Year 4 - Bridge Through a Multiple of 10

When to choose this strategy

When adding takes us past a multiple of 10, add enough to reach it first. Then add the rest.

Worked example

960 + 80

1,000 + 40 = 1,040

1. We can add 40 to reach 1,000 from 960. Split 80 into 40 and 40. Start at 960 and add 40 to reach 1,000.

2. Add the remaining 40 to get 1,040. Check that 40 and 40 make the original 80.

> **Remember:** The first jump uses part of the number you are adding. Add only the part that is left.

Check understanding

5,860 + 300

Which multiple of 10 will you reach first? How much of the number is left to add?

Expected answer 5,860 + 300 = 6160

Year 4 - Bridge Through a Multiple of 10

When to choose this strategy

When subtracting takes us past a multiple of 10, subtract enough to reach it first. Then subtract the rest.

Worked example

1,030 − 70



1. We can subtract 30 to reach 1,000 from 1,030. Split 70 into 30 and 40. Start at 1,030 and subtract 30 to reach 1,000.

2. Subtract the remaining 40 to get 960. Check that 30 and 40 make the original 70.

> **Remember:** The first jump uses part of the number you are subtracting. Subtract only the part that is left.

Check understanding

6,130 − 300
Which multiple of 10 will you reach first? How much is left to subtract?

Expected answer 6,130 − 300 = 5830

Year 4 - Change an Addend When Close to a Clear Multiple

When to choose this strategy

Use this when one number is close to a multiple of 10 or 100. That nearby number can make the addition easier to do mentally.

Worked example

264 + 299

Add the nearby number

$$264 + 300 = 564$$

Subtract the extra

$$564 - 1 = 563$$

$$264 + 299 = 563$$

1. The addend, the number we add, is 299. It is close to 300, an easier number to work with. Add 300 to 264 to get 564.

2. We added 1 too much, so subtract 1. The sum is 563.

3. So 264 + 299 = 563. We used 300 and then adjusted by 1.

> **Remember:** If you added too much, subtract the extra. If you added too little, add the amount still needed.

Check understanding

48 + 29

What multiple will you add first? How will you adjust the total?

Expected answer 48 + 29 = 77

Year 4 - Change the Subtrahend When Close to a Clear Multiple

When to choose this strategy

Use this when the amount we subtract is close to a multiple of 10 or 100. In this question, 299 is only 1 less than 300. We can subtract 300, but that takes 1 too many, so we add 1 back. If we were subtracting 305 instead, we could subtract 300 and then the remaining 5.

Worked example

764 − 299

Subtract the nearby number

764 − 300 = 464

Add back the extra

464 + 1 = 465

The difference

764 − 299 = 465

1. The subtrahend, the number we subtract, is 299. It is close to 300, an easier number to work with. Subtract 300 from 764 to get 464.

2. We took away 1 too much, so add 1. The difference is 465.

3. So 764 − 299 = 465. We used 300 and then adjusted by 1.

> **Remember:** If you took away too much, add the extra back. If you took away too little, subtract the amount still needed.

Check understanding

648 − 29

What multiple will you subtract first? How much will you add back or still need to subtract?

Expected answer 648 − 29 = 619

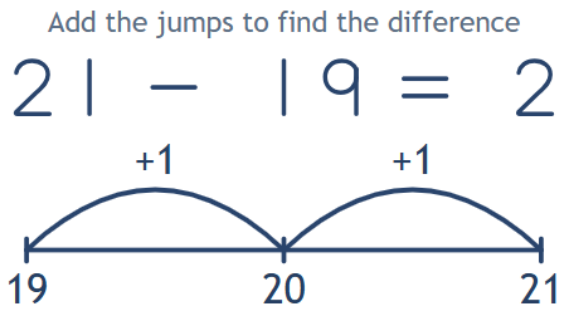
Year 4 - Count Up to Find the Difference

When to choose this strategy

When two numbers are close together, count up from the smaller number to the larger number. The amount we add is the difference.

Worked example

21 − 19



1. 21 and 19 are close together, so count up to find the difference. We count up from 19 to 21. First, we add 1 to reach 20: 19 + 1 = 20.

