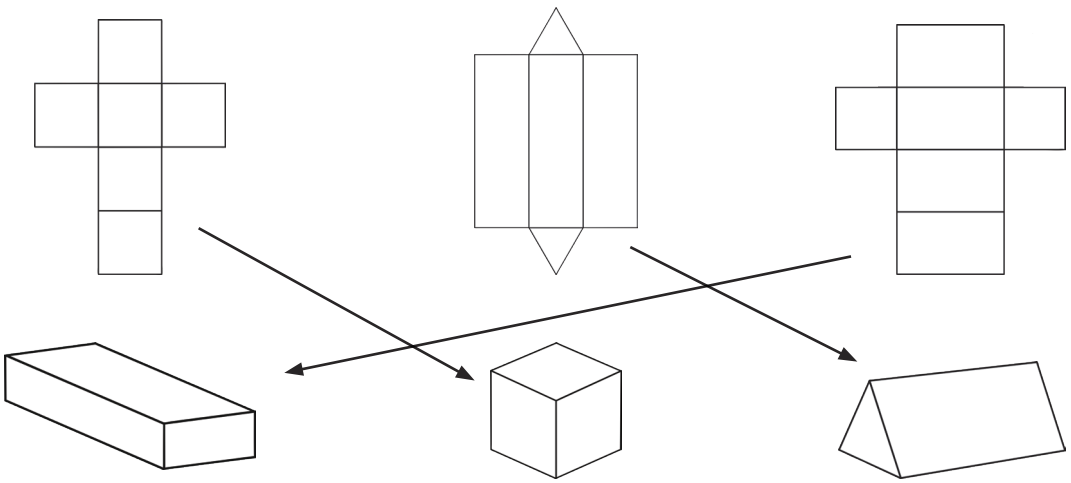
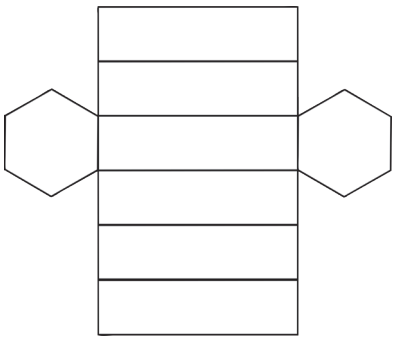
1)



2) *Accept any correct answer, for example:*

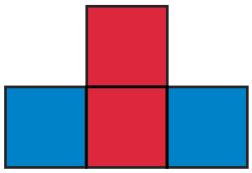


1) *Jonah is wrong. He has counted the faces that are visible. The cube model is made up of 8 multilink cubes.*

2) *Accept any correct answer, for example: It must be a cuboid because a cuboid has rectangular faces. It could be a triangular prism because the sides are rectangular faces. It can't be a square-based pyramid because you would see the apex.*

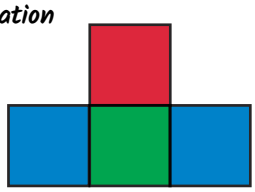
1) *Accept any correct answer, for example:*

Plan view

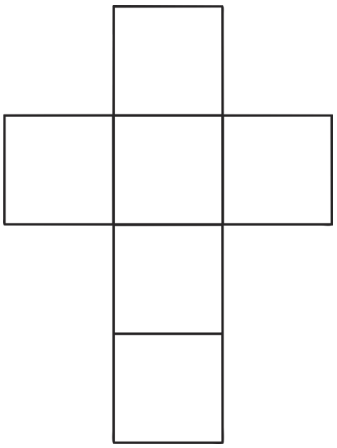


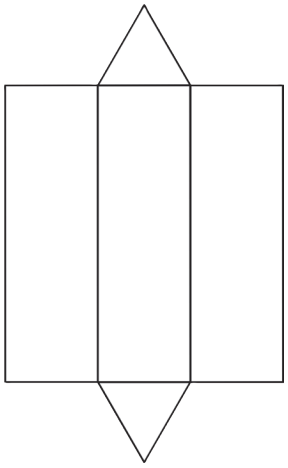
Below the 2 red cubes are the 2 green cubes.

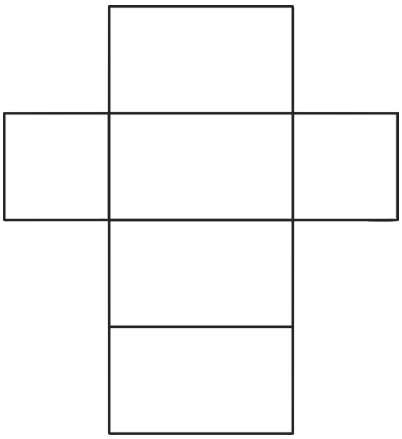
Front elevation

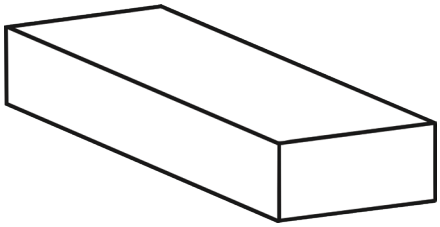


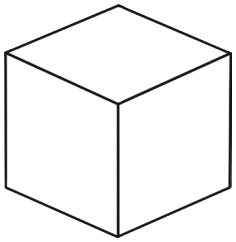
1) Match the net to the 3D shape.

