

# Catch a Crook

## Australian Curriculum Links

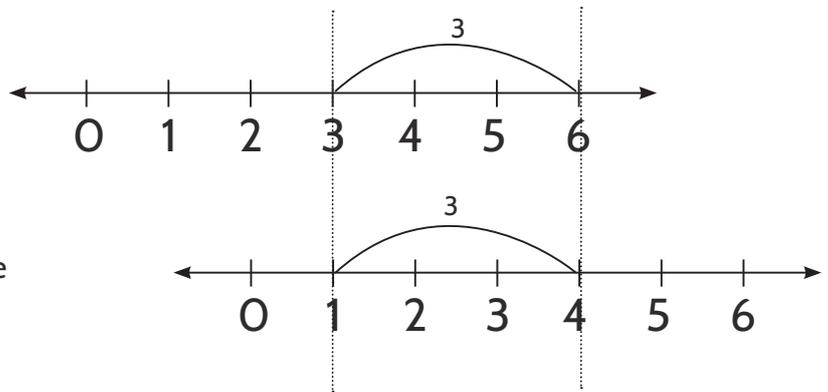
Yr 2: (ACMNA030) Solve simple addition problems using a range of efficient mental strategies.

Yr 3: (ACMNA055) Recall addition facts for single-digit numbers.

## Teachers Notes

Encourage children to perform the calculation and state the answer for the Police Commissioner to check before making a move. When playing 'Catch a Crook', avoid asking the students to subtract the smaller number from the larger as this can cause issues later. For example, a student who develops the habit of taking the smaller from the larger may start applying this idea to calculations such as  $374 - 68$  and choose to subtract the 4 from the 8. This is a very common issue in later years. The reality is that larger numbers may be subtracted from smaller ones;  $4 - 8$  is  $-4$ . When playing this game, refer to the idea of the difference between two numbers. This game focuses on the idea of 'difference'. Some students may be able to subtract but when asked to calculate the difference between two numbers, falter. It is likely that the word 'difference' will be cause of the problem.

The difference between two numbers may be illustrated on a number line. Placing two number lines underneath each other, as shown below, explains why two different subtraction calculations may have the same difference (answer).



Children may begin to notice that certain fact types will always have the same

difference. For example, the 'doubles facts' (addition) will always have a difference of zero, eg  $6 - 6 = 0$ ,  $5 - 5 = 0$ , ... The 'near doubles addition facts' will always have a difference of 1, eg  $6 - 5 = 1$ ,  $5 - 4 = 1$ , ...

When learning addition facts, students should be encouraged to link them to the associated subtraction facts to form a family of facts. For example, if a student has learned  $4 + 3 = 7$ , then this fact should be linked in the first instance to:  $3 + 4 = 7$ . Links may then be drawn to:  $4 + ? = 7$ ,  $3 + ? = 7$ ,  $7 - 4 = 3$  and  $7 - 3 = 4$ .

## Keeping Track of Clues that are Collected

A counter may be collected for each clue or alternatively, copy and cut out the tokens so that players may keep track of the clues that they have collected (see next page).

### Monitoring the Play

One player may be allocated the role of 'Police Commissioner', much in the same way that a player may take on the role of banker in other games. The Police Commissioner is given the 'Subtraction Laws' – a grid showing all of the subtraction facts used when playing the different versions of the game.

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## SUBTRACTION LAWS

-	0	1	2	3	4	5	6	7	8	9
0	0	1	2	3	4	5	6	7	8	9
1	1	0	1	2	3	4	5	6	7	8
2	2	1	0	1	2	3	4	5	6	7
3	3	2	1	0	1	2	3	4	5	6
4	4	3	2	1	0	1	2	3	4	5
5	5	4	3	2	1	0	1	2	3	4
6	6	5	4	3	2	1	0	1	2	3
7	7	6	5	4	3	2	1	0	1	2
8	8	7	6	5	4	3	2	1	0	1
9	9	8	7	6	5	4	3	2	1	0