PLAN, SECTION, & ELEVATION

These are different ways to look at a building.

We’ll talk for a second about SCALE, too!
ELEVATION

- A drawing of the side of a building.
- A direct view to what you are seeing & drawing
PLAN

- A view from above, of the relationships between rooms, spaces, and other physical features at one level of a structure.

- Dimensions are usually drawn between the walls to specify room sizes and wall lengths.
SECTION

- If you took a building, and cut it perfectly in half, then drew what you saw, that would be the section.

- It reveals vertical relationships within structures.
Try drawing it out yourself!

Instead of buildings though, let’s try it with something a bit more simple.

When you are preparing to build your model, see if you can draw an ELEVATION, PLAN, & SECTION for it!
Structures & Spatial Awareness

CCTV Headquarters in Beijing, China
Structures react to gravity loads in many ways, but there are two main forces at work:

**COMPRESSION**
- Objects are getting PRESSED/CRUNCHED

**TENSION**
- Objects are getting PULLED

Stand up, and try it out!
COLUMN

A COLUMN is a vertical linear element used to support a beam, floor, or roof.

BEAM

A BEAM is a horizontal linear element spanning across an opening, supported at both ends.
**CANTILEVER**

A CANTILEVER is a horizontal structural element supported only at one end.

**FRAME**

A FRAME is a rectangular arrangement of linear structural elements.
**TRUSS**

A TRUSS is a 2-dimensional triangular arrangement of linear structural elements.

**SPACEFRAME**

A SPACEFRAME is a 3-dimensional triangular arrangement of linear structural elements.
Spatial Awareness

Photo: the most crowded classroom (221 students) in the world, in England, London. Aren’t you glad you don’t go here?

Understand how you relate to space in different areas of your school. Measure the space first, and then find out how many people it can hold.

(Teachers: more detailed instructions and additional activities were sent as handout)