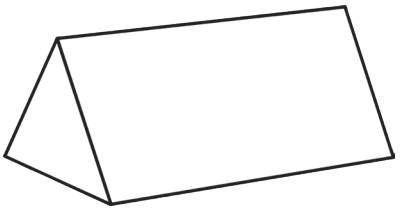




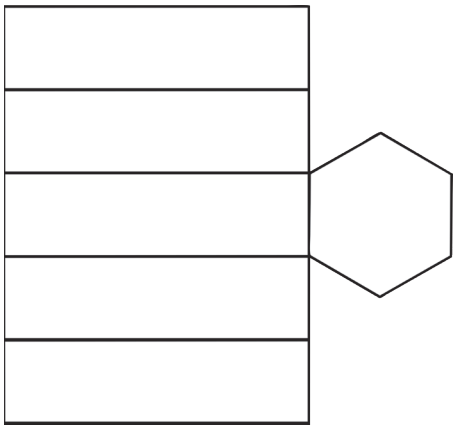




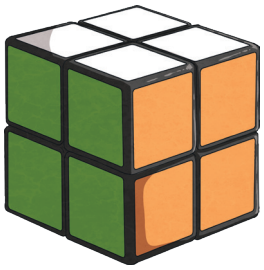


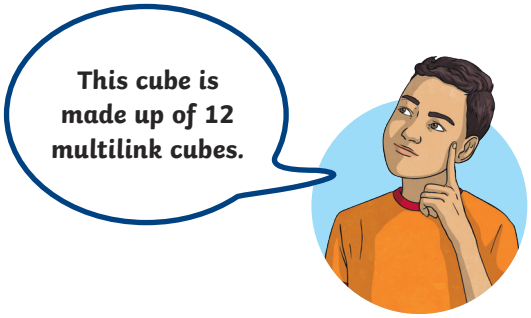


2) Two faces are missing from this net of a hexagonal prism. Draw where they should go.



1) Jonah is looking at a cube model.





Do you agree with Jonah? Explain your answer.

Here is the front view and plan view of a 3D shape.

Plan view

Front view

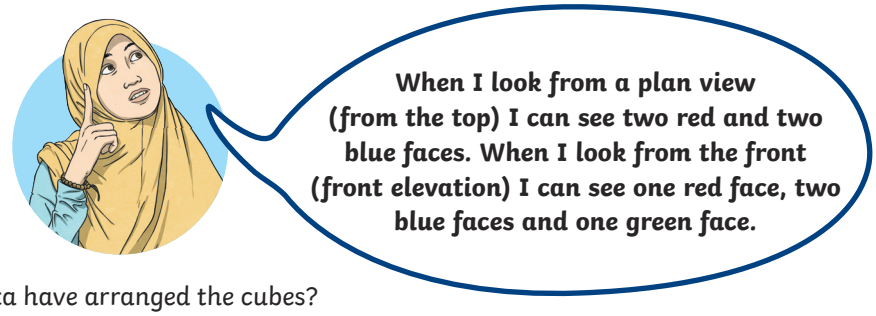
Complete the sentences and remember to explain your answers.

