

SOMA CUBE

Picture Puzzles

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Publisher ... Mathematics Centre
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This Picture Puzzle is based on
... Task 105, Soma Cube 1 & Task 161, Soma Cube 2
Teaching Notes
... mathematicscentre.com/picturepuzzles/teachingnotes.htm

Picture Puzzles

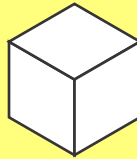
To Do

1. Find all the ways to build objects using 2,3,4 cubes.
2. Use some of the objects to make a Soma Cube.
3. Try 3D puzzles with Soma Cube & other pieces.

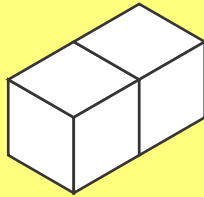
You Need

- Linking cubes
- Square graph paper (1cm)
- Isometric dot paper (1cm)

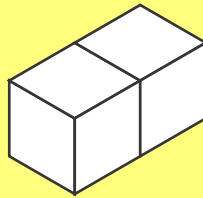
One cube.



Two cubes.

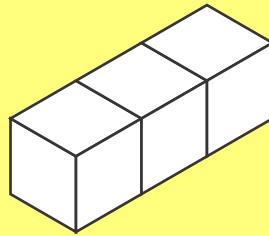


Two cubes.

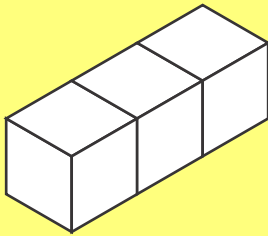


One way to join them.

Three cubes.

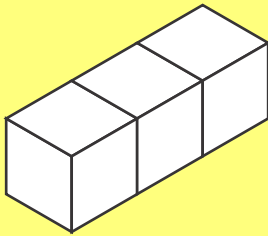


Three cubes.



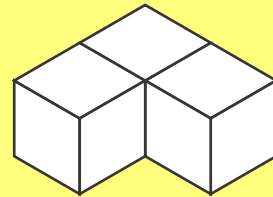
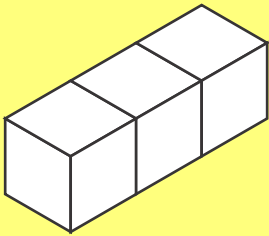
Two ways to join them.

Three cubes.



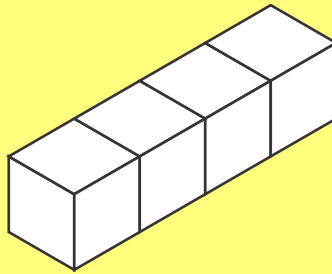
What is the other way?

Three cubes.

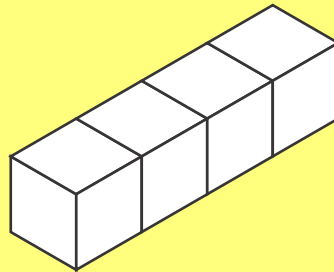


Two ways to join them. Make this L-shape.

Four cubes.



Four cubes.



How many ways to join them?

Make all the other ways and keep them.

Soma Cube

Choose the 3 cube *L*-shape and all the 4 cube pieces except the straight and the square.

Soma Cube

Choose the 3 cube L-shape and all the 4 cube pieces except the straight and the square.

These 7 objects make a cube. Can you make it?

Soma Cube

Choose the 3 cube L-shape and all the 4 cube pieces except the straight and the square.

These 7 objects make a cube. Can you make it?

It is called a Soma Cube.

Soma Cube

**Draw your solution on isometric paper
and show how the objects fit together.**

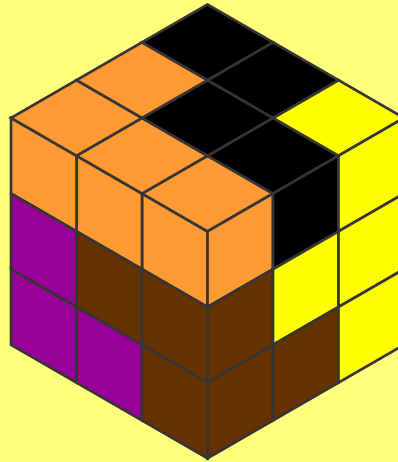
**Picture
Puzzles**

more

**Picture
Puzzles**

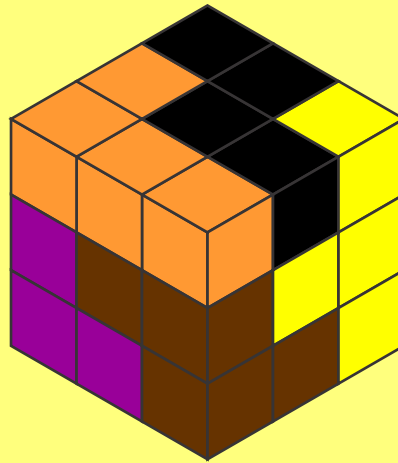
Soma Cube

**There are more than 200 ways to make
a Soma Cube. This is one way.**



Soma Cube

Make the Soma Cube this way.



