# Guidance Notes for Pipetting Olympics Activity

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This document provides guidance on how to conduct the Pipetting Olympics activity.

Pipetting skill is a core competence in Biosciences critical to most activities in the Microbiology laboratory. The Pipetting Olympics was designed as a set of highly engaging fun challenges to support the development of accuracy and reproducibility in pipetting skills and to boost student confidence in the laboratory.

**Session Requirements**

Listed below are the materials required for the Pipetting Olympics:

* Micro-pipettor (pipette)
* Pipette tips
* 96 well plate
* Food dyes
* 20 ml water in universal tube
* Spill tray

**Session Activities**

There are three suggested challenges detailed in this document, however, this can be modified and adapted to the audience and length of time available, choosing the most suitable activity(ies) as needed.

**Challenge 1 – Tip Racking Race – Fastest Finger**

This is an initial ‘warm up’ activity requiring students to refill an empty pipette tip box as fast as they can. They tip the 96 pipette tips out of the provided tip box and the first box fully refilled and closed (fastest finger) is the winner. This activity can help the students reflect on how many hours of technical prep go into each lab class, the need for proper time management in the lab and also sustainability implications of pre-racked tips vs re-filling ourselves.

**Challenge 2 - The Rainbow**

Unlike challenge 1, this is not a race for time but practice for honing pipetting skills

This activity is about carrying out a 2-fold serial dilution across a 96 well plate using dyes of the rainbow colour. Beginning from the first column for each dye, students carefully transfer 100ul of solution to the next well across the row serially. They are taught proper handling of pipettes, tips on avoiding bubbles and when they can re-use tips. The goal is to aim for reproducible pipetting volume and a pretty picture, not the fastest finish. Points of discussion here can include applications of serial dilution in 96-well plate such as in toxicity testing and antimicrobial testing (Minimum Inhibitory Concentration)

**Challenge 3 – Pixel Art**

This fun activity builds on challenge 2, requiring student to creatively design a recognisable image using coloured dyes and water, further promoting the practice of pipetting skills.

The accompanying workshop slides within the resource pack can be used by the tutor to introduce the session at the start of the workshop. It also contains step by step instructions for the challenges.

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