**Gary Eats An Orange**

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Equipment: four numbers, an orange

Time required: 3-10 minutes

Preparation: about 60 seconds or less to think of four appropriate numbers

This activity is really ‘Pick the Number that Doesn’t Belong.’ The orange acts as a timer and somehow makes the activity much more engaging (for students) and tasty (for the teacher). About 90 seconds to peel and a 90 seconds to eat is reasonable - adjust it to your students. It is a simple warm-up to get students to reason. Remember that the focus is on *reasoning*.

Write the four numbers on the board. Ask your students to choose the number that doesn’t belong and be prepared to explain why.

“Think about it in your head. Don’t put your hand up yet. If the number you have chosen is not the one that doesn’t belong, try to work out another number that might not belong. If that one is not the one that doesn’t belong, try to work out why a different number there might not belong. I am going to peel my orange. Keep thinking and do not speak until I have finished peeling my orange.”

Peel the orange as slowly and ostentatiously as you like. You can let students know if you are halfway or almost complete. Encourage students to go beyond their first or second choice.

When you finish peeling the orange, tell the students to put their hands down. They can now turn and talk with a partner about which number might not belong and why, discussing each of the possibilities they have thought of. They have until you finish eating your orange.

Select students to offer their choices and reasons. Allow students to explain their reasoning to the class and model on the board if necessary.

**Appropriate numbers**

Any attributes of numbers you would like to consolidate can lead to choosing the numbers.

With lower students, I would choose three consecutive multiples (e.g. 3, 6, 9) and an odd or even number which is the opposite of the middle number. In this example, the middle number 6 is even so I would choose an odd number, perhaps 5. So my numbers after mixing would be 5, 9, 3, 6.

Expect reasons such as 3 is smallest, 9 is largest, 6 is the only even, 5 does not fit into the counting by 3s pattern.

With higher students, you could try three consecutive multiples of a larger number and not starting at 1 (e.g. 12, 27, 42). You could then do the odd / even thing as before or try something with different digits, like 36. So after mixing we have 27, 42, 36, 12. This would give multiple reasons to exclude 27 (odd, not a multiple of 6), 42 (digits add to an even number, largest number), 36 (square number, not multiple of 15), and 12 (smallest number, consecutive digits)

There really is no limit to how difficult to make the numbers or how to choose them. You could try 2.7, 4.2, 3.6, 1.2. or 2700, 4200, 3600, 1200. Or just pick random numbers and see how your students go.