It must be _____

It could be _____

It can't be _____

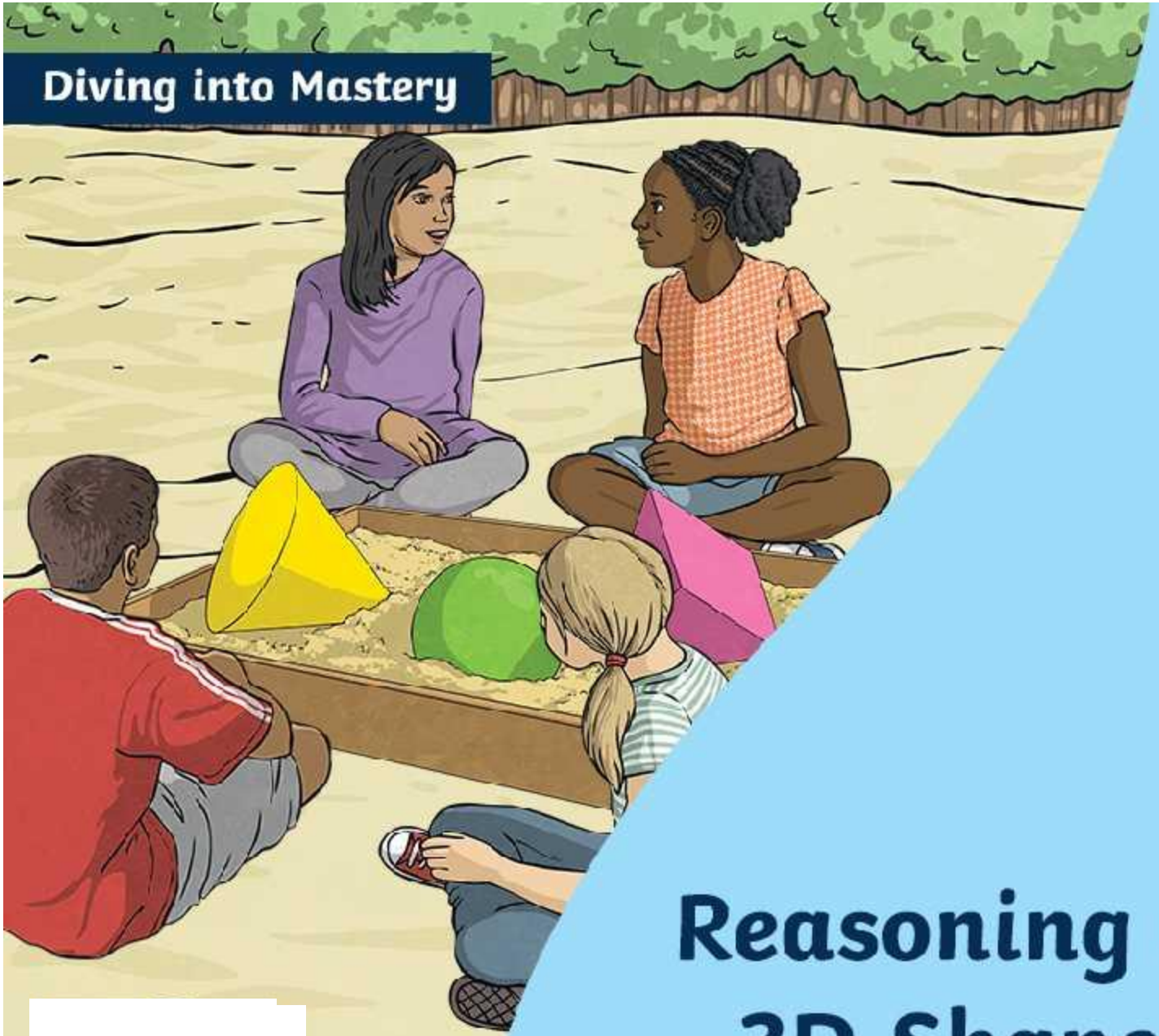
1) Sinitta has got six cubes: two red, two blue and two green.
She arranges them to make a model, then says,



How might Sinitta have arranged the cubes?
What might her model look like?

Is there more than one possible answer?

Diving into Mastery



Reasoning about 3D Shapes (2)

Diving into Mastery Guidance for Educators

Each activity sheet is split into three sections, diving, deeper and deepest, which are represented by the following icons:

Diving

Deeper

Deepest

These carefully designed activities take your children through a learning journey, initially ensuring they are fluent with the key concept being taught; then applying this to a range of reasoning and problem-solving activities.

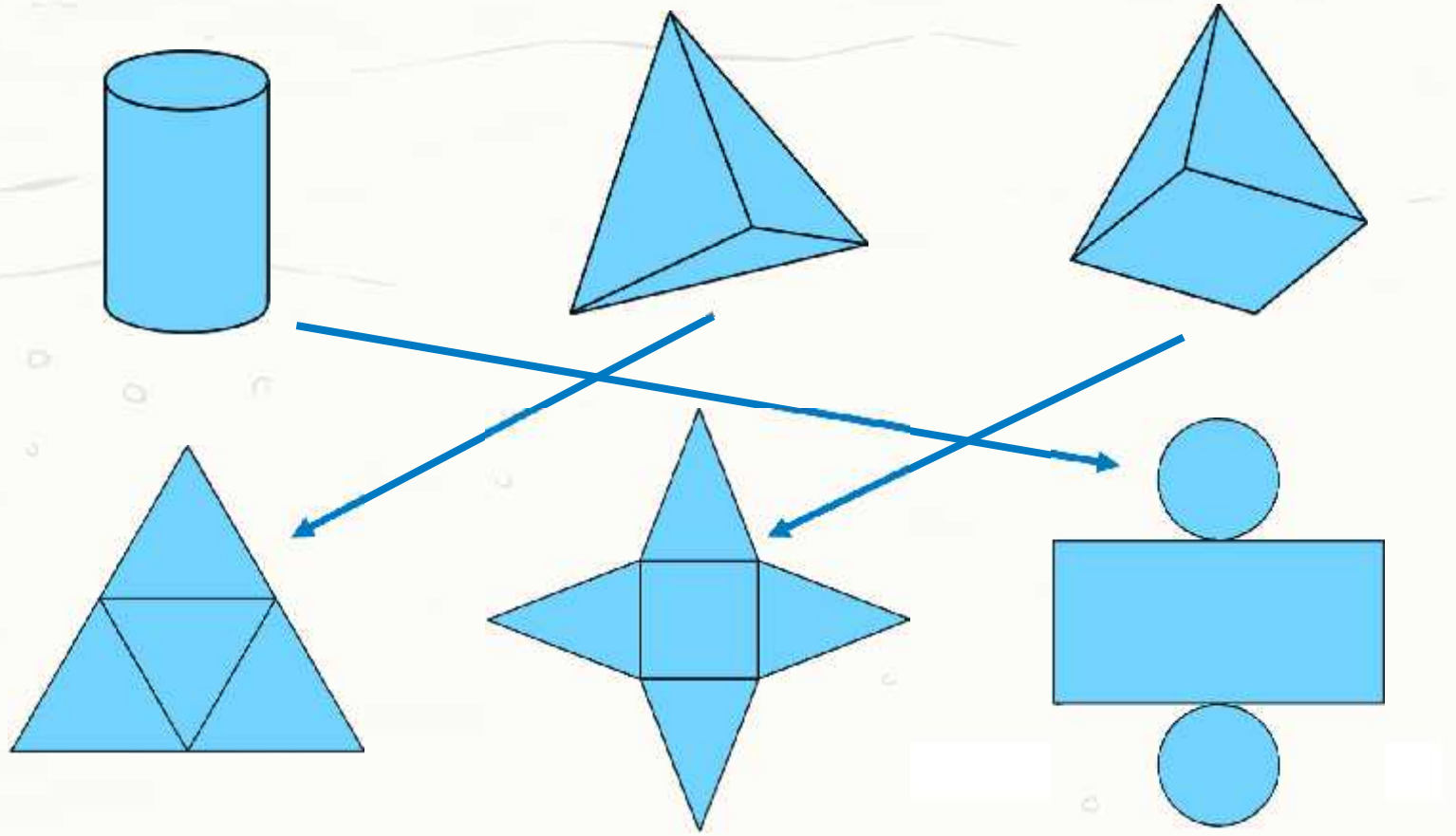
These sheets might not necessarily be used in a linear way. Some children might begin at the 'Deeper' section and in fact, others may 'dive straight in' to the 'Deepest' section if they have already mastered the skill and are applying this to show their depth of understanding.