2. Then, we add 1 to reach 21: 20 + 1 = 21.

3. Altogether, we added 1 + 1 = 2. So 21 − 19 = 2. The difference is 2.

> **Remember:** The difference is the total of the jumps between the two numbers.

Check understanding

£8.00 − £6.49
Where will you start counting up? How do your jumps give the difference?

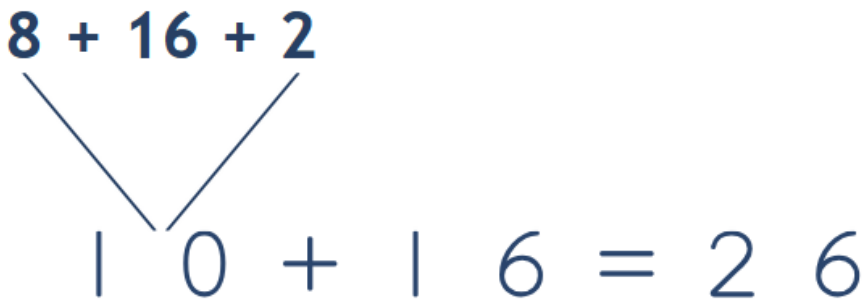
Expected answer £8.00 − £6.49 = 1.51

Year 4 - Choose a Pair to Add Three Numbers

When to choose this strategy

When adding three numbers, look at all three before choosing a pair. Use number bonds or doubles to make the next step easier. The useful pair can be anywhere in the question. Use the remaining number once after the first calculation.

Worked example



1. Choose 8 and 2 because 8 plus 2 makes 10, which is easy to add to. Keep 16 for the next step.

2. First, add 8 and 2 to get 10. Show the two numbers we chose and record their sum.

3. Next, 10 + 16 = 26. We have used all three original numbers once.

4. Now, we check using subtraction, the inverse. 26 − 16 − 2 = 8. We get back to the addend we started with.

> **Remember:** Use each of the three numbers once. After adding your pair, add the remaining number.

Check understanding

6 + 9 + 6
Which pair gives you a helpful total? What will you add to that total?

Expected answer 6 + 9 + 6 = 21

Year 4 - Use a Related Fact

When to choose this strategy

When both numbers are multiples of 10, 100 or 1,000, use place value and a number fact you know. For 500 + 200, think of 5 hundreds and 2 hundreds.

Worked example

500 + 200

Known fact: ones

$$5 + 2 = 7$$

Use it: hundreds

$$500 + 200 = 700$$

1. 500 is 5 hundreds. 200 is 2 hundreds. Use the known fact 5 + 2 = 7.

2. The result is 7 hundreds, which is 700.

> **Remember:** Name the unit in the answer. For example, seven tens is seventy.

Check understanding

60 + 20

Which fact will you use? What place value does your answer have?

Expected answer 60 + 20 = 80

Year 4 - Use a Related Fact

When to choose this strategy

When both numbers are multiples of 10, 100 or 1,000, use place value and a subtraction fact you know. For 500 − 200, think of 5 hundreds and 2 hundreds.

Worked example

500 − 200

Known fact: ones

$$5 - 2 = 3$$

Use it: hundreds

$$500 - 200 = 300$$

1. 500 is 5 hundreds. 200 is 2 hundreds. Use the known fact 5 − 2 = 3.

2. The result is 3 hundreds, which is 300.

> **Remember:** Name the unit in the answer. For example, three tens is thirty.

Check understanding

90 − 40

Which subtraction fact helps? How do you turn that fact into the answer?

Expected answer 90 − 40 = 50

Year 4 - Partition to Add Without Exchanges

When to choose this strategy

When the digits add without an exchange, partition the number you add. Add one part at a time.

Worked example

4,206 + 2,003



1. The matching digits in 4,206 and 2,003 add to less than 10 in each place, so we can add without exchanging. Partition 2,003 into 2,000 and 3. When we partition to work mentally, we start with the largest place value. Add 2,000 to 4,206 to get 6,206.

2. Then add 3 to 6,206. The sum is 6,209. Check that the two parts make 2,003.

> **Remember:** Add each part once. Start with the largest place value.

Check understanding

5,379 + 4,020
How will you partition the number you add? Which part will you add first?

