

Maths lesson plan linking careers in construction to the classroom learning
in line with Gatsby Benchmark 4



Building Your Future

A careers special in association with



Watch the Show here: https://www.youtube.com/channel/UCXDSgY0E_aACHXcSqX14YNg

New town in Devon: Sherford:
context which has lots of housing
developments and developers

[Watch the link here](#)

[https://www.youtube.com/watch?v=
w7QbnoM80Ys](https://www.youtube.com/watch?v=w7QbnoM80Ys)

Prepare

- Discuss what maths could be involved in a career in the construction industry

Sherford is a new town in Devon. Developers use drawings to plan a development and build properties.

- Challenge What types of drawings could help the construction industry?

Prepare – drawings used by the construction industry

- Location plan – top-down, scaled drawing shows the development and surroundings
 - <http://news.bbc.co.uk/1/hi/england/devon/6575115.stm>
- Site plan – top-down, scaled drawing shows the layout of plots
 - <https://www.bradleys-estate-agents.co.uk/pages/sherford>
- Floor plan – top-down, scaled drawing of a building
 - <https://www.rightmove.co.uk/property-for-sale/property-79834676.html>
- Elevations - side-on, or front-on, scaled drawings of a building
 - <http://www.redtreellp.com/downloads/2007-Application/Town%20Code%20October%202007/Town%20Code%20October%202007%20Pages%20138-150.pdf>

Suggest what features each type of drawing includes
Challenge: What is a bird's eye view and why is it used?

Prepare – answers

- Location plan – surrounding streets/features/buildings; access to development; features/access/buildings in the whole development
- Site plan – position of buildings and boundaries, utilities & access etc
- Floor plan – position of walls, doors, windows
- Elevation – position of walls, roof, features, windows, doors etc

Agree learning objectives

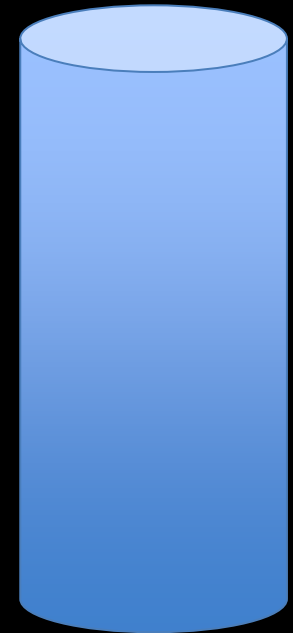
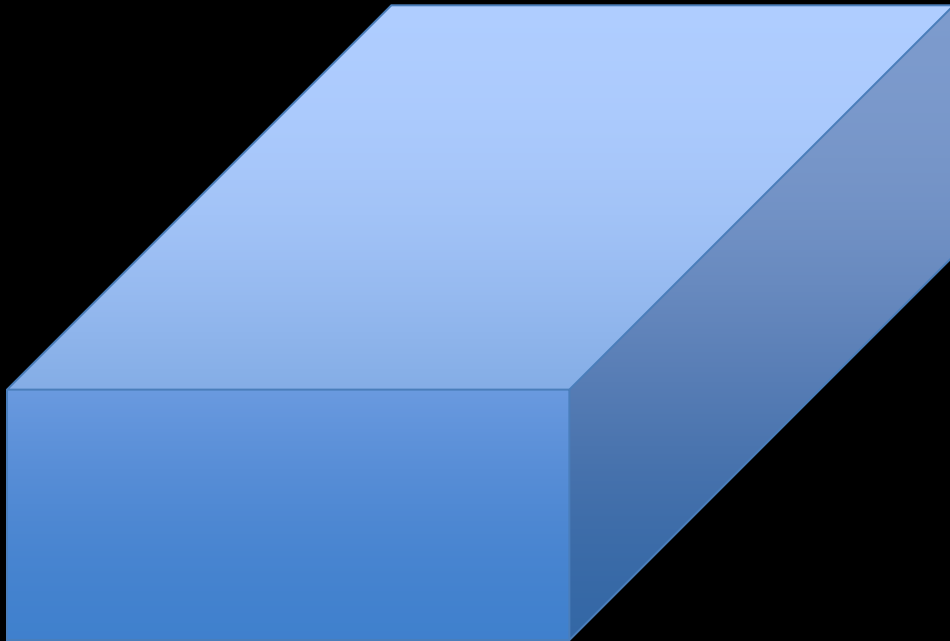
- We are learning about 3-D elevations and plans
- You will be able to
 - interpret plans and elevations of 3-D shapes
 - Construct 3-D shapes from an elevation
- Key words
 - plan, elevation, net, scale
- Things to remember
 - 2-dimensional is flat; 3-dimensional is solid
- KASE

