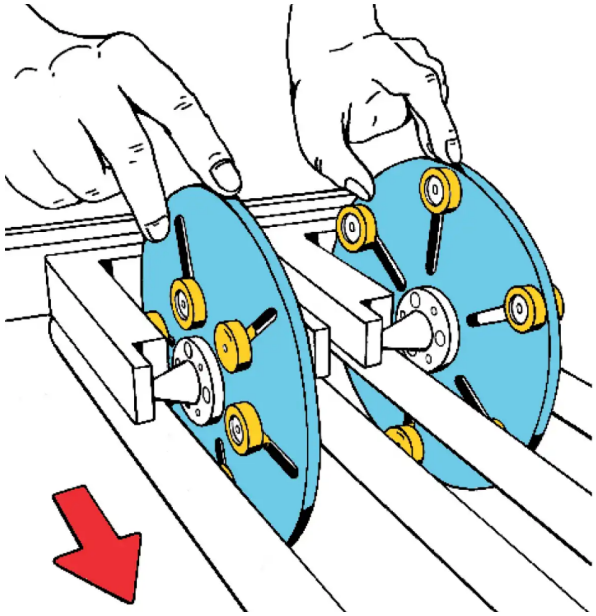
Downhill race

Which disk is faster?



Put two disks of the same weight on the slope and observe them rolling down. For each weight there is one disk where you can shift the small weights.

Repeat the experiment but shift all the weights on that disk. What do you observe?

Compare disks with different weights.

Even though two disks have the same weight, they roll down the slope at different speeds. The disk with the weights placed close to the axis runs faster than the one with the weights placed towards the outside rim.

The so-called moment of inertia of a rotating body is determined by its weight distribution. The moment of inertia increases with the distance of the heaviest weight from the rotation axis. This fact is used in flywheels – i.e. in our „crazy case“: the spinning disk carries most of the weight on the rim to maximize the moment of inertia.