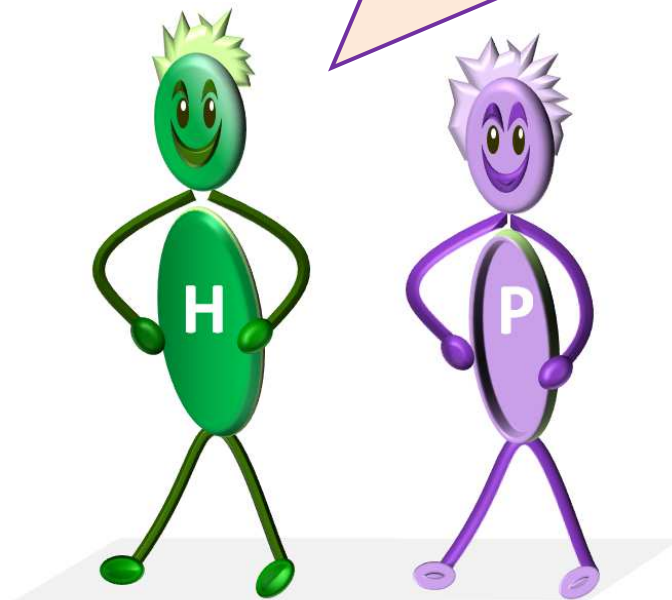Henry and Poppy

have fun with **Division**

Year 5 to Year 6 maths

We had fun making these questions for you. Enjoy them.

CONTENT

Year 5:
- Short division up to 3 digits with a remainder
- Short division up to 4 digits with a remainder
- Short division up to 3 digits - Interpret remainders as fractions or decimals
- Henry's trick for divide by 5
- Divide numbers mentally drawing upon known facts
- Problem Solving

Year 6:
- Short division up to 4 digits - Interpret remainders as fractions or decimals
- Long Division – formal written
- Long Division using factors
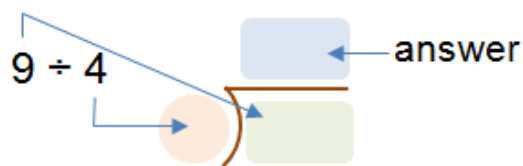- Long Division with decimal remainders
- Problem Solving

1

Share 9 bananas between 4 of Henry's friends

This is 9 ÷ 4 and we write it like this in a bus-stop

$9 \div 4$ ← answer

and say ...

how many — to make

$4 \overline{) \ 9}$

or almost
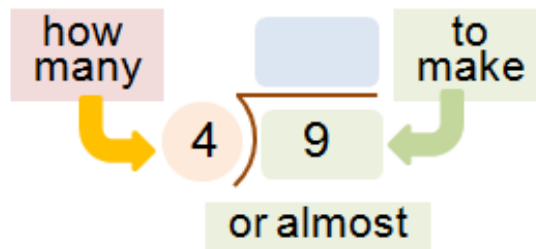
we need two 4's   with a remainder

$$4 \overline{) \ 9} = 2$$

× (2)

$$(4) \overline{) \begin{array}{l} 9 \\ 8 - \\ 1 \end{array}}$$

remainder   1

so they get two bananas each with one left over.

