

Logical Line Ups

Logical Line Ups

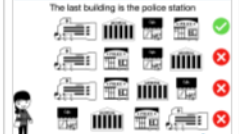
Where do the blocks go?

B G Y B G Y B G Y

Blue is the last colour in the line up
We can deduce where green goes

Logical Line Ups

The last building is the police station



Logical Line Ups

Where do the blocks go?

Green is at the top

Yellow is not at the bottom

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There are three parts to this guide.

A quick introduction to logical line ups

A demonstration of the elimination strategy - and also deductive reasoning

1

Logical Line Ups

Where do the blocks go?

B G Y

B G Y

B G Y

Blue is my favourite colour

Yellow is in the middle

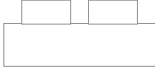
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Both sentences are true - but which sentence helps us solve the puzzle?


2

Logical Line Ups

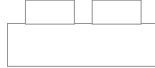
Where do the blocks go?




B G Y




B G Y




B G Y



Blue is my favourite colour



Yellow is in the middle


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That's right! It's great to like blue, but that doesn't help us know where to put it.


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Logical Line Ups


Where do the blocks go?




B G Y




B G Y




B G Y



Blue is my favourite colour



Yellow is in the middle


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We don't just know that yellow is in the middle.
 We know yellow is not at either end.
 Can you see how Y has been marked red at the ends?


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Logical Line Ups


Where do the blocks go?




B G Y




B G Y




B G Y



Is this clue helpful...



Blue is next to yellow

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Not helpful at all - we can deduce blue is next to yellow if yellow is in the middle.

This doesn't help us know which side.


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Logical Line Ups


Where do the blocks go?




B G Y




B G Y




B G Y



What do we need to know to solve this line up?



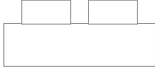
☐ Where blue goes
☐ Where green goes

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Logical Line Ups

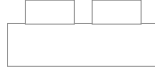
Where do the blocks go?





B G Y



B G Y



B G Y

Why do we only need to know where blue goes?

☒ Where blue goes or green

☐ Where green goes


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If we know where blue goes - we can reason where green must be.
 The same goes for green - if we know where it goes we can solve for blue.


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Where do the blocks go?





B G Y



B G Y



B G Y


Blue is the last colour in the line up

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Logical Line Ups


Where do the blocks go?



B G Y



B G Y



B G Y

Blue is the last colour in the line up

We can **deduce** where green goes


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The steps we used for this simple puzzle are the same steps we can use for more complex puzzles.


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Logical Line Ups


Where do the buildings go?



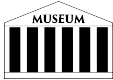
HOSPITAL




Cafe



POLICE



MUSEUM



?
?
?
?

➔

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We are now going to solve where the buildings go.
This lady is walking to the right and will pass these four buildings.

Logical Line Ups

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We need to deduce - using the clues that are coming - which set of buildings is the one she will pass.

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The first building I pass is the hospital

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Read this first clue. Which set of buildings can we eliminate? Which one doesn't fit with this rule?

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Logical Line Ups

The first building I pass is the hospital

Row 1: Hospital, Museum, Cafe, Police —
 Row 2: Hospital, Police, Cafe, Museum —
 Row 3: Hospital, Police, Museum, Cafe —
 Row 4: Cafe, Museum, Police, Hospital ✗

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That's right! The cafe can't be first.

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Logical Line Ups

The cafe is between the museum & the police station

Row 1: Hospital, Museum, Cafe, Police —
 Row 2: Hospital, Police, Cafe, Museum —
 Row 3: Hospital, Police, Museum, Cafe —
 Row 4: Cafe, Museum, Police, Hospital ✗

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Another clue. Which set of buildings can we eliminate now?

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Logical Line Ups

The cafe is between the museum & the police station

| Line-up | Circle |
|--|--------|
| Hospital, Museum, Cafe, Police Station | — |
| Hospital, Police Station, Cafe, Museum | — |
| Hospital, Police Station, Museum, Cafe | + |
| Cafe, Museum, Police Station, Hospital | + |

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That's right - the cafe must be between two buildings - not on an end.

