



FORGENIUS

Connected learning approach for teaching forest genetic diversity

Forest genetic resources often receive limited public attention, even though genetic diversity, the foundation of broader biodiversity, is essential for the health, resilience and adaptability of our forests. Building awareness early in life can help change this. To support teachers in introducing this topic, the FORGENIUS project developed and tested an educational pilot programme, FORGENIUS for Schools. This pilot brings biodiversity into primary education through a structured and engaging learning experience that can be easily integrated into existing teaching.

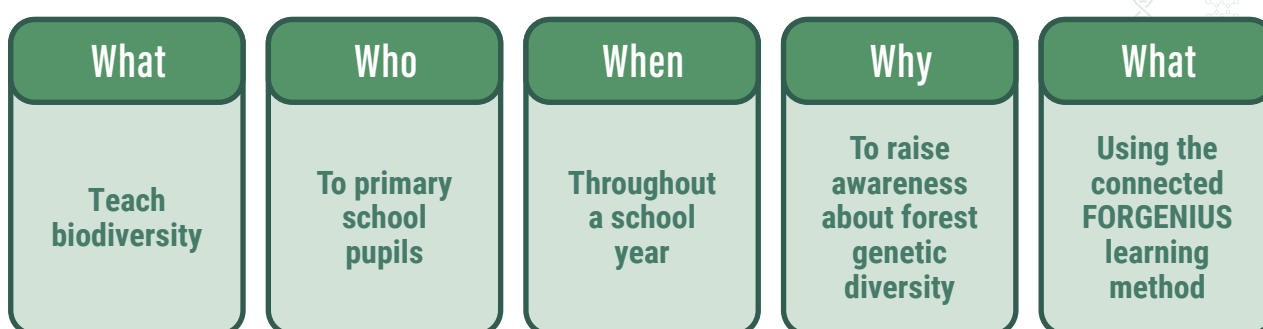


Figure 1 FORGENIUS for schools tested how the topic of biodiversity can be incorporated into public education.

Connected learning for forest genetic diversity

During the 2021/2022 school year, two pilots were implemented in **Finland** and **Slovenia**. The FORGENIUS experience demonstrated that Connected Learning is an effective approach for teaching pupils in primary schools about biodiversity and, by extension, forest genetic diversity. This method integrates three complementary dimensions:

Peer-supported: learning with and from classmates; **Interest-powered:** building on students' curiosity and motivations; **Academically-oriented:** linking activities to curriculum goals.

Combined with design-oriented pedagogy, pupils learned by interacting directly with forests and observing their biodiversity. Researchers took part in discussions, answered questions, and showed how scientific knowledge is produced. Pupils also used tools such as **360 Luke** and **iNaturalist** to document and explore their findings.

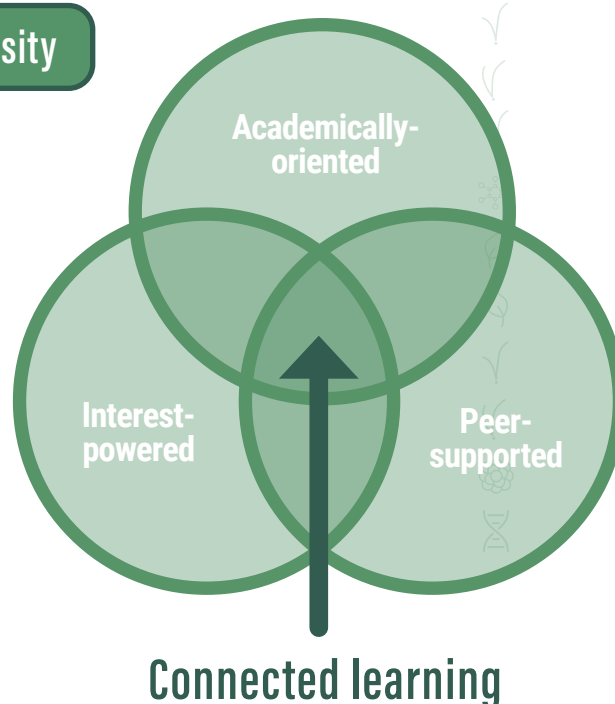


Figure 2 Connected learning method model (adapted from Ito et al., 2013, p. 64.)

The learning path



The FORGENIUS for Schools learning path consists of flexible steps that can be adapted to different national curricula and local environments:



1. Identify a shared learning challenge by pupils, teachers and researchers.
2. Explore local forests through guided excursions with researchers.
3. Monitor school engagement throughout the year.
4. Document school activities with photos, videos, drawings, and notes.
5. Foster international exchanges among schools when several countries participate.



Recommendations

Pupil's motivation

- Involve pupils in defining shared learning challenge and planning activities.
- Promote scientific documentation to pupils.
- Ensure researchers support is available throughout the learning process.
- Facilitate international peer-to-peer exchanges of pupils, teachers and researchers.

Activities' planning

- Align activities with national curriculum.
- Begin planning learning process early in the school year.
- Provide biodiversity educational material in advance.
- Offer teacher training by researchers.
- Create a teacher–researcher support network.

Communication and documentation

- Use a shared digital platform by pupils, teachers and researchers.
- Provide safe communication tools for pupils.
- Highlight local forest characteristics and biodiversity challenges and compare them with those in other countries.

For more information

<https://www.forgenius.eu/resources/forgenius-for-schools>

<https://forgeniusforschools.metsabiotalous.fi/>

References

Ito, M., Gutiérrez, K., Livingstone, S., Penuel, Bill., Rhodes, J., Salen, K., Schor, J., Sefton-Green, J., Watkins, S., 2013. Connected Learning: an agenda for research and design. Digital Media and Learning Research Hub, Irvine, CA, USA.

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