

MICROSCOPE

MATERIAL

- a smartphone
- a small drop of water
- a hair

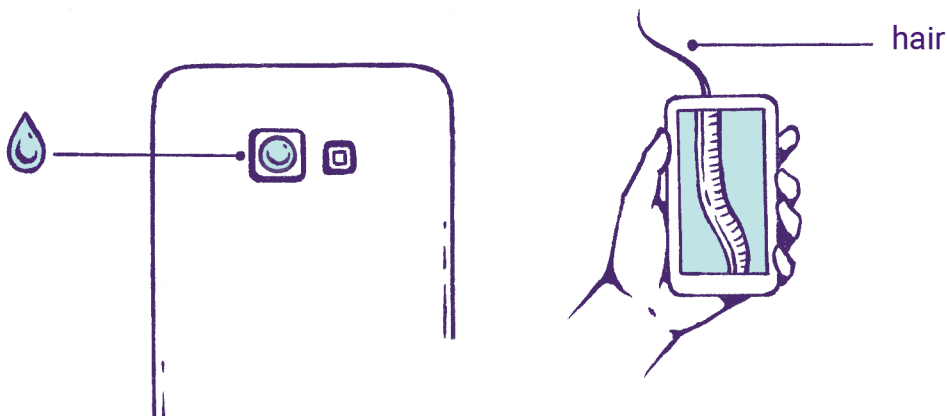
optics

CHALLENGE

By turning your smartphone into a microscope, measure the thickness of a hair.

OVER TO YOU

In using the tip of a pen or other suitable device, place a “very” small water drop on the lens of your smartphone camera. Tear off a hair from your neighbor’s head, and take a picture to measure its diameter. To see the real magnification of your camera, take a picture of a graduated ruler under the same conditions (with the same water drop).



Determine how the magnification of your smartoscope depends on the size of the drop...

THE ULTIMATE CHALLENGE



Fight forgers: Examine a bank note to discover the hidden symbols that will allow you to recognize the real stuff from a fake. For example, somewhere on euro banknotes it is written in very small letters *euro euro euro...*