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Logical Line Ups

The last building is the police station

| Line-up | Circle |
|--|--------|
| Hospital, Museum, Cafe, Police Station | — |
| Hospital, Police Station, Cafe, Museum | — |
| Hospital, Police Station, Museum, Cafe | + |
| Cafe, Museum, Police Station, Hospital | + |

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With this clue we can solve it - which one can be eliminated?

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Logical Line Ups

The last building is the police station

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That's correct! The Museum can't be at the end.

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Logical Line Ups

The last building is the police station


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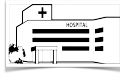

This is the correct order - and we found it using the elimination strategy.


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Logical Line Ups

The first building I pass is the hospital






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



We can also solve these puzzles moving pieces about - they might be counters, blocks or picture cards. Here is what that looks like.

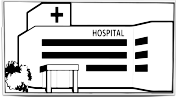
19


Logical Line Ups

The first building I pass is the hospital










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This first clue lets us put the hospital in place. We know nothing yet for the other buildings.

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
Logical Line Ups


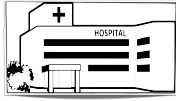
The cafe is between the museum and the police station







?

?









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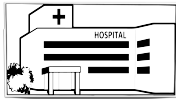
There are two ways that the cafe could be in the middle. We don't know enough to know which one is correct yet.


Logical Line Ups


The last building is the police station

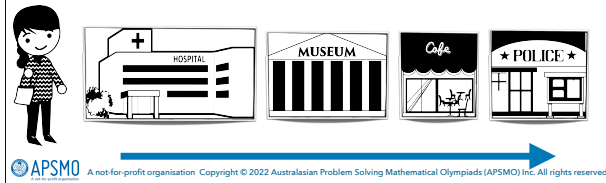





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Now we do! Let's eliminated the option that had the museum at the end.

Logical Line Ups



And now the puzzle is solved! Using counters, blocks or picture cards is a great way to order and reorder pieces until the puzzle is solved.

Try another - or Task Cards

Logical Line Ups

Where do the blocks go?

B G Y B G Y B G Y

Blue is the last colour in the line up
We can **deduce** where green goes

Logical Line Ups


The last building is the police station

Logical Line Ups

Where do the blocks go?

Green is at the top

Yellow is not at the bottom







Y B G O

Y B G O

Y B G O

Y B G O

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Have a think about all the information these clues give us.
We know where green goes and where it doesn't go.


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Logical Line Ups

Where do the blocks go?

Green is at the top

Yellow is not at the bottom






Y B G O

Y B G O

Y B G O

Y B G O

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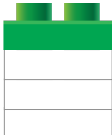
We also know that yellow does not go on the bottom, but it can't be at the top because green is there.

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Logical Line Ups

Where do the blocks go?

Orange is next to yellow



| | | | |
|---|---|---|---|
| Y | B | G | O |
| Y | B | G | O |
| Y | B | G | O |
| Y | B | G | O |

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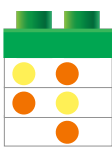
There are a few possibilities that could be true for this clue

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Logical Line Ups




Where do the blocks go?

Orange is next to yellow



| | | | |
|---|---|---|---|
| Y | B | G | O |
| Y | B | G | O |
| Y | B | G | O |
| Y | B | G | O |

several possibilities

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The yellow must be in one of the middle spaces - and this leaves several options for where the orange could be.


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Where do the blocks go?


Blue touches green
and yellow

(Do we need another
clue?)



| | | | |
|---|---|---|---|
| Y | B | G | O |
| Y | B | G | O |
| Y | B | G | O |
| Y | B | G | O |

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Logical Line Ups


Where do the blocks go?

Blue touches green
and yellow


(Do we need another
clue?)




| | | | |
|---|---|---|---|
| Y | B | G | O |
| Y | B | G | O |
| Y | B | G | O |
| Y | B | G | O |



No - we can deduce



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We don't need another clue. If blue touches green we know where it **must** go.
 And if blue also touches yellow we can determine where yellow **must** go.
 And all that is left is orange

Logical Line Ups

Where do the blocks go?

Solved!

