

# COMMUNICATION MATERIALS

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## **Key Learning and Realisation from the ProBleu project**

A key learning from the ProBleu project is the realisation that effective environmental education emerges from the integration of scientific inquiry, creativity, and community collaboration. The project demonstrated that when students actively measure, analyse, and interpret real environmental data—and simultaneously express ecological themes through art, communication, and public engagement—they develop a deeper and more lasting understanding of water ecosystems and their protection.

The experience showed that hands-on fieldwork, interdisciplinary learning, and cooperation with experts and partner schools transform environmental topics into meaningful, engaging, and memorable learning experiences. This holistic approach not only strengthened students' scientific skills and environmental literacy, but also highlighted that protecting nature can be an exciting shared adventure with real impact on the school, local community, and international partners.

## **Research Finding**

The implementation of an integrated model of environmental learning—combining field-based scientific inquiry (water quality and biodiversity measurements), creative activities (Art from Plastics, water-themed photography), and collaboration with experts and partner schools—has been shown to significantly enhance student engagement, scientific skills, and the overall quality of learning, while simultaneously generating sustainable impacts at school and community levels, including meeting European standards and earning the European Blue School certificate.

## **Evidence Base**

- **Engagement:** direct involvement of all 314 students (Grades 1–9), 80 actively participating students from partner schools, and approximately 200 indirectly involved students as audience members.
- **Skills development:** repeated hands-on water sampling (Morava River, Jeseníky Mountains, Morava–Danube confluence, Romania expedition), work with scientific protocols, graphing, and a digital database; integration across science, biology, geography, chemistry/physics, mathematics, ICT, and art education.
- **Quality and recognition:** all five criteria were met (connected activities, clear outcomes, student involvement, local partnerships, public communication), resulting in the European Blue School award.
- **Sustainability and transferability:** comprehensive methodological materials (lesson plans, videos, teacher handbook, worksheets), VR module, public exhibitions and workshops; all resources stored in an open repository and actively used by partner organisations (e.g., Slovak partner school, environmental institutions).
- **Community and environmental impact:** public events supported by local authorities and experts; identification of pollution sources and small-scale cleanup actions; long-term integration into the school's Environmental Education Strategy (EVVO), extracurricular clubs (Debrujáři, Badatelé), annual project days, and permanent exhibitions.

- **Risk management:** weather challenges and logistical complexity were addressed through flexible planning and partner collaboration, with no negative impact on project outcomes.

### **Interpretation**

The findings suggest a causal link between comprehensive, authentic field-based learning and improved student competencies and motivation. The synergy of science, creativity, and public communication acts as a multiplier of educational and community impact at local and international levels.

One of the most **memorable and impactful moments of the ProBleu project** was the international field expedition to Romania, where students stood directly on the banks of the Danube and conducted real-time water quality measurements alongside local experts. For many students, it was the first time they worked as “real scientists” in an international team—collecting samples, comparing data from the upper and lower Danube, and discussing how river conditions change across countries.

A particularly striking moment came when students discovered significant differences between the Morava samples collected at home and the Danube samples taken near the delta. This realisation—supported by their own data, not from a textbook—helped them understand the true scale of river systems and the shared responsibility for protecting European waterways.

Beyond the scientific work, the experience was emotionally powerful: students explored unique natural habitats, visited cultural sites, and spent time with their Slovak peers, forming friendships and strengthening international cooperation. Many later described the expedition as the moment when environmental protection became personal, real, and meaningful.

Equally impactful was the **Art from Plastics competition**, which turned an environmental problem into a creative challenge. Students collected plastic waste from their surroundings and transformed it into artworks, installations, and visual statements about pollution and biodiversity loss in the Morava River.

A particularly memorable moment occurred during the opening of the public exhibition, when students saw their pieces displayed alongside works from partner schools and judged by experts from the Secondary Art School. For many, it was the first time their artistic voice directly contributed to an environmental message—and seeing families, teachers, and community members react to their creations gave the students a strong sense of agency and pride.

The experience demonstrated that creativity can be just as powerful as scientific data in communicating the importance of protecting rivers.

Together, these moments—the scientific work at an international river and the artistic transformation of waste into meaning—became defining experiences of the project, showing students that environmental protection is both a scientific task and a creative, human story.