Aim

- Identify 3D shapes, including cubes and cuboids, from 2D representations.

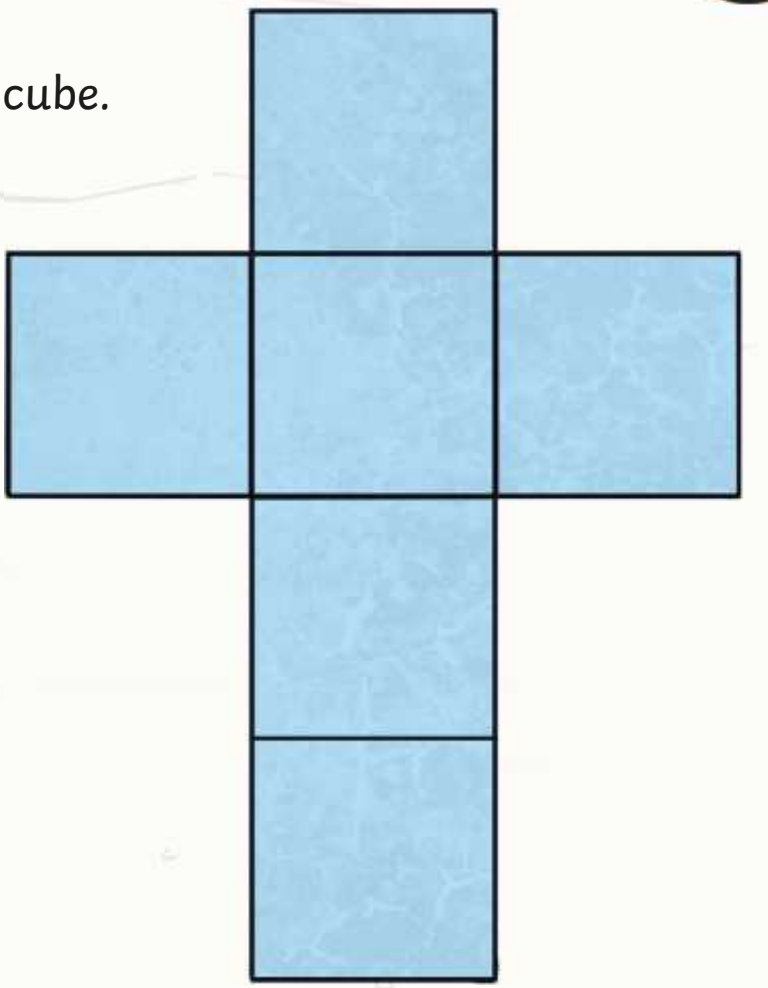
Reasoning about 3D Shapes (2) | Diving

Match the 3D shape to its net.



Reasoning about 3D Shapes (2) | Diving

Jilly has started drawing the net of a cube.



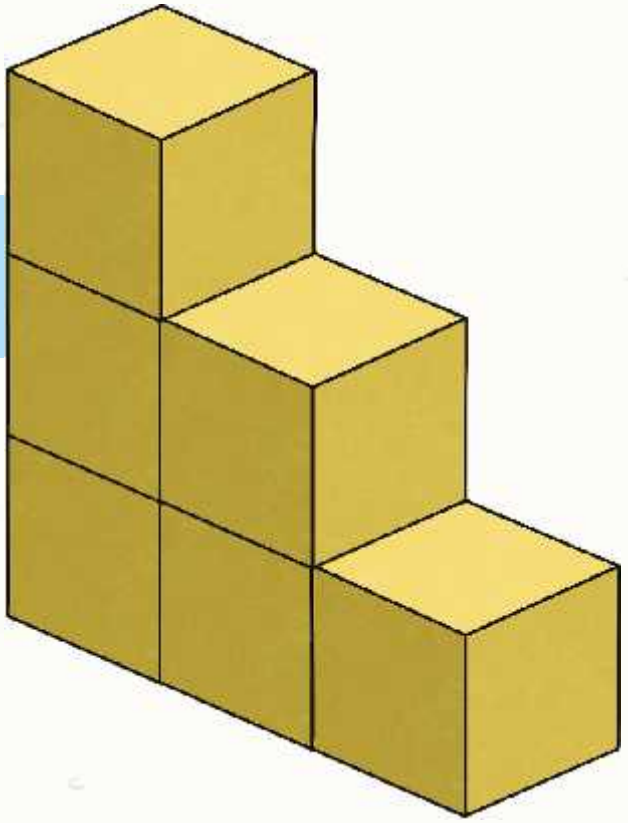
What is missing?

