

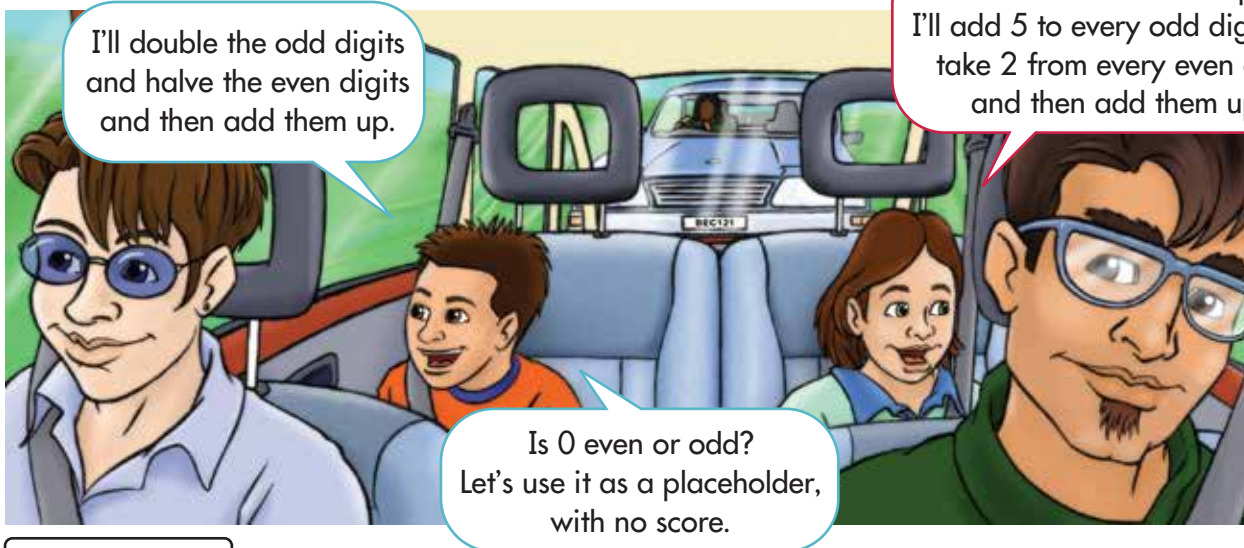
# Pick a Plate

You need  a photocopy of the table copymaster

a classmate

## Activity One

Caleb and Jessica live in Dunedin. They are driving to Christchurch with their mum and dad to visit their nana. It's a long drive, so they decide to play a number plate game to help make the journey more fun.



**RR4578** is the first number plate they see.

First I double the odd digits:  
 $5 + 5$  or  $2 \times 5 = 10$   
 $7 + 7$  or  $2 \times 7 = 14$ .

Then I halve the even digits:  
 $\frac{1}{2}$  of  $4 = 2$   
 $\frac{1}{2}$  of  $8 = 4$ .

That gives me  
 $10 + 14 + 2 + 4 = 30$ .  
 I wonder what Jessica got.



- ① Will Caleb and Jessica always get the same score for each number plate they see? Explain your answer to a classmate.
- ② Here are their next 9 number plates.

**ZQ4731**

**SZ8827**

**TG9915**

**WY4328**

**YQ8888**

**PJ2564**

**RB3695**

**UG7006**

**XK2468**

Work out their scores with a classmate. One of you could be Caleb, and the other could be Jessica.

Remember to keep track of your scores for each number plate. A table might help ...



Number plate	Caleb		Jessica	
	Score	Score difference	Score	Score difference
<b>RR4578</b>	30		30	
<b>ZQ4731</b>	24		28	+4
<b>SZ8827</b>				
<b>TG9915</b>				
<b>WY4328</b>				
<b>YQ8888</b>				
<b>PJ2564</b>				
<b>RB3695</b>				
<b>UG7006</b>				
<b>XK2468</b>				
<b>TOTAL</b>				

- a. Caleb and Jessica add up their scores for all 10 number plates. Who has the highest total?
- b. Without using a calculator, find another way to work out the score for each number plate and the totals. Discuss this with your classmate.

- 3.
- What do you notice about the digits on the number plates that Caleb scores higher on?
  - What do you notice about the digits on the number plates that Jessica scores higher on?
  - Why does this happen?
  - What numbers do they score the same on?



### Activity Two

- Record 10 number plates of cars in your school car park. (Ask permission from your teacher first.) Make up your own rules for a new number plate game and play the game with a classmate, using your 10 number plates.
- Do your rules give both of you a good chance of winning? Check your rules with your classmate. If your rules are not fair, work together to find some that are.