

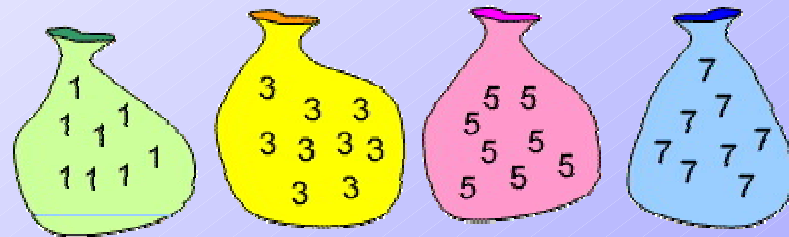
**‘Make visible what, without you,
might perhaps never have been
seen’ (Robert Bresson):**

**Exploring the challenge of online
mediation.**

**Jenni Back & Charlie Gilderdale
NRICH Project**

Make 37

Four bags contain a large number of
1s, 3s, 5s and 7s.



Pick any ten numbers from the bags
above so that their total is 37.

Pupils appreciate the chance to work on something different

- *I liked it because the problem made me think harder than I have in a Maths lesson this year!*
- *It's something different to just writing out sums in books.*

Pupils appreciate the chance to work on something challenging

- *I liked it because it was hard.*
- *I enjoyed doing a problem that was impossible.*
- *I like the problem because it was very challenging.*

Pupils motivated to persevere with the problem

- *I liked it because you get 36 or 38 so you get determined to get 37.*
- *Yes, as soon as I started I knew I wanted to finish it. I liked thinking about it.*

Pupil has seen the potential for learning – understanding that you don't only learn from instruction.

- *The maths problem was very frustrating and I enjoyed it. It was fun because you learnt how odd and even numbers work.*

Hints

Pupils recognised the value of the resources that are available to them: their thinking skills and their peers

- *Working in silence; having longer thinking time at the beginning.*
- *Talking to more than one person.*

Pupils focus on reducing the routine aspects of the problems and the chances of arithmetical errors.

- *A number line.*
- *A calculator.*

Pupils are offering comments which will draw attention to the underlying mathematical structure of the problem.

- *Think about odd numbers and even numbers.*
- *Think of what happens if you add 2 odd numbers together.*

Pupil offers another problem which offers the same challenge as the original.

- *Think and see if you can get up to thirty with seven numbers.*

And at the other end of the
continuum.....

Pupil has focused on the arithmetic rather than stepping back

- *I was more trying to add together than looking at the numbers?*

Pupils do not recognise that there is anything to be gained from tackling an 'impossible' problem.

- *I don't really like doing maths problems and it was impossible to do which made it worse.*
- *Being an impossible problem there is no point in doing it because it is pointless sitting there for ages stuck.*

Pupils react negatively when maths question doesn't match their preconceptions

- *Was quite annoying when you found out it was impossible.*
- *I love maths and enjoy it very much u gave me that problem to work out and I couldn't so I was enoyed, but then u tell me its impossible its such a waste of time and effort and Im very enoyed. (sic)*

Hints

Pupils are wanting to remove all the difficulty out of the problem so that there is no challenge left.

- *A clue to point in the direction of impossibility.*
- *There is no answer.*
- *Don't think it can definitely be done.*
- *U can't do it.*
- *Telling me it was impossible might!!*

Pupil offers a hint that would trivialise the problem

- *odd + odd = even*

What kind of mediation is
feasible in an online
environment?

How can we cater for pupils with
such different perspectives?

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