

MUSIC/SUSTAINABILITY TRANSDISCIPLINARY FOCUS

INVERTEBRATES UNIT OF INQUIRY: BEES

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LEARNING PLAN OVERVIEW

Subject(s)	- Natural Sciences - The Arts - Environmental Education
Grade Level (s)	Lower Primary (ages 6-7)
Systems Tool(s)	- Sustainability Compass - Systems Iceberg
Purpose of Using Tool	- Inquiry - Critical Thinking - Discussion
Summary	Students will learn about the role that bees play in our society and ecosystem, while also developing their critical listening skills and creating a musical soundscape related to bee sounds.

Learning Objectives

- Understand the importance of bees to our ecosystem and society
- Describe musical elements present in a piece of music and understand how we can create music to recreate natural sounds and evoke emotion
- Create a bee soundscape composition using classroom instruments, body percussion and/or vocals

Material and Settings

Materials:

- Musical recording – Flight of the Bumblebee
- Bee video

- Paper, pencils, markers
- Whiteboard
- Percussion instruments
- iPad, Seesaw app
- Sustainability Compass with prompts

Learning Context

This lesson was completed in a Year 1 music class over three 45-minute sessions. The aim was to draw and expand on their learning from their classroom unit of inquiry around invertebrates, with a transdisciplinary focus of developing musical experiences in this area while also deepening their understanding of the role of bees. This was the first time students had used any systems compass tools.

Purpose of Using the Systems Thinking Tools

Sustainability Compass - I wanted the students to understand the big picture about why bees are important and help them to map the connections in how they shape our environment and society.

Systems Iceberg - I wanted to see if this tool could be effective in a setting that was not specifically focused around sustainability, but to see if it could be used to develop deeper meaning and critical thinking in a listening activity.

Impact on Participant Learning

This was the first time these students had used any of the Compass tools and I felt that by using the Sustainability compass (which we added easier to understand headings to), they were able to better process how pollination affected a variety of areas of our everyday lives and the connections between these.

The Systems Iceberg helped students to break up what they were listening to into different components and dig a little deeper into areas such as patterns in the music. The descriptive answers they gave demonstrated a higher level of thought than in previous listening activities.

Learning Plan Step-by-step Description

Lesson 1 (45 minutes)

1. Students will listen to the piece of music 'Flight of the Bumblebee' by Rimsky-Korsakoff. Students will be told that this piece of music has been written about an invertebrate. As

they listen they will consider the mood, tempo (fast/slow), dynamics (loud/soft) and articulation (smooth/bumpy) and draw a picture of an invertebrate they think matches the music. They will complete this as a task on Seesaw on their iPads, but drawing their picture and taking a photo. They will then share why they made their choice.

2. Students will be told the composer was imagining a bumblebee when he wrote the music and we will discuss the musical characteristics present that might match the behaviour of a bumblebee. We will create a Systems Iceberg together.

At the top of the Systems Iceberg will be:

- **Event 'What do we hear?'** - (fast buzzy sounds, bumpy sounds like a bumblebee flying)
- **Patterns** – (same buzzy melody sounds just in different high and low places)
- **How It's Made (Systems)** – instrumentation (violins) beginning, middle, end
- **Feelings and Ideas (Mental Models)** – (Music can tell a story or create a picture in our minds. Composers can use sounds and rhythms to create special effects).

Lesson 2 (45 minutes)

1. Brainstorm Together – What do we know about bees?
2. Watch video 'All About Bees' - [This why bees are important!](#)
3. Discuss the importance of pollination (food production, supports growth of plants) + making honey, beeswax, etc.
4. Create a Sustainability Compass map and prompt students to help them understand the different Compass points. Divide students up into groups with butcher's paper. Make sure each group contains a mixture of ability levels and good writers. Students can also choose to draw pictures that represent their ideas. As this is the first time they are doing this, we will discuss each point together and come up with some examples on the board they can choose to copy on their groups paper if they like. They can then add any additional ideas.
 - Nature - This means the environment and all living things. How do bees help the environment? (bees pollinate flowers etc)
 - Economy – This means money and resources. How do bees help humans to make money? (Bees make honey, bees help farmers grow food which they can sell to make money)
 - Society – This means people and communities and how we work together. How do bees support communities? (help feed people) How do bees support each other? (Work together in hives).
 - Wellbeing – this means our emotions in how we feel and how we stay healthy. How do bees help us feel happy and healthy?
5. Start Planning for a bee soundscape composition:
 - What instruments do we have in the room that we could use to make bee sounds?
 - Discuss student ideas.
 - Add any additional ideas that haven't been discussed (i.e guiro for scratchy insect-like sounds).
 - Xylophone (low and high notes for flying up and down)

- Tambourine (hitting the head could create a buzzing sound)
- Shakers (could mimic the sound of flying)
- In small groups, allow students time to play with the instruments and explore different sounds.

Lesson 3 (45 minutes)

1. Discuss our composition having a beginning, middle and end. Choose 3 ideas from a list of what the bee could be doing and decide the order in which they will happen. Discuss examples of how to produce those sounds and give some prompts if needed.
 - Bee is sleeping in the hive (i.e voice for snoring sounds? Gentle xylophone)
 - Bee is flying slowly (slow tempo on 'flying' instrument of choice)
 - Bee is communicating with another bee (call and response between two instruments)
 - Bee is flying fast (increase tempo!)
 - Bee is pollinating flowers (different instrument for each flower)
 - Bee is flying through a thunderstorm (rain and storm noises)
 - Bee is calm (gentle sounds)
 - Bee joins a whole swarm of angry bees (Loud! Fast! Lots of sounds moving up/down/around)
2. Create a soundscape as a whole class using student ideas.
3. Split into small groups and allow the students to create their own, using ideas from the class soundscape or their own.
4. Each group is to perform their soundscape for the class. Students give feedback about the positive aspects of the performances.

Reflection: Plusses

This was an interesting experiment for me, as I have not previously integrated music and environmental/social science into one lesson before. My role as a sustainability leader has been to work with a small group of student leaders on sustainability projects around the school. It would have been easier for me to choose a lesson plan around my work with these leaders, but I wanted to see how I could integrate sustainability into my music classroom by tying in with a unit of inquiry. With such a young age group, I wasn't sure how they would go with the systems tools, however, they surprised me by finding connections easily and showing understanding of the bigger picture. I feel that my 3 activities were still disjointed in a way, given that 2 were very music specific and one was very science specific, however, I think having a greater understanding of bees made the other activities more fun and provided a bit more connection.

Areas for Improvement

I could work out how to integrate these two areas better. The soundscape activity was a little rushed as we were pressed for time. (However, they did use some ideas from their learning to inform what their bee was doing in the soundscape, i.e different sounds for flying and pollinating, etc).

EVIDENCE



