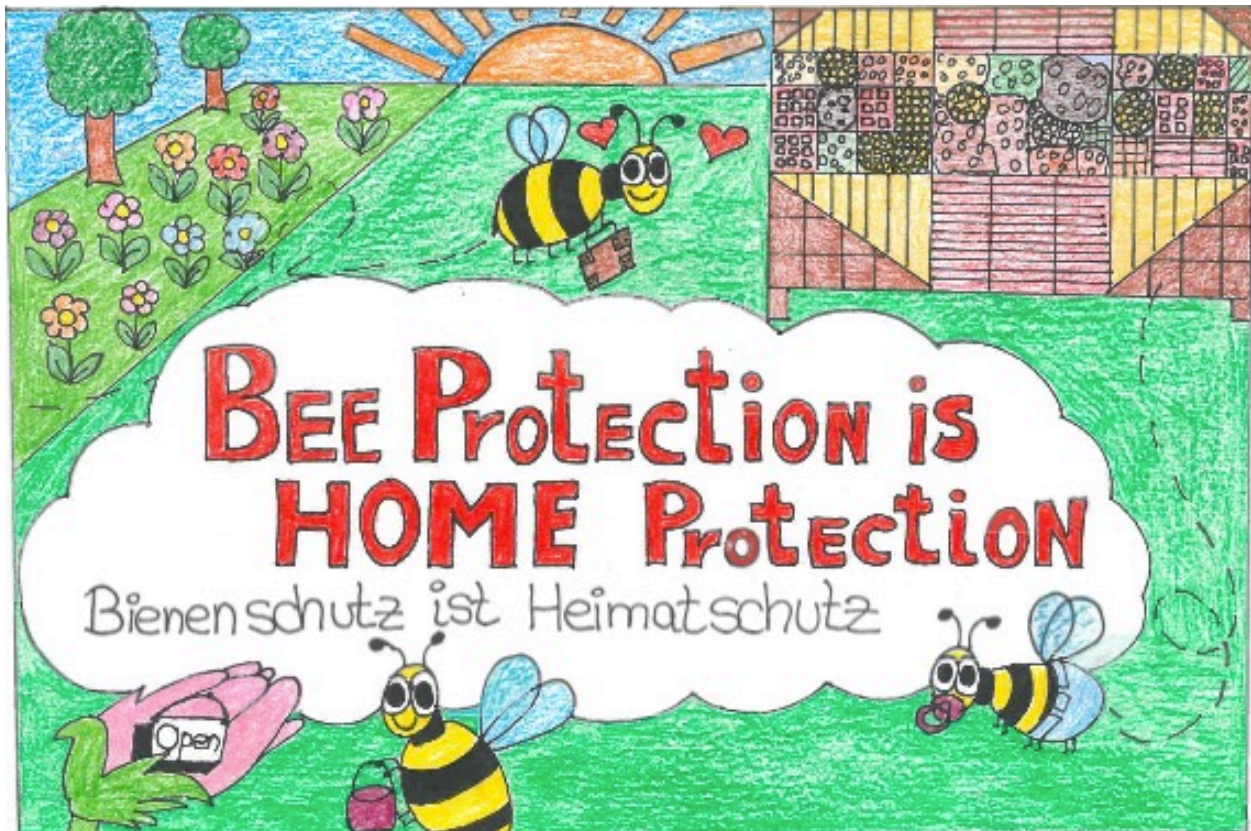


1. Participant profile

▪ Participant name:	Larissa Ganz
▪ Participant profession:	Apprentice Industrial Management Assistant (3rd year of apprenticeship)
▪ University/Organisation:	None
▪ Number of people in the group:	32 children, 1 teacher, several parents and the project manager Larissa Ganz

2. Project Overview

Title:	Bee Protection is Home Protection
Competition (Research/Society):	Society
Quarry name:	Waghäusel-Wiesental



Project: Bee Protection is Home Protection

from Larissa Ganz

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Abstract

The following final report provides an overview of the detailed measures and activities of the project entitled “Bee Protection is Home Protection”. The project addressed and illustrated the exchange of experiences between children, adults and wild bees. Following that the findings of the children were reconciled with the findings of the adults and summarised into a final conclusion. The basis of the final report is the handling, behaviour and understanding of children for why adults use pesticides and also why pesticides harm bees. However, this was not explained to the children. By doing so, the project manager Larissa Ganz hoped for a better understanding of wild bees and the importance of supporting and protecting them. Humanity gains added value from this since it has been scientifically proven that people need bees to survive. Children and adults are our future and are able to make a difference. We can show them the way but they must decide for themselves.

