*Problem of the Week #1*

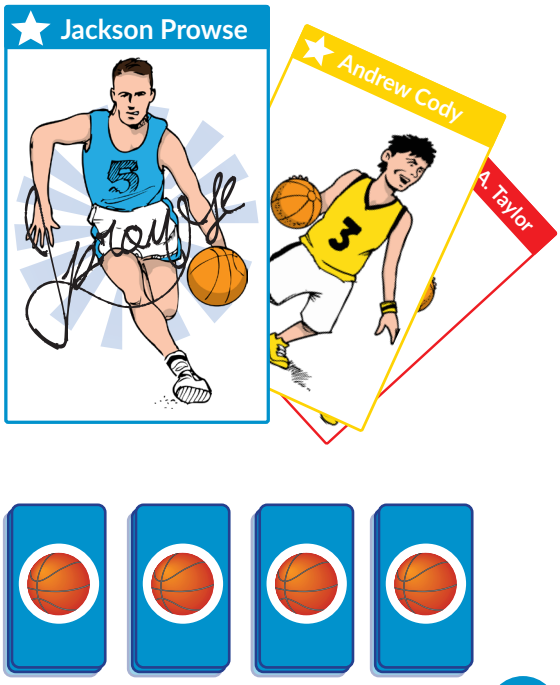
# Counting Cards

1

I have less than 100 basketball cards.

- When I divide the total number of cards by **4**, then **3** cards are left over.
- When I divide the total number of cards by **3**, **no cards** are left over.
- When i divide the total number of cards by **2**, only **1** card is left over.
- If I divide the total number of cards by **7**, **no cards** are left over.

How many basketball cards do I have?






*Problem of the Week #2*

# Party Cleanup

2

After a party there were some glasses to wash. There are fewer than 150 glasses in total.

- When lined up in **pairs**, there was **one** left over.
- When lined up in **threes**, there were **two** left over.
- When lined up in **fours**, there were **three** left over.
- When lined up in **fives**, there were **four** left over.
- When lined up in **sixes**, there were **five** left over.
- When they were arranged in **sevens** there were **none** left over.

How many glasses were there?

# *Teachers Notes:*

Problem 1:

This problem and problem 2 are similar. Students may follow a similar plan when solving both problems.

The number is a multiple of seven that is less than 100.

7, 14, **21**, 28, 35, **42**, 49, 56, **63**, 70, 77, **84**, 91, 98

The number is divisible by three, so that narrows the search to 21, 42, 63 and 84.

The clue about dividing by two and 1 card being left over tells us that the answer is odd.

This leaves 21 or 63 as options.

The answer is 63, as it meets the criteria of leaving a remainder of 3, when divided by 4.

Problem 2:

Fewer than 150 glasses (straightforward clue) - opportunity to explain 'fewer' vs. 'less than' and how that colloquially they will often be used to refer to the same thing, and to expect and understand both.

Clue that the answer is odd: 'pairs one left over'

Read through all of the clues. The last clue tells us that the answer is a multiple of seven.

Potential strategy:

List multiples of 7 that are odd numbers up to 150.

7, 21, 35, 49, 63, 77, 91, 105, 119, 133, 147

Check these numbers against further clues

## Australian Curriculum Links

Depending on the approach adopted by the students, they may use parts of the following content descriptor/s

Year 5 ACMNA101

Solve problems involving division by a one digit number, including those that result in a remainder.