

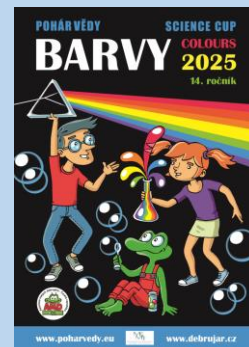
# SCIENCE CUP – COLOURS 2025



## POHÁR VĚDY SCIENCE CUP

Category 4 – High School

1st round – January – deadline 14. 2. 2025 23:59



## Introduction

Dear competitors welcome to the first round of the 14th **Science Cup—COLOURS 2025**. Before you start your work, please take a few minutes to learn about the tasks, their solutions, and evaluation.

The assignments for the corresponding rounds for each month (January, February, and March) include tasks in three areas - The creative part (assessed 20%), the Experimental part (assessed 40%), and the Practical part (assessed 40%). Describe the solution procedure of each task using your own words, and document them with your pictures or photos.

Solutions must be submitted no later than 23:59 on the last day of the round.

By the deadline, the solution must be uploaded to the system on the competition website in the form of a single PDF file of a maximum size of 10 MB. The file's contents (text, sketches, photos) must not exceed 3 A4 pages and must be easy to read (simple font, minimum font size 11).

We know you would be able to fill far more than three pages. However, we must also ensure that the evaluators can review all the solutions and give them a fair evaluation. Therefore, we will—albeit reluctantly—penalize solutions that do not meet all these requirements with a loss of 20 points.

On the other hand, for a complete solution, you can get 20 points from the evaluators for the Creative part, 40 points for the Experimental part, and 40 points for the Practical part. Therefore, you can earn up to 100 points for each of the three rounds of the basic correspondence part of the competition between January and April. Each evaluation includes verbal feedback on what you did well or what you can improve for next time. The team members' own work, not the leader's, is essential for the evaluation.

Online national round will follow the corresponding part in May, where the top teams from the corresponding rounds of categories 2 - 4 will advance.

And now you can get to work; we wish you success and much fun.

Your Science Cup 2025 team

## 1. Creative part (20 %)

The first round will be multi-colored, focused on the colors of the Czech and Slovak flags: red, white, and blue. Choose at least two or all three of them to work with during your team introduction.

*Your team's presentation should be in the form of your own product in the above colors in a maximum size of 20 x 30 x 20 cm or smaller. This can be a picture, a model clay creation, a model in a cardboard box, a collage, etc. Take a photo of your creation, remembering that you are taking a photo of your product, not just the team.*



*Photo by J. Soukupová*

Describe what colors and tools you used in the production and document your activity and the final product with at least two photos - one documenting your activity, the other documenting your final product.

## 2. Experimental part (40 %)

Choose any chemistry or physics experiment that uses or results in the colors red, blue, and white (which can also be transparent), again, either in at least two or all three.

*The experiment should involve only simple tools and commonly available chemicals allowed for independent work in your age group. Remember that if promoted to the final, you will present the experiment on the stand, so it should be safe for you and the audience. You should either be able to perform it quickly and safely repeatedly, or it should work for the duration of the stand.*



*Source: <https://steamideasforkids.com>*

When documenting your experiment, remember to provide the necessary tools and describe how the experiment was made so that the reader can carry out the experiment based on the description. Also, remember to explain the experiment correctly and completely. Complete the experiment with your own photographs.

### 3. Practical part (40 %)

In the practical part, we will combine theory, practice, and your own observation or measurement.

We stay with the colors red, blue, and white (or transparent). This time, you have three related tasks:

For your observations or measurements, choose at least two of the three colors and experiment with them either from a chemical or physical point of view (pH, optics, density, propagation speed, oscillation period, ...) so that your own observations or measurements are part of your research.

- find out 3 interesting facts about the chosen vegetable
- make and describe a physical or chemical observation or measurement
- from your observations or measurements, draw correct conclusions



Source: <https://www.zaben.cz>

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Describe the solution procedure of each task, the results of your team work, and any additional information, and document them with photos.

The solution can be handed in only before the deadline. Only the solutions fulfilling all the requisites given in the propositions will be judged without any point loss.

If you have any questions, you can ask a category consultant in your country:

Czech Republic and Slovakia: Naďa Zíková – [zikova@icpf.cas.cz](mailto:zikova@icpf.cas.cz) and Jitka Soukupová – [jitule.sk@seznam.cz](mailto:jitule.sk@seznam.cz)

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