Brief description

The objectives of the project were to build a wild bee house and plant a wild flower meadow. In addition, other objectives arose during the implementation phase such as generally raising awareness of bees, the incorporation of the quarry with its resources as well as the participation of the public and local media. The quarry, Waghäusel-Wiesental, is located in the county of Karlsruhe in Baden-Württemberg, roughly 20km outside of Heidelberg. It is a sand and gravel quarry from which Heidelberger Sand und Kies GmbH has been mining raw materials since 1964. The mined sand is used for concrete or the sand limestone industry.

The team members consisted of 32 children (2nd year, Freie Waldorfschule Mannheim [independent Waldorf school in Mannheim]), the class teacher Mr Vaupel, some parents and the project manager Larissa Ganz.

The target group was children who had come across bees as part of their school education and thus had gained fascinating insights into their way of life. Likewise, the parents who, through their support, were more aware of the matter and as a result successfully built their own nesting aids. There was also another target group in the form of the younger generation going through the “where do I belong?” phase of their life. For them, bee protection isn’t as important as what to wear to the next party. Some among this target group considered the topic by following the project, others were able to perceive the environment differently and others even built their own nesting aids. The final target group was the public. They were made aware of bee protection via posts on Facebook (Group: Bee Protection is Home Protection), a newspaper report (Mannheimer Morgen), an online article and a public radio report on the lunchtime radio show, “Radio Regenboden” with the motto: Everyone can help to protect bees!

Final report:

Measures and activities

After the project manager Larissa Ganz had decided on the Waldorf school in Mannheim, the planning for the wild bee house got under way. She sought inspiration from a wild bee house in Durmersheim.

Another measure was finding a location for the wild bee house at Heidelberger Sand und Kies GmbH. At a joint meeting between the factory manager Mr Beyerle and the project manager Larissa Ganz, the grounds were inspected for a suitable location. A meadow on the edge of the grounds just before the forest was chosen, since wild bee houses should not be exposed to the hot sun all day as wild bees never nest where it's too hot.

At another meeting with some of the children's parents, the teacher, a few children, the plant manager Mr Beyerle, the operations manager Mr Zimmerer and the project manager Larissa Ganz, the exact location of the wild bee house was identified. Furthermore, the measures for the laying of the gravel path by Heidelberger Sand und Kies GmbH were discussed along with exactly which parts of the meadow should be ploughed so that the children could sow wild flowers there.

Later in the course of the project, in a joint meeting between the children, the teacher and the project manager Larissa Ganz, bee bricks were made using the school's own clay. Prior to this, square shapes had been prepared into which the children could press clay so that all the bricks were the same size and could be stacked on top of each other. With the help of wooden sticks, holes of various sizes were made in the bricks. These serve as nesting corridors for wild bees.

The original plan to design and build the wild bee house with an internal honeycomb could not be accomplished, since doing so would have made the house much larger. It also would have been difficult to house individual nesting options. So it was decided that the best solution for the bees was a normal bee house instead of a house that appealed more to the human eye. The design would also not have given the bees any added value. Due to the new decision in favour of a simple build, the house was able to be completed more easily and was sawn and built in a single joint working group day by the parents since the children were not able to do so by themselves due to their age. The parents had a lot of fun with their children and everyone had a beautiful and creative day.

After constructing the wild bee house, another requirement was a strong foundation at the later Waghäusel site. Since nature and ecology were the priority, no foundation plates could be cast. Therefore 80cm deep holes were made with a concreted wooden construction so that the house would be protected against strong winds. One of the fathers made a template for orientation and drilled the holes using a ground drill which were then filled with concrete from Heidelberger Sand und Kies GmbH to make the structure sturdy.