What does Jilly need to add to complete the net?

Jilly needs to add one more square to the net, as a cube has six faces. She could add this to the end of any one of the squares to complete the net.

Reasoning about 3D Shapes (2) | Deeper

Here is a model made from cubes.

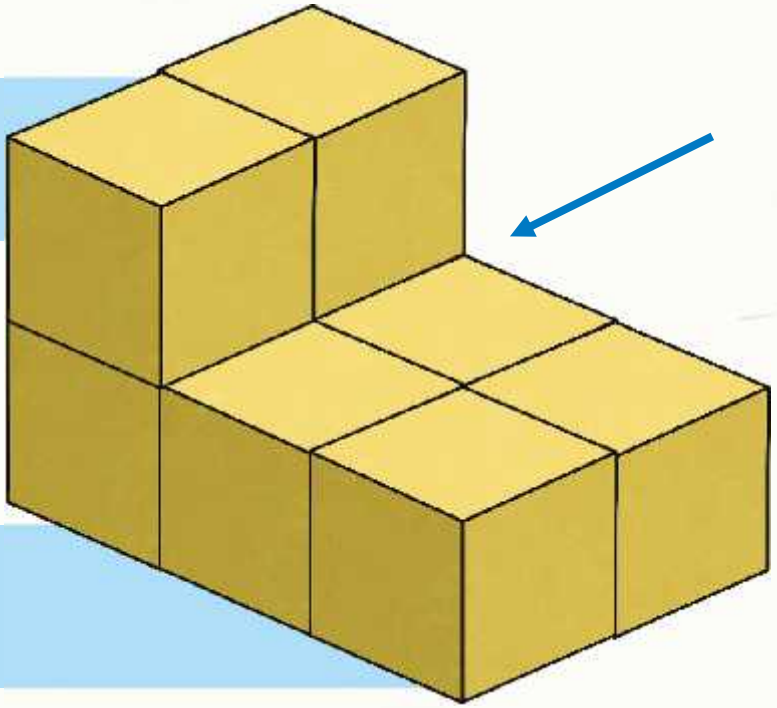


How many cubes would you need to make an identical model?

You would need 6 cubes.

Reasoning about 3D Shapes (2) | Deeper

What about this model?



How many cubes would you need to make an identical model?

You would need 8 cubes. There is a cube under this that you cannot see from this view.

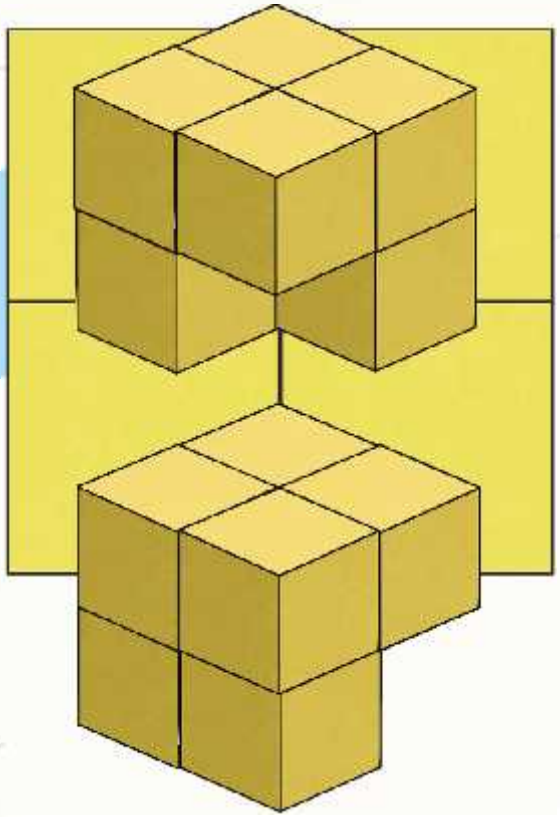
Is this model trickier than the last example? Why?

This model is more challenging as you cannot see all of the cubes in the picture. You need to visualise the model from all angles.

Reasoning about 3D Shapes (2) | Deepest

There are a number of possibilities, but here are two.

This is a picture of the plan view of a model made from coloured cubes.