Year 5-DIVISION Short Division (Bus stop), 3 digits, with remainder

2

135 ÷ 4 using short division the bus stop method

Write it like $4\overline{)135}$

$$4\overline{)13^15}\begin{array}{c}33\ r3\end{array}$$

4 will not go into 1

13 divided by 4 is 3 remainder 1

Carry the 1 to the 5

15 divided by 4 is 3 with remainder 3

33 r3

Year 5-DIVISION Short Division (Bus stop) 3 digits, with remainder

---

3

Do 323 ÷ 4 using the bus stop method

1 mark

Year 5-DIVISION Short Division (Bus stop) 3 digits, with remainder

4

Do 323 ÷ 5 using the bus stop method

1 mark

Year 5-DIVISION Short Division (Bus stop) 3 digits, with remainder

5

Do 323 ÷ 8 using the bus stop method

1 mark

Year 5-DIVISION Short Division (Bus stop) 3 digits, with remainder

1

Do 1456 ÷ 5 using the bus stop method

$$0\,2\,9\,1\,\text{r}\,1$$
$$5\,)\,\overline{1\,^1\!4\,^4\!5\,6}$$

5 will not go into 1 so write 0

Carry the 1 to the 4 making 14

14 divided by 5 is 2 remainder 4

Carry the 4 to the 5

45 divided by 5 is 0 with no remainder

6 divided by 5 is 1 with remainder 1

291 r1

Year 5-DIVISION Short Division (Bus stop) 4 digits, with remainder

2

Do 1129 ÷ 5 using the bus stop method

1 mark

Year 5-DIVISION Short Division (Bus stop) 4 digits, with remainder

3

2537 ÷ 8 using the bus stop method

$$0\ 3\ 1\ 7\ \text{r}\ 1$$

$$8\ \overline{)\ 2\ ^2 5\ ^1 3\ ^5 7}$$

8 will not go into 2 so write 0

Carry the 2 to the 5 making 25

25 divided by 8 is **3** remainder 1

Carry the 1 to the 3 making 13

13 divided by 8 is **1** remainder 5

Carry the 5 to the 7 making 57

57 divided by 8 is **7** with remainder 1

317 r1

Year 5-DIVISION Short Division (Bus stop) 4 digits, with remainder

4

Do 1729 ÷ 8 using the bus stop method

1 mark

Year 5-DIVISION Short Division (Bus stop) 4 digits, with remainder

1 Do 54 ÷ 4 using the bus stop method with the remainder as a fraction or decimal

$$1\ 3\ r\ 2$$
$$4\ \overline{)\ 5^14}$$

The remainder is 2 out of 4

$^2/_4$ can be written as $^1/_2$ or 0.5

54 ÷ 4 = 13 ½ or 13.5

Year 5-DIVISION Short division up to 3 digits with remainders as fractions or decimals

2 Do 74 ÷ 4 using the bus stop method with the remainder as a fraction or decimal

1 mark

Year 5-DIVISION Short division up to 3 digits with remainders as fractions or decimals

3

Do 98 ÷ 8 using the bus stop method with the remainder as a fraction or decimal

1 mark

Year 5-DIVISION Short division up to 3 digits with remainders as fractions or decimals

---

4

Do 65 ÷ 4 using the bus stop method with the remainder as a fraction or decimal

$$16 \text{ r } 1$$
$$4 \overline{) 6\,^2 5}$$

The remainder is 1 out of 4

which is $\frac{1}{4}$ or 0.25

65 ÷ 4 = 16 ¼ or 16.25

Year 5-DIVISION Short division up to 3 digits with remainders as fractions or decimals

5

Do 429 ÷ 4 using the bus stop method with the remainder as a fraction or decimal

1 mark

6

Do 98 ÷ 8 using the bus stop method with the remainder as a fraction or decimal

$$1\,2 \text{ r } 2$$
$$8\,\overline{)9\,{}^1 8}$$

The remainder is 2 out of 8

which is $1/4$ or 0.25

98 ÷ 4 = 12 ¼ or 12.25

7 Do 922 ÷ 8 using the bus stop method with the remainder as a fraction or decimal

1 mark

Year 5-DIVISION Short division up to 3 digits with remainders as fractions or decimals

1

Henry has a TRICK :