Expected answer 5,379 + 4,020 = 9399

Year 4 - Partition to Subtract Without Exchanges

When to choose this strategy

When there is enough to subtract in each place, partition the number you subtract. Subtract one part at a time.

Worked example

8,530 − 3,020



1. In each place, the digit in 8,530 is large enough to subtract the matching digit in 3,020 without exchanging. Partition 3,020 into 3,000 and 20. When we partition to work mentally, we start with the largest place value. Subtract 3,000 from 8,530 to get 5,530.

2. Then subtract 20 from 5,530. The difference is 5,510. Check that the two parts make 3,020.

> **Remember:** Check that each place has enough to subtract. Start with the largest part when you partition the number you subtract.

Check understanding

8,678 − 1,008
How will you partition the number you subtract? Which part will you subtract first?

Expected answer 8,678 − 1,008 = 7670

Year 4 - Use a Near Double

When to choose this strategy

When the two numbers are one apart, double the smaller number and add 1.

Worked example

37 + 38



1. 38 is one more than 37. Start with double 37, which is 74.

2. Add the extra 1 from 38 to 74. The sum is 75.

> **Remember:** Add 1 to the double of the smaller number because the larger number is 1 more.

Check understanding

35 + 36
Which number will you double? Why will you add 1?

Expected answer 35 + 36 = 71

Year 4 - Use a Related Fact

When to choose this strategy

When a factor is a multiple of 10, 100 or 1,000, use place value and a multiplication fact you know. For 300 × 4, think of 3 hundreds multiplied by 4.

Worked example

300 × 4

A number fact we know

3 × 4 = 12

Use the hundreds

300 × 4 = 1200

1. 300 is 3 hundreds. Use the known fact 3 × 4 = 12.

2. The result is 12 hundreds, which is 1,200.

> **Remember:** Keep the unit from the known fact. For example, twelve tens is one hundred and twenty.

Check understanding

500 × 7

Which multiplication fact will you use? What place value does the answer have?

Expected answer 500 × 7 = 3500

Year 4 - Use a Related Fact

When to choose this strategy

When the dividend is a multiple of 10, 100 or 1,000, use place value and a division fact you know. For 800 ÷ 4, think of 8 hundreds divided by 4.

Worked example

800 ÷ 4

A number fact we know

$$8 \div 4 = 2$$

Use the hundreds

$$800 \div 4 = 200$$

1. 800 is 8 hundreds. Use the known fact 8 ÷ 4 = 2.

2. The result is 2 hundreds, which is 200.

> **Remember:** Keep track of what one group contains when you divide the tens or hundreds.

Check understanding

700 ÷ 7

Which place-value unit gives you a related division fact? What is one group worth?

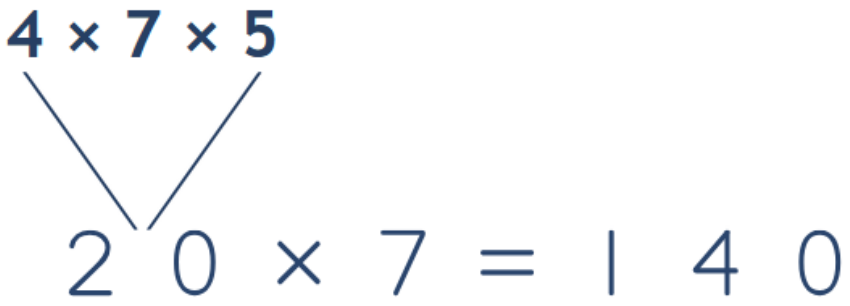
Expected answer 700 ÷ 7 = 100

Year 4 - Choose a Pair to Multiply Three Numbers

When to choose this strategy

When multiplying three numbers, look at all three before choosing a pair. Use multiplication facts to make the next step easier. The useful pair can be anywhere in the question. Use the remaining number once after the first calculation.

Worked example



1. Choose 4 and 5 because 4 times 5 makes 20, which is easy to multiply by. Keep 7 for the next step.

2. First, multiply 4 by 5 to get 20. Show the two numbers we chose and record their product.

3. Next, 20 is 2 tens. We know 2 × 7 = 14, so the product is 14 tens. 20 × 7 = 140. We have used all three original numbers once.

