

Lesson plan: Conduct a BioBlitz using the iNaturalist app – Lesson 1

Lesson Objective: Work scientifically to carry out an enquiry, evaluate data and present findings

Duration
60 mins

Theme
Nature

Subject focus
Science

Age group
Key Stage 3

Recommended Resources

- Magnijars/magnifying lens
- ID cards if available
- Tubs, bug pots
- 'A guide for observing nature' (see resources)
- iPads loaded with the iNaturalist app (refer to notes for log in details)
- 'How to use iNaturalist' (see resources)
- [National Geographic Analysing BioBlitz data](#)
- [State Of Nature Report](#) (optional)

Adult Support

- Work with groups in different areas of the school ground (activity 3)
- Hand out and collect in equipment

Follow up activities

- Analyse the data collated by participating in Lesson 2
- This activity would work well as part of a wider scientific enquiry exploring sampling strategies and methodology

Learning outcomes for lesson 1 and 2 (differentiated)

MUST: make and record observations and evaluate the reliability of data collection.

Present observations and data using appropriate methods, including tables and graphs.

SHOULD: interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions.

Identify possible improvements to data collection.

COULD: evaluate data and show awareness of potential sources of error.

Identify further questions arising from their results

Keywords
Naturalist
Cultivated
Captive
Hazards
Risks
Taxon
Biodiversity
BioBlitz

Background Information

This lesson has been written to celebrate City Nature Challenge taking place on the 30th April – 3rd May. Over 400+ cities will be working together globally to collect as many wildlife observations as possible and engage the most people possible. For more information visit www.citynaturechallenge.org

The lesson plan is divided into two lessons. The first could take place during the City Nature Challenge dates with the second lesson (data analysis and presentation) to follow.

In preparation for this lesson share with your class the app iNaturalist that they will be using for activity 2 in their school grounds/local space. You will need to set up a class account to keep student identities anonymous (see online guidance). Explain how the app is used and how they can explore the app themselves at home (see 'How to Use iNaturalist Guide').

Starter

What is a BioBlitz and why is it important?

Write the word BioBlitz on the board. Ask students if they have ever come across the word before? Separate the word into 'Bio' and 'Blitz'. Ask students if they can work out what it might mean?

'Bio' means 'life' and 'Blitz' means 'to do something quickly and intensively'. Together they make 'BioBlitz', a collaborative race against the clock to discover as many species of plants, animals and fungi as possible, within a set location, over a defined period (often 24 hours). A BioBlitz usually comprises a group of scientists, students, naturalists and other members of the public working together. It is an informal and fun way to create a snapshot of the variety of life that can be found in an area as part of a genuine scientific survey. A BioBlitz can be carried out anywhere there is wildlife, including urban and rural areas, inland or coastal locations, upland and lowland settings. It is a very flexible concept: it's up to you how many people to invite, how big an area to explore and what activities to include.

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Why is it important to survey biodiversity?

Ask students to explain what the term 'Biodiversity' means. Discuss the value of this variety of life on earth. Ask students to come up with a value for each of the below questions (share predictions or play 'higher or lower' before sharing the answers).

- How many plants, animals, and other living organisms on Earth have been identified and given a scientific name? (1.75 Million)
- How many species do scientists estimate there are on Earth? (7 million)

Source: National Geographic

Next, consider why studying and recording the diversity of life (biodiversity) is so important. If time allows, it may be useful to share some headline information from the [State of Nature Report](#) [2013, 2016].

Main activity

Prepare to go outside by reminding the students about expectations of working safely in the outdoors using 'A guide for observing nature' (see resources).

Produce a simple class risk assessment with students identifying potential hazards, their associated risks and control measures that could be put in place to reduce the risks.

Remind students how to use the app and share 'How to use iNaturalist' (see resources). In particular remind students of the words 'cultivated' and 'captive' as discussed on the guide.

Outside

Hand out iPads and ID guides with the iNaturalist app and class log ins. Divide up your school grounds e.g. playing field, flower beds etc and assign a group to work in each area.

Working in groups, students start exploring their sample area and record all plants and animals observed as they go. Group tasks can be divided up to include identifying different plants through leaf shapes, flowers etc, as well as collecting minibeasts to temporarily restrict their movement in magnifying tubs or pots to allow identification and, where possible, photographs could be collected. Any animals that cannot be photographed can be identified with ID guides and the name inputted into the app manually allowing it to be included in the data collated.

Ask students to pay attention to the additional information that they can learn from the iNaturalist app. For example, the Latin name, size and distribution. As well as inputting photographic evidence, where possible, remind students to annotate their observation by completing as much information as possible in the 'notes' section. This information may include more specific information on where the flora or fauna was discovered e.g. underneath a flower pot. This careful observation and recording of data follows the same process that naturalists would strive to do, as more detail is always valuable.

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Plenary

Call students together and collect in all the equipment.

Ask groups to feedback to the class. For example, what was the most commonly occurring living thing and the least? What challenges did they encounter? Were there any surprises or anything which was not possible to identify? What limitations can they identify to this style of data collection and could they suggest any improvements? How would they evaluate the reliability of data? What was the level of accuracy for their class/local area/international campaign using the iNaturalist app.

Share with your class that during the next lesson you will be looking at the class data, exploring ways to best present findings and drawing conclusions.

Extension tasks/homework ideas for lesson 1 and 2

- Visit iNaturalist website inaturalist.org and explore the observations made around the world, the species recorded and the people taking part. Compare results from nearby projects/other schools/local sites/internationally.
- Find out about the work of naturalists, for example, David Attenborough or explore the significance of the work of scientists such as Carl Linnaeus, a pioneer of classification.
- Plan a follow-up BioBlitz at a different time of the year to compare data.
- Celebrate BioBlitz results by creating a class display for the school. Student contributions can feature 'biodiversity superlatives' such as smallest, largest, fastest, slowest, slimiest, most colourful, best camouflage, most surprising, most common, rarest, and most dangerous.

Curriculum links

Science Key Stage 3

Working Scientifically:

- pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
- evaluate risks
- ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
- use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety