

# Activity Pack · Big Thinking

Logic, codes and puzzles that need no maths

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The hardest pack we make, and the one worth persevering with. Nothing here needs arithmetic – it needs patience and the willingness to be stuck for a while.

## What is inside

- A logic grid puzzle
- Two coded messages to crack
- A 9×9 sudoku
- A large maze
- Spot the difference
- Answers for everything

**Ages** 8–13

### Printing

A4, black and white. Choose "Fit to page" if you are printing on US Letter. Draft quality is fine – the puzzles use thick lines on purpose.

# Logic Puzzle

What is in the lunchbox?

Three children each brought one fruit and one drink. Work out who brought what.

### Clues

- 1. The child with the banana also brought milk.
- 2. Dev did not bring milk and did not bring the pear.
- 3. Elsie brought water.
- 4. Femi did not bring the apple.

|       | Apple | Banana | Pear | Water | Juice | Milk |
|-------|-------|--------|------|-------|-------|------|
| Dev   |       |        |      |       |       |      |
| Elsie |       |        |      |       |       |      |
| Femi  |       |        |      |       |       |      |

# Code Breaker

Crack the secret messages

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## How to play

Every letter has a number: A=1, B=2, C=3, all the way to Z=26.

A slash / means a new word.

|      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| A=1  | B=2  | C=3  | D=4  | E=5  | F=6  | G=7  | H=8  | I=9  | J=10 | K=11 | L=12 | M=13 |
| N=14 | O=15 | P=16 | Q=17 | R=18 | S=19 | T=20 | U=21 | V=22 | W=23 | X=24 | Y=25 | Z=26 |

**Message 1**    What every scientist does first.

1 19 11 / 1 / 2 9 7 / 17 21 5 19 20 9 15 14

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**Message 2**    True, even when it does not feel true.

13 9 19 20 1 11 5 19 / 8 5 12 16 / 21 19 / 12 5 1 18 14

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# Sudoku

34 numbers given

## How to play

Each row, column and 3×3 box contains 1 to 9 with no repeats.

|   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|
| 7 | 4 | 5 | 8 |   |   |   |   |   |
| 6 |   |   | 5 | 4 |   |   | 3 |   |
|   |   | 1 |   | 7 |   | 9 |   |   |
| 2 | 7 |   | 4 | 1 |   |   |   |   |
|   | 5 | 4 |   |   |   | 7 | 1 |   |
|   |   |   |   | 3 | 8 |   | 2 | 5 |
|   |   | 2 |   | 8 |   | 6 |   |   |
|   | 6 |   |   | 5 | 4 |   |   | 2 |
|   |   |   |   |   | 6 | 5 | 7 | 9 |