4. Now, we check using division, the inverse. 140 ÷ 7 ÷ 5 = 4. We get back to the factor we started with.

> **Remember:** Multiply the product of your pair by the remaining factor.

Check understanding

8 × 4 × 5
Which pair gives a product that is easy to multiply by? Which factor will you use next?

Expected answer 8 × 4 × 5 = 160

Year 4 - Double Twice

When to choose this strategy

To multiply by 4, double twice. This is helpful when both doubles are easy to find.

Worked example

23 × 4



1. Four is two times two, so we can double twice. Double 23 first to get 46.

2. Now double 46, the result of the first step, to get 92.

> **Remember:** Double the result of the first doubling.

Check understanding

32 × 4

What is the first double? Which number will you double next?

Expected answer 32 × 4 = 128

Year 4 - Halve Twice

When to choose this strategy

To divide by 4, halve twice. This is helpful when both halves are easy to find.

Worked example

84 ÷ 4

42 ÷ 2 = 21

1. Four is two times two, so we can halve twice. Halve 84 first to get 42.

2. Now halve 42, the result of the first step, to get 21. Check that four equal shares of 21 make 84.

> **Remember:** Halve the result of the first halving.

Check understanding

36 ÷ 4

What is the first half? Which number will you halve next?

Expected answer 36 ÷ 4 = 9

Year 4 - Partition to Multiply Using Known Facts

When to choose this strategy

When the tens and ones give you multiplication facts you know, partition the number. Multiply each part, then add the products.

Worked example

23 × 3



1. We know the facts for 20 times 3 and 3 times 3. Split 23 into 20 and 3. When we partition to work mentally, we start with the largest place value. Multiply 20 by 3 to get 60.

2. Multiply 3 by 3 to get 9.

3. We multiplied both parts by 3. Add the products 60 and 9 to get 69.

> **Remember:** Multiply every part by the same factor, starting with the largest place value. Add the products.

Check understanding

33 × 2

How will you partition the number? Which part will you multiply first?

Expected answer 33 × 2 = 66

Year 4 - Use a Factor Pair

When to choose this strategy

Split one factor into two smaller factors when multiplying by them in turn is easier.

Worked example

18 × 6



1. 6 is 2 times 3. Double 18 first to get 36.

2. Then multiply 36 by 3. Multiplying by 2 and then by 3 is the same as multiplying by 6. The product is 108.

> **Remember:** The two smaller factors must multiply to make the original factor.

Check understanding

13 × 6

Which factor will you split? What will you multiply by first and then second?

Expected answer 13 × 6 = 78

Year 4 - Multiply by 5 Using 10

When to choose this strategy

Five is half of ten. Multiply by 10 and halve the product.

Worked example

48 × 5

480 ÷ 2 = 240

1. Five groups are half as many as ten groups. Multiply 48 by 10 first to get 480.

2. Now halve 480. Five groups of 48 make 240.

> **Remember:** Halve the product you get after multiplying by 10.

Check understanding

34 × 5

What will you get after multiplying by 10? Why do you halve that amount?

Expected answer 34 × 5 = 170

Year 4 - Close to a Multiple

When to choose this strategy

If one factor is close to a multiple of 10, use that multiple first. Then add or subtract the extra groups.

Worked example

39 × 7

$$280 - 7 = 273$$

1. 39 is close to 40. Use 40 groups of 7 first to get 280.

2. We counted one group of 7 too many. Subtract 7 to get 273.

> **Remember:** Each extra or missing group is worth the other factor.

Check understanding

19 × 6

Which multiple will you use? What is one group worth, and how will you use it to adjust?

Expected answer 19 × 6 = 114

Year 4 - Change the Minuend When Close to a Clear Multiple

When to choose this strategy

If the minuend, the starting number, is close to an easy multiple, start at the multiple and subtract the same number. Then correct the difference.

Worked example

398 − 175

225 − 2 = 223

1. The minuend, the number we start with, is 398. It is close to 400, an easier number to work with. Start at 400 and still subtract 175 to get 225.

2. We started with 2 too much, so subtract 2. The difference is 223.

> **Remember:** Keep the number you subtract the same. If you started too high, subtract the extra. If you started too low, add the difference back.

Check understanding

199 − 54

What easier number will you start from? How will you correct the difference?

Expected answer 199 − 54 = 145