'Great Pet Sale' box

Product Code

MGPS

Contents

17 characters from the book
A set of matching price tags
The book itself
A complete set of teaching notes and activities

Introduction

'The Great Pet Sale' by Mick Inkpen is a wonderfully engaging picture book full of humour and the kind of 'will he/won't he' suspense which young children love, so it is easily used to enhance English activities. But even the most casual reader will recognise the mathematics potential for learning it also contains. The immediate and most obvious of these is that the total value of all the pets for sale in the shop is one pound. This means it can be used as a starting point for money activities with children working with money up to the value of a pound. Delve a little deeper, read it more carefully with your mathematical antennae switched on and it becomes clear that it can be used as a stimulus for many maths learning goals and objectives from the Foundation Stage to Year 4! See below!

Since its publication I have enjoyed using it within many maths sessions with children from four to nine years of age. I have used it at the beginnings of lessons to set the context for our work with money or problem solving, and I have also read it to the children in the plenary part of the lesson as a fun summary and extension of the work we have just completed.

But why use a story in a 'maths' lesson? There are many reasons:
- a story can provide a context which children enjoy and in which they can engage, so their learning is more relevant
- the brain is programmed to recognise and remember novelty – using a story can encourage visualisation and make the maths learning more memorable

LEARNING OBJECTIVES	MATHS ACTIVITIES
FOUNDATION STAGE	
Counting and recognising numbers	
• count reliably up to 10 everyday objects	• Count how many pets were for sale in the Pet Shop
• say & use the number names in order in familiar contexts such as stories • recognise numerals 1 – 9...then beyond 10	• Say the numbers on the price tags & find them on the pets in the story
• count in tens & twos	• Count to £1 in 1ps, 2ps, 5ps, 10ps
• estimate a number then check by counting	• Put all the pets into a pile, estimate how many , then count to check
• use language such as more or less to compare two numbers	• Choose two pets & say which costs more/less • Sort the pets into two sets of those costing more/less than 6p
• order a given set of numbers	• Match price tags to the pets & put them in price order • Put the priced pets in a feely-bag. Take out four of them & put them in price order
• begin to understand ordinal numbers	• Discuss the order of the pets in the story. 'Which was the first, second, third... pet the boy saw in the shop?'
Adding and subtracting (some also involve solving problems)	
• begin to relate addition to counting on	• Use real pennies. Choose two pets. Start with the price of one & count on the value of the second to find the total
• select two groups of objects to make a given total	• Choose a total. 'What 2 pets could you buy for a total of 8p? Are there any others?'
• begin to relate subtraction to 'taking away' & counting how many are left	• 'If you had 10 pennies & bought the gecko, how many pennies would you have left? What if you bought a tortoise instead? Would you have enough pennies left to buy the rat as well?'
Solving problems	
• solve simple problems or puzzles in a practical context, & respond to 'What could we try next?'	• 'How many different ways can these 5 (or 10) pennies be arranged in these two purses?' • 'How many pets will fit in this box?'
• make simple predictions	• 'What size box do you think you would you need to take the rat home in? Can you find one? What about the skink, or the dragon?
• sort & match objects or pictures, justifying the decisions made	• Match the wooden pets to the pictures in the book • Sort the pets according to different criteria: cuddly/not cuddly, brown/not brown, 4 legs/not 4 legs, pets I'd buy/not buy...
• begin to understand & use the vocabulary related to money	• Discuss the cost of each pet and the money notation.
• sort coins...& use them in role-play to pay & give change	• Sort coins & match any to pets of that price, e.g. 1p – rat, 2p – terrapin • Use large card coins and put them in order of value (include £1 & £2 coins)
YEAR 1	
Numbers and the number system	
• count reliably at least 20 objects • give a sensible estimate that can be checked by counting (up to about 30)	• Line up the wooden pieces from the box, or show the 'fold-out' page from the book & estimate the number of pets in the story. Check by counting. (There are 21!)

• count on and back from zero in ones, twos, fives & tens	• Count up & back from zero to £1 in 1ps, 2ps, 5ps, 10ps
• partition a 'teens' number & know what each digit represents	• 'If you bought the box of little brown creatures for 10p and the rat for 1p, how much would that be altogether? What if you bought the little box and the turtle? Can you tell me? … so, it's 10p and 3p that's 13p altogether…' Repeat for other combinations making 'teens' numbers
• within the range 0-30, say the number that is 1 or 10 more or less than a given number	• 'If the pet shop took an extra 1p off the price of each pet, how much would each cost?' (Make a 'free' tag to put on the rat!) 'If, when the sale finished, all the pets' prices went up by 10p, what would each pet's new price be? Can you make new price tags for the pets?'
• order numbers to at least 30	• Choose five pets, look at their value & put in value order – cheapest to dearest. 'Can you do this with a larger number of pets?'