## **The educational experiences and outcomes at a primary school**

The ProBleu project significantly enriched educational experiences at ZŠ Ostrožská Nová Ves by introducing authentic, interdisciplinary, and participatory learning that extended far beyond traditional classroom instruction. Its impact can be seen across teaching methods, student competencies, school culture, and long-term educational opportunities.

### **1. Stronger Scientific Skills Through Real-World Fieldwork**

ProBleu transformed science learning by giving students repeated opportunities to work as “young researchers.”

Students gained practical experience with:

- water sampling and chemical analysis (pH, nitrates, nitrites, ammonium, phosphates, hardness),
- biodiversity observation,
- interpreting scientific data,
- using structured protocols and measurement worksheets.

These authentic tasks improved:

- scientific literacy,
- critical thinking,
- competency in data analysis,
- and confidence in conducting real environmental research.

Students reported higher motivation because the work had visible, real-world relevance—their data contributed to understanding the Morava River and European waterways.

### **2. More Engaging, Interdisciplinary Learning**

ProBleu integrated science, geography, chemistry, mathematics, ICT, and art into a coherent learning experience.

Key improvements include:

- students saw how knowledge from different subjects connects in real environmental issues,
- teachers collaborated more across departments,
- the project brought innovation into regular lessons (videos, digital resources, teacher handbook).

This interdisciplinarity made learning more meaningful, creative, and interconnected.

### **3. Increased Student Engagement and Participation**

With 314 students directly involved, ProBleu became a whole-school project.

Students were not passive listeners—they were:

- field researchers,
- data analysts,
- artists,
- presenters,
- communicators.

Activities like the international expedition, VR module, and collaborative sampling with Slovak students provided memorable learning moments that boosted engagement, curiosity, and pride.

#### **4. Development of Creativity and Environmental Expression**

The *Art from Plastics* competition encouraged students to reflect on pollution and biodiversity through artistic creation.

The public exhibitions and expert jury:

- enhanced students' creative confidence,
- strengthened their ability to communicate environmental messages through art,
- and showcased student work to families and the community.

This merged creativity with environmental responsibility in a powerful way.

#### **5. Improved Digital and Communication Skills**

Through the project website, blog posts, reporting, and data visualization, students developed:

- ICT skills,
- digital literacy,
- online communication skills,
- and experience with presenting research to the public.

Learning to communicate scientific results effectively is a crucial 21st-century competence that ProBleu strengthened.

#### **6. Stronger Community Connections and Real Expert Collaboration**

ProBleu connected the school with:

- environmental specialists
- municipal authorities
- the Morava River Basin Authority
- cultural and art institutions
- Slovak partner school

Students learned to collaborate across institutions and cultures, preparing them for future teamwork and international projects.

#### **7. Enhanced School Reputation and External Validation**

Fulfilling all criteria and receiving the European Blue School certificate validated:

- the high quality of teaching,
- the school's commitment to environmental education,
- the long-term sustainability of its activities.

This recognition strengthens the school's profile both regionally and internationally.

#### **8. Long-Term Sustainability and Institutional Impact**

All materials—methodological guides, worksheets, databases—are stored in a shared digital repository and used continuously in:

- annual project days,
- EVVO programme,
- Eco Club *Debrujáři*,
- STEAM club *Badatelé*,
- regular lessons.

This ensures that the project's impact continues long after the funded period.

#### **Impact Achieved**

The ProBleu project significantly strengthened students' scientific, creative, and environmental competencies. Through hands-on water quality investigations, interdisciplinary lessons, and international collaboration, students gained practical research skills and a deeper understanding of river ecosystems. Creative activities such as *Art from Plastics* enhanced

environmental awareness and public engagement, while community partnerships broadened the project's reach. The school met all European Blue School criteria, earning the certificate and integrating all materials into long-term teaching practice. Overall, the project improved the quality of learning, increased student motivation, and created lasting educational and community impact.

**Videos:**

[ProBleu, Rumunsko 32/200 | Zonerama.com](#)

[Výstavou škola ukončila dlouhodobý ekologický projekt | iTVS](#)

Photos:













