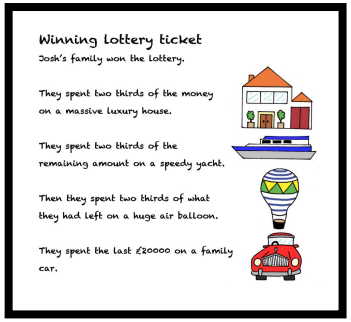
G7 Winning Lottery Ticket

The Big Picture

Recommended for Year 6

Strategy G - use inverse operations and work backwards to find the solution.



NC Objectives

To perform mental calculations, including with mixed operations and large numbers (year 6, number, operations)

Stickability

To multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams (Fractions, Year 5)

Key Questions

Where should we start?

If £100 is left after $^3/_4$ was spent, what fraction of the total is £100? How can we find the total from this amount?

How can we check the solution when we have found it?

Resources

Copied sheets of problem

Problem based learning

Children may need to use bar models to understand the relationships between the fractions when working backwards. For example, if they spend $^2/_3$ of an amount and £20000 is left, that is $^1/_3$ of the initial amount. Multiplying by 3 will give the initial amount.

LEARNING SEQUENCE

HOOK

Ask the children what they would buy if they won the lottery. Explain that today's problem is all about how Josh's family spent their lottery winnings.

Teacher Led

Show PitSTOP 2 to the children. Model how to work backwards from the final amount, £200, using bar models to support. They had £200 left, so they also spent £200 on clothes. Continue until you reach the initial amount. Re-do the problem 'forwards' from the initial amount to check.

Student Led

Give out PitSTOP 3 to complete in pairs, stopping an modelling as needed. Show how to check by working through the problem with the initial amount to see if it matches.

Support: PitSTOP 1.

Teacher Led

Show PitSTOP 4 and model how to solve. If there was £1000 left after 3/5 was split, £1000 must be 2/5. The whole amount would be £1000 ÷ 2 x 5 = £2500. We can then multiply this by 2 to get %00 before the ring was brought. If £5000 was the remaining $^1/_4$, we can multiply by 4 to get the initial amount: £20 000

AFL & Independent

As children are ready, give out PitSTOP 5 and 6 to be solved independently or in pairs.

Support: Consolidate earlier PitSTOPS.
Extension: PitSTOP 7

PLENARY

Children to explain their reasoning, using bar models to support.

Check by entering the solution into the beginning of the problem and working through.