



## Chemical Education

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### ‘Chemie für dich und mich’ – A Hands-on Science Resource for Primary Schools

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**Abstract:** Chemistry without formulas or reaction equations, but with full relevance to a 12-year-old’s everyday life. This is “Chemie für dich und mich”: a learning resource for primary schools, combining a hands-on kit with a training course for teachers.

**Keywords:** Experiment kit · Science education · Teacher training course

“Can we do this every day?” – This spontaneous question from Lena, a 12-year-old student, was a gratifying moment during our visit to Riedmatt Primary School in Zug. Teacher Géraldine Müller had invited us to observe her class 6a using our ‘Chemie für dich und mich’ (Chemistry for you and me) kit, and we were pleased to see Lena and her nine classmates not only enjoy the session but also explore the world of chemistry with evident curiosity and engagement.

The experiment kit was developed by the SimplyScience Foundation in response to a recurring issue: many primary school teachers express interest in science but shy away from chemistry due to unfavorable experiences in their own education, a lack of training, or the considerable time required to research, test, and prepare suitable experiments. Our goal was to remove these barriers and create a resource that gives primary school teachers easy access to chemistry and enables them to deliver meaningful and joyful lessons, in line with the curriculum (Lehrplan 21) and with minimal preparation.

The first module was completed in 2017 with didactic input from the Pädagogische Hochschule Thurgau, involving a pilot course and feedback from participating teachers to shape the final material. Encouraged by positive evaluations and strong interest in the first module, additional modules were developed and released in 2020 and 2024.

‘Chemie für dich und mich’ consists of an introductory module and three in-depth modules focusing on topics familiar to children from their daily lives: cleaning agents (‘Zaubermittel Waschmittel’), personal care (‘Körperpflege unter der Lupe’), and kitchen science (‘Küchengeheimnisse’). These themes frame a wide range of chemical concepts – from hydrophobicity and solubility to emulsification and gelification – all explored through hands-on experiments (Fig. 1). Each module includes a box with experiment materials and extensive digital resources: a teacher guide, a student research booklet, a recipe booklet (modules 2 and 3), comics, photo sequences, and checklists. The resource is modular and flexible – teachers can use the full structure or integrate selected parts into existing lessons.

(During our visit to the classroom in Zug, we observed what we had hoped for: students working together, experimenting,



Fig. 1. Students of class 6a preparing a hand cream in the classroom, using the material from the experimental kit. The substances used are non-hazardous.

asking questions, searching for solutions. Most of the proposed experiments engage not only the mind but also the senses – as was evident by the lifted noses and excited chatter when a subtle scent of lavender filled the room while the students prepared a hydrolate for a hand cream. A moment that was as joyful as it was memorable, making learning tangible and lasting.

Géraldine later shared that the material had made it easy for her to teach science in a structured, engaging, and age-appropriate way. Other testimonials from teachers confirm this: the kit helps build confidence and supports effective science teaching.

Géraldine particularly appreciates that ‘Chemie für dich und mich’ promotes students’ cross-curricular skills such as teamwork, self-organization, or even setting up a personal workspace. Since around half of school time should be dedicated to fostering these kinds of skills, this resource is a valuable support in the classroom.

Asked how much time a primary school teacher can spend on projects like this, Géraldine says: “As a teacher, you naturally set priorities. While the curriculum is structured in such a way that each topic can be covered in about two weeks, it’s also important to take the time to explore certain topics in more depth. Not everything has to be covered in the same level of detail. Sometimes, it’s more valuable to slow down and engage deeply with a subject, depending on the group and the learning context. Experiences like ‘Chemie für dich und mich’ tend to stick with the students – they’ll still be talking about them years from now.”

Another major advantage Géraldine points out is that almost all the necessary materials are included in the kit. This not only saves a lot of preparation time but also allows for quick and easy implementation in everyday teaching. Obviously, teachers need to familiarize themselves with the structure and material beforehand, but this requires no more time than preparing other lessons.

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Géraldine also values the modular structure of ‘Chemie für dich und mich’ that allows her to select individual aspects and use them flexibly depending on the group or time available. Consequently, the resource works very well not only for regular classes but also for special formats like talent groups.

The teaching resource consisting of an experimental kit and a three-hour training course is provided free of charge. All German-speaking primary school teachers in Switzerland are eligible. Teachers can express their interest in participating in the program through an online form and are notified when a course is scheduled.

Since its publication, more than 24 courses have been held in 14 different locations, reaching over 520 teachers. The courses took place at various schools and institutions in German-speaking Switzerland, including the Pädagogische Hochschule Bern, Pädagogisches Zentrum Basel, Pädagogische Hochschule Zürich, and Pädagogische Hochschule Luzern. Many teachers return for additional modules, and currently over 80 are on the waiting list – without active promotion. Thanks to financial support from the Swiss federal government through the mandate of the Swiss Academies of Arts and Sciences, more courses are planned to be held within 2025–2028.

By combining professional development, ready-to-use materials, and ongoing support from the SimplyScience Foundation, ‘Chemie für dich und mich’ enables teachers to confidently bring everyday chemistry into the classroom. Students gain not only scientific understanding but also skills in scientific inquiry, teamwork, and problem-solving.

Lena’s question says it best: when students experience chemistry as relevant, fun, and empowering, they want to keep going. ‘Chemie für dich und mich’ shows how chemistry can become a natural and exciting part of primary education (Fig. 2).



For further information please visit: <https://tinyurl.com/bdz2acmj>

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Many thanks to Géraldine Müller and the class 6a from Riedmatt Primary School Zug for allowing us to visit during the lesson. Image credit: Sarah Menzi.

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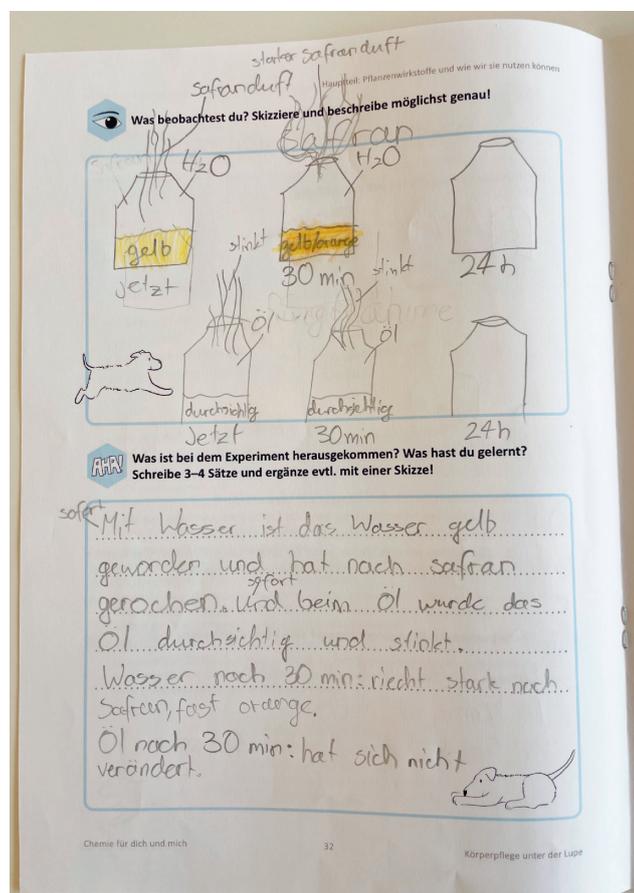


Fig. 2. Page from a lab journal of a student of class 6a. The students are provided with a lab journal where they note their hypotheses, experimental setup and observations.