



LESSON PLAN: **KLP003**

REVISION: **B**

DATE OF PUBLICATION:

LESSON PLAN NAME: **MAKING MUSIC**

KOOKABERRY APPS: **MOVEMUSIC**

## KEY LESSON OUTCOMES

### Stage 3 – Year 5

#### Music

*Explore dynamics and expression, using aural skills to identify and perform rhythm and pitch patterns (ACAMUM088)*

*Develop technical and expressive skills in singing and playing instruments with understanding of rhythm, pitch and form in a range of pieces, including in music from the community (ACAMUM089)*

#### Mathematics

*Choose appropriate units of measurement for length, area, volume, capacity and mass (ACMMG108)*

## AT A GLANCE

Students will explore musical pitch and tune bottles using their Kookaberry.

## TEACHER BACKGROUND AND INFORMATION

### Tuning Bottles

1. Line up the 8 bottles in a safe solid place.
2. Fill up bottle one with water. Pour a little less water into bottle two; even less into bottle three; and so on, until bottle eight has only a very small amount of water.



- Now "tune" the bottles by pouring water out, or adding water, to match each bottle to the notes of the C major scale. Use a Kookaberry and the MoveMusic app to assist you with this.

The first bottle will be the lowest note, and bottle eight will be the highest note. The more water there is in the bottle, the lower the note it produces. This is because, when you hit the glass, both the glass and water vibrate. A larger volume of water makes a lower sound. Notice how larger musical instruments, like double basses, play low notes; and small musical instruments, like whistles, are very high-pitched.

## Kookaberry

The Kookaberry is a palm-sized self-contained microcomputer designed specifically for students and their teachers and is used in this lesson plan to enrich the teaching and learning experience. The additional resources section at the end of this lesson plan references the Kookaberry Quick Manual describing the Kookaberry and how to use it, and the description of the Move Music app integral to this lesson plan. This [lesson plan](#) can be found and downloaded on the [Kookaberry website](#) along with its referenced additional resources. Please refer to these resources to gain familiarity before giving the lesson.

## EQUIPMENT

### For the Class

- Glass jars or bottles
- Jugs and funnels
- Access to water
- Drum sticks/pencils/spoons

### For Each Student

- Kookaberry and battery box.
- Powered loudspeaker and connecting cable (optional)
- The cardboard Kookaberry paddle holder

### For the Teacher

- Kookaberry and battery box
- Pre-tuned glass bottles representing the eight notes of the Major C scale

## LESSON STEPS

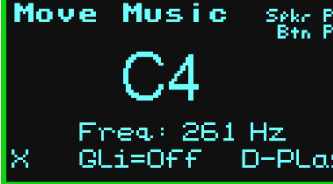
### Preparation

Mount the Kookaberry and battery box into a 3D printed handle.

Have the students plug the powered loudspeaker accessory into plug P4 on the back of the Kookaberry.

Mount the loudspeaker onto the side of the handle with a small screw or onto the front with Blu Tack.



Steps	Description	Resources
1	Turn on the Kookaberry and start the MoveMusic app. Tilt the Kookaberry forwards and backwards slowly demonstrating each of the notes. Ask students what they can hear. Discuss pitch and the range of notes that can be heard on the Kookaberry.	Kookaberry, loudspeaker accessory and MoveMusic app.
2	Invite students to experiment with the MoveMusic app on their own Kookaberry. Challenge students to find each of the eight notes by slightly tilting their device forwards and backwards to select the note, and pressing the 'D' button to play the note. Ask students to find the highest note, the lowest note and explore what happens when they move their device in other ways, for example tilting the Kookaberry right and left.	
3	Discuss the movements needed to hit each note (higher notes attained by tilting the Kookaberry towards the body and lower notes when tilting it away).	
4	Next, play a note matching game with students. Play a mystery note on the Kookaberry and have students experiment with their devices in an attempt to match the note. Ask students to take turns at guessing which mystery note was being played.	
5	Show students the tuned glass bottles that were prepared before the lesson. Using a pencil or drum stick, lightly tap each of the bottles to demonstrate their note. Play a short tune such as 'Twinkle Twinkle Little Star' (if possible).	Tuned glass bottles
6	Tell students that they will create their own tuned bottle instrument (this is best done outdoors). Explain to students that they will need to very carefully fill their bottles and test the sound by ear using their Kookaberry - this could take some time. *Discuss safety precautions with students regarding the glass bottles.	Empty glass bottles (or other containers that vibrate). Water to fill the bottles. Water pitcher and funnel.
7	Divide students into small groups and distribute resources. Allow groups time to experiment with their bottles and tune them accordingly.	
<b>REFLECTING</b>		
8	Groups could take turns to play each of their bottles whilst the remainder of the class assess their success at tuning each of the notes.	
9	Students could practise playing simple tunes using their tuning bottles to determine whether the notes sound correct or not.	

## GOING FURTHER

Provide students with simple sheet music and ask them to play the notes using their Kookaberry.

Challenge students to use their Kookaberry to create a short piece of music. Students could write down the notes of their tune so that others can play along with them.

## DIVERSITY FOR LEARNERS

### Extension Suggestions

- Allow students the option of tuning as many bottles as they can. It will take a significant amount of time to perfect the notes.
- Ask students to attempt to play a song on their tuned bottles by ear or from memory.
- Students could use their Kookaberry to tune other instruments.
- Students could note the frequency shown on the Kookaberry for each note. How does the frequency change with notes of higher and lower pitch?
- Ask students to tilt the Kookaberry left or right to change octave. What happens to frequency between equivalent notes on the C scale?
- By momentarily pressing the C button, the pitch of notes will be varied (or modulated) by the movement of the Kookaberry and the C scale will no longer be in tune (Mod=On is shown on the display). Momentarily pressing the C button switches modulation off again (Mod=Off is shown). Notes can be played continuously by keeping the D button depressed. Ask students what they notice about the pitch of notes when Mod=On and when Mod=Off as they move the Kookaberry about.

### Support Suggestions

- Allow students to observe and experiment with the teacher's tuned bottles. Ask students what they notice about the notes and the corresponding amount of water. Do they need less water or more water to make a high/low note?

## ADDITIONAL RESOURCES

- Information Sheet KIS004: Kookaberry Quick Manual
- App Instruction KAP004: MoveMusic Kookaberry app description and usage

- End -

