Slindon C.E. Primary School

Progression in Mathematical Calculations – Subtraction

Guidance for Parents

In **year 1** the expectation is that children will:
Represent and use number bonds and related subtraction facts within 20.
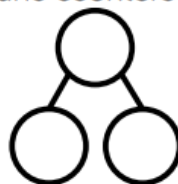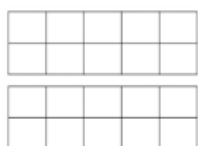Subtract one-digit and two-digit numbers to 20, including zero.
Solve one-step problems that involve subtraction, using concrete objects and pictorial representations, and missing number problems.

For example:

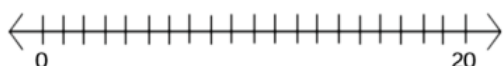First there were 18 sheep. Four of them ran away.
How many sheep are left?
Use ten frames and counters to represent the sheep.

Tia is working out $12 - 4$ by counting back on a number line.

Her answer is 9

What has Tia done wrong?

Can you explain her mistake?

What should the answer be?

Useful vocabulary:
subtract, take (away), minus
leave
how many are left/left over?
how many have gone?
one less, two less, ten less…
how many fewer is… than…?
how much less is…?
difference between
half, halve

Kate and Stephen have some balloons.
Some of their balloons fly away.

	First	Then	Now
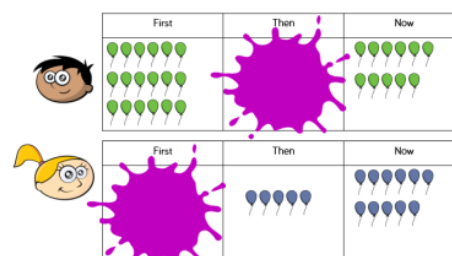
Who had more balloons at the start?
Who lost more balloons?
Explain why.

Choose the correct digit card to make the number sentences correct.

$13 - 5 < 13 - \_\_$
$16 - 4 = \_\_ + 4$
$9 + \_\_ > 9 + 1$

4   8   2

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In **year 2** the expectation is that children will:
Recall and use subtraction facts to 20 fluently, and derive and use related facts up to 100.
Subtract numbers using concrete objects, pictorial representations and mentally, including two two-digit numbers.
Show that subtraction of one number from another cannot be done in any order.
Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.

For example:

Sam and Zoe are working out some subtractions.

I am working out 74 – 56

Sam

One of the numbers in my questions is 15

Zoe
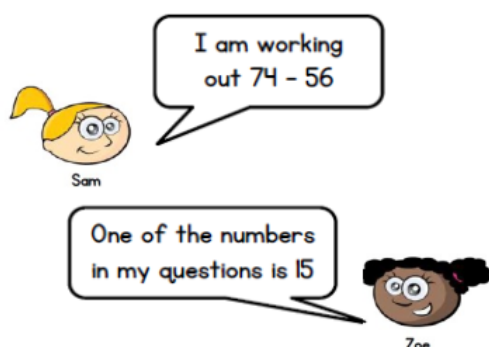
Sam's answer is double Zoe's answer.

What could Zoe's subtraction be?

Find the greatest whole number that can complete each number sentence below.

$45 - 17 > 14 + \square$

$26 + 15 < 60 - \square$

> **Useful vocabulary:**
> subtract, subtraction, take (away), minus
> leave, how many are left/left over?
> one less, two less… ten less…one hundred less
> how many fewer is… than…?
> how much less is…?
> equals, sign, is the same as difference between
> half, halve

At the end of Key Stage 1 (year 2) the children will be expected to answer questions such as these in their SATs tests:

Look at the numbers.

15   7   16   8

Use two of these numbers to make this correct.

$\square - \square = 7$

There are **1000** pieces in a puzzle.

12 pieces go missing.

How many pieces are left?

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In **year 3** the expectation is that children will:
Subtract numbers mentally, including a three-digit number and ones, tens or hundreds.
Subtract numbers with up to three digits, using columnar subtraction.
Solve problems, including missing number problems, estimate the answer to a calculation and use the inverse operation to check answers.

For example:

I completed an addition and then used the inverse to check my calculation.

When I checked my calculation, the answer was 250

One of the other numbers was 355

What could the calculation be?

$$\boxed{?} + \boxed{?} = \boxed{?}$$

$$\boxed{} - \boxed{} = \boxed{250}$$

Kassie is working out $406 - 289$

Here is her working out:

$$\begin{array}{r} {}^{3}\cancel{4}\,0\,{}^{1}6 \\ -\,2\,8\,9 \\ \hline 7 \end{array} \qquad \begin{array}{r} {}^{2}\cancel{3}\,{}^{1}0\,{}^{1}6 \\ -\,2\,8\,9 \\ \hline 0\,2\,7 \end{array}$$

Explain her mistake.

There are 566 in counters altogether but the splat is covering some.
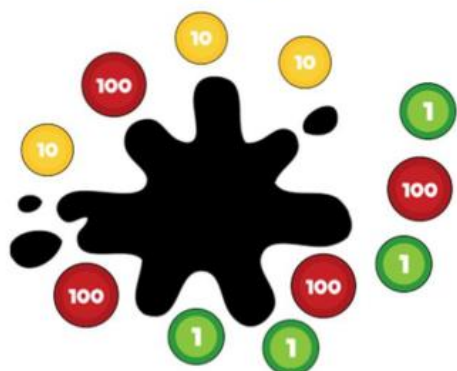
How many different ways can you make the missing amount?