to ÷ 5, instead ÷ 10
then *double* the answer

120 ÷ 5 → Do 120 ÷ 10 = | 12 |

↓ double

| 24 |

180 ÷ 5 → Do 180 ÷ 10 = | |

↓ double

| |

2 marks

Year 5 Henry's trick for dividing by 5

2

Use Henry's TRICK

140 ÷ 5 → Do 140 ÷ 10 = | |

↓ double

| |

320 ÷ 5 → Do 320 ÷ 10 = | |

↓ double

| |

2 marks

Year 5 Henry's trick for dividing by 5

3 Use Henry's TRICK

520 ÷ 5 → Do 520 ÷ 10 = ☐

↓ double

☐

640 ÷ 5 → Do 640 ÷ 10 = ☐

↓ double

☐

2 marks

Year 5 Henry's trick for dividing by 5

4 Use Henry's TRICK

1230 ÷ 5 → Do 1230 ÷ 10 = ☐

↓ double

☐

2410 ÷ 5 → Do 2410 ÷ 10 = ☐

↓ double

☐

2 marks

Year 5 Henry's trick for dividing by 5

1 Halving (÷2) by breaking down the number

24 ÷ 2

24 =   20   +   4

↓ half   ↓ half

| 10 | + | 2 |

↓ Add

| 12 |

Year 5 DIVISION: Divide numbers mentally drawing upon known facts

---

2 Halving (÷2) by breaking down the number

86 ÷ 2

88 =   80   +   6

↓ half   ↓ half

| | + | |

↓ Add

| |

1 mark

Year 5 DIVISION: Divide numbers mentally drawing upon known facts

3 Halving (÷2) by breaking down the number

246 ÷ 2

246 = 200   +   40   +   6

↓ ÷2   ↓ ÷2   ↓ ÷2

| 100 | + | 40 | + | 3 |

↓ Add

| 143 |

Year 5 DIVISION: Divide numbers mentally drawing upon known facts

---

4 Halving (÷2) by breaking down the number

468 ÷ 2

464 = 400   +   60   +   8

↓ ÷2   ↓ ÷2   ↓ ÷2

| | + | | + | |

↓ Add

| |

1 mark

Year 5 DIVISION: Divide numbers mentally drawing upon known facts

5 Halving (÷2) by breaking down the number

308 ÷ 2

308 = 200 + 100 + 8

↓ ÷2   ↓ ÷2   ↓ ÷2

| 100 | + | 50 | + | 4 |

↓ Add

| 154 |

Year 5 DIVISION: Divide numbers mentally drawing upon known facts

---

6 Halving (÷2) by breaking down the number

706 ÷ 2

706 = 600 + 100 + 6

↓ ÷2   ↓ ÷2   ↓ ÷2

| | + | | + | |

↓ Add

| |

1 mark

Year 5 DIVISION: Divide numbers mentally drawing upon known facts

1

Write a number as a decimal number then
To divide by 10
move the decimal point 1 place
to make the number *smaller...*

$99.0 \div 10 = 9.90$

$\div 10$

| 9 | 9 | . | 0 |

$\rightarrow$

| 9 | . | 9 | 0 |

You don't have to put the last 0 with decimal numbers

Year 5 DIVISION: Divide numbers mentally drawing upon known facts

---

2 Divide these numbers by 10

$22.0 \div 10$ | 2 | 2 | . | 0 | $\rightarrow$ | | | |

$85.0 \div 10$ | 8 | 5 | . | 0 | $\rightarrow$ | | | |

$5.0 \div 10$ | 5 | . | 0 | $\rightarrow$ | | |
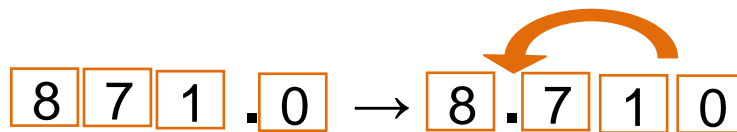
3 marks

Year 5 DIVISION: Divide numbers mentally drawing upon known facts

3

Write a number as a decimal number then
To divide by 100
move the decimal point 2 places
to make the number *smaller...*

$$871.0 \div 100 = 8.710$$

$\div 100$

| 8 | 7 | 1 | . | 0 | $\rightarrow$ | 8 | . | 7 | 1 | 0 |

You don't have to put the last 0 with decimal numbers

Year 5 DIVISION: Divide numbers mentally drawing upon known facts

---

4 Divide these numbers by 100

$\div 100$

$123 \div 100$ | 1 | 2 | 3 | . | 0 | $\rightarrow$ | ☐ | ☐ | ☐ | ☐ |

$\div 100$

$985 \div 100$ | 9 | 8 | 5 | . | 0 | $\rightarrow$ | ☐ | ☐ | ☐ | ☐ |

$\div 100$

$85.6 \div 100$ | 8 | 5 | . | 6 | $\rightarrow$ | ☐ | ☐ | ☐ |

3 marks

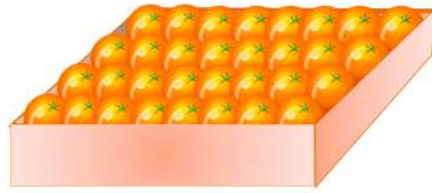**Year 5 DIVISION:** Divide numbers mentally drawing upon known facts

1

There are 32 oranges in a tray.

The tray costs 416 p

How much is an orange in pence

1 mark

Year 5- Division - Problem Solving

2
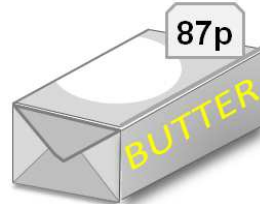
If I have £10 how many tins of beans can I buy

69p

74p

If I have £20 how many loaves of bread can I buy

2 marks

Year 5- Division - Problem Solving

3

For my birthday party we need to buy bread, butter and cakes

74p

87p

BUTTER

26p

We spent £7.40 on bread, £3.48 on butter and £6.50 on cakes
How many of each did we buy?