Soma Cube

Make the Soma Cube this way.

**Now turn it so the black corner
is at the front.**

Soma Cube

Make the Soma Cube this way.

**Now turn it so the black corner
is at the front.**

**Draw the isometric view from this corner
and show how the objects fit together.**

Soma Cube Puzzles

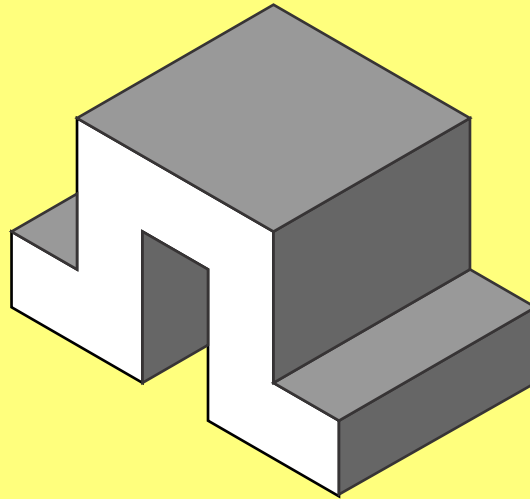
Soma Cube pieces make many 3D puzzles.

You will find some on the next eight slides.

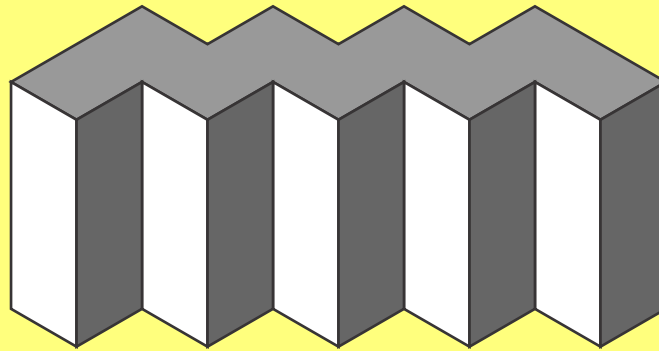
You don't have to do them all.