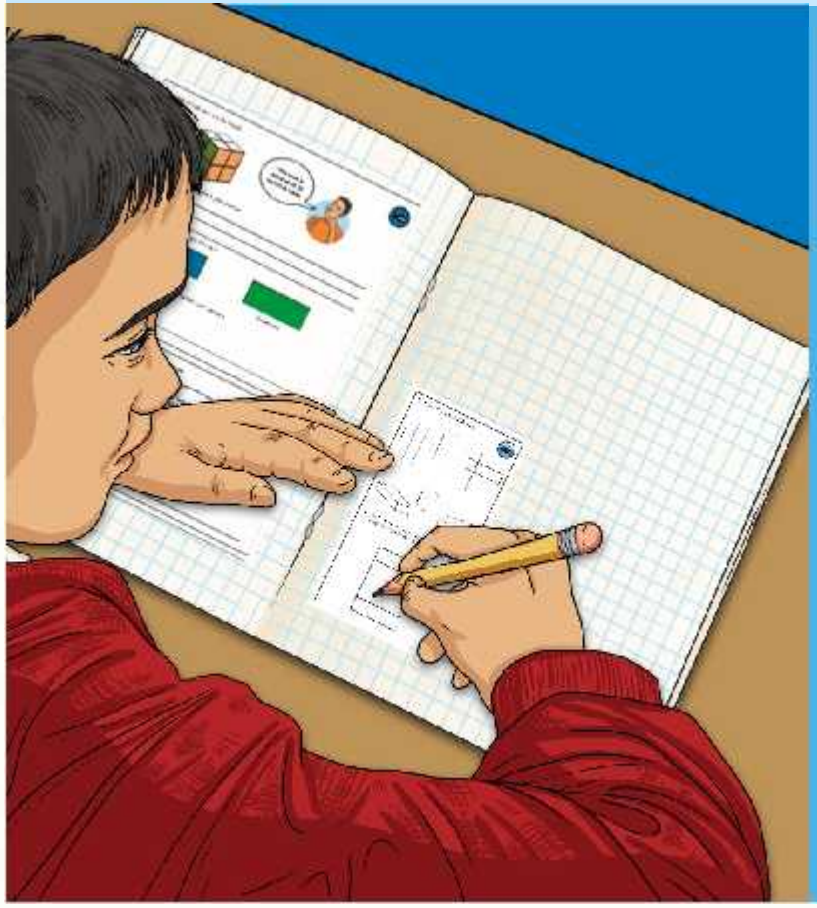


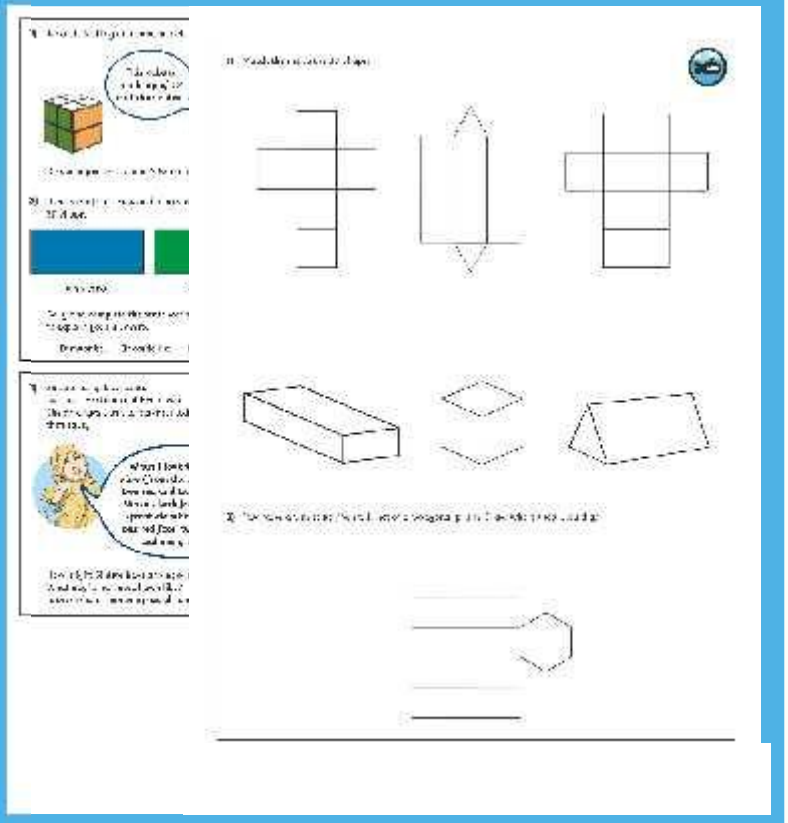
It is made from 6 cubes. Using cubes, can you recreate what this model might look like in its 3D form?