Calculations (some also involve problem solving)	
• understand the operation of subtraction (as 'take away' 'difference' & 'how many more to make')	• 'If you had 15p, how much would you take away if you bought the koala & anteater?' • 'What's the difference between the prices of the gecko & the turtle…the puffin & the dragon…?' • 'If you had 5p & wanted to buy the salamander, how much more money would you need… if you had 15p & wanted to buy the dragon…?'
• begin to recognise that addition can be done in any order	• Choose two pets & find their total cost. 'Which number did you start with? Why?'
• begin to recognise that more than two numbers can be added together	• 'Choose your three favourite pets in the sale. How much will they cost you altogether? What would it cost to buy all the pets? How did you work it out?'
• know by heart: all pairs of numbers with a total of 10	• 'Can you find a pair of pets with a price total of 10? Are there any others?' terrapin/gecko (2+8) turtle/skink (3+7) tortoise/salamander (4+6) any two pets on the perch (5+5)
• begin to know: addition facts for all pairs of numbers with a total up to at least 10	• The koala & anteater are 9p the pair. 'How many different pairs of numbers make 9?

Solving problems	
• investigate a general statement… by finding examples that satisfy it	• 'Are large pets always the dearest?'
• use mental strategies to solve simple money problems, set in 'real-life'	• 'How long is a Komodo dragon?' • 'How tall is an anteater?' • 'What pets could you buy if you had 10p…15p…20p…50p… etc'
• find totals & change from up to 20p	• Choose any pet to buy. 'If you had 20p, what change would you get?'
• work out how to pay an exact sum using smaller coins	• 'What coins could you use to pay exactly for each pet?' • 'Using coins of different values, how many different ways could you pay for the skink…little brown creatures…dragon?'

YEAR 2	

Numbers and the number system	
• recognise odd & even numbers	• Order all the pets with an odd price & all the pets with an even price. 'Which set has the largest total?' (odds – 70p, evens – 30p!)
• round numbers less than 100 to the nearest 10	• Look at the pet prices. 'Which would you round up/down to the nearest 10?'
Calculations (some also involve solving problems)	
• begin to add three single-digit numbers mentally (to 20), or three two-digit numbers with the help of apparatus (to 100) • use known number facts & place value to add/subtract mentally	• 'What's the total cost of all the pets behind the plastic rock?' • 'What's the total value of the pets on the perch that begin with 'p'?' • 'How much do all the pets with shells cost? What change would you get from 20p if you bought them all?' • 'How many groups of pets can you find that have a total of 20p?' • Choose some pets to buy. 'What is their total cost? Would you get any change from 50p...£1. How much?'
• find a small difference by counting up from the smaller to the larger number	• Buy the Komodo dragon & one other pet. 'What is the difference in their prices?'
• understand the operation of multiplication as repeated addition	• 'Which pets could you pay for exactly using only 2ps...5ps?' • 'How many dragons could you buy if you had £1? What about boxes of little brown creatures?''
• know & use halving as the inverse of doubling	• For the last week of the Pet Sale, all the prices are halved. 'What would each pets new price be? What price would you give the rat?!' • Supposing that after the sale all the prices doubled. 'What would each pet cost now? How much would it cost now for the boy to buy them all?'
Solving problems	
• investigate a general statement about familiar numbers by finding examples that satisfy it	• 'What's different about even numbers?' • 'What's the most you can get for £1?'
• choose and use appropriate operations & efficient calculation strategies to solve problems	• The koala & the anteater are '9p the pair'. Investigate what the value of each one could be. 'How many different combinations can you find? How do you know you've got all of them?' • 'What's the largest number of pets you can buy with 10p? ... How do you know?' • If you had two weeks to save up to buy a pet, would you rather be given: ✓£20 at the end of the fortnight, or ✓1p on the first day, 2p on the second day, and so on, doubling the amount on each of the 14 days? Can you explain why?' • 'If you could have only the odd-priced pets or the even-priced pets, which would you prefer? Why? What's the best way of adding these prices?'
• find totals, give change, & work out which coins to pay	• 'If you had the dragon, & exchanged it for pets of the same value, what pets could you have?'

	• 'Can you find three pets with a total of 10p?' rat/koala/anteater (1+9) rat/terrapin/skink (1+2+7) • 'What's the largest number of pets you could buy with 50p? Would you get any change? Why not?'

YEAR 3 AND YEAR 4
By extending the range of values of the pets, or using a collection of 'beanie' animals with larger prices, some of the ideas above can extend into the teaching programmes for Y3/4. The 'open-ended' problem solving ideas above could be used with Y3/4 children, as you would expect them to solve the problems in a more sophisticated way. I have listed a couple of examples involving children calculating, problem solving and recording their thinking.

YEAR 3	
• use informal pencil & paper methods to support, record or explain HTU ± TU	• You have £1.50. You buy a hamster for 58p & a guinea pig for 76p. 'How much change will you get? Can you use an empty number line to record your thinking?'

YEAR 4	
• extend understanding of the operations of × & ÷ & their relationship to each other • round up or down after division, depending on the context	• 'Imagine you are the Pet Shopkeeper. You have run out of rabbit food and a customer wants you to order 40 bags of it. The bags are supplied in boxes of 6. How many boxes will you need to order?' • 'The boxes cost £1.56. What is the cost of each bag? Can you record what you were thinking to explain how you worked it out?'

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