



Reporting an “effective” task selected/ designed and enacted in the context of the EDUCATE project

Teacher: Niamh Dunphy

Mathematical topic: Problem solving (Word problems – fractions/decimals/percentages)

Educational Level: Primary

Age group: 5th class

Duration of the lesson: 1 hour

Learning goals:

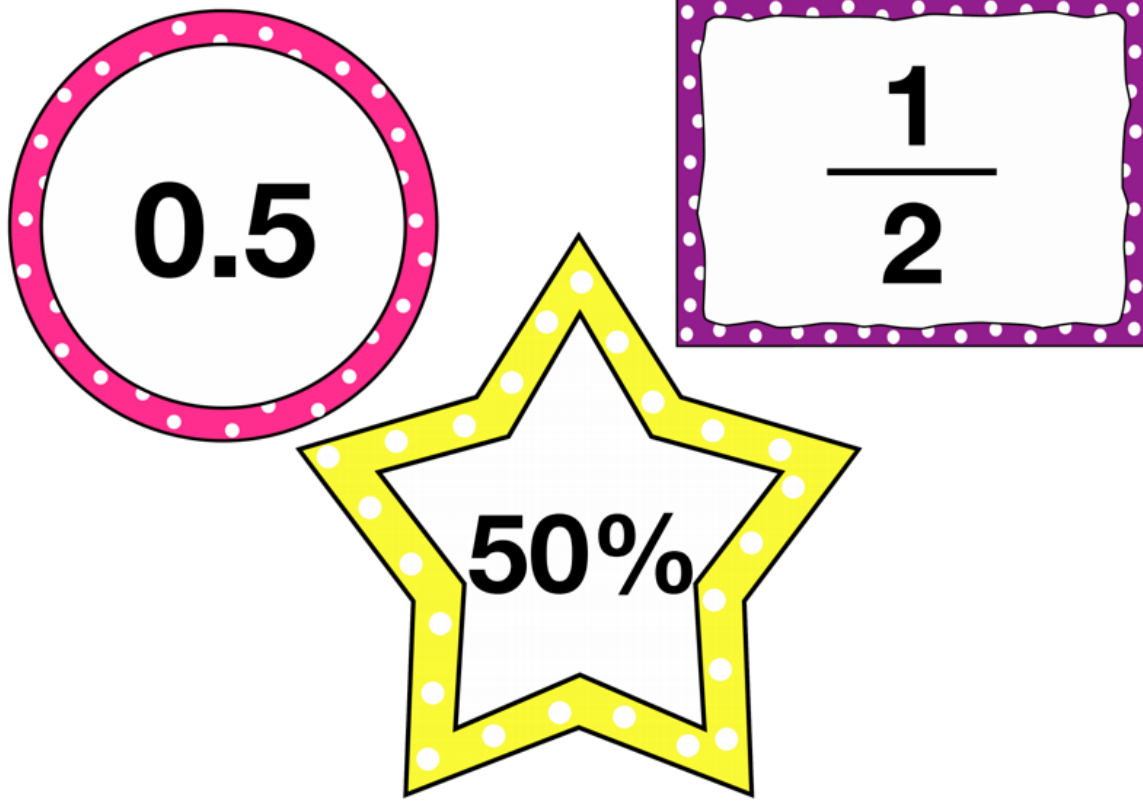
- Work with a partner to solve ‘real life’ problems involving fractions, decimals and percentages.
- Find a fraction/decimal or percentage of a given number
- Reduce or increase a number by a fraction/decimal/ percentage of that number (e.g. cost was 25% less)

Description of the task and its rationale in terms of mathematical challenge and differentiation:

- The main challenging task was for children to use the knowledge they had about fractions, decimals and percentages and use that knowledge to solve problems related to real life scenarios e.g. cost increases for hotels/trips etc.
- Children also needed to be able to work collaboratively with a partner to solve the problems, explain how they did it and justify their answers.

Task unfolding

We began the lesson with a matching activity (so the children had to find the equivalent fraction, decimals and percentages). This was a good way for me to see which children had a solid understanding of the relationship between each of these. It was also a chance to see which children struggled to find a partner. I strategically handed out the cards so that all children could access the materials for example I gave the most familiar fractions/decimals/percentages (such as half/quarter etc.) to the children who would need the most support and then more difficult ones to the children who needed an extra challenge.



The children then worked collaboratively (these groups were mixed ability). Each group had a different problem to solve. They had a given amount of time to solve the question and when completed they could move onto the next problem.

Each problem had 2-4 parts to ensure that different levels were catered for when the children worked in groups. (Some groups only got the first part of the problem solved; others finished the entire problem.)

Children were encouraged to work independently first and see how they might solve the problem and then to share their ideas with their group. The children used whiteboards to jot down any ideas they had or steps they would take to solve the problem.

Teacher support was given to any child or group that needed it.

Once the problems were solved, we then began a whole class discussion looking at the different ways that each group solved the problem and discussed additional ways that the problem could be solved. For most children, they solved the problems by using the fraction, but some groups decided to try out how it would work with decimals and then we talked about the most efficient way to solve the problems.



A trip to Rome for two adults costs €645.28 during the summer.
There is a reduction of 25% during off peak season.
What is the price during the off peak season?



Tickets in the circle cost €94.30.
Tickets in the stalls cost 30% more (than the circle).
Round your answer to the nearest euro.
Tickets in the upper circle are 0.5 the price of the stalls.
Find the cost of the tickets
for the stalls and for the upper circle.



A trip to Brighton costs €211.23 per person during the
month of May.
The trip increases by $\frac{2}{3}$ for the month of July.
How much will the trip cost for 3 people in July?



I think because we had real life scenarios, they made much more sense to the children and they were really engaged in the learning and solving the problems. They could then relate and think of examples from their own lives too.

Reflection

I think the lesson overall went very well – it was interesting to see the children working collaboratively, and using real life problems made it really relevant for the children. There was enough to challenge all pupils at their own levels too. I often wonder what works best in terms of group work – should the groups be mixed or same ability so I would like to try the lesson with same ability groups to see what difference it would make to the achievement to pupils overall. I sometimes worry about the children who are at a very different level to the rest of the class (particularly if they have a much higher ability- as was the case with two children in this class group).