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BioBeo's 'Organic Magic - Bioeconomy Explorer's' Video: Guidance Notes

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‘BioBeo Organic Magic: Bioeconomy Explorers’ Video

(Ages: 4-12, adaptable)



Organic Magic: Bioeconomy Explorers



Before Viewing...

Introduction to the Bioeconomy

Begin by discussing the concept of the bioeconomy. Do the children know it? What do they know? You might then begin by explaining the concept of the bioeconomy to the children if necessary. Discuss how natural resources like plants, animals, and microorganisms are used to produce food, materials, and energy without harming the planet, in a much more sustainable way. Emphasise the importance of sustainability and circularity in these processes.

- **Sustainability** - the practice of meeting present needs without compromising the ability of future generations to meet their own.
- **Bioeconomy** - the production, utilisation, and conservation of biological resources to provide sustainable goods, services, and energy.

- **Circularity** – the idea that resources are used, recycled, or repurposed so that nothing is wasted and everything keeps flowing in a continuous loop.
- **Residues** – small amounts of material left over after a process, like leftover bits from food, farming or energy production that can often still be used or recycled.

Exploring Interconnectedness

Discuss the idea that all elements of nature are interconnected. Discuss how actions in one part of the ecosystem can affect other parts. Use simple examples like how bees pollinate flowers, leading to the growth of fruits and vegetables. Build a tower of cards in groups. If one card falls, what happens to the others? Then discuss how things are made and how our food is produced. Where does it come from?

Setting the Scene

Prepare the children for the video. Ask them if they like apples? Do they eat fruit? How does fruit grow? Do other animals pollinate it? Do they ever waste food? Would they ever eat insects? Invite them to think about these questions.

During Viewing...

Active Listening

Encourage children to listen carefully to the conversation between Beo and her friend and Raja in the park.

Visual Engagement

As the video plays, point out interesting images.

Interactive Participation

Ask the students to identify the different elements of nature mentioned in the video and to discuss how they are connected. Invite them to write down key words, especially new ones they don't know!

After Viewing...

Discussion and Reflection

Lead a discussion about the key concepts. Ask the children what they learned about bioeconomy and interconnectedness. Encourage them to share their thoughts and feelings about the video.

Activities

Science (Living Things)

Activities: Insect Buffet & Ecosystem in a jar!

Video link: *“Did you know they can be used to feed insects?”*

Prompt: Why do insects like apple cores? How do they help break down organic material?

Insect buffet: Set up small trays with apple cores on the school field. Observe which insects visit over time.

Micro-ecosystem jar: Collect grass, soil, and a bit of organic waste to create a mini terrarium and watch decomposition in jam jars brought in by the children.

Skills: Observation, forming an hypothesis, data recording (sketches, notes), care for living creatures.

Geography (Caring for the Environment)

Activities: From Waste to Energy

Video Link: *“Also, the waste or poop ... can be used in a biogas plant.”*

Prompt: How does organic waste become gas? How does that gas heat homes nearby?

Go on a virtual or real visit to a local biogas plant or watch an outdoor biogas demo.

Local waste walk: Explore the school grounds to find green areas where organic waste naturally decomposes. Does your school have a compost bin? If not, start one!

Skills: Map-reading, environmental literacy, comparing local vs. global practices.

SPHE (Caring for the environment)

Activity: Responsible citizenship

Video Link: *"First of all, the apple is only half finished. You should not waste food."*

Prompt: How can we help the planet?

In partnership with the caretaker and principal, organise a new compost bin for the school and mini brown bins for each classroom. Write a letter to both the principal and caretaker explaining why this would be good for everyone and the planet especially!

Skills: Empathy, responsibility, speaking & listening, community awareness.

Maths (Pattern, Measurement, Problem-solving)

Activities: "Circle Power!" Outdoor Maths Trail

Video link: *"Circularity and circular systems are the best! Heating and food are connected!"*

Prompt: Can you find and measure real circles in nature? What do they have in common with circular systems?

Create stations where children measure and compare circular shapes found in nature (tree rings, logs, snail shells). Link to the idea of circularity in systems. Include challenges like estimating circumference using string or creating a human circle and measuring its size with steps. Explore the Fibonacci sequence. Create art with the children following this maths exploration!

Skills: Estimation, measuring, comparing units, recognising patterns and symmetry.

English (Narrative Writing)

Activities: Lost in the forest

Video link: *"It seems a bit gross... Insects are eaten in so many places in the world."*

Prompt: How would you respond if someone thought something was "gross" but you loved it?

