**What can DNA in the environment tell us about an ecosystem? – teacher instructions**

**Ako: Learn about how humans classify living things**

This is a reader/writer and researcher activity that uses the *Frontiers for Young Minds* article [What can DNA in the environment tell us about an ecosystem?](https://kids.frontiersin.org/articles/10.3389/frym.2019.00150) The article is also available as a [PDF](https://static.sciencelearn.org.nz/documents/files/000/001/342/original/What_Can_DNA_in_the_Environment_Tell_Us_About_an_Ecosystem.pdf?1742525880).

**Activity premise:**

The students work in pairs. Each pair has a question sheet. One student is the reader/writer, and the other is the researcher. The reader/writer cannot leave their desk and stays in their seat with the question sheet. The researcher moves around the room looking for the answers to the questions. The researcher needs to remember the question and the answer, as they will report back to the reader/writer who will write down the answer on the question sheet.

This activity requires the students to focus on just one piece of information at a time and scan the information sheets for answers. It also requires them to explain the answer to their partner in a way that enables them to write down the answer.

An additional benefit is that it gets students out of their seats and moving around while learning. Students swap roles halfway through the activity.

Students can start at any section on the question sheet. This avoids the sections becoming bottlenecks.

You can add a competitive element if you choose. Students can also report back their findings at the end.

Photocopying the question sheets in a different colour helps to monitor/ensure students don’t take the question sheet with them when looking for answers.

**Resources:**

* Copies of [What can DNA in the environment tell us about an ecosystem?](https://static.sciencelearn.org.nz/documents/files/000/001/342/original/What_Can_DNA_in_the_Environment_Tell_Us_About_an_Ecosystem.pdf?1742525880) – PDF
* Copies of [What can DNA in the environment tell us about an ecosystem? – student questions](https://static.sciencelearn.org.nz/documents/files/000/001/343/original/What_can_DNA_in_the_environment_tell_us_about_an_ecosystem_-_student_questions.docx?1742526242)

**What to do:**

1. Print multiple copies of the PDF article [What can DNA in the environment tell us about an ecosystem?](https://static.sciencelearn.org.nz/documents/files/000/001/342/original/What_Can_DNA_in_the_Environment_Tell_Us_About_an_Ecosystem.pdf?1742525880)
2. Cut the articles into six sections. Label each section 1–6.

* Section 1: Abstract (page 1)
* Section 2: Monitoring biodiversity is important (page 2)
* Section 3: What is eDNA? How can eDNA be used to identify the organisms in a community? (pages 2–3)
* Section 4: What are the advantages of using eDNA to identify species? – paragraph 1 ‘DNA-based … being revealed’ (pages 3–4)
* Section 5: What are the advantages of using eDNA to identify species? – paragraphs 2–3 ‘Conservation biology … (Figure 2)’ (page 4)
* Section 6: Are there any problems with using eDNA? (pages 4–5)

1. Place the sections numerically around the room.
2. Use [What can DNA in the environment tell us about an ecosystem? – student questions](https://static.sciencelearn.org.nz/documents/files/000/001/343/original/What_can_DNA_in_the_environment_tell_us_about_an_ecosystem_-_student_questions.docx?1742526242) to explain the activity to the students.

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