



THIRD SPACE
LEARNING



THE COMMON MISTAKES ON A Y6 SATS ARITHMETIC PAPER

Missing number addition or subtraction

Real examples from past KS2 Maths SATs Year 6 arithmetic test

1. $___ + 5 = 341$

2. $___ - 100 = 1,059$

3. $602 - ___ = 594$

Common mistake

Not understanding when to use the inverse.

Multiplication

Real examples from past SATs Year 6 arithmetic test

1. $5,413 \times 86$

2. 71×46

3. 14×100

Common mistake

For examples 1 and 2: omitting a 0 as the place value holder on the second line of the long multiplication method. For example 3: choosing long multiplication instead of moving the place value digits!

Division

Real examples from past SATs Year 6 arithmetic test

1. $8,051 \div 83$

2. $1,210 \div 11$

3. $60 \div 15$

4. $0.9 \div 100$

Common mistake

For example 1: minor inaccuracies along the way which result in an incorrect answer. For examples 2-4: not recognising that these can be completed mentally

Decimal addition and subtraction

Real examples from past SATs Year 6 arithmetic test

$$1. \ 9 - 1.9$$

$$2. \ 5.87 + 3.123$$

Common mistake

Not aligning the decimal points or, in the case of example 1, writing the numbers the wrong way round because the second one 'looks' bigger as it has more digits (so $1.9 - 9$).

Decimal multiplication

Real examples from past SATs Year 6 arithmetic test

1. 0.5×28

2. 0.9×200

3. 15×6.1

Common mistake

For examples 1 and 2: not recognising that these can be completed mentally (e.g. seeing 0.5 as $\frac{1}{2}$ in example 1, so finding $\frac{1}{2}$ of 28; using place value and times table knowledge for example 2). For example 3: lining up the place values 'correctly' as in addition or subtraction, reaching the incorrect answer of 915 as opposed to 91.5:

	1	5.	0
x		6.	1
	1	5	0
9	0	0	0
9	1	5.	0



Order of operations

Real examples from past SATs Year 6 arithmetic test

1. $50 + 36 \div 6$

2. $9^2 - 36 \div 9$

Common mistake

Not completing the operations in the correct order!

BIDMAS

Remember, it must be used like this:

First do any: **(B)**rackets

Followed by any: **I**ndices

Left to right do any: **D**ivision & **M**ultiplication

Lastly, left to right: **A**ddition & **S**ubtraction

Percentage of amount

Real examples from past SATs Year 6 arithmetic test

1. 36% of 450
2. 99% of 200
3. 15% $\times$ 1,000

Common mistake

- For example 1: forgetting to divide by 100 at some point (if their chosen method is to find 1% first, and then 36%, which – in my opinion – is a quick and fail-safe method for any percentage of amount question!)
- For example 2: again, either forgetting to divide by 100 or failing to see a more efficient method – finding 1% and subtracting it from the whole.
- For example 3: not realising that 'x' means 'of' – or, again, forgetting to divide by 100!

100% is the whole amount

50% is half of the whole amount

Working out:

10% - same as dividing by 10

1% - same as dividing by 100

You can work out 5% by halving 10%

Adding and subtracting fractions and mixed numbers

Real examples from past SATs Year 6 arithmetic test

1. $\frac{4}{6} + \frac{3}{6}$
2. $\frac{3}{10} - \frac{1}{20}$
3. $4 \text{ and } \frac{2}{3} - 1 \text{ and } \frac{6}{7}$
4. $1 \text{ and } \frac{4}{5} + \frac{3}{10}$

Common mistake

For examples 1 and 2: overcomplicating the common denominator (the number of times I've seen children convert $\frac{4}{6}$ and $\frac{3}{6}$ to $\frac{24}{36}$ and $\frac{18}{36}$! Of course they will achieve the same answer but there is more room for error here). For examples 3 and 4: making errors when crossing the whole.

Dividing fractions by integers

Real examples from past SATs Year 6 arithmetic test

1. $\frac{3}{5} \div 3$

2. $\frac{1}{4} \div 2$

Common mistake

For example 1: not recognising that three fifths shared into three equal parts will be one fifth (of course, $\frac{3}{5} \times \frac{1}{3}$ will still achieve the same answer). For example 2: dividing the denominator by the integer instead (in this case, to get $\frac{1}{2}$).

Multiplying fractions and mixed numbers

Real examples from past SATs Year 6 arithmetic test

1. $\frac{5}{6} \times 540$

2. $1\frac{1}{2} \times 40$

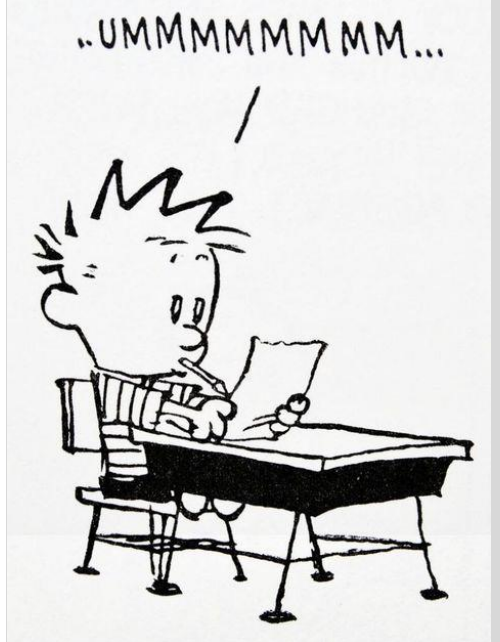
3. $1\frac{3}{4} \times 10$

Common mistake

- For example 1: not recognising that this is the same as $\frac{5}{6}$ of 540.
- For example 2: not recognising that this mixed number can be partitioned to $(1 \times 40) + (\frac{1}{2} \times 40)$ because $\frac{1}{2}$ of 40 is easy to calculate (as opposed to example 3 which may be easier to convert to an improper fraction and solve as $\frac{7}{4} \times 10$).
- For both examples 1 and 2: depending on the method, forgetting to simplify the answer to an integer (i.e. the answer of $120\frac{1}{2}$ would not be accepted for example 2)!

Clerical errors

- Misreading the operation (usually addition as subtraction or vice versa)
- Omitting decimal points
- Missing out questions
- Missing out WHOLE PAGES!
- Illegible digits (usually 6s as 0s and vice versa, or 7s as 1s)
- Getting the answer correct in the working out box but not copying it correctly into the answer box



Final SATs arithmetic preparation