In addition, Heidelberger Sand und Kies GmbH laid the desired and planned gravel path, using its own gravel, which served as the path to the wild bee house and became accessible to the public. The next step was to plough an equally large area to the left and right of the path. A larger area was also uncovered on the right hand side of the wild bee house.

Before construction began with the children on 15 May 2018, preparations were necessary. 800m² of seeds called “Bienensommer” (bee summer), a special mixture especially for bees, were purchased from a regional seed manufacturer. Furthermore, blackberry stems were collected and attached to the back of the wild bee house so that wild bees that nest in myelinated stems would also be able to deposit their eggs. Small buckets were also provided for the children and covered in colourful crêpe paper in order to take Waldorf education (educational concept) into account. One part was the children’s journey from Mannheim to Waghäusel. Since it was too far by train or by foot for the seven to nine year olds, the decision was made to hire a bus for the children and their chaperones. This brought the children from Mannheim to Waghäusel for the launch together with the plant manager Mr Beyerle, the operations manager Mr Zimmerer, one of the jurors from the national jury Mr Beißwenger, some employees of HeidelbergCement AG, Mr Wczassek (from the Wienerberger company) and the project manager Larissa Ganz. After a short briefing and the distribution of safety vests to everyone, they went by bus to the actual location of the wild bee house.

To begin with, two of the fathers had gone ahead with the frame of the wild bee house, secured it for the children in preparation for the prepared construction and covered the roof with slate tiles. The construction was carried out by two working groups; the bee group and the ant group. At this point, each child was allowed to place their own brick with their name on it in the wild bee house. Each group filled one part of the house while the other group took over part of the wild flower seeding. Meanwhile, each child received their own beekeeping glove in either green, blue or pink, which they were allowed to keep at the end.

On the day on construction in Waghäusel, the project manager Larissa Ganz produced information signs which could not have been produced in advance due to time restrictions. Thus, they were only available as printouts on the day. The project manager Larissa Ganz worked with the signs by giving one to each child and then briefly discussing each one together. Together, they put the signs in the appropriate order and employees from Heidelberger Sand und Kies GmbH secured them after completion.

Finally, all the children, the teacher and the project manager Larissa Ganz gathered around the last open field and sowed the last seeds, pressing them into the ground together with their feet.

List of those involved:

- 32 children
- Mr Vaupel (teacher)
- The children's parents (two parents per child + some siblings)
- Stein family and Gloria (children's parents)
- Project manager Larissa Ganz
- Mr Wzcassek from the Wienerberger company, which provided small formats and helped to plant the meadow.
- The plant manager Mr Beyerle and the operations manager Mr Zimmerer from Waghäusel
- The project manager's mother who proofread (German).
- The mother's life partner who was involved in the layout of the signs.
- The project manager's father who produced the nesting aid sign.
- Friends: Caroline, Jasmin, Svenja, Lena, Sarah, Jessica who proofread (English).

Exchange of experience

At this point it will not be about discussion but rather the exchange of experience since the project was not a discussion but rather an exchange between different generations and between people and animals. The project was child-friendly since children should remain children and not be burdened by environmental problems. The children were told that, due to special circumstances, the wild bees were dying and so we had to help them. Thus, the children became familiar with an infantile area of the environment. They very much enjoyed making bee bricks, bundling reeds and drilling logs. They also liked with the earth/clay mixture that was used to make sure that the reeds could not be pulled out of the wild bee house by birds. The mixture had a positive side effect. The wild bees used the mixture to close off their nesting corridors and did not have to search for the material in the area surrounding the house. Another special experience was the planting of the wild flower meadows. The seeds were trodden into the earth by the children's footsteps giving the children a special connection to the ground as not many people spend their time sowing seeds these days. The seeds were stomped into the ground by the children so that they weren't immediately eaten by the birds. Thus, the children not only learned about the behaviour of wild bees but also about the behaviour of migratory birds looking for food..

