

Multiplication TO x TO using factors

Multiply numbers mentally drawing upon known facts
Multiply TO x TO using factors



1 Halve each number and then halve again.

- | | | | | | |
|---|-----|---|-----|---|-----|
| a | 280 | b | 560 | c | 260 |
| d | 360 | e | 180 | f | 380 |
| g | 240 | h | 340 | i | 720 |
| j | 320 | k | 620 | l | 940 |
| m | 640 | n | 740 | o | 580 |

Example
480 → 240 → 120

2 Double each number and then double again.

- | | | | | | |
|---|----|---|----|---|----|
| a | 45 | b | 52 | c | 38 |
| d | 37 | e | 78 | f | 65 |
| g | 23 | h | 35 | i | 79 |
| j | 49 | k | 90 | l | 97 |
| m | 75 | n | 87 | o | 29 |

Example
25 → 50 → 100

3 Follow the instructions on the cards to find the final number.

a	Start	$\times 2$	$\times 4$	$\times 2$	$\div 2$	$\times 2$	$\times 2$	$\div 4$	Final
	30								?
b	Start	$\div 2$	$\div 2$	$\times 4$	$\times 2$	$\times 2$	$\div 2$	$\div 4$	Final
	180								?

Challenge 2

1 Use the double and half strategy to find the answers to these calculations. Find the easiest way to work out the answer.

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|---|---------|---|---------|---|---------|---|---------|
| a | 14 × 64 | b | 23 × 36 | c | 14 × 88 | d | 15 × 48 |
| e | 21 × 24 | f | 25 × 32 | g | 36 × 13 | h | 24 × 17 |

Example
14 × 24
28 × 12
56 × 6 = 336

2 Find all the different ways to work out the answers to these calculations by breaking the numbers into their factors. Use the easiest way to work out the answer.

- | | | | | | | | |
|---|---------|---|---------|---|---------|---|---------|
| a | 46 × 15 | b | 32 × 18 | c | 35 × 42 | d | 28 × 14 |
| e | 25 × 36 | f | 42 × 16 | g | 24 × 14 | h | 33 × 22 |

Example
14 × 24
= 14 × 6 × 4
= 14 × 4 × 6
= 24 × 7 × 2
= 4 × 6 × 7 × 2

Challenge 3

For some of these calculations using factors is not the best strategy. Find these calculations, and explain why this is the case for each one.

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|---------|---------|---------|---------|
| 26 × 15 | 37 × 17 | 23 × 29 | 13 × 43 |
| 72 × 46 | 27 × 41 | | |