New information

- A plan - what a shape looks like from above
- A side elevation – what a shape looks like from the side
- A front elevation – what the shape looks like from the front
- A net – a 2-D pattern used to make a 3-D shape

Construct

Draw a plan, a front elevation and a side elevation for this cube and cylinder:



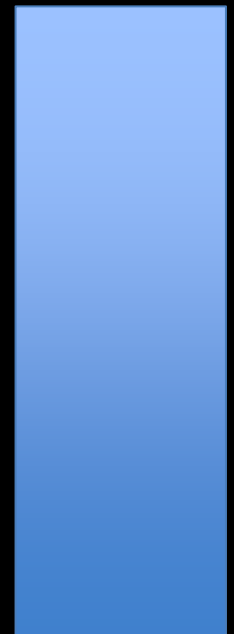
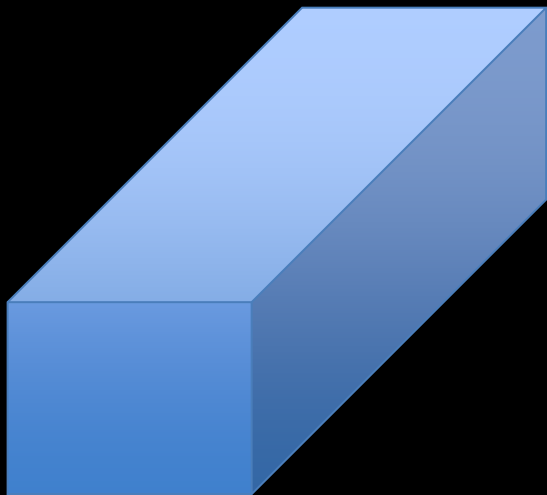
Construct: explain the shape of the plan and elevations:

Shape

Plan

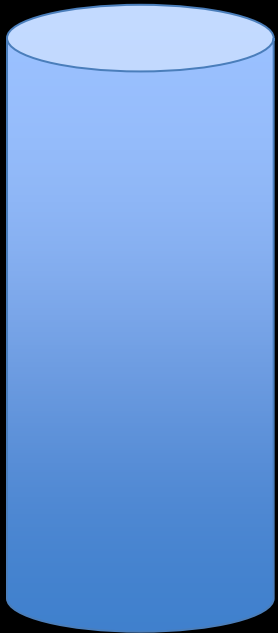
Front
elevation

Side
elevation

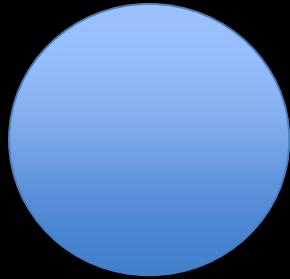


Construct: explain the shape of the plan and elevations:

Shape



Plan



Front
elevation



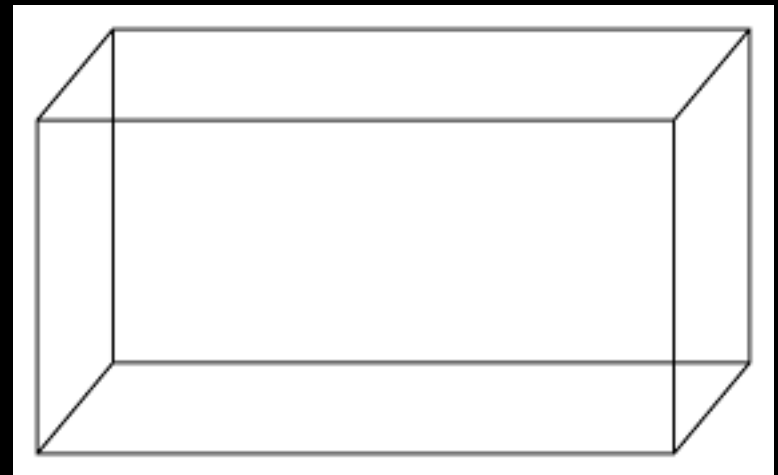
Side
elevation



New information

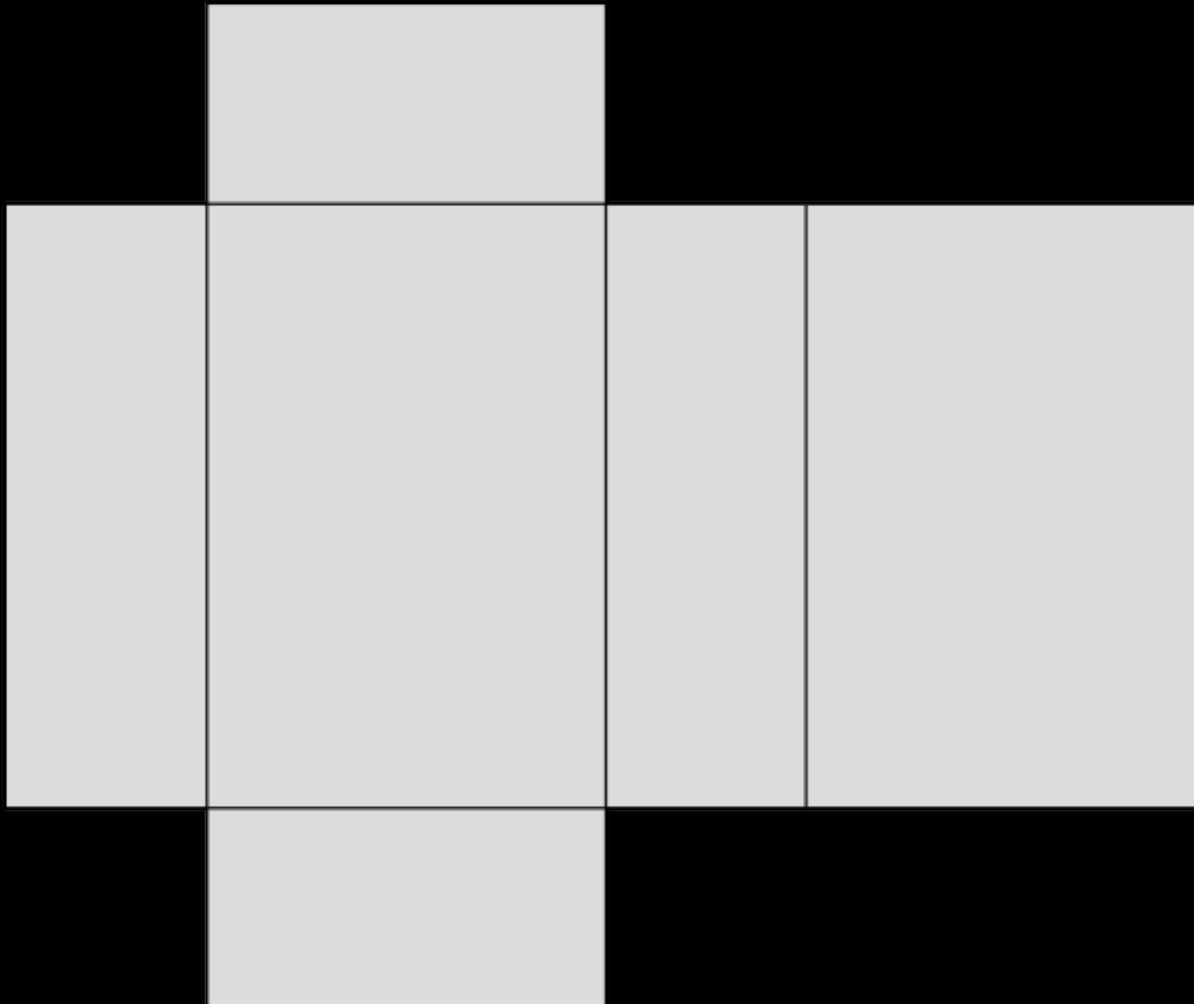
- A net is a 2-D pattern used to make a 3-D shape
- The shape you get if you cut down the sides of the box so you can flatten it out is a net
- Draw what you think you will see

