

MATHS FOCUS **TUDOR MARKET**

- *Fractions and percentages:* all the special-offer labels require groups to work out the new price of the goods they are purchasing and selling
- *Problem solving and strategic thinking:* creating a scenario where there is no right or wrong approach, and where pupils need to think about how cheaply to sell their goods to encourage buyers, but also consider how not to make a loss

Scenario

The Lord of the Manor is holding a competition to find the most enterprising stall owners in the land and he invites the children to set up their stalls, create a name for their shop and price their goods so as to attract the most buyers. He announces that there will be a prize for the person who earns the most money.

Exploration

- 1 The children are divided into groups and given an area of the room in which to set up their market stall. Each stall sells exactly the same products as the other.
- 2 The products are the types of thing you would see in Tudor times; a pig's head, a cup and ball etc. All the prices the children are given to sell the goods at are in Tudor crowns, and they are exactly the same price for each group.
- 3 Each group is then given the same number of special-offer labels, which enable them to reduce the price of some of their goods. The labels can state that this item is half-price, or has a 20 per cent discount etc.
- 4 The groups have to decide in secret which items to apply the discounts to. Do they place it on the item that is the most expensive, or will that mean that they will lose potential income on a sale? When they have decided, they place their discount cards and reveal their stall to the rest of the room.
- 5 Each group is given a shopping list of items it must purchase from other stalls and has time to wander around to find the best deals. Lists are kept of who purchases what from whom, and, at the end of the first round, the amount of money made by each stall holder is noted.
- 6 The pupils then have time to discuss if they need to change which items they discount for the second round.

Outcomes

Often, pupils try to sell the most expensive items without a discount, but the group that first takes the risk of lowering the price of this item soon discovers that more people want to shop from them.

Quote from evaluations

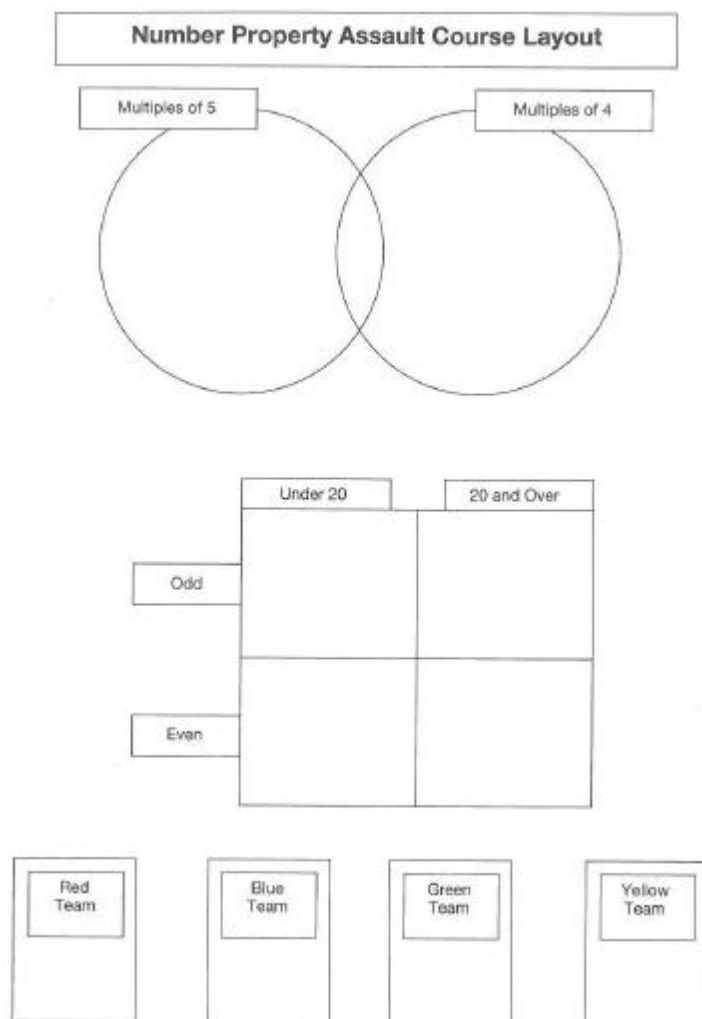
The children really enjoyed this sophisticated version of playing shop, and began to get more and more tactical with each round.

(Year 5 teacher)

Further information

This idea can be adapted to fit any period in history. A Roman market would have the added benefit of providing a context for learning about Roman numerals, as required at Key Stage 2. It is also possible to extend the approach to explore enterprise education in a modern-day context.

Another example of this type of work, developed by MakeBelieve Arts, was the creation of a number property assault course (see Figure 8.3), where Venn and Carroll diagrams were used in a relay race to engage children in answering sums, finding the answer in a Carroll diagram, where numbers were sorted into odds and evens, under 20 and over 20, and then running with the number to a Venn diagram taped out on the floor. On arriving at the Venn diagram, pupils had to place the number in the correct circle according to whether it was a multiple of 10, 4, both or neither.



MATHS FOCUS **FARMING FOR FRACTIONS**

- Problem solving
- Fractions
- Division

Scenario

A wise old farmer decides he is going to take a long holiday and gives responsibility for managing the farm (consisting of one fruit field and one vegetable field) to his two sons. The brothers decided to take a field each and to grow two crops in each field.

A seed seller arrives and tells the brothers that, if they buy seeds from her, they will grow twice as many crops. A week later, she returns with new seeds that will help the brothers grow twice as many crops again. The brothers are now growing eight different crops each. Getting fed up with his field, the older brother asks his sibling if he can have a quarter of the fruit crops, in return for one-eighth of his vegetables. The younger brother agrees, and they rebuild the fences between the farm.

The younger brother is happy until he realises that he has fewer crops. They agree to swap again: half of the younger brother's field for two-eighths in return. As soon as the fields are divided, they begin arguing again. When their father returns, he is angry that his sons have not been able to manage the farm without arguing. As a final test, he gives the brothers twenty-four animals to divide fairly: twelve cows, six pigs, three horses and three sheep. But what is the best way to do it?

Exploration

- 1 The children are invited to act the story out, marking the fields and the dividing fences with masking tape, string or playground chalk (if working outdoors).
- 2 As the fences between the fields change, marker pens, coloured string or coloured chalk are introduced to differentiate the new boundaries.

Outcomes

- Bringing fractions to life on a large scale can really help to engage children in exploring mathematical ideas. No longer does maths need to be an activity where children sit at their desks dividing circles with pencil lines.

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MATHS FOCUS **FARMING FOR FRACTIONS** ... *continued*

- Although working with smaller numbers sometimes helps children to understand or solve number problems in particular (see Chapter 3), many problems can best be understood by working on this larger scale. This gives children more scope for physical action and alternative 'ways of knowing'.

Quote from evaluations

I was so inspired by the INSET and the idea of teaching maths through story-telling that I was determined to create a story to help my Year 4 class who were struggling with fractions. Once I got the idea it didn't take me that long to work into a lesson plan, but I have never had so much fun in a maths lesson. The children really enjoyed it too and they really got it. This is a powerful approach that I will definitely use in the future. I just need to think of a story to explain multiplication next.

(Year 4 teacher who created Farming for Fractions)

Further information

We have found that, by bringing fractions to life in this way, we are able to engage children in more complicated mathematics than the curriculum would dictate for their age group. Year 2 pupils working on a similar division exercise were engaged in dividing up an island equally between everyone who staked a claim in it. These young children were able to consider how they might have one-thirty-second of the island. All of this took place on a large piece of lino shaped like an island and involved lots of discussion on how to divide equally.