Added value for the location, the company, biodiversity and the community

The installation of the wild bee house and the wild flower meadows resulted in a more wide-spread settlement of different species of insects in the **quarry**. The variety of species rose due to the opportunities gained from the project, also serving as a source of food for other species, e.g. for the sand martins living there. It leads to a closed circle, the circle of life, which we have supported.

The existence of high-value, natural habitats close to nature is a decisive factor in the survival of wild bees. Bees need these habitats to create brood nests for the winter, and to collect nectar and pollen from wild plants. This was able to be created in the quarry.

The company supported recultivation by interfering in the natural habitat through quarrying and destroying some of the existing vegetation. By providing their support, many animal and plant species can benefit and emerge. The digging of raw materials means interfering in nature and the landscape. Many animals and plants benefit from the large number of habitats resulting from the **company's** digging activities. The company made it possible for the children and their parents to connect with their curiosity. It will also enable them to learn about the characteristics of species in quarrying sites and sharing the knowledge they gained about them.

Biodiversity involves three areas: The diversity of ecosystems (habitats), the diversity of species, and the diversity within these species. All ways of life are connected to a certain ecosystem. Just as marine creatures are dependent on salt water, wild bees need a rich source of food and nests. We preserved the natural habitats and, through the wild bee house and the wild flower meadows, supported biodiversity as well as the animals and plant species living there, thus paving a path for the future. Around 40 different species of wild bee can now benefit from the erection of the wild bee house.

For the community, this meant that they were involved in a project protecting species. The world and its population have changed. They have opened up to the environment and to the protection of wild bees. For the school class from Mannheim, it was a worthwhile construction and science project that they will not soon forget as another wild bee house is to be erected at the school in Mannheim so that the entire school can relate to it in and outside of the classroom. Thus, the children can grow up familiar with the protection of wild bees and, as a result of the project, have gained a feel for the environment, our bees and their own responsibility. They have learned that bees are vital for our future and will enjoy all the visitors flying by. The parents spent quality time with their children during the project which, in today's world where parents spend most of the day at work, is a lovely gift for the children. It also strengthened the bond between parent and child. It may have even uncovered some craftsmen among the boys and some biologists among the girls.

Result:

According to the project manager Larissa Ganz, the wild bee house and the wild bee meadows turned out even better than she envisaged at the beginning of the proposal. Ideas can quickly take off and develop unrealistically while reality proves whether the plans and ideas can develop masterfully and successfully. The house became well colonised within just a short amount of time and the early nesting corridors are already exhibiting holes meaning that baby wild bees have hatched which shows the success that was strived for. The most important goal was to improve nesting opportunities while another was to create sources of food. The meadows are used just as much as the house. They attract a rich variety of insects and serve as a source of food for them.

Development recommendation:

The point of the “Bee Protection is Home Protection” project is for the wild bee house to continue to exist so that the wild bees can continue to colonise it after the project is over. Since the bees clean out their nests every year before they lay their eggs, the nests don’t need to be taken care of in the coming years. They will only need changing out in a few years since they’re exposed to the weather every day. The wild flower meadow, like the other meadows, is mown by Heidelberger Sand und Kies GmbH so that the flowers can bloom anew each year and not be driven out by certain other plants (weeds). Currently the wild bee house is accessible to other school classes, whether they be from Mannheim or from other schools in the area. Thus, it can be turned into an educational trail for lessons. Likewise, in the area around Karlsruhe, there is a cycle path with designated nesting aids that the public can view. The wild bee house in Waghäusel should also be incorporated into this network. It is thus being made visible and constantly accessible to the public. In the future, sponsorship will be sought for the wild bee house. The project manager’s wish is that the wild bee house will continue to be preserved in the future. In the coming years, she will keep an eye out for additional sponsorship for future years or perhaps somebody will submit a supporting project as part of future Quarry Life Awards.