# Maze

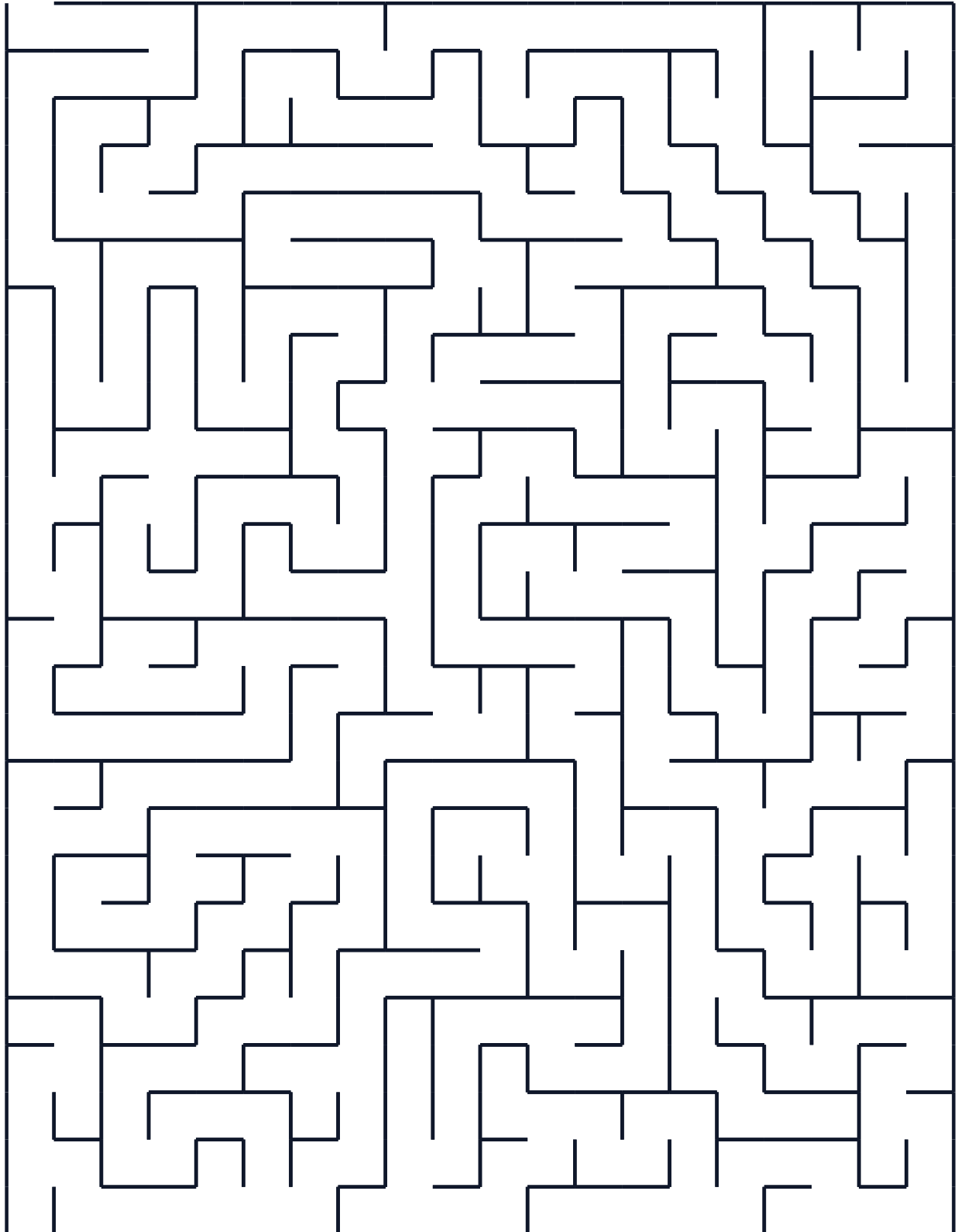
The long way round

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## How to play

Start at the arrow in the top-left corner and find your way to END.

