

## Light polarization: Lesson 2

**Task 1.** Although our eyes are pretty good at measuring brightness, they cannot detect the polarization of light. We are therefore forced to use a polarizer to determine the polarization of light. The polarizer used for this purpose is called analyser.

**a)** How can we decide that the polarization property of light is a property of light that is different from the brightness of light?

**b)** Does any property of the light scattered from the table and passing through the polarizer change when the polarizer is rotated?

**Task 2.** Two polarizers are put on the exercise book in the same plane. One of them is slightly rotated relative to the position where the brightness of the transmitted light is at its maximum.

**a)** A third polarizer (analyser) is used to check the polarization of the light passing through the system into our eyes. What determines the polarization of the light?

- Only the position of the first polarizer.
- Only the position of the second polarizer.
- The relative position of the two polarizers.

Reasoning:

**b)** What determines the brightness of light passing through the system?

- Only the position of the first polarizer.
- Only the position of the second polarizer.
- The relative position of the two polarizers.

Reasoning:

**Task 3.** Place a polarizer on the calculator display and rotate it. What do you see? What can we conclude?

**Task 4.** A light filter is a dense medium that reduces the brightness of transmitted light. Based on our experience, does the polarizer work as a filter? Let justify your answer!

**Task 5.** The more light filters are placed on top of each other, the more the brightness of the transmitted light decreases. Is the same true for polarizers? How are the polarizers different?