

LESSON PLAN: **KLP002**

REVISION: **B**

DATE OF PUBLICATION:

LESSON PLAN NAME: **PRACTISE MAKES PERFECT**

KOOKABERRY APPS: **BALANCEME, LISTENLOG**

KEY LESSON OUTCOMES

Stage 2 – Year 4

Health and Physical Education

Participate in physical activities designed to enhance fitness, and discuss the impact regular participation can have on health and wellbeing (ACPMP064)
Participate positively in groups and teams by encouraging others and negotiating roles and responsibilities (ACPMP067)

Mathematics

Construct displays, including column graphs, dot plots and tables, appropriate for data type, with and without the use of digital technologies (ACMSP119)
Describe and interpret different data sets in context (ACMSP120)

Digital Technologies

Acquire, store and validate different types of data, and use a range of software to interpret and visualise data to create information (ACTDIP016)

AT A GLANCE

Students will design and run an obstacle course whilst using the ‘BalanceMe’ app on their Kookaberry with the aim of improving their balance and reducing their number of ‘drops’. The ‘BalanceMe’ app emulates an egg and spoon, detecting and recording out-of-balance events.



TEACHER BACKGROUND AND INFORMATION

Balance

Balance and coordination work hand in hand. Balance is the ability to perform a task whilst maintaining control over one's body. There are two types of balance:

Static Balance is being able to hold a certain position without moving.

Dynamic balance is the ability to maintain balance whilst moving, such as hopping, jumping or riding a bike.

Balance is an essential skill in gross motor activities. Having good balance will increase children's ability and confidence to engage in physical activities, promote fine motor skills (because a strong core equips children with support when using their arms and hands) and helps prevent injury. Balance is a "use it or lose it" kind of thing, which means it is important to practice balance at all ages.

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 Information Sheet in the additional resources describes the Kookaberry and how to use it. Further Instruction Sheets describe the Kookaberry apps designed to support this lesson plan. Please refer to these guides to gain familiarity before giving the lesson.

EQUIPMENT

For the Class

Access to a range of sporting equipment to design an obstacle course.

For Each Student

- Kookaberry and battery box.
- Digital buzzer and connecting cable (optional)
- Ruler, and two (2) elastic bands, or the cardboard Kookaberry paddle holder
- Graph paper or maths books

For the Teacher

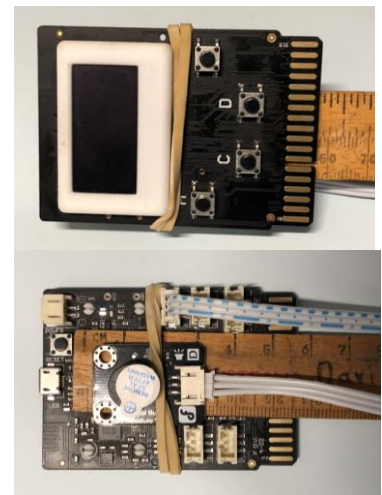
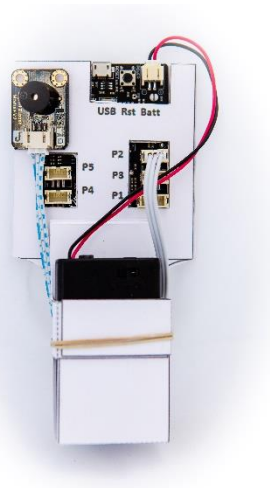
- Kookaberry and battery box
- ListenLog app
- Computer
- Spreadsheet software and template
- Computer projector or Smartboard


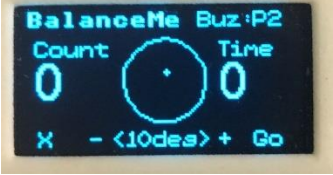
LESSON STEPS

Preparation

Optionally have the students plug the buzzer accessory into plug P2 on the back of the Kookaberry as shown. Tuck the accessory cable between the body of the Kookaberry and the battery box and secure with an elastic band as shown. If the cardboard paddle holder is not used, mount the Kookaberry, buzzer and battery box on a ruler and secure with elastic bands.

The holder or ruler will be the spoon, and the Kookaberry the egg.



Steps	Description	Resources
1	<p>Have students stand on one leg for as long as they can without support or losing their balance. Increase the difficulty of the activity by throwing a ball around the room from student to student whilst remaining on one leg. Ask students to discuss how the difficulty of the activity changed their balance. As a class, discuss the importance of balance in sports and to our physical health.</p>	A soft ball.
2	<p>Explain to students that they will be working in small groups to design an exercise obstacle course that will measure the balance of each of the students.</p>	
3	<p>Explain to students how to attach the buzzer to the Kookaberry, and if using the ruler instead of the cardboard paddle holder, how to secure the Kookaberry, buzzer and battery box securely to the end of a ruler.</p> <p>Have students turn on their Kookaberry and open the 'BalanceMe' application.</p> <p>To assist with recording the class results, the teacher should turn on their Kookaberry and start the 'ListenLog' app. This app listens for the results transmitted by the students' Kookaberrys using the in-built radios.</p>	Kookaberry, battery box and optional buzzer.
		