https://commons.wikimedia.org/wiki/File:Cuboid_simple.svg



Net of a cardboard box

<https://bar.wikipedia.org/wiki/Datei:QuaderNetz.svg>



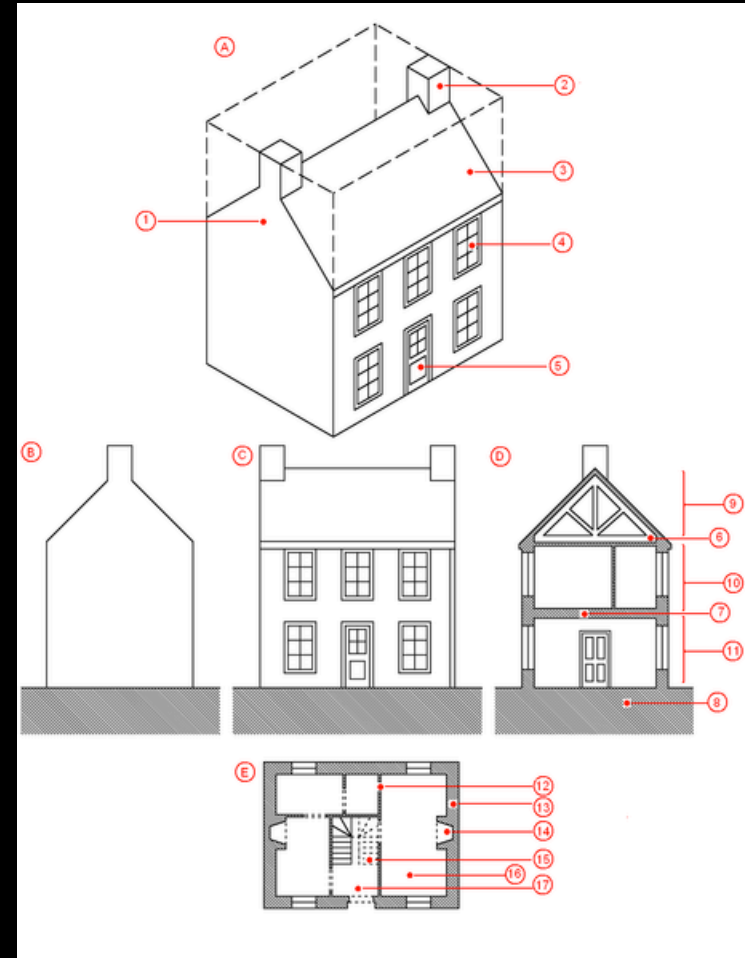
Apply to demonstrate

Draw the **plan view, front and side elevations** of this house

https://commons.wikimedia.org/wiki/File:House_numeric_labels.PNG

Challenge: if the house is 5m wide, 9 m long and 9 m high, draw the plan and elevations to a **scale of 1: 100**

OR draw a **net** of this house



Review

Think of the building you live in.

- Sketch the plan, front and side elevation
 - Add details like doors, windows
 - Challenge – label the approximate sizes in metres.
- Explain your drawing to a partner



To learn more about careers in the construction sector click here:

<https://www.goconstruct.org/>

For further information, please see

<https://www.rsaacademies.org.uk/projects/building-your-future/>