1 mark

Year 5- Multiply - Problem Solving

4

For my party we need to buy cakes

26p

How many cakes can we buy with 300p and how much money will be left over

1 mark

Year 5- Multiply - Problem Solving

1 Do 165 ÷ 9 using the bus stop method with the remainder as a fraction or decimal

$$
\begin{array}{r}
0\ 1\ 8\ r\ 3 \\
9\ \overline{)\ 1\ 6\ 5}
\end{array}
$$

The remainder is 3 out of 9

which is $\frac{1}{3}$

0.33 is not exact enough

165 ÷ 9 = 18 $\frac{1}{3}$

Year 6-DIVISION Short division up to 4 digits with remainders as fractions or decimals

---

2 Do 678 ÷ 8 using the bus stop method with the remainder as a fraction or decimal

1 mark

Year 6-DIVISION Short division up to 4 digits with remainders as fractions or decimals

3

Do 999 ÷ 5 using the bus stop method with the remainder as a fraction or decimal

$$1\ 9\ 9\ \text{r}\ 4$$
$$5\ \overline{)\ 9\ {}^4 9\ {}^4 9}$$

The remainder is 4 out of 5

which is the same as $^{8}/_{10}$ or 0.8

999 ÷ 5 = 199 $^{4}/_{5}$ = 199.8

Year 6-DIVISION Short division up to 4 digits with remainders as fractions or decimals

---

4

Do 999 ÷ 4 using the bus stop method with the remainder as a fraction or decimal

1 mark

Year 6-DIVISION Short division up to 4 digits with remainders as fractions or decimals

5 Do 1992 ÷ 5 using the bus stop method with the remainder as a fraction or decimal

$$3 \, 9 \, 8 \, r \, 2$$
$$5 \overline{\smash{)}\, 1 \, {}^{1}9 \, {}^{4}9 \, {}^{4}2}$$

The remainder is 2 out of 5

which is the same as $^4/_{10}$ or 0.4

1999 ÷ 5 = 398 $^2/_5$ = 398.4

Year 6-DIVISION Short division up to 4 digits with remainders as fractions or decimals

---

6 Do 1262 ÷ 5 using the bus stop method with the remainder as a fraction or decimal

1 mark

Year 6-DIVISION Short division up to 4 digits with remainders as fractions or decimals

---

7 | Do 532 ÷ 12 using the bus stop method with the remainder as a fraction or decimal

$$\begin{array}{r} 0\ 4\ 6\ \text{r } 4 \\ 12\overline{)\ 5\ ^5 3\ ^5 2} \end{array}$$

The remainder is 4 out of 12

which is $^1/_3$

0.33 is not exact enough

532 ÷ 12 = 46 $^1/_3$

Year 6-DIVISION Short division up to 4 digits with remainders as fractions or decimals

---

8 | Do 628 ÷ 12 using the bus stop method with the remainder as a fraction or decimal

1 mark

Year 6-DIVISION Short division up to 4 digits with remainders as fractions or decimals

1

Do 3471 ÷ 13 by Long Division

```
          0 2 6 7
13 ) 3 4 7 1
    - 2 6
        8 7
      - 7 8
          9 1
        - 9 1
            0
```

267

2

Do 3058 ÷ 11 by Long Division

2 marks

---

3   Do 8991 ÷ 9 by Long Division

Year 6-DIVISION Long division

1

Do 7305 ÷ 15 by Long Division
using *factors* of 15

15 = 5 × 3

5 and 3 are the factors of 15

We can do this division in two steps.
First divide by 5 and
Then divide the answer by 3
to get the final answer

487

Year 6-DIVISION Long division using factors

2

Do 5460 ÷ 15 by Long Division
using factors of 15

2 marks

Year 6-DIVISION Long division using factors

3

Do 4830 ÷ 14 by Long Division
using factors of 14

2 marks

4   Do 8802 ÷ 18 by Long Division
using factors of 18

Year 6-DIVISION Long division using factors

1 Do 522 ÷ 15 by Long Division with decimal remainder

```
         0 3 4 . 8
   15 ) 5 2 2 . 0
       - 4 5
          7 2
        - 6 0
          1 2 0
        - 1 2 0
              0
```

34.8

2

Do 550.2 ÷ 14 by Long Division
with decimal remainder

2 marks

3

Do 899.1 ÷ 9 by Long Division
with decimal remainder

2 marks

Year 6-DIVISION Long division with decimal remainder

1

Do 541.45 ÷ 35 by Long Division
using factors of 35 with decimal remainder

2 marks

Year 6-DIVISION Long division using factors with decimal remainder

2   Do 2591.4 ÷ 21 by Long Division

using factors of 21 with decimal remainder

2 marks

1 Poppy went to the moon in her rocket.

It is about 386, 400 km

Her speed averaged 5600 km per hour.

