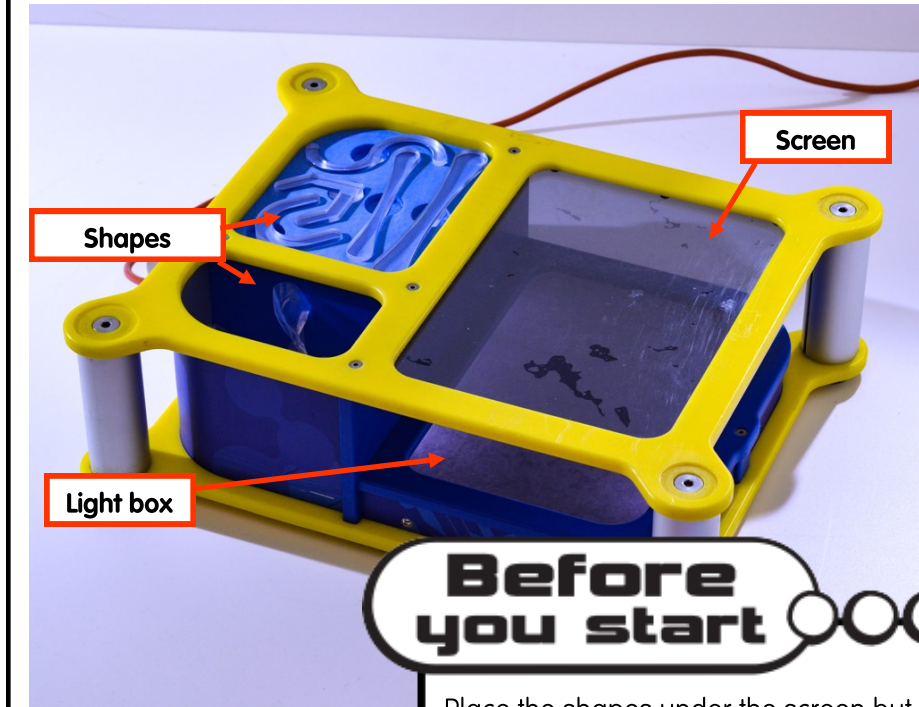


SEEING STRESS

Challenge



**Before
you start**

Place the shapes under the screen but on top of the light box. Stretch and squeeze the shapes in different ways and observe the colour changes

Use the light box to investigate the effects of forces on the different shapes

SEEING STRESS

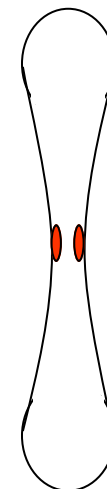
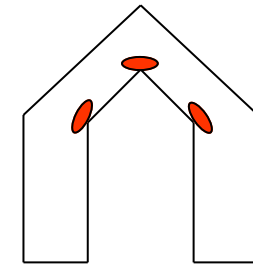
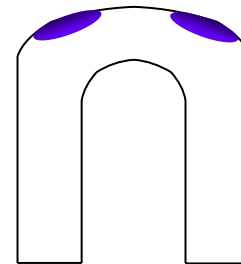
When we bend an object we are applying a force. If this force is focussed more on one area than another, it will break at the place where it is concentrated.

Looking at objects under polarised light allows us to see the stress point– called stress risers.

Try bending and squeezing the shapes provided.

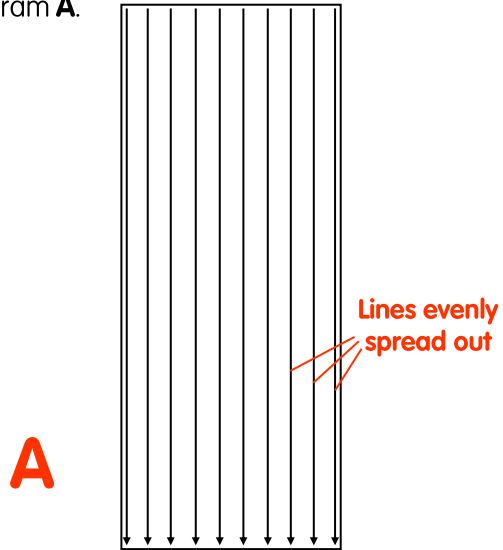
What do you notice?

1. On the shapes below, indicate the areas where stress is concentrated.
The first one is completed for you

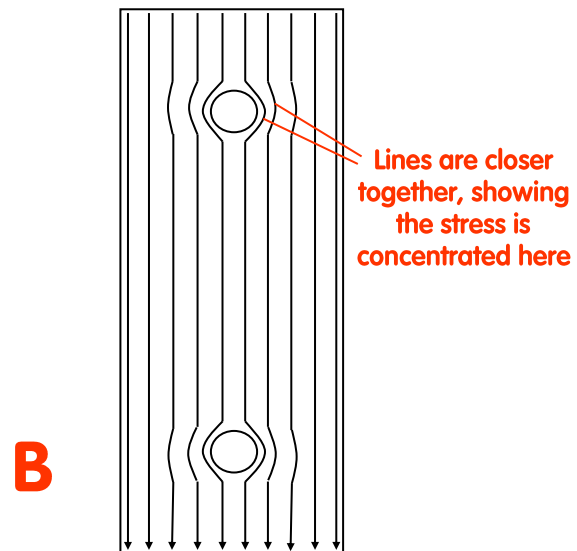


SEEING STRESS

Materials are strongest when forces on them are evenly spread out or distributed, as in diagram **A**.

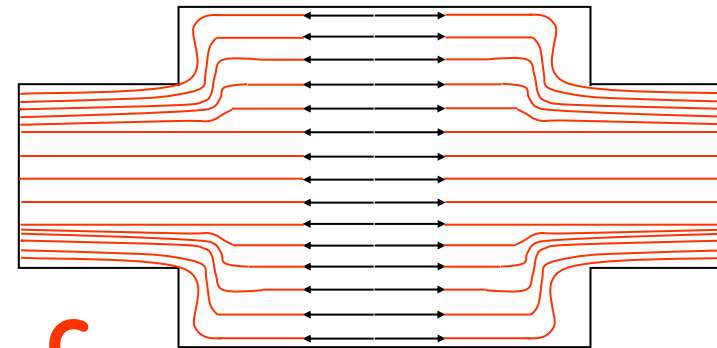


A reduction in area causes forces to be unevenly distributed and concentrated (focussed) on some places more than others. See diagram **B**.

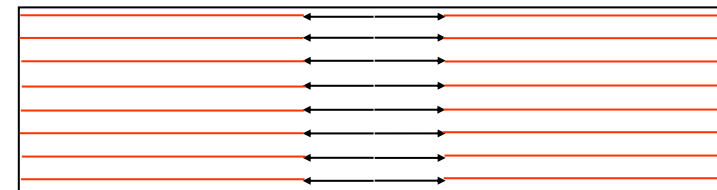


SEEING STRESS

2a) Add lines to diagram **C** and **D** to show how the forces are distributed.



C



D

2b) Which shape is stronger **C** or **D** and why?
