**Tech questions**

Cantilever Beam – how to reduce failure?

1. Increase thickness – increase moment of inertia making it harder to bend

2. Change material - Increase modulus of elasticity

3. Make the bar shorter to reduce the moment on the junction

4. Add a support material

5. Reduce the load

Steel vs Aluminum Cantilever Beam

-Modulus of E of steel is 3x greater so bend less

Steel vs Aluminum Different heights but same deflection

-h^3b/c so because Mod of E is 3x greater, the height is cubed root of 3 less

Length is 2m and 1m but same material. Deflection?

-length is cubically proportional, so 2m will bend 8 times greater

Mild Steel vs Hardened tool steel

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Def Modulus of elasticity

-slope of elastic curve on stress vs strain

Where would it fail?

-Junction because it has the greatest moment

What is stress?

-Force per area

What is strain?

-Amount of deformation divided by initial length due to stress