BioBeo

Co-funded by the European Union

BioBeo's 'Back to the Future with Beo and Raja - A Tale from the Early Bioeconomy' Comic - Guidance Notes

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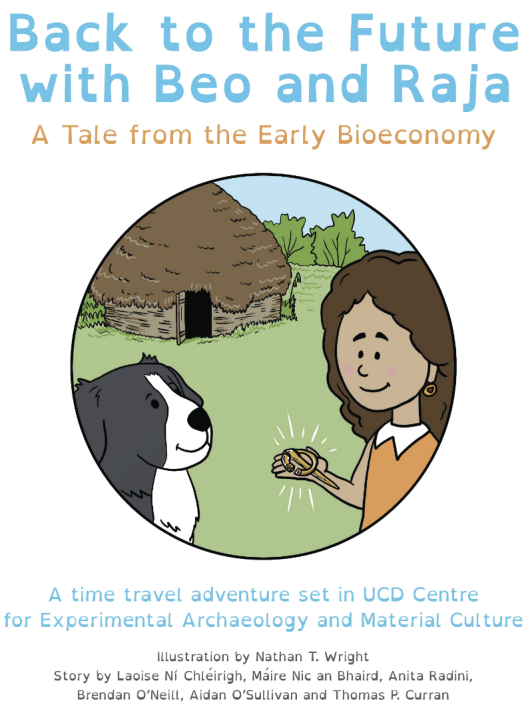
Guidance Notes - Back to the Future with Beo and Raja - A Tale from the Early Bioeconomy



Introduction:

This is the second comic in the Beo and Raja series, created from an original concept by Maynooth University and University College Dublin as part of the BioBeo Horizon Europe project on bioeconomy education. The project is supported by the European Union and brought to life with the help of partners.

This comic invites children to explore the deep connections between language, landscape, culture, and the bioeconomy. By travelling through time, Beo and Raja discover how early Irish communities lived in rhythm with nature, growing flax for linen, coppicing hazel trees, keeping pigs and bees, and using every resource with care but leaving no waste. They realise our ancestors were bioeconomy superheroes! Inspired by this, Beo decides she wants to be a good ancestor in the final scene.

The guidance notes invite children to engage deeply through inquiry, creativity, and hands-on exploration. Through storytelling, making, experimenting, roleplay, and outdoor learning, this comic encourages young learners to imagine how we can all care for our land and shape a sustainable future.

Introduction to Beo and Raja's Time Travel Adventure.

Subjects: English, Visual Arts, SPHE, Gaeilge, Modern Foreign Languages

Objective: Introduce the story and characters while developing reading, visual, and emotional literacy.

Activities:

- Display panels from the comic in order along a classroom wall.
- Children sequence events, read aloud speech bubbles, and act out scenes in small groups. For older children, develop this further by inviting them to write their own script for the comic.
- Introduce the term 'Fáilte' and invite children to greet each other in multiple languages. Research these terms together. Invite children of other nationalities to teach you how their families say 'Fáilte'.

Extension: Create a multilingual welcome banner with "Welcome" in different languages (link to Gaeilge, English, Modern Foreign Languages). Invite groups of children to draw and paint each term on a piece of card.

- **French:** Bienvenue
- **German:** Willkommen
- **Spanish**: Bienvenido
- **Arabic:** Ahlan wa sahlan

- **Chinese**: Huānyíng
- **Polish:** Witaj
- **Irish Sign Language**: (draw the gesture)

2. Forge a Brooch like an Ancient Craftsperson

Subjects: History, Science, Visual Arts, Maths

Objective: Explore early Irish metallurgy and pattern design.

Activities:

Children use tinfoil or air-drying clay to design and create a replica brooch, referencing old Irish Celtic patterns.

Investigate symmetry and geometry in brooches (Maths: Shape & Space).

Discuss how fire was used historically for transformation (Science: Materials & Change).

3. Introduce how bellows were used to control fire and link to air flow in science.

Aim: *Make Your Own Mini Bellows!* Design and test a simple air-pumping device like ancient bellows.

Instructions:

Cut the neck off a balloon and stretch the balloon over one cup like a drum skin. Poke a hole in the bottom of the other cup and insert a straw securely. Tape the two cups together so the balloon side forms the “squeeze end.” When you push and release, the balloon compresses and blows air out the straw. Hold your hand in front of the straw to feel the air moving!

Challenge Extension: Try to aim the air at a lightweight object like a feather, small paper piece, or candle with adult supervision.

Science Connection:

Key Concept: Combustion needs oxygen.

Bellows works by forcing extra air into the fire, increasing oxygen and making it burn hotter.