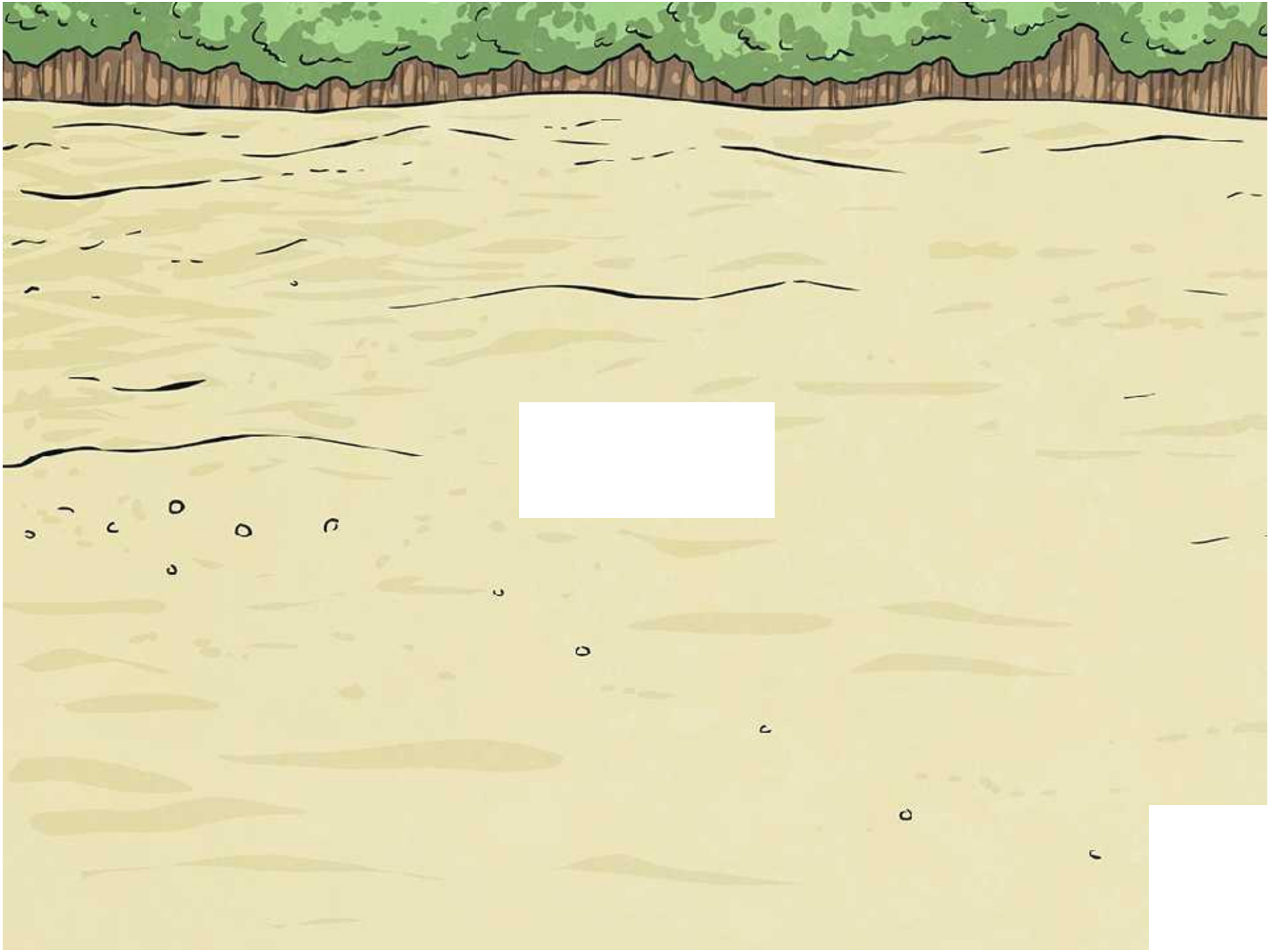
Pictures of plan, or bird's-eye views, make it difficult to know whether there are cubes below those that we are able to see. Because we know there are 6 cubes, there must be 2 cubes below the ones we can see.

Reasoning about 3D Shapes (2)

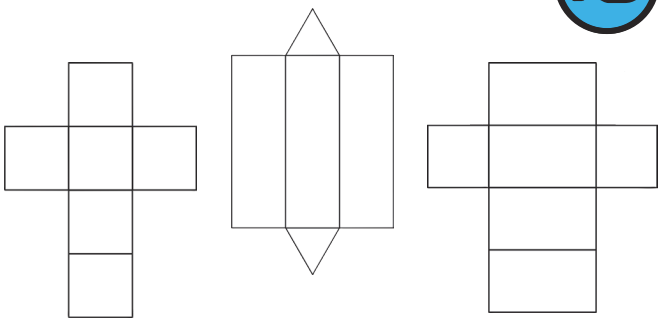
Dive in by completing your own activity!

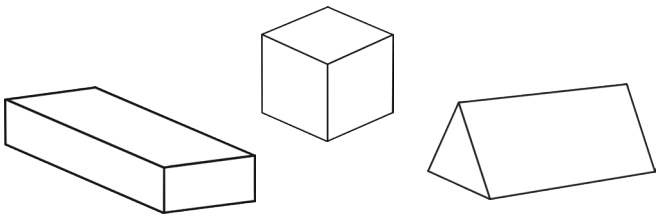




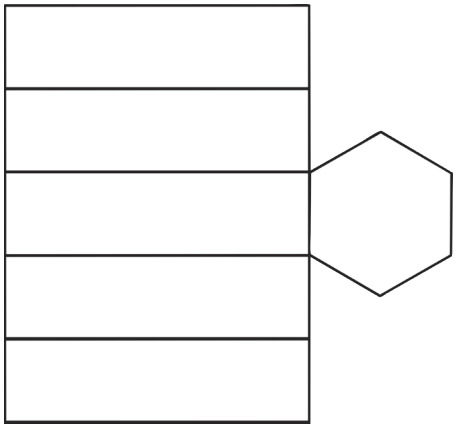


1) Match the net to the 3D shape.

