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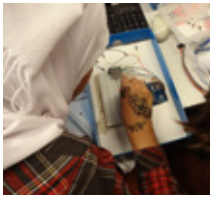
EDUCATION
Schule in Farbigen Zuständen

Universität Bremen

ENSURING THE NEXT GENERATION OF MINT SPECIALISTS

Any Research is driven by people with curiosity, ideas, enthusiasm, endurance and perseverance; by people who break new grounds on unknown territories; with the tools of basic knowledge. But where do researchers come from and how do they obtain their skills to tackle important and yet unsolved problems? Although this is different for each individual, we are sure that we cannot start early enough to spark the flame. Our Collaborative Research Centre (CRC 1232 „Farbige Zustände") allows us to engage people from different scientific disciplines, at different stages in their career and from different cultural backgrounds in order to spark to our next generation. But how can we get this spark across to our future scientists, researchers, developers? Till what age are girls and boys open for new ideas and when do career aspirations consolidate?



The approach: Today there are two main established paths to engage young people: firstly, through programmes, e.g. the competition "Jugend forscht" (youth researches) for older children at an upper school level who have already received inspirations and made plans for their career. Secondly, through children who have had specific opportunities such as Girls' and Boys' Days, Childrens' University ("Kinder Uni") or open house workshops, etc. In our opinion, both paths seem to lack a key point for a future concept: to start at an early age AND on a long-term-basis. This in mind, the CRC 1232 decided for a strong cooperation with a school close to the university, the Wilhelm-Focke-Oberschule (WFO) in Horn-Lehe, a junior secondary comprehensive school from grade 5 to 10, so-called Oberschule.

The implementation: Starting with a group of 28 fifth-graders in summer 2017, every week a WFO teacher and two CRC scientists give a two hour lesson together, organized in several 5-week modules. The project continues through the entire first funding period of the CRC while the children move from 5th to 7th grade, and our wish is, of course, to extend it to the 10th grade.

The themes originate from our interdisciplinary CRC, they offer new concepts and knowledge to the children. At the same time we provide links to their every-day-life as well as to their regular technical and non-technical school subjects. The aim is to broaden the interest, arouse and support curiosity in technical topics. Regular hands-on practical exercises at school and at the university are an important element of the cooperation. For the children these visits at the university and the research institutes are always a highlight.

Table 1: Teaching modules for the 5th grade

Start and Name of Module	Area of discipline	School Subject
08/2017 ‚Werkstoffdetektive'	Materials Science	Natural Science
11/2017 ‚Programmieren mit Arduinos'	Computer Science	Mathematics
01/2018 ‚Metallzeit – Evolution durch Werkstoffe'	Chemistry and Physics	Society and Politics (GuP)
03/2018 ‚Altmetall – Mach' was draus'	Material Science	Economics, Labour & Technology (WAT)
05/2018 ‚Märchenhaftes Material' – Ein Videoprojekt	Media Technology	German

Benefits and first results: The benefit for the children is to receive a broad education with practical research experience and hands-on experiments. The teachers extend their expertise by working with scientists and getting access to the research environment and new topics. This joint cooperation requires open minds from all three partners: children, teachers and scientists. We could already see that all this is worth the effort: the regular evaluation of the teaching modules shows an increasing interest in technology and research among the children.

At the end of the first year's programme, the children proudly presented their project work throughout all the subjects to their families, teachers and CRC-interns at the university. A "high-five" and a "we'll see each other again in 8 years when I start studying at the university" was how the kids said good bye to the CRC-scientists of the teaching modules at the end of the year.

Farbige Zustände

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