Air is matter and moves from high pressure to low pressure when we squeeze it.

Keywords: air pressure, combustion, oxygen, heat, flow

4. Science of Fog and the Magical Song

Subjects: Science, Music, Drama, Gaeilge

Objective: Learn about weather and sound.

Activities:

Create a classroom 'cloud/fog-in-a-jar' (Science: Weather). See a very useful video here: https://youtu.be/4KdH--dZhlc?si=KJi2hrtf0_9f6xG-

Children create an 'All of Nature is Interconnected" song (Music). Invite any musicians in your class to co-write the song and play their instruments. Ensure Irish words are included too!

Incorporate movements to show the 'circularity of nature' (Drama + Gaeilge: learn 'timthriallach' = cyclical

5. Time Travel Map Creation

Subjects: Geography, History, SESE, Visual Arts, Maths

Objective: Build an understanding of place and time.

Activities:

Children design a time travel map showing their journey from modern UCD back 1000 years to Old Ireland. Plot landmarks like the roundhouse, hills, woodlands, seaweed-drying fires, the sparrowhawk's nest, the thatcher's hut etc. Use a compass rose and legend (Geography: Map Skills).

In groups the children create a short sketch about time travel.

6. Roundhouse Roleplay and Hazel Woodland Management

Subjects: Drama, History, Science, SPHE, Geography

Objective: Understand sustainable woodland practices in early Ireland.

Activities:

Children build a mini roundhouse in groups using twigs, cardboard, and clay. Compare their constructions with modern ideas of sustainability and bioeconomy.

Create a "Nature's Superheroes" booklet about ancient resourcefulness.

7. Animal Hunt - Life Then and Now

Subjects: Science, Geography, Gaeilge, Art, History

Objective: Learn about animals in ancient Ireland.

Activities:

Create animal fact cards (goats, pigs, bees, sparrowhawks). Use a scavenger hunt to match cards around the room or school garden. Label each animal in English and Irish.

Make animal masks or puppets in Visual Arts.

Watch this wonderful video on how to make Ancient Irish deer antlers: https://youtu.be/CkkFFCq-riE?si=Mr9lnAgBf5WjPdGe

Compare ancient and modern animal habitats.

Visit the Natural History Museum in Dublin if possible and take a guided tour to learn about the animals of old Ireland!

8. Grain to Roof – Understanding Oats and Straw

Subjects: Science, History, SPHE, PE

Objective: Learn how people grew and used oats and straw.

Activities:

Examine real oats and straw.

Use oats to cook a simple porridge (with teacher supervision).

Watch videos or images of thatching roofs, then build mini roofs using straw and cardboard.

9. Butterfly Observation and Flax Exploration

Subjects: Science, Visual Arts, English

Objective: Explore biodiversity and textiles.

Activities:

Conduct a butterfly observation in the school garden or nearby park/green space.

Create butterfly life cycle wheels with 3D objects made from arts and crafts materials.

Touch real flax fibres or linen samples. Create a display explaining the story of flax to linen. Use this video on how modern linen is created: https://youtu.be/LNDbINF6Vew?si=jZU7fwSzq-w6mGvo

Create dye art using natural dyes (e.g., beetroot, spinach, turmeric) inspired by the 'Book of Kells'. Take a school tour to the Book of Kells Experience - https://www.visittrinity.ie/book-of-kells-experience/

10. Food from the Forest and Sea

Subjects: Science, Geography, History, SPHE

Objective: Investigate food sources and preservation.

Activities:

Ensuring there are no nut allergies in your school, examine real hazelnuts and create nutrition posters (link to protein).

Use a classroom heater (safely) or sun-drying to simulate drying seaweed.

Crush dried seaweed to simulate making salt.

Explore where seaweed grows on maps (Geography). Visit the closest beach to you to collect seaweed.

Explore this excellent website and engage with their superb educational resources: https://ellenhutchins.com This website will introduce you to the wonderful work of Ellen Hutchins, Ireland's first female botanist.

11. Returning to the Present – Good Ancestors

Subjects: SPHE, English, Ethics, Art, History, Science

Objective: Reflect on learning and inspire future action.

Activities:

Discuss: What would a good ancestor do today?

Children draw themselves as eco-heroes.

Write pledges on leaves for a classroom "Tree of Good Ancestors".

Create a "Then & Now" book comparing how people used resources.

Assessment Ideas

- Portfolios: include drawings, brooches, flipbooks
- Group presentations of their "Nature's Superhero"
- Oral recount of time travel adventure
- Self-assessment: "What did I learn from Old Ireland?"