Reasoning and Problem Solving
Four Operations Consolidation – Year 6

National Curriculum Objectives

Mathematics Year 6: Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
Mathematics Year 6: Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication
Mathematics Year 6: Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context
Mathematics Year 6: Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context
Mathematics Year 6: Perform mental calculations, including with mixed operations and large numbers
Mathematics Year 6: Identify common factors, common multiples and prime numbers
Mathematics Year 6: Use their knowledge of the order of operations to carry out calculations involving the four operations
Mathematics Year 6: Solve problems involving addition, subtraction, multiplication and division
Mathematics Year 6: Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

About This Resource

This resource is aimed at Year 6 Expected and has been designed to give children the opportunity to consolidate the skills they have learned in the Autumn Block 2 Four Operations.

The questions are based on a selection of the same 'small steps' that are addressed in the block, but are presented in a different way so children can work through the pack independently and demonstrate their understanding and skills.

Small Steps

Add and subtract whole numbers
Multiply up to a 4 digit by a 2 digit number
Short division
Long division
Common factors
Common multiples
Mental calculations and estimation
Reasoning from known facts

More Year 6 Four Operations resources.

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It's the Women's Football Cup Final at the end of this month and your fan club are planning a trip to support the local team.

There's a lot of organisation needed to ensure the trip is a success, and that the club get the best deal for their money.

You have been assigned the role of budget management; all spending is signed off by you. Get going, everyone's relying on you and there's heaps to do before the big match!

First thing to organise is the strip. The club has created a memorial strip to celebrate reaching the cup final and the orders are flying in; you can't keep up with demand.

1a. Last week you ordered 73 shirts and were quoted £1,022, but now the order has increased by 21 more shirts! What will the new total price be?

1b. You want to make at least £18 profit on each shirt. How much is the minimum you need to sell the shirts for?

2. You've had a quote passed to you by the club secretary. She has ordered some whistles and rattles for the fans to make a racket at the game. Unfortunately, it got wet when she spilt some coffee on it. You need to sort out the missing figures.

Quote for whistles @ 75p each: £41.25.

The same number of rattles @ 96p each:

2a. How many whistles were ordered?

2b. How much does the order of rattles come to?

2c. What is the total quote?

3a. The tickets for the game cost £35.50 for an adult and half that for a child.

You have 67 adults and 27 children in your fan club who would like to buy a ticket. What is the total cost for the group?

3b. A new deal has come online!
For every 10 adult tickets, you will get 3 children's tickets free!
How much will you save?

4. You have been given some merchandise; 35 rubbers and 42 stickers.
How many bags will you need to share them both equally into each bag?

5. The transport company have been in touch. You will need to arrange train and bus travel to get all 94 fans to the stadium.

Train carriages seat 33 people and cost £54 per carriage, or £2.50 per person.

5a. How much will your train journey cost?

5b. The coaches seat 25 people and cost £57 each.
How much will the coach cost?

5c. What are the total travel costs?

There's a hot meal and drink deal on at the stadium.

Usually pies cost £2.50 and drinks are £1.75.

6. If half your group buy the deal, how much money will they save altogether?

You receive a quote from a hotel offering to put everyone up overnight after the game.

7a. Check the quote below, is it accurate? If not why not?

SleepWell Hotel
RE: Quote

94 rooms @ £23 each
£2,068

Breakfast per person @ £9
£856

Total Quote: £2,904

7b. What is the correct calculation?

Rooms | Breakfast | Total

8. YOUR TEAM WON! Congratulations! The FA have sent a gift to cover the cost of the trip; tickets, travel, food and drinks. Your award is £3,500!

8a. Does this cover your costs?

8b. How much profit or loss does it leave you?

8c. If you have a profit, how could you spend this money to benefit all the fans?

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1a. £1,022 ÷ 73 = £14 per shirt
£14 x 21 = £294
£1,022 + £294 = £1,316
1b. £14 + 18 = £32 per shirt
2a. £41.25 ÷ 75p = 55 whistles were ordered.
2b. 96p x 55 = £52.80 for the rattles.
2c. The total quote is £94.05.
3a. £35.50 ÷ 2 = £17.75 for a child ticket
67 x £35.50 = £2,378.50
27 x £17.75 = £479.25
Total Cost: £2,378.50 + £479.25 = £2,857.75
3b. 6 x 3 = 18. 18 x £17.75 = £319.50 will be saved.
4. 7 bags
5a. There are 94 seats needed.
Train: 94 ÷ 33 = 2 coaches and 28 remaining
2 carriages x £54 = £108
28 single seats = £70
Train travel cost: £178
5b. Coach: Need to book 4 coaches to fit 94 people on. £57 x 4 = £228
Coach travel cost: £228
5c. Total cost: £178 + £228 = £406
6. Half of the group = 47. £2.50 + £1.75 = £4.25
£4.25 – £3.75 = 50p saving
47 x 50p = £23.50 saving
7a. The quote is not accurate.
The rooms and breakfast have been mis-calculated, therefore the final total is incorrect.
7b. Rooms: 94 x £23 = £2,162
Breakfast: 94 x £9 = £846
Total: £3,008
8a. Tickets: £2,538.25 + Travel Cost: £406 + Food: £176.25 = Total: £3,120.50 Yes, the amount given from the FA will be enough to cover the trip, with extra left over.
8b. £3,500 – £3,120.50 = £379.50 profit
8c. Various answers, for example: help to cover hotel costs; help to cover T-shirt costs; help to cover costs of whistles and rattles; a party to celebrate; doing up the fan club; reducing ticket prices etc.