

STOPS A1 - Lesson Plan

Name

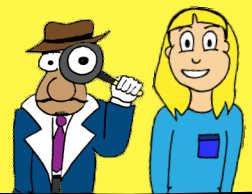
STOPS A1 - Catching a Duck

Learning Intention

To solve a problem by acting it out

Resources

Suitable equipment to "Act Out" the problem. Using numbered ducks in a pond is ideal. Alternatives include cardboard duck outlines with numbers on that could be picked or using a form of toy duck. You could attach a paperclip to the cardboard duck and use a magnet to "hook" them.



Teaching notes

It is vital at this stage to actually act out the problem. If possible, actually using numbered ducks in a pool with a way of catching them would be great fun and very engaging for the children. It will also enable them to refine their strategy from "Acting it Out" literally to making a model which represents the problem, which will be invaluable later on. Some children will be able to move past the physical representation and be able to solve it mentally.

This problem can easily be taught as a group, paired or individual activity as well as with the whole class.

Read the problem to the children and ensure that they understand. Some children may be unfamiliar with the concept of the "Hook a Duck" traditional fairground game so ensure that they understand. Ask children to catch two ducks and see what the total is. Encourage children to talk about their method for adding, for example counting on, or allow them to use materials to support their adding.

Tell them that to win the game they must score exactly 5 with two ducks. Allow children to use a trial-and-error method if needed, eg 'picking 2 ducks and adding them, or encourage them to "work backwards", eg knowing that they have picked a 3, which duck should they pick next. Ensure that these strategies are discussed but they need not be formally named at this stage.

As the children's strategies become more refined they will be more confident. Work through the more complex examples on the problem sheet, discussing strategies as you go. Children will love to be rewarded with a prize for winning the fairground game!



Key Questions:

- What numbers can you see on the ducks?
- Which is the biggest number? The smallest?
- We need to make a score of 5 to win, how can we do that?
- You have picked 1 and 3, what total does that make? How do you know?
- You have picked a 3. What number do we need to make 5? How do you know?
- Can we make 7 with 2 ducks? How can we make 7 with more than 2 ducks?
- What is the highest number we can make?

Differentiation:

- Lower - STOPS early solvers
- Higher - STOPS A2

Lower - To win the game, you must only catch ducks that are smaller than 4. Which ducks can you catch? (1, 2 or 3)

Higher - re-number the ducks with higher numbers, as appropriate for the ability of the children.

If the ducks are numbered 3, 4, 5, 6 you can ask:

To win the game you must catch ducks with a total of 9. How can you do this? (3 and 6 or 5 and 4)

What is the largest total you can make? (11)

What is the smallest total you can make? (7)

Solutions:

You can score 5 by catching 1 and 4, or 2 and 3.

You can score 6 by catching 2 and 4, or 1, 2 and 3.

You can score 7 by catching 3 and 4, or 1, 2 and 4.