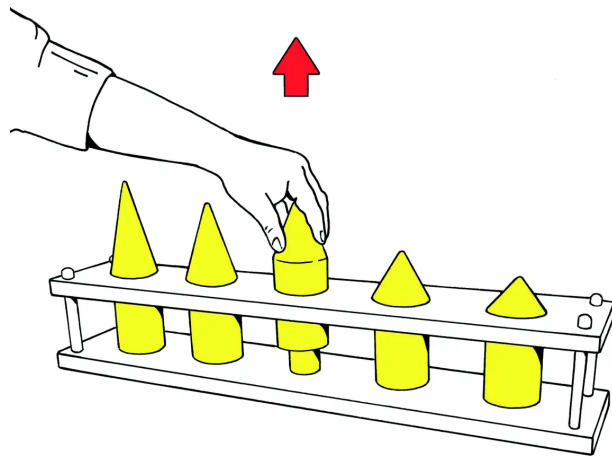


# Get a grip?

Which cones are the easiest to lift?



Grip the cones and lift them.

Check carefully how you can best lift the cones. Do you use your fingertips or the flatter finger surfaces? Does it make any difference?

When lifting a cone, we need to exert forces to overcome its downward weight. All we can do is clamp the cone between our fingers. We rely entirely on friction between our fingers and the sloping surface of the cone to lift it, because the pressure we apply with the fingers is actually angled downwards. The friction force is a particular proportion of this pressure force (depending on the surfaces), and must overcome both the weight of the cone and our downward pressure. Sharper angled cones are easy to lift because the frictional forces are strongly angled upwards. With flatter cones, the frictional forces have smaller upwards components and eventually the flatter cones cannot be lifted. A rougher surface would help, but there would still be a limiting angle.