



## LUCY LOOKS FOR A REAL NUMBER

### Stimulus:

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It's Lucy's birthday and today she has turned 10. She has finally reached the age of her favourite number: the number 10.

She has decided that she wants to try and find a real number 10 so that she can keep it forever. Lucy thinks to herself '... Mmm, where am I going to find a number 10?' She thinks for a while longer and then she has an idea. 'I know, she says, I'm 10 today, so: am I a number 10?'

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### Task question 1: Is Lucy a number 10?

(Anchor the children with the following question: has she found a real number 10? Or this one: so, what is a real number? Use this to anchor the children to the task-question throughout the enquiry.)

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Next she thinks, 'maybe I can find a real number 10 on the number line', so she goes along to the number line in the classroom and points to the number 10. 'Is that a real number 10?'

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### TQ 2: Is the number 10 on the number line a real number 10?

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Lucy then has another idea, so she runs to her piggy bank holds it upside down and rattles it around for a few minutes until she has 10 ten pence coins. She places the 10 coins next to each other and wonders if she has finally found a real number 10.

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### TQ 3: Is '10 things' a real number 10?

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Finally, Lucy stands up and counts out loud: 'One, two, three, four, five, six, seven, eight, nine, TEN! There,' she says, 'now I've found a real number 10.'

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### TQ 4: Has she finally found a real number 10 by counting out loud to 10?

## TQ 5: How do you think you might find a real number 10?

### Nested Questions:

- ✓ What are numbers?
- ✓ Where are numbers?
- ✓ If there were no human beings would there still be any numbers?
- ✓ What happens to numbers when we are not using them?
- ✓ Are numbers invented or discovered? Is zero a number?
- ✓ Can you touch a number?
- ✓ Is it possible to find a number?

## EXTENSION ACTIVITY:

How would you explain what a number is to someone who has never heard of numbers?

Ask the children to get into pairs or groups and prepare how they would undertake this task. You could even get them to try it with younger children in the school. The teacher could role-play an alien or child that doesn't know what numbers are and at each stage of their explanation let them know when what they have said, in some way, depends on knowing what numbers are:

Children: "Numbers are when you count."

Role-playing teacher: "But I don't know what 'counting' is because I don't know what 'numbers' are. Try again."

You may want to remind them that there was a time when they didn't know what numbers were, but then they learned what they were. You could ask them: "how did you learn what numbers were?"

## Teaching Strategy: break the circle on number

Write the word 'number' in the centre of the board and ask the children to say what a number is, but tell them they are not allowed to say the word 'number' or 'numbers' in their answer. Write the beginning of this sentence: "It is..." on the board in the top left hand corner. Encourage them to say what has not already been said and tell them to listen carefully so that they don't do this. This activity can be done with any word you ask the children to define and it encourages them to avoid simply thinking in a circular way: "a number is when you count numbers." This leaves you with the same question: but what are numbers?