Dialogue creation: In pairs, write a new conversation between Beo and Raja and their friend about a time they were lost in the forest and had to forage for food. They had to eat food they thought they would never eat, just to stay alive.

Skills: Writing dialogue, descriptive writing, perspective-taking, vocabulary development.

Art & Design (Drawing, Construction)

Activities: Visual storytelling and sustainable design.

Video link: *“Residues from biocast production can be used as fertiliser ...”*

Prompt: What is fertiliser? What else can you use for fertiliser?

Leaf-and-core art: Collect fallen leaves, twigs, peelings; arrange into patterns or mosaics on the ground. Create a mandala in groups of 4. Seaweed is also a natural fertiliser. Take a trip to the beach and in groups, create beach art using seaweed, shells, driftwood.

Skills: Creativity, planning, understanding form and function, outdoor crafting.

PE (Outdoor Wellbeing)

Activities: Outdoor Fun

Video link: *“Everything can be used now... Circularity and circular systems are the best!”.*

Prompt: How does energy or food move in a circle? Can your body move like that too?

Circular Systems Obstacle Course: Set up a circular obstacle course where each station represents a part of the apple core’s journey (e.g. Apple Tree to Snack Time to Insect Zone to Biogas Plant to Radiator to Fertiliser to New Apple Tree). At each station, students complete a themed movement challenge (e.g. apple picking = climbing, insect wriggle = crawling, biogas blast = sprint, fertiliser spread = wide arm skipping). The course finishes where it began, just like a circular system!

Skills: Agility, balance, gross motor skills, sequencing, teamwork, conceptual movement.

Music (Listening & Responding)

Activity: Exploring Sound

Video link: Listen to the sounds in the video coming from the children and Raja and the nature sounds in the background.

Prompt: How is sound created? Did you notice Beo's friend wears a cochlear implant? Discuss.

Soundwalk: Listen for insect or nature sounds on a walk outdoors. Sit in a quiet spot and draw images reflecting the different sounds you hear in the area around you. You might draw a wing for a bird, a foot for a human walking etc. Fill the page!

Skills: Rhythm, composition, listening, pattern recognition, empathy

History (Change and Continuity)

Activities: Waste Then and Now

Video Link: *"Nothing has to be left over! Everything can be used now."*

Prompt: How did people deal with food waste in the past? Did our grandparents throw things away like we do now?

Local Interview Project: Children talk with grandparents, parents, or local elders to find out how people used to deal with food scraps, animal waste, or heating before biogas and modern composting. Bring stories to class and share outdoors around a "story circle."

Timeline Trail: Create a "human timeline" on the yard using chalk or rope from traditional farming to modern waste systems. Each stop along the trail shows a different moment in history (e.g. feeding scraps to hens, using firewood for heat, compost heaps, biogas plants). Add props or mini performances at each station.

Skills: Historical inquiry, oral history, understanding change, sequencing events, making connections between past and present.

Drama (Exploring and Making Drama)

Activity: The Apple Core's Journey – A Movement Drama in Nature

Video Link: *"Even apple cores are valuable... They can be used to feed insects."*

Prompt: Can your body show what happens to an apple core, without using words?

Children take part in a silent movement drama outdoors, using their bodies to become different parts of the apple core's journey. This requires specific planning before you go out. Democratically plan it with the children including the roles, the gestures or cues etc instead of words. Start as an apple on a tree, gently swaying in the breeze. Fall to the

ground, where you're nibbled by insects. Crawled on by worms, then carried to a compost heap. Transformed into energy, rising as warm air. Settling into the soil again to grow a new tree. Use music or natural sounds (leaves rustling, birdsong, drums) to set rhythm and pace. Teacher guides the group through the transitions using gestures or sound cues instead of words.

End in a final freeze-frame circle where everyone becomes part of the apple tree again.

Skills: Physical and imaginative movement, Co-operation and spatial awareness, Sequencing through drama, Non-verbal communication

Assessment

Observation: Monitor children's participation during discussions and activities to assess their understanding of the concepts.

Creative Work: Evaluate the children's art projects and all other activities to gauge their comprehension and ability to apply the concepts.

Reflection: Review the children's work to assess their personal connections to the concepts of the video.

By following these guidance notes, educators can effectively use the 'BioBeo Organic Magic: Bioeconomy Explorers' Video to teach children about the bioeconomy and the interconnectedness of nature in an engaging and enjoyable manner.