START



END

# Spot the Difference

Five things are not the same

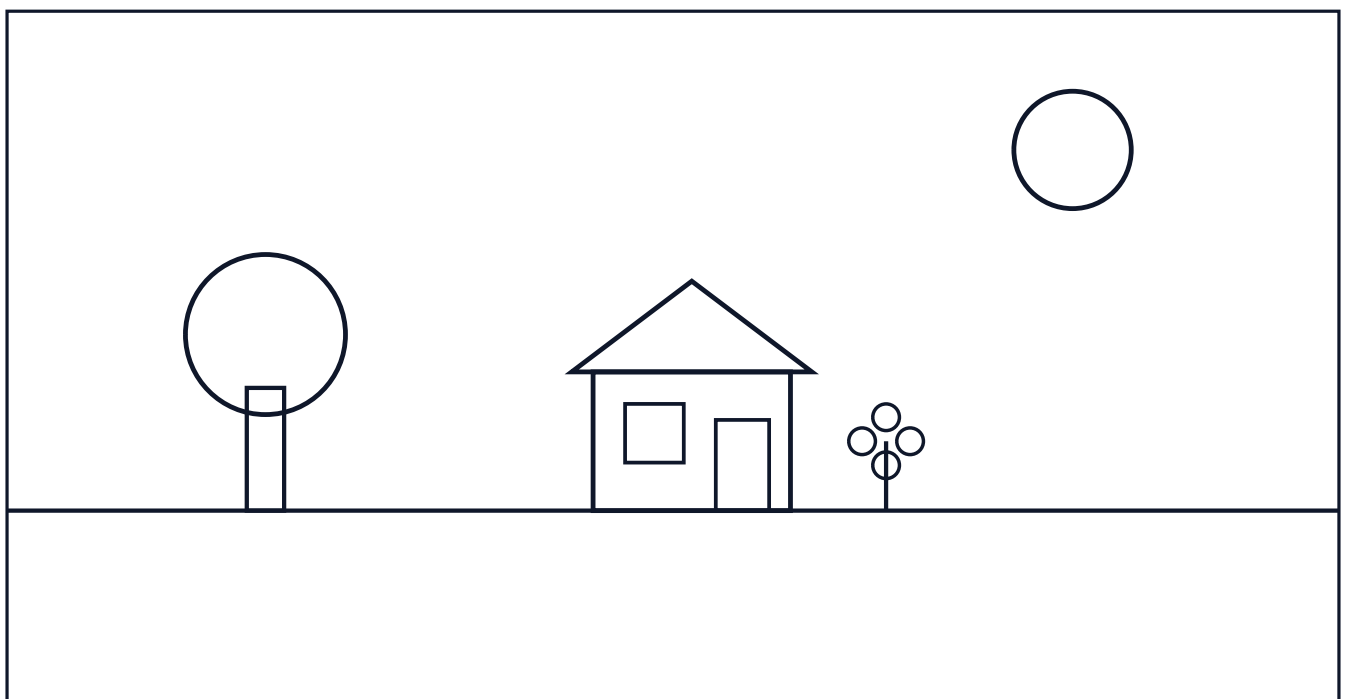
## How to play

Look carefully at both pictures. Circle the five differences in the bottom one.

### Picture A



### Picture B



# Logic Puzzle

What is in the lunchbox?

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Three children each brought one fruit and one drink. Work out who brought what.

## Clues

1. The child with the banana also brought milk.
2. Dev did not bring milk and did not bring the pear.
3. Elsie brought water.
4. Femi did not bring the apple.

|       | Apple                                                                             | Banana                                                                             | Pear                                                                              | Water                                                                             | Juice                                                                              | Milk                                                                                 |
|-------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Dev   |  |                                                                                    |                                                                                   |                                                                                   |  |                                                                                      |
| Elsie |                                                                                   |                                                                                    |  |  |                                                                                    |                                                                                      |
| Femi  |                                                                                   |  |                                                                                   |                                                                                   |                                                                                    |  |

## Answer

Dev: Apple, Juice  
Elsie: Pear, Water  
Femi: Banana, Milk

# Code Breaker

Answers

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## How to play

Every letter has a number: A=1, B=2, C=3, all the way to Z=26.

A slash / means a new word.

|      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| A=1  | B=2  | C=3  | D=4  | E=5  | F=6  | G=7  | H=8  | I=9  | J=10 | K=11 | L=12 | M=13 |
| N=14 | O=15 | P=16 | Q=17 | R=18 | S=19 | T=20 | U=21 | V=22 | W=23 | X=24 | Y=25 | Z=26 |

