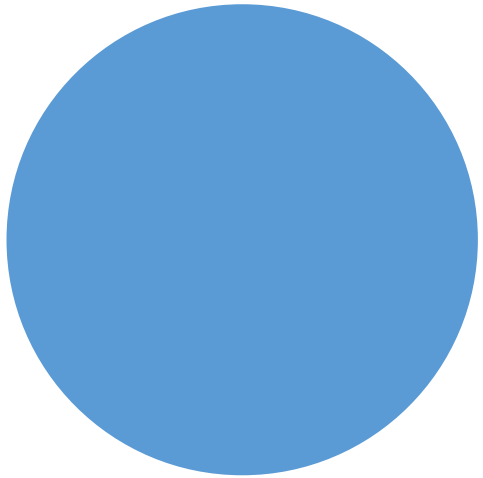
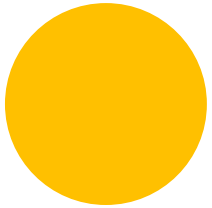

Fun with Buildings!

Reviewing Classwork

What have we learned from out time in class?

Lets have a look, and then you can build your own buildings like a true structural engineer!

Don’t forget to do the questions for each slide!

Forces!

What are the main forces we need to worry about?

- Gravity
- Pressure
- Magnetism (maybe!)
- Maybe even buoyancy!

How does gravity affect buildings we build?

- It keeps them on the ground! (Good!)
- It collapses them if they aren't strong enough (Bad!)
- How would we build a building without gravity! What would happen?

Moments

- What are moments!
  - Moments are a force, acting through a distance!
  - For example, remember the door handle, or picking up the bag with the pole?
  - The longer the distance, the bigger the moment
  - When was this a danger to structural engineering?
  - In skyscrapers!
  - What was used to make sure the skyscrapers didn’t fall?

Engineering Drawings

Remember, there are 3 planes of dimensions!

X, Y, and Z (Just like in maps in Minecraft!)

That means there's three sides to every object (3D objects)

How do we draw them on paper for engineers!

It's important to use each side, in case we miss any details!

Skyscrapers

1

What makes something a skyscraper!

- Skyscrapers must house people, and be at least 100m tall!

2

Why do we make skyscrapers?

- For use! Offices, housing, and also because we can!

3

Are there any skyscrapers in Dublin?

- Nope! The tallest building in Dublin is Captiol Dock, and it's only 79 m tall! (still big though!)

4

What tricks do skyscrapers use to stay upright?

- They get skinnier as they get taller
- They "hang" their walls so they can move in the wind a little

Strong shapes!

What shape did we learn was the strongest?

Triangles!

What other shapes are pretty strong?

Squares are okay, and so are hexagons and octagons, but triangles are the strongest basic shape!

Where in nature do we see shapes being used to support things?

Beehives! Bees make their hives in shapes of hexagons!

Why are triangles so strong?

They evenly share the load at each of their points, and all points are supported by each other!