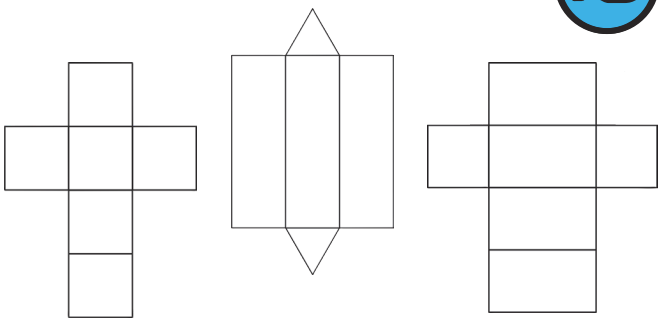


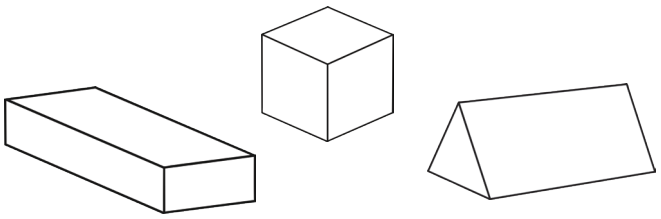


2) Two faces are missing from this net of a hexagonal prism. Draw where they should go.

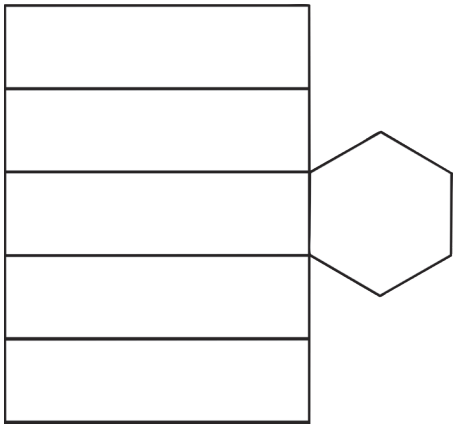


1) Match the net to the 3D shape.

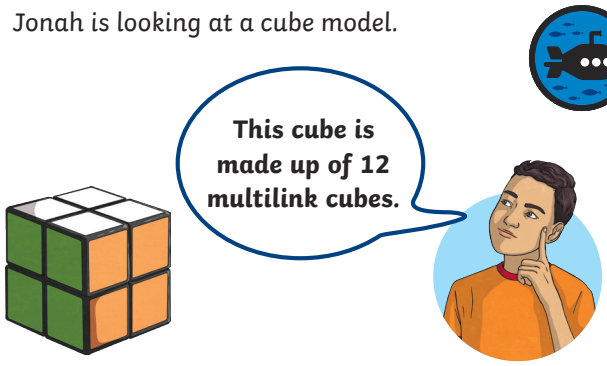




2) Two faces are missing from this net of a hexagonal prism. Draw where they should go.

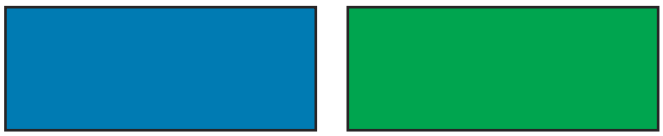


1) Jonah is looking at a cube model.



Do you agree with Jonah? Explain your answer.

2) Here is the front view and plan view of a 3D shape.

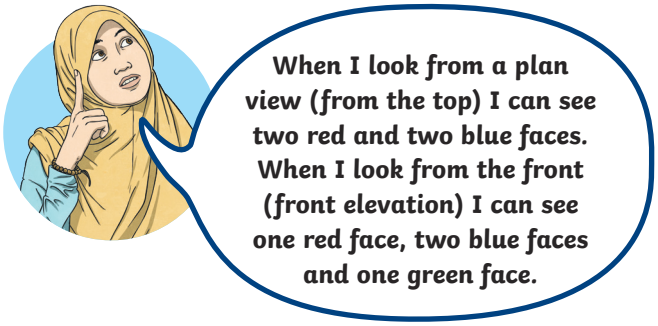


Plan view Front view

Copy and complete the sentences and remember to explain your answers.

It must be... It could be... It can't be...

1) Sinitta has got six cubes:
two red, two blue and two green.
She arranges them to make a model, then says,



How might Sinitta have arranged the cubes?
What might her model look like?
Is there more than one possible answer?

1) Jonah is looking at a cube model.

This cube is made up of 12 multilink cubes.

Do you agree with Jonah? Explain your answer.

2) Here is the front view and plan view of a 3D shape.

Plan view Front view

Copy and complete the sentences and remember to explain your answers.

It must be... It could be... It can't be...

1) Sinitta has got six cubes:
two red, two blue and two green.
She arranges them to make a model, then says,

When I look from a plan view (from the top) I can see two red and two blue faces. When I look from the front (front elevation) I can see one red face, two blue faces and one green face.

How might Sinitta have arranged the cubes?
What might her model look like?
Is there more than one possible answer?