4	<p>Allow students a few minutes to practise walking around the room while trying to keep the 'egg' within the circle on the screen. Each time the egg moves outside the boundary is called a 'drop' and will be recorded by the Kookaberry. Tell students that they can increase and decrease the sensitivity of the egg drop by pressing the C and D buttons on the Kookaberry. Explain the function of the B key to start the course timer and drop counter, and again to stop the timer and record the results.</p>	
5	<p>Provide students with access to a range of obstacle course equipment. Divide students into small groups of approximately three students and ask them to plan and prepare their obstacle course. Remind students that the obstacles they design will need to be able to be performed while holding the Kookaberry in ONE of their hands. Each course should take no longer than 45 seconds to complete.</p>	Obstacle course equipment such as cones, balls, hoops, balance beams and stepping stones.

Steps Description

Resources

6 Once the courses have been set out, each student will then start the timer by pressing the B (Go) button and run their course while holding their Kookaberry using the BalanceMe app. The aim is to complete the course within the given time limit of 45 seconds, with the least number of ‘drops’. At the end of the course the students should press the B button again to stop the timer and record the ‘drops’ of the student on a file in the Kookaberry’s serial memory. Each Kookaberry will also share the data with the teacher’s Kookaberry using the in-built radio.
Each Kookaberry should be set to the default sensitivity of 10, unless otherwise approved by the teacher.

For students a Kookaberry running the BalanceMe app.
The teacher(s) should run the ListenLog app on their Kookaberry to record the class results in a central file.

7 Once each group member has had a turn, students should re-test themselves with the aim of improving their scores.

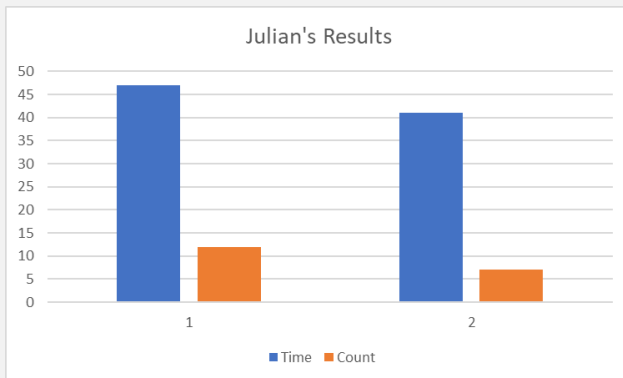
8 Upon returning to class, have students access the data from their Kookaberry and compare the amount of ‘drops’ with the other members of their group. Each student’s individual data will be stored in the KLP002.csv file on their Kookaberry. The Kookaberry needs to be plugged into a computer and mounted as a USB memory stick to access the file. Alternatively, the teacher(s) running the ListenLog app will have a ListenLog.csv file with the class data on their Kookaberry. This file is accessible when the Kookaberry is plugged into the USB port of a computer.

Example content of the individual KLP002.csv file as opened in MS Excel.

	A	B	C	D	E
1	Name	Angle	Time	Count	
2	Julian	10	47	12	
3	Julian	10	41	7	
4					

The file contains the results of each course, being the student’s name, the sensitivity of the egg, the time taken for the course, and the number of drops on each course.

9 Have students analyse their data and discuss what type of graph would be best to represent their results. Instruct students to graph their personal results.



Steps REFLECTING (FOLLOW-UP LESSON)

10	Ask students to compare the number of ‘drops’ during their first attempt, with those of subsequent attempts. Do they notice a change? Discuss the benefits of repetition and practise when learning a new skill or sport.	
11	With the aid of the teacher examine the whole of class results as recorded by the ListenLog app. Ensure the students’ names are not shown to avoid unnecessary bullying or heckling among students. Was there a range in the class results? What were the median and average results, are they different? Look up the meaning of median and average. Does the distribution of the results follow pattern? Do the faster course times show a greater number of drops and the slower times fewer drops? In what other ways can a population’s data be tested to give useful information?	Computer, projector or Smartboard, spreadsheet software, and template spreadsheet

GOING FURTHER

Students may wish to compete in a traditional ‘egg and spoon race’ relay with their peers. The Kookaberry’s drop sensitivity can be increased to make this traditional game more challenging.

Challenge students to design an original game or race that incorporates the ‘BalanceMe’ app.

DIVERSITY FOR LEARNERS**Extension Suggestions**

- Increase the sensitivity of the Kookaberry.
- Challenge students to complete their set course in shorter time frames.

Support Suggestions

- Decrease the sensitivity of the Kookaberry.
- Extend the time frame for students to complete their course.
- Provide students with examples of relevant graphs, for example a line graph or a bar graph.

ADDITIONAL RESOURCES

- Information Sheet KIS001: Introduction to the Kookaberry
- Information Sheet KIS002: Making a cardboard paddle holder for the Kookaberry
- Information Sheet KIS003: Troubleshooting the Kookaberry
- App Instruction KAP003: BalanceMe Kookaberry app description and usage
- App Instruction KAP001: ListenLog Kookaberry app description and usage
- Spreadsheet KEX002: Practise Makes Perfect Excel Spreadsheet

- End -