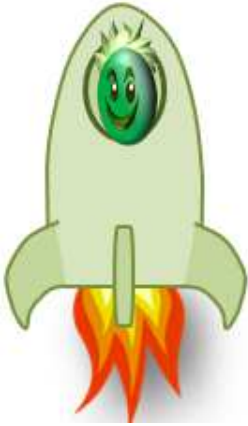How long will it take her to get there

	hr

1 mark

Year-6 Division: Problem Solving

2 Henry travelled 8235 km in his rocket.
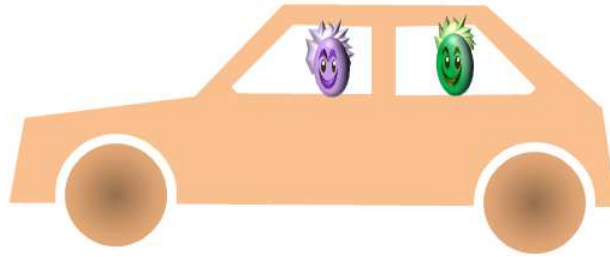
It took him 15 hours.

How far did he travel in one hour

	km

1 mark

Year-6 Division: Problem Solving

3 Henry and Poppy went for a car ride.

Their speed was 36 miles per hour.

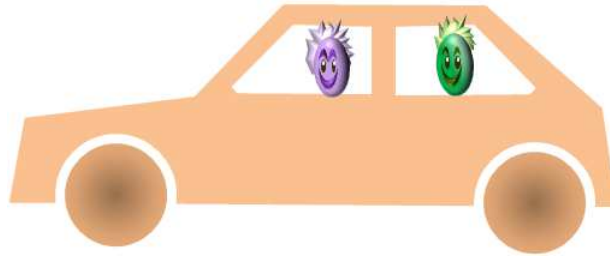
How long would it take them to travel 333 miles

| | hr |

1 mark

Year-6 Division: Problem Solving

4 Henry and Poppy went for a car ride.

They travelled 978 km and took 12 hours.
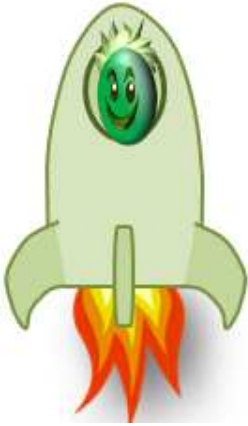
On average what was their speed in km per hour

km/hr

1 mark

Year-6 Division: Problem Solving

5 Henry travelled 15,576 km in his rocket

It took him 1 day.

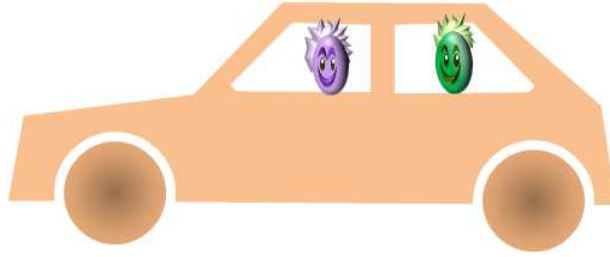How far did he travel in one hour

km

1 mark

Year-6 Division: Problem Solving

6 Henry and Poppy's car has a fuel tank of 72 litres.

They can drive 882 km on a full fuel tank

How far can they go one litre of fuel

	km

1 mark

Year-6 Division: Problem Solving

7

25 children in a class paid for a school meal

The teacher collected £57.54 altogether.

But Henry paid too much.

Work out how much each child paid in pounds and pence and how much extra Henry paid in pence

£ [ ]   [ ] p

2 marks

Year 6-DIVISION Problem solving - Long division using factors with decimal remainder

8 28 children in a class paid for a school meal

The teacher collected £58.70 altogether.

But Poppy didn't pay enough.

Work out how much each child paid in pounds and pence and how much less Poppy paid in pence

£   p

2 marks

Year 6-DIVISION Problem solving -Long division using factors with decimal remainder