



Data and Graphing

Learning Area

Maths

Year Level

Year 8

Introduction

In this lesson, students will use the All-in-One Sports VR app to engage in a round of archery, recording their scores and then analysing the data. This activity will help them understand how different types of graphs can represent data in various ways. They will use tools like Excel or Google Sheets to create visual representations of their performance, enhancing their skills in data analysis and interpretation.

Application

All-in-One Sports VR

This app provides a variety of sports activities in a virtual environment, allowing students to engage in and observe the physical dynamics and energy transfers involved in sports like basketball, archery, and more.



Lesson Overview

Lesson Objectives

- To practise recording raw data.
- To use graphing tools to create line graphs, bar charts and histograms.
- To analyse which type of graph best represents their performance data.

Resources

- [Raw Data Worksheet](#)



Lesson Outline



Before the Immersive Learning Journey

- Ensure that all VR equipment (headsets, controllers, sensors) and software/applications are properly set up and functioning.
- Ensure students are familiar with Archery in All-In-One Sports VR, if not provide a demonstration on how to aim and shoot in the experience.
- Edit and distribute copies of the [Raw Data worksheet](#) to all students, or groups of students.
- Ensure students' ability to complete raw data and create digital graphs on online platforms such as Excel or Google Sheets.



During the Immersive Learning Journey

This will not be a 3 station based lesson. Instead, students will work in an appropriate number of teams (i.e. 3 IMVR station = 3 groups).

Introduction:

1. Provide students a demonstration of a round of Archery in All-in-One Sports.
2. Inform students of their teams and explain their goals for this lesson.
3. Distribute the Raw Data Worksheet to groups of students and send students to their stations.

Activity:

1. Groups will begin filling in their basic details in the Raw Data Worksheet.
2. Students in groups will begin their round of archery, and one/two peers from the group will record their scores on the worksheet.
Note: if students score a lot of zeros as they get used to the experience, the teacher may decide to NOT count practise shots in raw data.
**Ensure all students get a chance to shoot, and a turn to record data.*
3. The rest of the team will begin discussing what type of graph might be best to represent their data: line graphs, bar charts, histograms, pie charts, ect.
4. They must attempt 3 different graphs and list their pros and cons for each (highlighting how each may be useful to show various aspects of their performance). *For example: Imputing scores for 9 rounds of archery for 9 students on a line graph becomes too cluttered but is useful to show any trends; such as scores*



improving towards the end as students got better with their aiming.

5. Once all raw data has been collected in a group, all students will create a graph they think best represents the information.
6. As a group, they must calculate certain measures (mean, median, mode, minimum, maximum, range, ect) and present this data with their final graphs.



After the Immersive Learning Journey

Conclusion:

1. Pack all IMVR stations/equipment away.
2. Bring class together and provide time for each group to share back their most interesting findings:
 - a. What were they surprised with?
 - b. Were there any trends?
 - c. Which graph best represents your data?
 - d. Which numeric measures were most important for their data?
3. Collect individual work for assessment.