

#GreenHeart

By: Jens Hepper (Germany)
School for Vocational Education II Northeim &
Regional State Office for Schools and Education

Age 6-16

Learning Objectives

- Appreciate how the edge effect of hedges works in furthering biodiversity.
- Conclude that by letting nature do her work, biodiversity can be elevated.
- Observe how many species that can live in our gardens, towns, and cities if we just make a little room for them.
- Explain how natural succession happens.

Introduction

The inspiration for this lesson came during the Covid-19 pandemic. The Green Heart biotope concept came from the need to bring experience with nature and biodiversity into students' immediate vicinity. This lesson involves students in small inexpensive actions for big valuable change. Experience how designating an area (small or large) to be left untouched can have a big impact on local biodiversity. This lesson simultaneously provides first-hand experience for students with conservation and rewilding efforts. #GreenHeart is a way to teach students to love the Earth back.

Keywords: #GreenHeart, biotope, habitat, distance education, rewilding

Structure There are both short term and long term aspects to this activity. It can be done in one year, it can be done in 10+ years, depending on the curriculum. After two weeks, students and teachers will see the first changes with ants building their nests, etc:

- Classroom Session 1: Getting our #GreenHeart started (60 minutes)
- Outdoor Session 2: Let it Grow (60 minutes + ongoing weekly observation)
- Outdoor Session 3: Signs of Life (60 minutes + ongoing weekly observation)

Before the Lesson Sometimes these spots may be viewed as unkempt possibly bringing pests into the yard. In some cases, teachers may need to address and convince other staff members.

Required Resources

- A small patch of grass on the school grounds
- Teachers garden
- Student gardens
- Optional: seeds of wildflowers, etc.
- Applications like pl@ntnet or others for identifying the species growing there or books for identifying them.
- Observation charts or notebooks

Assessment

Use observation sheets and charts made by students to track the observations of different species (pollinators, birds, words, etc.). These can be used to track students' keen observations, understanding of the progress in biodiversity because of the actions taken, and ability to track data and draw conclusions.

Differentiation

This activity is suitable for all ages and ability levels.

Extension

This is a project that can easily be seen from the air, when Google Maps, etc. publishes new photos. Encourage other schools to do the same by asking students to write a letter and send it off to another school with a few photos and a packet of seeds to start their green heart with.



Dissemination: Examples of Schools participating in #GreenHeart Projects

Schiller-Gymnasium Hameln



Grundschule Bungerhof-Hasbergen



Albert-Einstein-Gymnasium Hameln



IGS Peine



Gymnasium Bad Nenndorf



Burg Gymnasium



1

Activity

Getting our #GreenHeart Started

Introduction

- Introduce the #GreenHeart project to students.
- Take a look at the photos in the *dissemination section* to see how other schools have gone about their #GreenHeart project.
- Explain the concept of a biotope with students:
 - Biotope: an area which has a uniform biological environment with a specific community of animal and plant species.
 - The #GreenHeart project creates a small scale biotope where nature is allowed to 'do its magic'.
 - In an untouched area, species can naturally coexist.

Development

- Facilitate a discussion on where would be an ideal space in the school for a green heart? What should be planted there?
- Using a map of the school garden or outdoor area, mark off an area agreed upon by the students to begin the green heart.
- Take the students outdoors and with sticks, rope, or tape mark off the determined area in the shape of a heart.
- Talk with the responsible people for landscaping in the schoolyard and make sure they stop cutting the grass in the designated area.
- As an addition, you can discuss with students which additional plants should be sown in the area.

Conclusion

- Close this session with a plan of action.
 - Write down the next steps
 - Timeline
 - List of responsible students
- Allow students to share their hopes and expectations of the #GreenHeart
- Ask students about their predictions on how soon they will be able to observe a change in the species present in and around the #GreenHeart.

2 Activity

Letting our #GreenHeart Grow

Introduction

- Ask students to collect any necessary gardening materials and go outdoors to the green heart.
- Have students take initial photos of the marked area before any work is done.

Development

- Depending on whether the existing area has enough vegetation, show students how to use shovels to turn the soil up and allow them to sow some grass and wildflower seeds on top.
- *Over the next few weeks:* Encourage students to observe and measure how fast the plants grow compared to one another. This can be measured with a meterstick, etc. and documented every week.
- Have a chat outdoors or in the classroom where observations can be recorded for all the students to see.
- Encourage students to carefully observe the development of the plants:
 - When do the grasses emerge?
 - When do wildflowers blossom?
 - When did the red or white clovers appear?
 - What happens to the green heart in the fall?
- Encourage students to watch for life:
 - Look for ants, snails, bugs, etc. moving in after a few weeks during spring/summer.
 - Track them on a biodiversity tally sheet in the classroom or somewhere outdoors.
 - Ex: Track how many different bee species can be identified before the summer holidays!
- Show students how to set up brightly colored bowls filled with some water around the green heart area.
 - Instruct students to observe pollinators and other insects that come for a drink.
 - Remind students to help insects out if they fall in.

Conclusion

- Allow students to take responsibility for the observation, care, and protection of the area.
- At the end of each month have a feedback session where students led the review on the feedback charts (plant growth, species sightings, etc.).

3

Activity

Signs of Life in our #GreenHeart

Introduction

- As the #GreenHeart develops, instruct students to observe the increasing complexity in the species relations within it.

Development

- Remind students to look for new species.
 - Encourage them to watch for trees (they take up to a year to see).
 - Once trees begin to appear challenge students to find the possible parent tree.
 - Is there one nearby? How far can a seed travel?
- Encourage students to look out for signs of biodiversity in relation to food webs.
 - Once slugs and snails appear what other species follow?
 - There may also be signs that birds or hedgehogs visited too to feed upon them.
 - What food web or other relations can students spot among the species?
- Get students excited about looking for earthworms!
 - Tell students that earthworms are an indicator of active and living soil.
 - Use a safe method to drive earthworms out from the soil to observe them (spade clapping, mustard solution, etc.).
 - Show students that in an untouched area there are more earthworms compared to landscaped areas.

Conclusion

- Encourage students to reflect on the big picture:
 - What happened during the process of creating a green heart over time?
 - How has the biotope changed over the seasons?
 - What did we learn about a green space that is 'left alone' from the human intervention? What did we learn about biodiversity?
 - How can we continue to improve the biodiversity of the green heart and expand it to other areas?
- Ask students to record and share their opinions and suggestions.
- Share your #GreenHeart pictures on social media, with parents/guardians, and the community.



A new #GreenHeart at the Eco-School, Wilhelm-Bracke Cooperative School



Students finished preparing the soil for their #GreenHeart at Albert-Einstein Gymnasium Hamelin



Marking the area for a #GreenHeart at IG School Peine