**Each time you solve one, record its top view
and show any pieces you can see.**

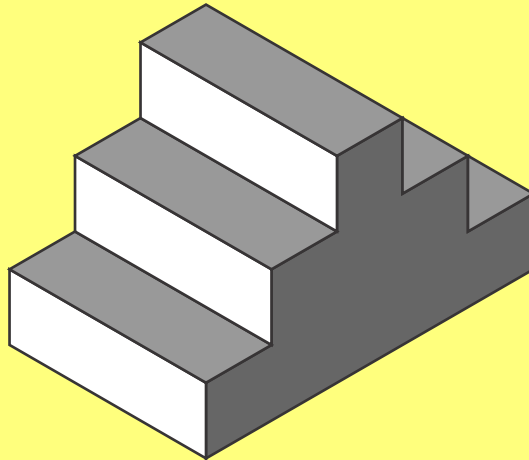
Tunnel



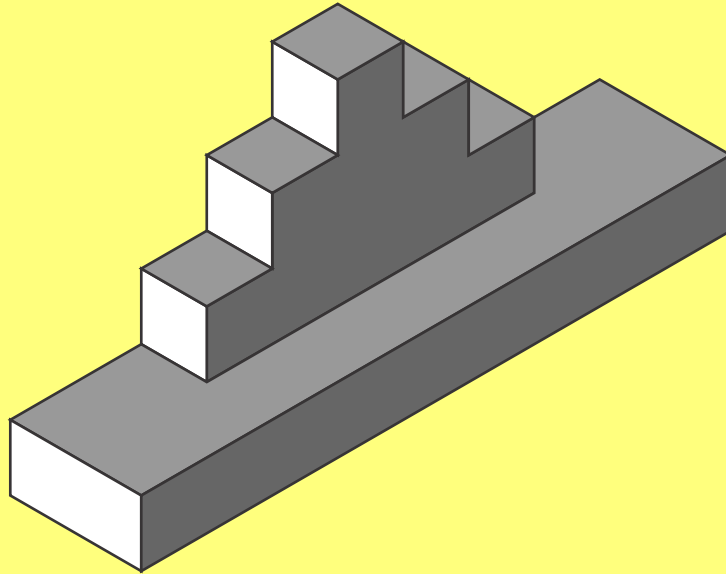
Wall



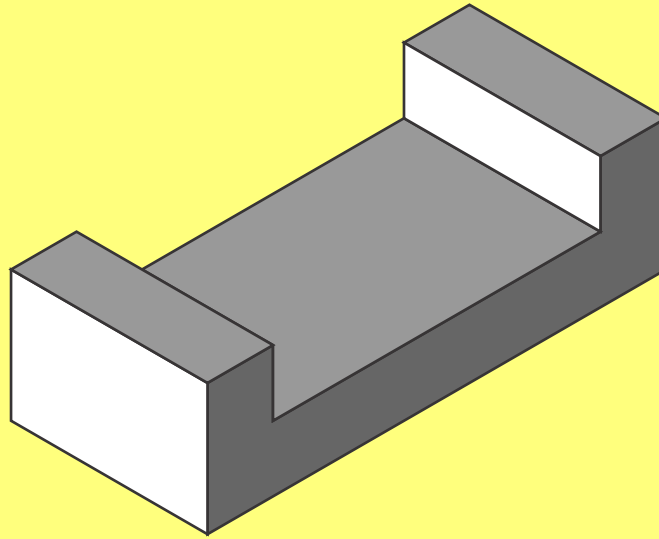
Steps



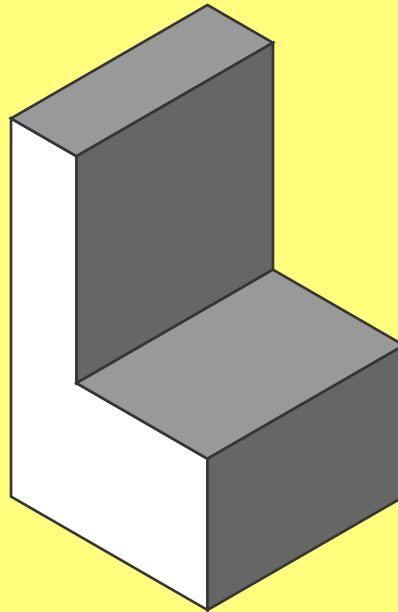
Ship



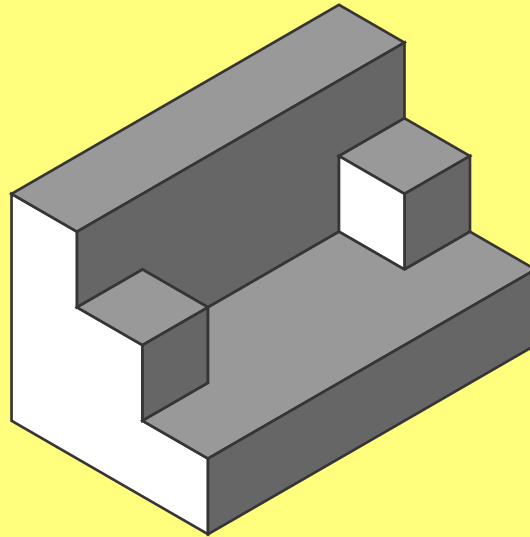
Bed



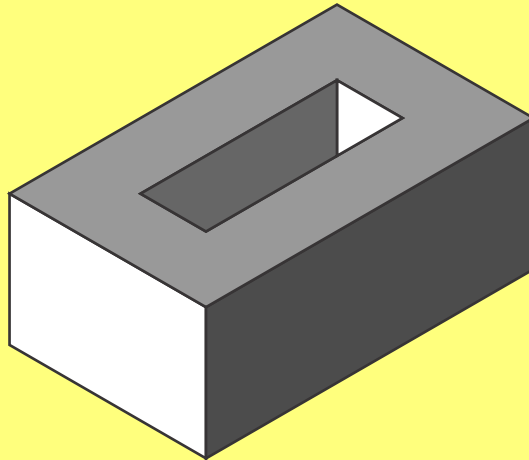
Chair



Couch



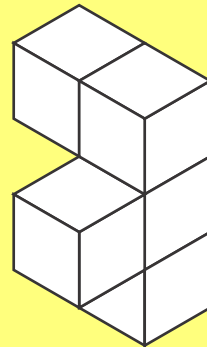
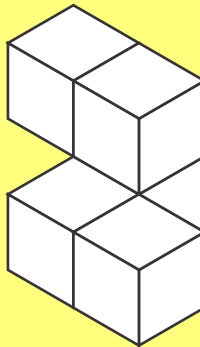
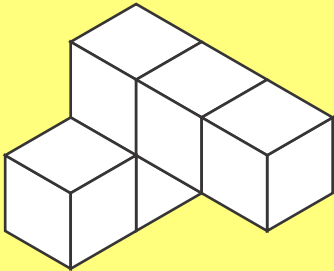
Bath



even more

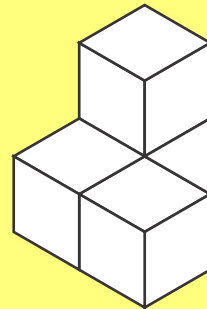
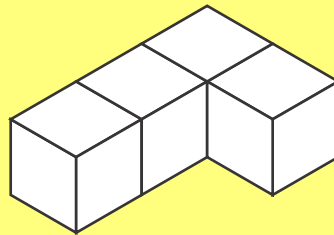
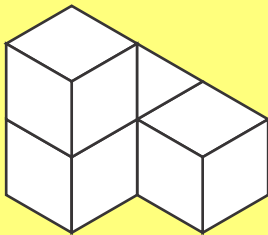
Steinhaus Cube

**There are many ways to join five cubes.
Just make these three.**



Steinhaus Cube

Also make these three objects.



Steinhaus Cube

These 6 objects make a cube. Can you make it?

Steinhaus Cube

These 6 objects make a cube. Can you make it?

