$

$56 \div 1 =$

$7 \times 9 \times 5 = 315$

Explain how you might calculate $203 \div 7$ mentally.

Multiply two-digit and three-digit numbers by a one-digit number using formal written layout

$$\begin{array}{r} 457 \\ \times \quad 8 \\ \hline \end{array}$$