

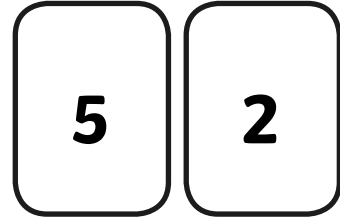


Doubling and Halving

I can use halving and doubling as a strategy for mental multiplication and division.

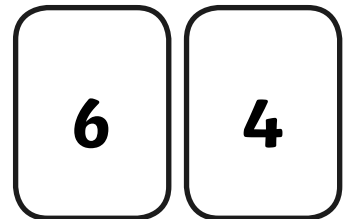
1. Double it

- You will need a set of digit cards 0-9.
- Turn over two cards to make a two-digit number.
- Double it.
- Write out the calculation in full like the one below:
 $52 \times 2 =$
 $(50 \times 2) + (2 \times 2) =$
 $100 + 4 = 104$
- Repeat this activity ten times.



2. Halve it

- You will need a set of digit cards 0-9.
- Turn over two cards to make a two-digit number. The ones digit must be even, so keep turning cards over until your two-digit number ends with 0, 2, 4, 6 or 8.
- Halve it.
- Write out the calculation in full like the one below:
 $64 \div 2 =$
 $(60 \div 2) + (4 \div 2) =$
 $30 + 2 = 32$
- Repeat the activity ten times.



3. Sequences

Fill in the missing number boxes to complete the sequences.

- a) 128, 64, , 16, . Did you halve or double? _____
- b) 160, 80, , 20, , 5. Did you halve or double? _____
- c) 2, 4, , 16, , 64, 128. Did you halve or double? _____
- d) 3, 6, , 24, , 96. Did you halve or double? _____



Doubling and Halving **Answers**

1. Double it

Multiple answers possible.

2. Halve it.

Multiple answers possible.

3. Sequences

Fill in the missing number boxes to complete the sequences.

a) 128, 64, , 16, . Did you halve or double? **Halve**

b) 160, 80, , 20, , 5. Did you halve or double? **Halve**

c) 2, 4, , 16, , 64, 128. Did you halve or double? **Double**

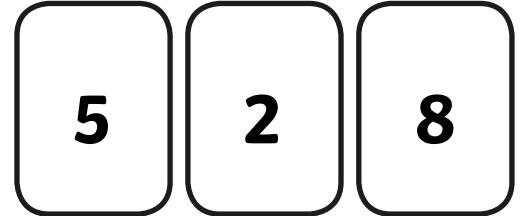
d) 3, 6, , 24, , 96. Did you halve or double? **Double**

Doubling and Halving

I can use halving and doubling as a strategy for mental multiplication and division.

1. Double it

- You will need a set of digit cards 0-9.
- Turn over three cards to make a three-digit number.
- Double it.
- Write out the full number sentence e.g.



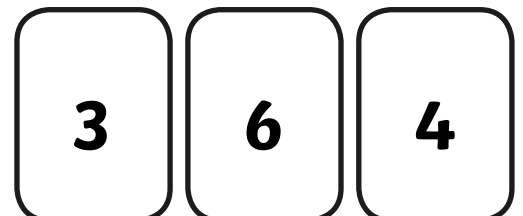
$$\begin{array}{l} 528 \times 2 = \\ \swarrow \quad \searrow \quad \searrow \\ (500 \times 2) + (20 \times 2) + (8 \times 2) = \\ \downarrow \quad \swarrow \quad \searrow \\ 1000 + 40 + 16 = 1056 \end{array}$$

- Repeat this activity ten times.

2. Halve it

- You will need a set of digit cards 0-9.
- Turn over three cards to make a three-digit number. The ones digits must be even, so keep turning cards over until you get a 0, 2, 4, 6 or 8.
- Double it.
- Write out the full number sentence e.g.

$$\begin{array}{l} 364 \div 2 = \\ \swarrow \quad \searrow \quad \searrow \\ (300 \div 2) + (60 \div 2) + (4 \div 2) = \\ \downarrow \quad \swarrow \quad \searrow \\ 150 + 30 + 2 = 182 \end{array}$$



- Repeat this activity ten times.



Doubling and Halving

3. Sequences

Fill in the missing number boxes to complete the sequences.

a) 256, , 64, , 16, . Did you halve or double? _____

b) 320, , 80, , 20, , 5. Did you halve or double? _____

c) 2, 4, , 16, , 64, 128 . Did you halve or double? _____

d) 3, 6, , 24, , 96 . Did you halve or double? _____



Doubling and Halving **Answers**

1. Double it

Multiple answers possible.

2. Halve it.

Multiple answers possible.

3. Sequences

Fill in the missing number boxes to complete the sequences.

a) 256, , 64, , 16, . Did you halve or double? **Halve**

b) 320, , 80, , 20, , 5. Did you halve or double? **Halve**

c) 2, 4, , 16, , 64, 128 . Did you halve or double? **Double**

d) 3, 6, , 24, , 96, . Did you halve or double? **Double**



Doubling and Halving

I can use halving and doubling as a strategy for mental multiplication and division.



1. Double it

- You will need a set of digit cards 0-9.
- Turn over one card.
- Start a doubling sequence. Keep going until the numbers get beyond four digits.
For example, if you turned over a **5**, the sequence would be:
5, 10, 20, 40, 80, 160, 320, 640, 1280, 2560, 5120
- Repeat this activity with five different start numbers.

2. Halve it

Halve these numbers, continuing the sequence until you get down to a one-digit number.

a) 1024

b) 3072

c) 1280

d) 2304

e) 7168



Doubling and Halving **Answers**

1. Double it

Multiple answers possible.

2. Halve it.

Halve these numbers, continuing the sequence until you get down to a one-digit number.

a) 1024, **512, 256, 128, 64, 32, 16, 8, 4, 2, 1**

b) 3072, **1536, 768, 384, 192, 96, 48, 24, 12, 6, 3**

c) 1280, **640, 320, 160, 80, 40, 20, 10, 5**

d) 2304, **1152, 576, 288, 144, 72, 36, 18, 9**

e) 7168, **3584, 1792, 896, 448, 224, 112, 56, 28, 14, 7**