Project manager's personal conclusion

For me personally it was a wonderful and splendid experience to be able to lead such a great project. It showed me how such small things can still be important to the big picture. Looking back, I am glad that I submitted my project idea. Also I am glad that I was able to implement everything how I had imagined. Furthermore, it turned out even better than originally planned. It is great to see the kind of joy that the children and parents experienced helping to shape it and the sense of unity that arose as a result. Thank you for allowing me to be a part of this union. I was also pleased to see how well the individual species of wild bees accepted the house and the meadow. It could have been left empty or not settled in until next year. However, after two months, a number of the holes were already sealed and, in some cases, even broken up as some of the bees had already hatched. It was a pleasure to observe this fruitful and rapid progress. Looking back, it was a lovely but also exhausting period since the project took a long time. As I'm currently still in education myself and thus still had to work, I accumulated hours for the project which I then used for it. Just as everything in life comes to an end, so shall the project upon submission of the final report in September and the project presentation in October. After this we will see if I was able to create excitement and awareness for "Bee Protection is Home Protection".

Conclusion

In conclusion, project "Bee Protection is Home Protection" was a worthwhile science project for all involved. Everyone gained their own experience from it. The children engaged with our little wonders of the world and the parents increased their awareness. The wild bees have adopted the house and the meadows magnificently. The area is accessible to the public. It can provide information on the educational trail on wild bees, biodiversity and the circle of life and, preferably, can support itself. The appeal of "I can do it too" often elicits people and moves them to contribute towards a better environment and way of life. The bee protection project did not go unnoticed but rather reached the wider public by appearing in an informative newspaper article in the "Mannheimer Morgen" newspaper and being published on Facebook and through an informative interview on the radio show "Radio Regenbogen". Through these media channels, the project was made accessible to a wider audience, involving the community and encouraging reflection. All in all, in the opinion of the project manager, it was an educational and fantastic experience that she wouldn't have missed as well as a successful project for humans and bees alike.

Project description (please mark as applicable)	
The information is used to categorise your project in the project archive (which is also available on the website).	
<p>Project focus:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Outside the quarry <input type="checkbox"/> Biodiversity management <input type="checkbox"/> Cooperation programme <input checked="" type="checkbox"/> Promoting cooperation with local communities <input checked="" type="checkbox"/> Education and sensitisation <input type="checkbox"/> Invasive species <input checked="" type="checkbox"/> Landscape conservation <input checked="" type="checkbox"/> Pollination <input type="checkbox"/> Research and restoration of habitats <input type="checkbox"/> Scientific research <input type="checkbox"/> Soil management <input type="checkbox"/> Species research <input checked="" type="checkbox"/> School project <input type="checkbox"/> Urban ecology <input type="checkbox"/> Water management <p>Flora:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Trees and bushes <input type="checkbox"/> Ferns <input checked="" type="checkbox"/> Flowering plants <input type="checkbox"/> Fungi <input type="checkbox"/> Moss and liverworts <p>Fauna:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Amphibians <input type="checkbox"/> Birds <input checked="" type="checkbox"/> Insects <input type="checkbox"/> Fish <input type="checkbox"/> Mammals <input type="checkbox"/> Reptiles <input type="checkbox"/> Other invertebrates <input checked="" type="checkbox"/> Other insects <input type="checkbox"/> Other species 	<p>Living spaces:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Artificially created spaces/cultivated land <input type="checkbox"/> Hollow <input type="checkbox"/> Coastal area <input checked="" type="checkbox"/> Grassland <input type="checkbox"/> Human settlement <input type="checkbox"/> Open areas with rocky ground <input type="checkbox"/> Recreation areas <input type="checkbox"/> Sandy and rocky habitat <input type="checkbox"/> Screes <input type="checkbox"/> Shrubs and groves <input checked="" type="checkbox"/> Soils <input type="checkbox"/> Wandering biotope <input type="checkbox"/> Waters (flowing, standing) <input type="checkbox"/> Wetland <input type="checkbox"/> Forests <p>Interested parties:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Authorities <input type="checkbox"/> Local communities <input type="checkbox"/> NGOs <input checked="" type="checkbox"/> Schools <input type="checkbox"/> Universities