Do Field Investigations with Seek by iNaturalist

AARHUS UNIVERSITET

NATURAL TECHNOLOGY

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The app Seek by iNaturalist is used in the following activity for field investigations of nature and biodiversity in neighborhoods, for example as a part of a science class. The activity has been produced with inspiration from the website and guide associated with iNaturalist and has been further developed by Cathrine Rafn Crety for Natural Technology.

Target audience: 6-18 years old.

Time use and prerequisites:

1-2 hours outside and optionally extra time for processing data later.

The activity presupposes that the teacher/facilitator has experience making observations in iNaturalist and is thoroughly acquainted with the app.

Materials:

Smartphone or tablet with Seek by iNaturalist downloaded.

Optionally magnifying glasses, petri dishes and hula hoops to delimit the area under investigation.

Fact box

Biodiversity

Biodiversity means biological variety, which is the number of different species of plants, animals, and microorganisms, as well as suitable habitats for them, that are found in an area. Biodiversity is an important element of ecosystems that we humans are also a part of, which is why the flourishing of plants and animals is good for us as well.

About this activity

This activity is part of a series of activities developed by the Danish research project called *Natural Technology*. The purpose of the project is to investigate technology in combination with nature, such as the potential of smartphones in children and teenagers' experiences in nature. You can read more about the project here: https://naturligteknik.dk/en/.

Natural Technology is affiliated with the interdisciplinary organization Center for Children and Nature and is supported by Nordea-fonden.

Natural Technology is anchored in the research program 'Future Technology, Culture and Learning', located at the Danish School of Education at Aarhus University.

Description

In this activity, children or young people make field investigations of the nature and biodiversity in their neighborhoods, thereby learning about the animal, fungal and plant life around them. This can take place on the school grounds, in their garden or at the nearest park. By using the app Seek by iNaturalist, the children/young people can carry out field investigations in which they find animals, plants and fungi in a delimited area and record their findings in the app by taking a good picture of each finding. Through an image recognition function the app will try to identify the species. But be critical of the app's suggestions, as they are a product of 'machine learning', meaning the app 'learns' as it is used. After the field investigation, the experience of collecting data and the results of the collection can be used to discuss why it is important to have a diversity of animals, plants, and fungi.

Preparation

If the activity forms a part of a learning unit, the children can be introduced to what biodiversity is and why it is important to gather knowledge about biodiversity. Introduce the Seek app and show them how to document observations in it. For example, it is important that the children remember to check whether their observations are of animals in captivity or cultivated plants. Animals in captivity can mean domestic animals such as hens, and cultivated plants can be outdoor potted plants, for example.

Collection

Download the Seek by iNaturalist app. In the app you can find challenges and earn badges for making observations. The children can focus on an outdoor area and document all the natural organisms they find within it by taking pictures in the app. If it is difficult to take a picture of an animal, for example, the animal can instead be described and identified in the app using guides. The task is to document as many animals and plants as possible. This is also called a bioblitz.

Review

After the collection stage, form an overview of how many different species you have found and take a closer look at your findings. For example, you can examine:

- Which animals, fungi or plants did you find the most of?
- Select an animal and find more information about it: Where and how does it live? What does it eat?
- How many of the animals, fungi and plants you have found are either endangered or invasive?
- Could you imagine that your findings would have looked different at another time of the year? At a different time of day?

Based on your results, you can consider whether you can start projects to increase biodiversity in your area. Maybe you can make little caves that hedgehogs like to live in? Or build insect nests and sow wild plants to attract more insects?

City Nature Challenge and the iNaturalist app

Seek by iNaturalist was developed as a child-accessible version of the iNaturalist app. If you would like to continue with field investigations and participate in citizen science projects such as the City Nature Challenge, you could consider using iNaturalist. iNaturalist is both an app and an online community that aims to use image recognition to collect data for science and to discuss other users' findings. As a user, you register your findings and get help with species identification. It is a prerequisite that you register as a user in the app and that data is collected from this user profile. If iNaturalist is used in teaching, you as a teacher or facilitator can create logins for the students so that they remain anonymous, even if data is collected through the app. In iNaturalist, your logs are used for research in citizen science projects. In order to be able to send as much useful data to these projects as possible, it is important to practice taking good pictures of the findings and registering them correctly. This is why it’s a good idea to start by using Seek by iNaturalist, which is specifically intended for practicing field surveys and species identification. You can then consider whether you would like to use the iNaturalist app to participate in a citizen science project, like the City Nature Challenge, which is a global citizen science project in which data on biodiversity is collected in several cities around the world and which takes place every year in April.

Fact box
Citizen science *Citizen science is an opportunity for everyone to contribute to society and to science by gathering knowledge – in this case information about what lives and grows in specific geographic locations. The information you collect can be of great help to scientists.*

User guides for iNaturalist and Seek by iNaturalist

http://static.inaturalist.org/wiki_page_attachments/SeekUserGuide2020.pdf

https://www.inaturalist.org/pages/teacher%27s%2Bguide

Links

https://citynaturechallenge.org/