

# The multiples of ten

Multiply one-digit whole numbers by multiples of 10.

## Mathematical understanding and skills

- Multiply one-digit whole numbers by multiples of 10 in the range of 10–90 using strategies based on place value and properties of operations.
- Fluently multiply within 100, using strategies such as the relationship between multiplication and division or properties of operations.

## Prerequisite skills

Students should have strategies for multiplying all facts within 100, but may not yet have automaticity for all facts.

## Maths vocabulary

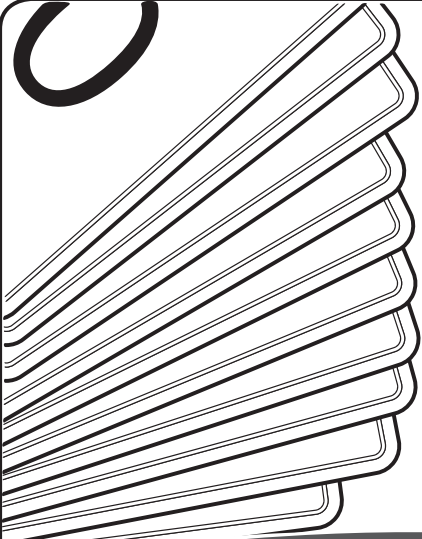
*multiple*





## Materials

For each pair of students:

- Deck of number cards 0–9 (page 104)
- 'The multiples of ten' game board (page 99)
- Index card
- Coloured markers

Warm-up	'Multiples of ten' game
✓	✓
	✓
✓	✓
	✓



80	120	160	200	240	
100	150	200		300	350
120	180	240	300	360	
140		280	350	420	

# The multiples of ten



## Warm-up: Zero in on multiples of ten

**Number of players:** 2

**Materials:**

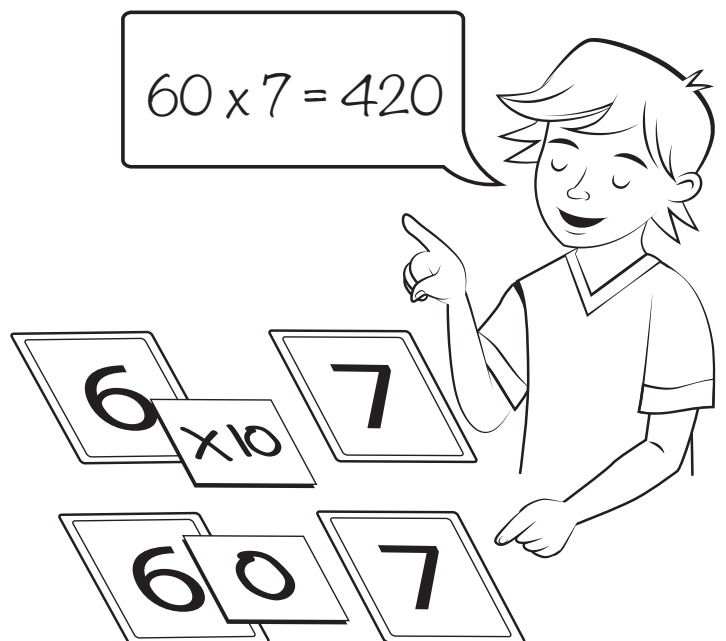
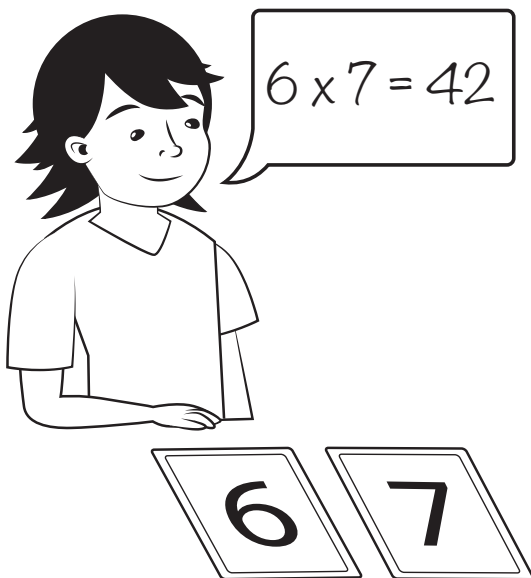
For each pair of students:

- Deck of number cards 0–9 (page 104) – remove the zero
- Index card (write 'x 10' on one side of the card and '0' on the reverse)

**Object:** Take turns doing a multiplication fact or its multiple of 10.

**Directions:**

1. Player 1 draws two number cards—for example, 6 and 7, and says, ' $6 \times 7 = 42$ '.
2. Player 2: Places the 'x 10' index card next to one of the cards (for example, 6). The player then flips the card to make 60 (because  $6 \times 10 = 60$ ) and says, ' $60 \times 7 = 420$ '.
3. Alternate which player starts.



# The multiples of ten

## Explaining the game

**Number of players:** 2

**Materials:**

For each pair of students:

- 'The multiples of ten' game board (page 99)
- Deck of number cards 2-9 (page 104)
- 'x 10' index card (from the warm-up exercise)
- Coloured markers

**Object:** Multiply a one-digit number by a multiple of 10 to capture three sets of three adjacent numbers in a row (horizontal, vertical or diagonal).

40	60	80	100	120	140	160	180	200
60	90	120	150	180	210	240	270	300
80	120	160	200	240	280	320	360	400
100	150	200	250	300	350	400	450	500
120	180	240	300	360	420	480	540	600
140	210	280	350	420	490	560	630	700
160	240	320	400	480	560	640	720	800
180	270	360	450	540	630	720	810	900
200	300	400	500	600	700	800	900	1000

**How to play:**

1. Deal five cards to each player. Taking turns, players:
  - Choose two cards and use the 'x 10' card to create a multiplication expression. Say the expression (for example, '4 x 80') and solve it.
  - Mark (capture) the product on the game board.
  - Discard the two number cards and draw two new cards.
2. The first player to capture three sets of three numbers in a row wins.

*The player marking with rectangles wins. Notice that a player may use a number as part of more than one set of three captured products.*

# The multiples of ten

## Differentiation

### More support

- Play cooperatively. Work together to get three sets of five in a row.

### Challenge

- Play the game with number cards 2–10.

## Deepening the understanding

### Ask the class

What is a quick way to multiply:

$$3 \times 60 = ?$$

$$4 \times 30 = ?$$

$$60 \times 7 = ?$$

What 'rule' or strategy works best for you?

### Mathematical capabilities

Reason abstractly and quantitatively.

Andrew says this is a true statement:  $80 \times 3 = 30 \times 8$

Do you agree or disagree? Why?

Reason abstractly and quantitatively.

Construct viable arguments and critique the reasoning of others.