Useful vocabulary:
subtract, subtraction, take (away), minus
leave, how many are left/left over?
one less, two less… ten less… one hundred less
how many fewer is… than…?
how much less is…?
equals, sign, is the same as difference between
half, halve

Sally thinks the rule for the function machine is subtract 60
Is she correct? Explain.
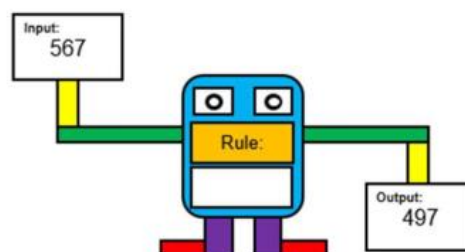
Input:
567

Rule:

Output:
497

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Progression in Mathematical Calculations - Subtraction

Guidance for Parents

In **year 4** the expectation is that children will:
Subtract numbers with up to 4 digits using columnar subtraction.
Estimate and use the inverse operation to check answers to calculations.
Solve subtraction two-step problems in contexts, deciding which method to use and why.

For example:

Look at each pair of calculations below.
Which one out of each pair of calculations has the same difference as 2450 – 1830?

2,451 – 1,831 =	2,451 – 1,829 =
2,500 – 1,880 =	2,500 – 1,780 =
2,449 – 1,829 =	2,449 – 1,831 =

Find the missing numbers.
What methods did you use?

3465	
2980	

5003 — 3886

2,300 + 4,560 = 6,860
Use a subtraction to check the answer to the addition. Is there more than one subtraction we can do to check the answer?

Sam, Lucas and Jemima are solving the calculation
7000 – 3582
Here are their methods.

Sam	Lucas	Jemima
7000 − 3582 = 3418	6999 − 3581 = 3418	3582 → 3600 → 4000 → 7000 7000−3582 = 3415

Who is correct? Can you explain how each child has reached their answer? Whose method is the most efficient?

Progression in Mathematical Calculations - Subtraction

Guidance for Parents

In **year 5** the expectation is that children will:
Subtract whole numbers with more than 4 digits using columnar subtraction.
Subtract increasingly large numbers mentally.
Use rounding to check answers to calculations and determine levels of accuracy.
Solve subtraction multi-step problems in contexts, deciding which method to use and why.

For example:

> **Useful vocabulary:**
> subtract, subtraction, take (away), minus, decrease
> leave, how many are left/left over?
> difference between
> half, halve
> how many fewer is… than…?
> how much less is…?
> equals, sign, is the same as
> tens boundary, hundreds boundary
> units boundary, tenths boundary
> inverse

Gina makes a 5-digit number.
Mike makes a 4-digit number.

The difference between their numbers is 4,365

What could their numbers be?

A milkman has 250 bottles of milk.

He collects another 160 from the dairy and delivers 375 during the day.

How many does he have left?

Complete the pyramid using addition and subtraction.

55,907

14,031

6,976 6,415 7,616

4,946 3,172 2,611

Sam

This is my method:

$375 - 250 = 125$

$125 + 160 = 285$

Do you agree with Sam's answer?

Work out: 4,648 – 2,347

45,536 – 8,426

Th	H	T	O

Tth	Th	H	T	O

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Progression in Mathematical Calculations - Subtraction

Guidance for Parents

In **year 6** the expectation is that children will:
Perform mental calculations with large numbers.
Solve subtraction multi-step problems in contexts, deciding which method to use and why.
Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.

For example:

Class 6 are solving this calculation:

$$2,000 - 1,287 =$$

Fatima: I used the column method and exchanged in the tens, hundreds and thousands columns

Adam: I used my number bonds from 87 to 100 and then 1,300 to 2,000

Stefan: I subtracted 1 from 2,000 and 1 from 1,287 then I did a column subtraction

Which method is most efficient?

Useful vocabulary:
subtract, subtraction, take (away), minus, decrease
leave, how many are left/left over?
difference between
half, halve
how many fewer is… than…?
how much less is…?
equals, sign, is the same as
tens boundary, hundreds boundary
units boundary, tenths boundary
inverse

Calculate:

$$834,501 - 193,642 =$$

$$
\begin{array}{r}
4\,7\,6\,1\,3\,2\,5 \\
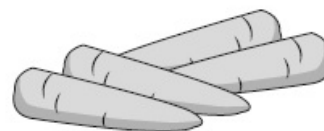-\ \ 9\,3\,8\,0\,5\,2 \\
\hline
\end{array}
$$

Find the difference between A and B
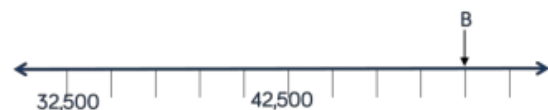
At the end of Key Stage 2 (year 6) the children will be expected to answer questions such as these in their SATs tests:

potatoes
£1.50 per kg

carrots
£1.80 per kg

Jack buys $1\frac{1}{2}$ kg of potatoes and $\frac{1}{2}$ kg of carrots.

How much **change** does he get from **£5**?