

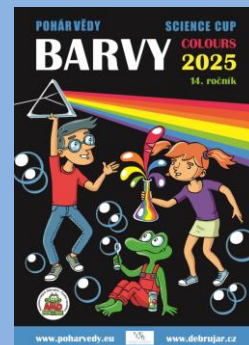
SCIENCE CUP – COLOURS 2025



POHÁR VĚDY SCIENCE CUP

Category 1 – Kindergarten and Pre-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 with your work, please take a few minutes to learn about the tasks, their solutions and evaluation.

Each month's assignment contains tasks in three areas - Creative part (20%), Experimental part (40%), and Practical part (40%). Describe the solution procedure of each task, the results of your team work, and any additional information, and document them with your pictures or photos.

Solutions must be submitted no later than 23:59 on the last day of the round. The solution must be uploaded to the system on the competition website by the deadline in the form of a single PDF file of maximum 10 MB in size. All contents of the file (text, sketches, photos) must not exceed 3 A4 pages and must be easy to read (simple font, minimum font size 11). The texts may be written in children's handwriting, scans or photographs of original entries from the researchers' own chronicles or diaries, but please pay attention to the readability, i.e. the evaluability of the submitted entries. However, do not send anything in paper form by post.

We know you would be able to fill far more than three pages. However, we must also ensure that the evaluators are able to go through 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. In total, 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 March. 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.

And now you can get to work, we wish you not only a lot of success, but especially a lot of fun and new knowledge.

Your Science Cup 2025 team

1. Creative part (20 points)

Our world is beautifully colourful



Photo: J. Houfková

The world around us is full of beautiful colours! Take a good look around you and notice what colours you find on the things around you. Your task will be to create a colourful **logo** or **emblem** for your team.

1. What is your task?

- Collect and select different coloured objects that you can find in the nursery, at home or outside (e.g. toys, crayons, papers, natural objects such as leaves, stones or pieces of clothing).
- Make a logo or emblem for your team using these things – it can be a simple picture, a letter or a shape.
- You can work inside or outside in a garden, a park or a forest.

2. What to do next?

- Take a photo of you working together to show how you create the logo.
- Also take a picture of the finished logo.
- With the help of your grown-ups, describe what your logo represents and what colours you used.

Have fun discovering the beauty of colours around us!

2. Experimental part (40 points)

How coloured pencils change colours on coloured paper

Coloured paper and pencils - what can we do with them? Let's explore together what different coloured pencils look like when we use them to draw on coloured paper. And what happens when we point a coloured light at them?

What you will need?

- White papers and coloured papers (for example, red, blue, green or yellow).
- A set of coloured pencils (at least the basic colours - red, blue, green, yellow, black and white).
- A flashlight (or lamp) and coloured foil (or cellophane) to change the light to red, blue, green, etc. or if you have coloured light (different coloured LED lights, lights from a Christmas tree, or different flashlights).



Photo: J. Houfková

Your tasks:

1. Drawing on various papers:

- Take one sheet of white paper and several sheets of different coloured papers.
- Draw the same picture on each paper (for example, a sun, a house or a heart).
- Use different colours of pencils and try them on all the papers.

2. Observation of colours:

- Look at how different colours of pencils look on different papers.
- Are all the colours equally visible? Which pencil colour is most visible on coloured paper and which one almost disappears?

3. Experiment with coloured lights:

- Use different coloured lights (e.g. red, blue, green) to shine on the pictures on the papers.
- Watch what happens: Do the colours of the pictures change in any way? Are some colours more visible under a certain light? Do some colours disappear altogether?
- Try this on white and coloured papers and compare the differences.
- Talk with your grown-ups about which colours look different under coloured light. How does light affect what we actually see?

What to do in the end?

- Draw what you have found and ask your grown-ups to write it down briefly.
- Add pictures and photos of your experiments.
- Think about which combination of coloured paper, pencil and light you liked best.

And above all, don't forget: Discovering colours is fun!

3. Practical part (40 points)

Investigating the properties of coloured papers

You see papers every day - but have you ever wondered what properties they have? Let's try out what papers can do!

1. What will you need?

- One sheet of white paper (for example, office paper).
- Coloured paper - at least two different colours, you can also use different types of coloured paper.
- Water, a brush or sponge, and possibly a flashlight or other lamp.

2. What to investigate? Prepare white and coloured papers and test what they can do:

- **Size:** Place the papers on top of each other. Are the white and coloured ones the same size?
- **Absorbency:** Sprinkle water on the papers or use a brush. What happens. Does the water soak in as quickly? Will the paper change color for a moment?
- **Durability:** Try gently stretching or crumpling the paper. Which paper will tear or change shape more easily?
- **Idea:** Can you think of anything else you can explore on or with the papers?

3. What next? Talk about what you found out - which paper was thicker, which sucked water more and which was more flexible? Draw your investigations and ask your grown-ups to give us a brief description of them.

Document your experiments with photographs and pictures, and ask your leader to write down the important parts. We suggest you to make research diaries, in which you will write and draw everything. You will not send us the diaries.

But do not forget that in order to be able to judge all your solutions at all, what you send us must not exceed three pages!

We are looking forward to your solutions and see you in the next round!

Describe the solution procedure of each task, the results of your team work, and any additional information, and document them with your own 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, see poharvedy.eu for contacts.