**Message 1**     What every scientist does first.

1 19 11 / 1 / 2 9 7 / 17 21 5 19 20 9 15 14

## ASK A BIG QUESTION

**Message 2**     True, even when it does not feel true.

13 9 19 20 1 11 5 19 / 8 5 12 16 / 21 19 / 12 5 1 18 14

## MISTAKES HELP US LEARN

# Sudoku

Answer

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|   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|
| 7 | 4 | 5 | 8 | 9 | 3 | 2 | 6 | 1 |
| 6 | 2 | 9 | 5 | 4 | 1 | 8 | 3 | 7 |
| 8 | 3 | 1 | 6 | 7 | 2 | 9 | 5 | 4 |
| 2 | 7 | 8 | 4 | 1 | 5 | 3 | 9 | 6 |
| 3 | 5 | 4 | 2 | 6 | 9 | 7 | 1 | 8 |
| 1 | 9 | 6 | 7 | 3 | 8 | 4 | 2 | 5 |
| 5 | 1 | 2 | 9 | 8 | 7 | 6 | 4 | 3 |
| 9 | 6 | 7 | 3 | 5 | 4 | 1 | 8 | 2 |
| 4 | 8 | 3 | 1 | 2 | 6 | 5 | 7 | 9 |

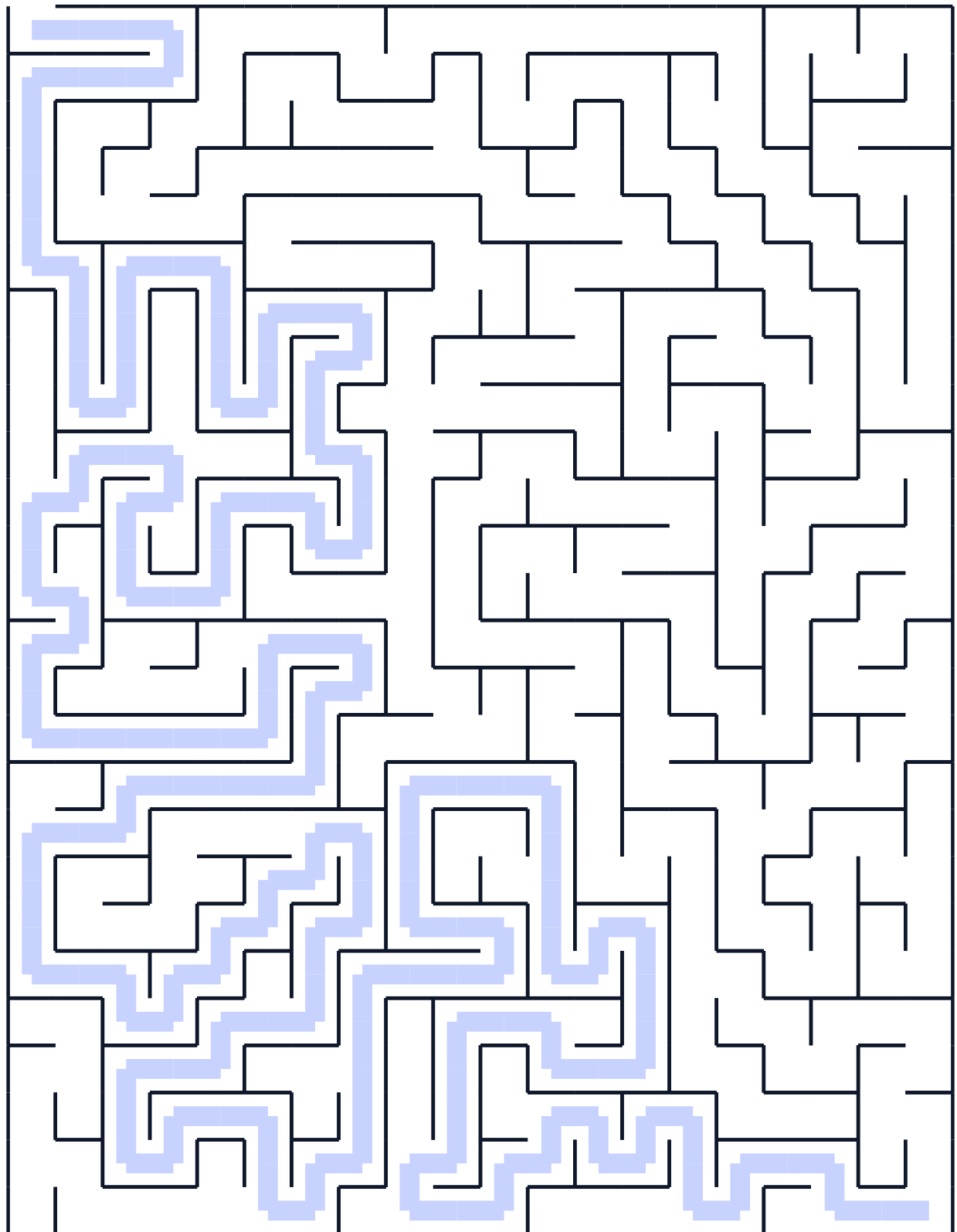
# Maze

Solution

## How to play

Start at the arrow in the top-left corner and find your way to END.

START



END

# Spot the Difference

Five things are not the same

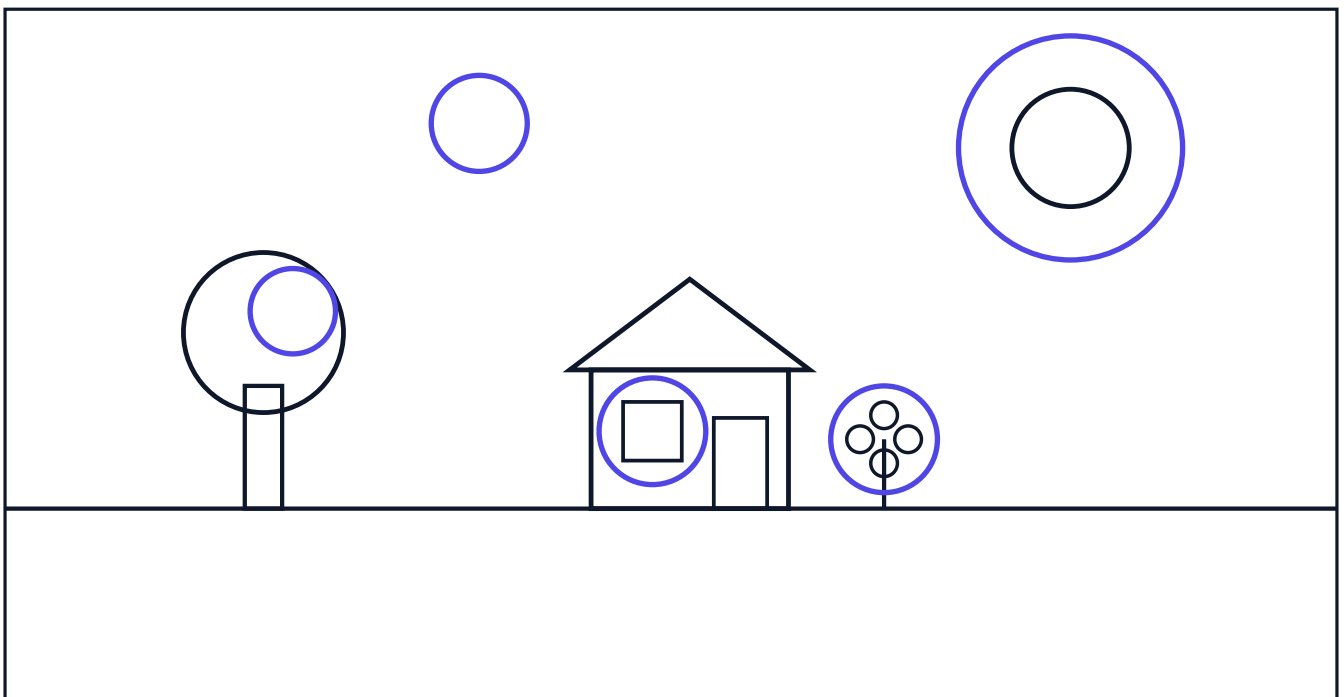
## How to play

Look carefully at both pictures. Circle the five differences in the bottom one.

### Picture A



### Picture B



The sun has lost its rays · the apple is gone · the window has no bars · the bird has flown · the flower has four petals, not six