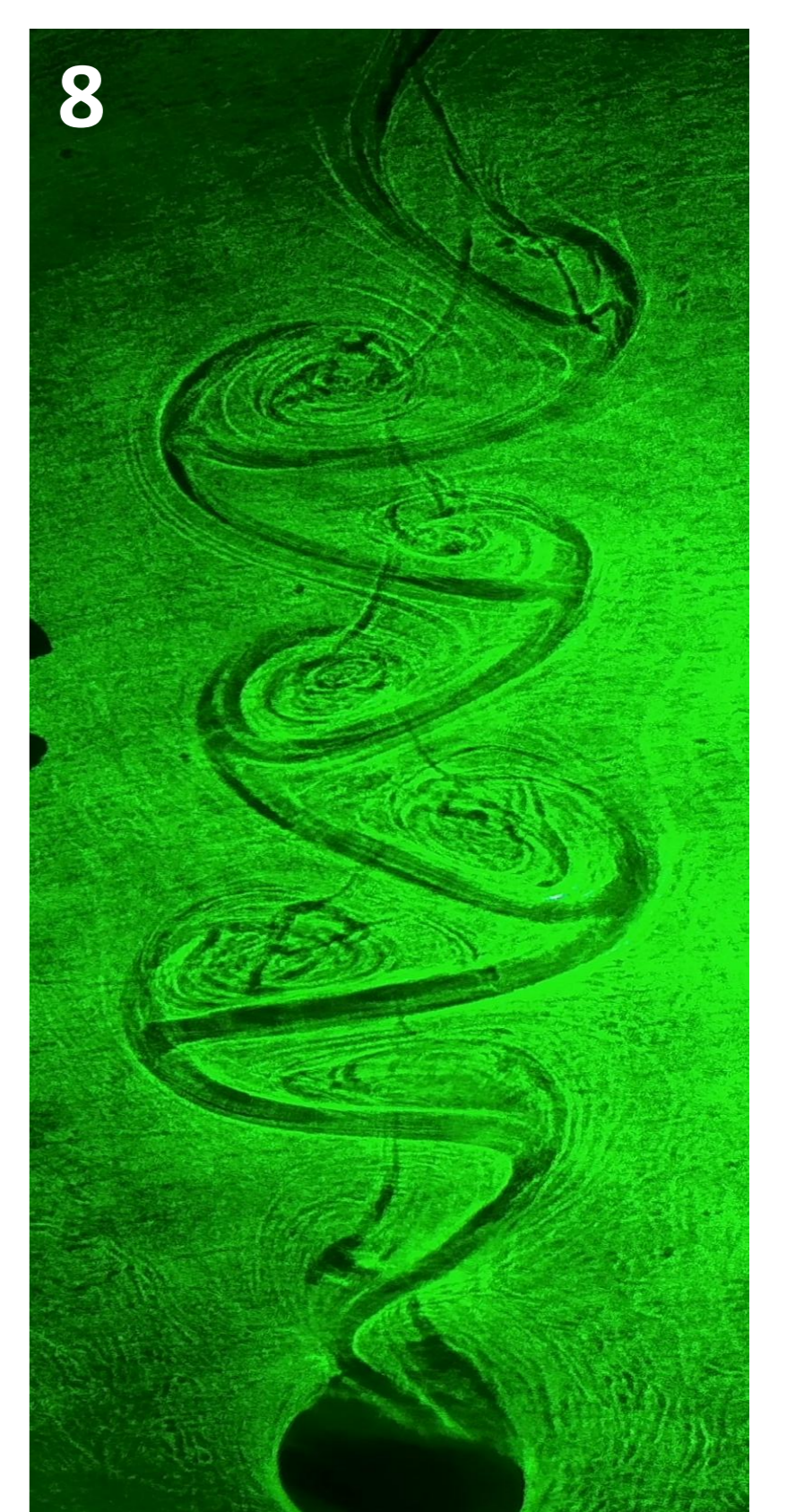
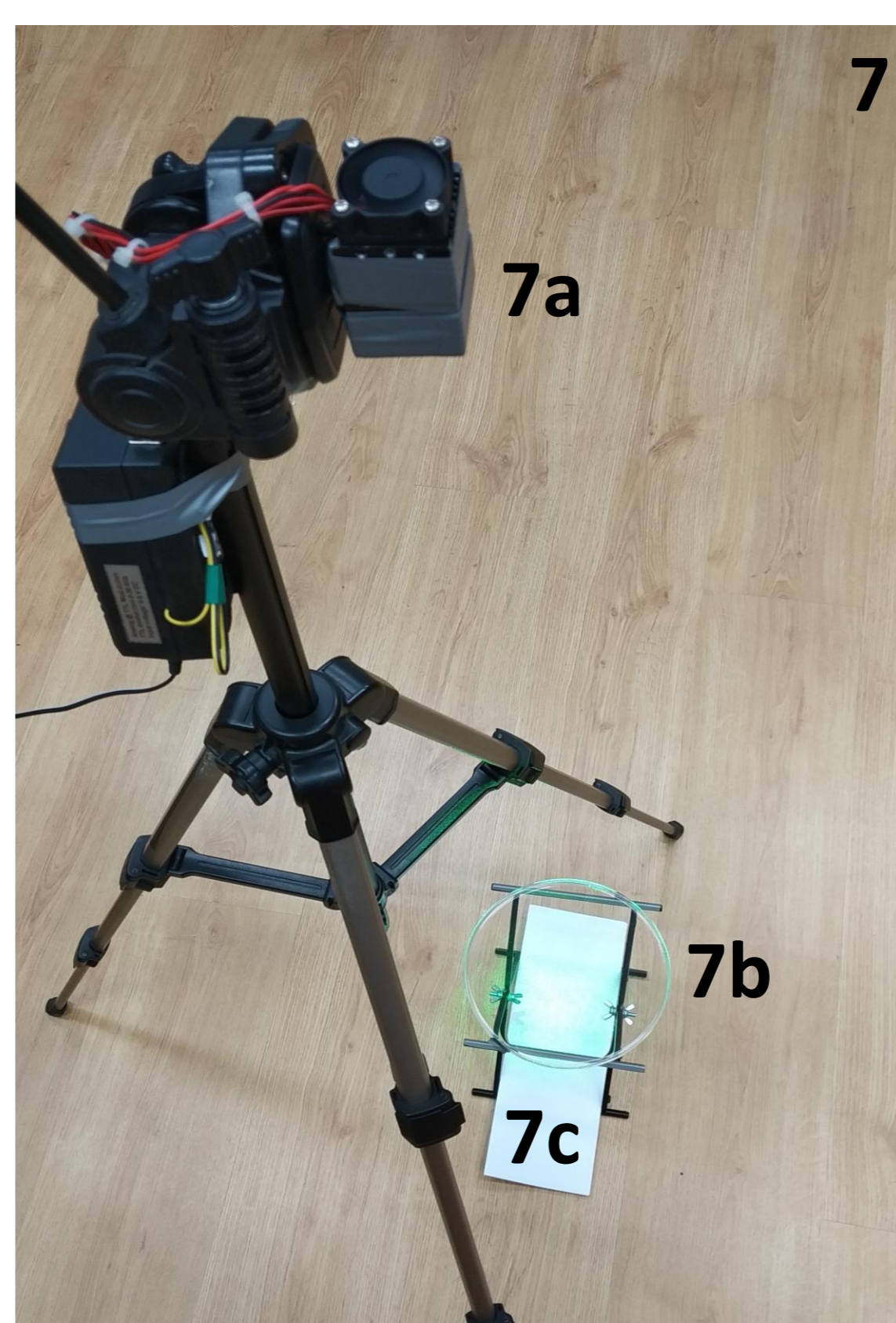
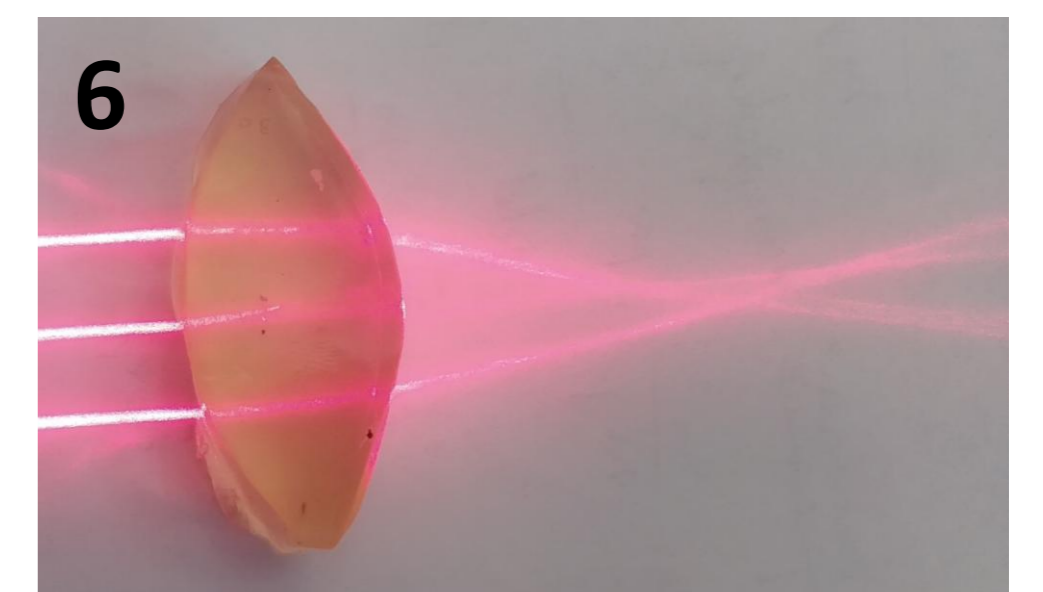
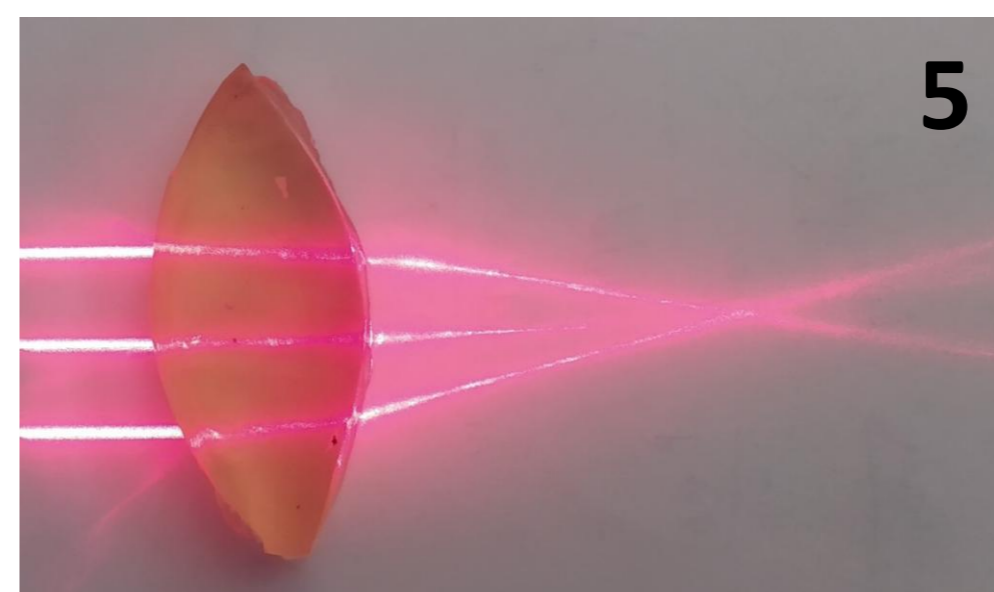
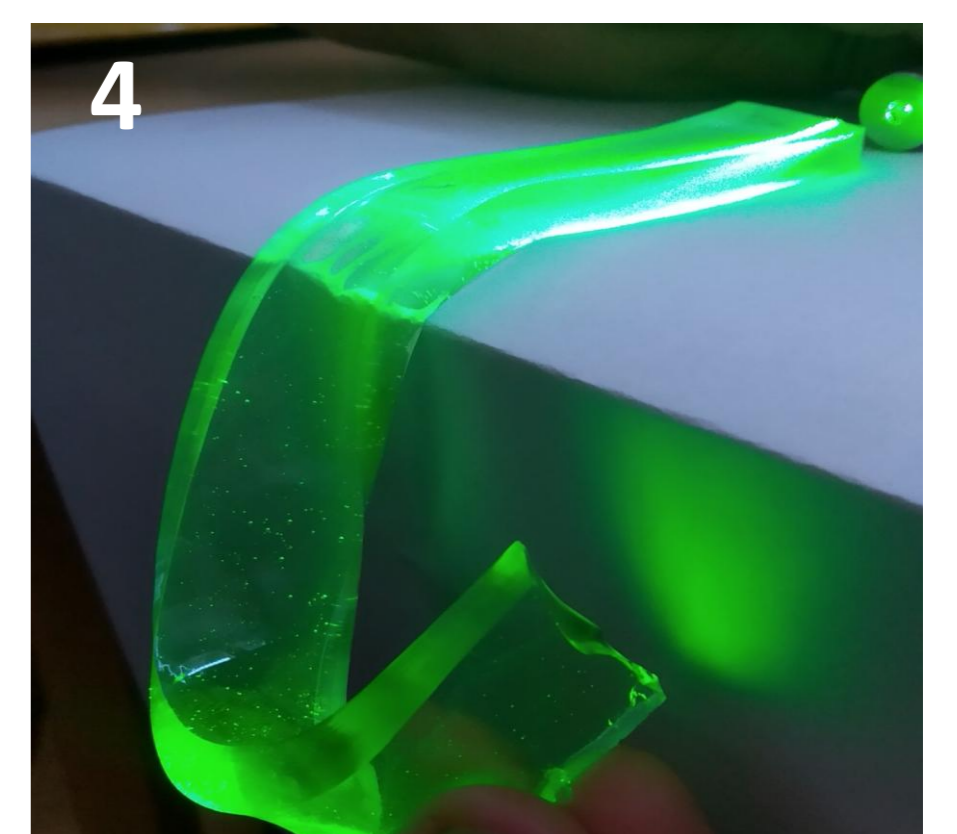


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## Experiments with gelatin and sugar

The project shows the usage of simple, easily accessible materials of everyday use to develop students ability to do research. It is possible to cut transparent forms of different shapes from solution of gelatin after it settles (fig. 1, 2). Younger students can observe simple optic experiments with the help of gelatin shapes (fig. 3, 4). Older students are able to design their own optical sets and to conclude how to use them in technics and the medicine of eye. Testing lens aberrations and the track of rays in their optical sets is a good example (fig. 5, 6). In the programme for more advanced students it is possible to find quantitative parameters: the refractive index and the speed of light in gelatin.

Another material letting us show interesting experiments is sugar. A good set for such an experiment is shown in fig. 7. A green beam from laser (7a) goes from the top through saturated solution of sugar in a transparent container (7b). The surface of this solution is sprinkled with clean water. Any movement is shown on a screen placed underneath (7c). What is seen are streaks resulting from differences in refraction in both liquids. One can observe the laws governing fluid mechanics. A good example are picturesque whirls created by moving objects in solution (fig. 8).



**Conclusion:** Commonly used substances give us a chance to make interesting experiments building scientific abilities of students of all ages.