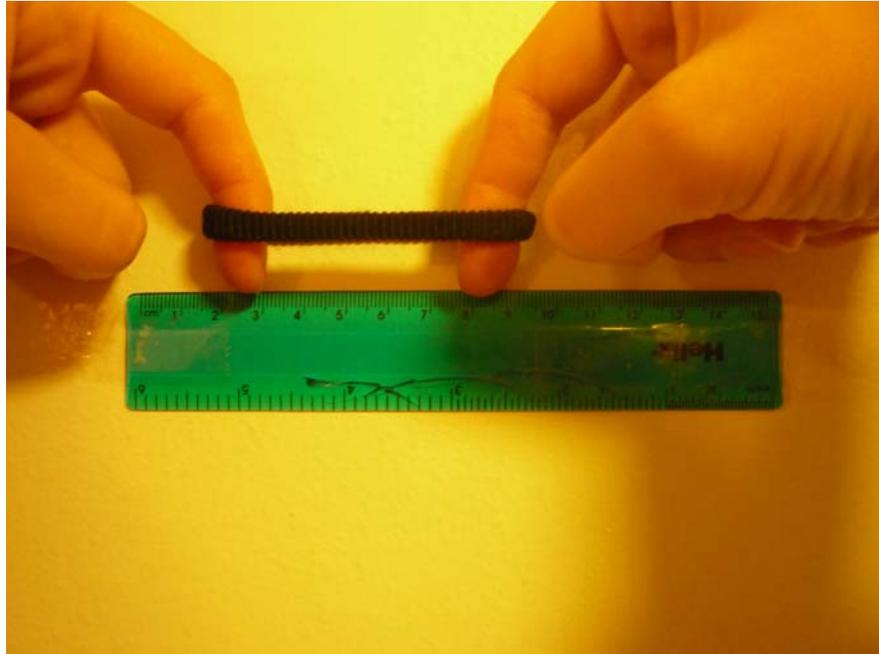
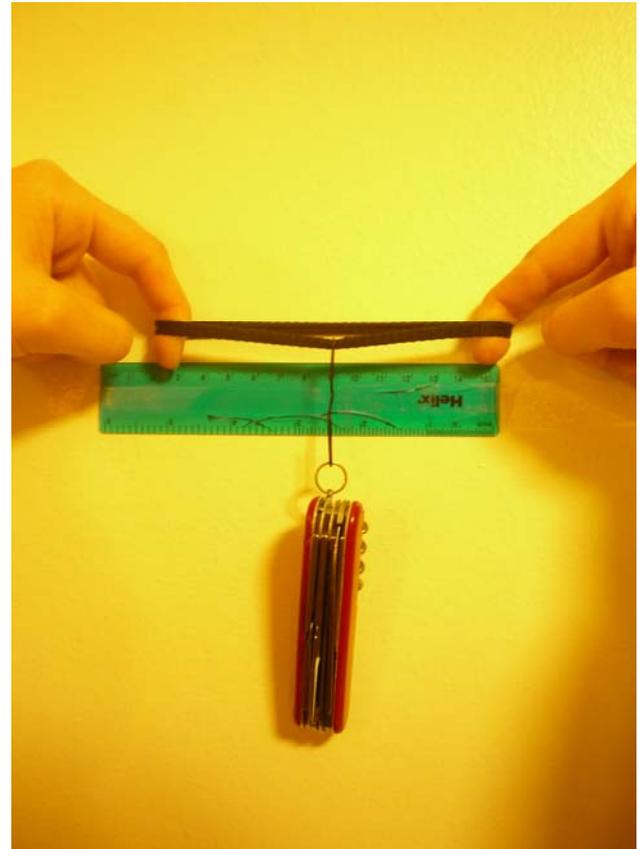


Prestress

Iskra Mednikarova



A hair band spanning a distance of 5cm. Hair band is loosely held in place. A concentrated load is applied at midspan, causing considerable deflection.



Hair band is pulled - an axial force (tension) is applied, causing elongation of the hair band. Now the span is 12cm. Normally a bigger span would mean bigger deflection. When the same concentrated load is applied at mid span, the deflection is much smaller. This is due to the prestressing axial force that is applied (pulling). Prestress makes the structure stiffer.