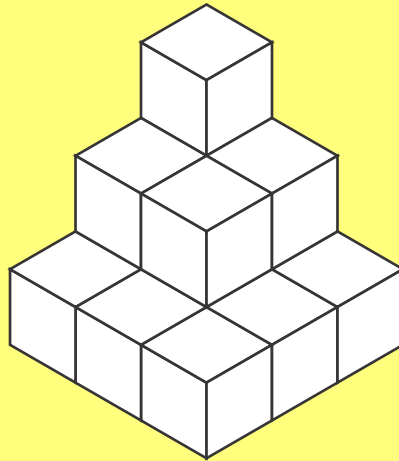
It is called a Steinhaus Cube.

Steinhaus Cube

**The next slide has a clue. Don't look
until you are really frustrated!**

Steinhaus Cube

**Start the Steinhaus Cube by putting
the L-shape with two others like this.**

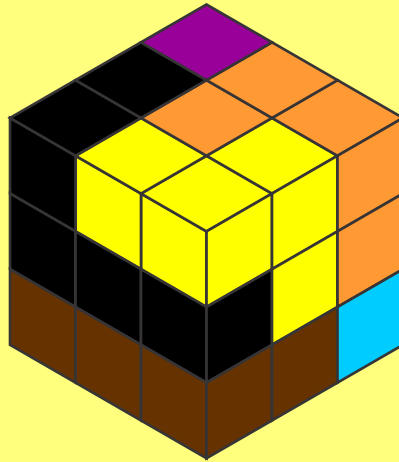


Steinhaus Cube

**The next slide has another clue. Don't look
until you are really, really frustrated!**

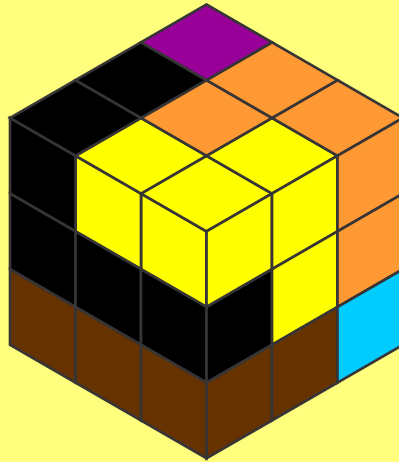
Steinhaus Cube

**There are only 2 ways to make
a Steinhaus Cube. This is one way.**



Steinhaus Cube

Make the Steinhaus Cube this way.



Steinhaus Cube

Make the Steinhaus Cube this way.

**Now turn it so the purple corner
is at the front.**

Steinhaus Cube

Make the Steinhaus Cube this way.

**Now turn it so the purple corner
is at the front.**

**Draw the isometric view from this corner
and show how the objects fit together.**

THE END...

...OR IS IT?