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miwelt: Hands-on science for primary school children in the field of microbial biotechnology

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In scope of the miwelt-project (funded by the Agora programme of the SNFS), activities for children from 7 to 11 years of age are being developed to encourage exploration of the non-tangible world of microorganisms, their presence in everyday life, and their use in the science laboratory. For this purpose, the scientists involved, together with artists and journalists, have developed illustrated factual stories, thematic excursions, and laboratory experiments in the field of microbial biotechnology. They have broken down complex information into graspable chunks and redesigned originally sophisticated scientific experiments with the use of conventional articles/items so that they can be reproduced outside a well-equipped laboratory, for example, in typical classrooms or the kitchen at home. The pedagogic concept is based on the use of graphic arts and creative activities to trigger and stimulate children's natural curiosity and bring them the excitement of a voyage of discovery. In this way, science becomes more attractive to children.

Children's fascination stimulates their curiosity! As the microbial world cannot be seen at first glance, its notions are built on images of the real, visible world as children experience it. While taking part in laboratory activities, children can observe, question, experiment, document their research and findings in a lab book, have discussions, and dress in white lab coats, gloves and goggles. They experience, for instance, that a good experimental plan may fail, that cells viewed under the microscope are likely to dance, that microbial culturing may be the new face of pastoral and/or arable farming, and that DNA is something a human, animal or plant cannot lose. The delivery concept is based on hands-on experience and a dialogue, both of which emphasise the significance of underlying principles over factual knowledge. Adult researchers developing and supervising these activities are motivated by the unbiased perceptions of the young researchers, and thus inspired to seek deeper understanding of their own knowledge of science.



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