Aseptic Technique Practical Guide

Aim: To understand and use proper aseptic technique by applying sterilised water to a nutrient agar plate.

Equipment Per Group	Method	Notes and guidance
• Nutrient agar plate • Vial of sterilised water • Wire inoculating loop • Bunsen burner and heatproof mat • Clear tape • Antibacterial hand wash • Wax pencil	1. Use the wax pencil to mark the agar plate with your group name. 2. Thoroughly clean your hands and workspace. Spray the bench with disinfectant spray and wipe dry with paper towels. 3. Light the Bunsen burner and open it up to a blue flame. This will help sterilise the air around your workspace. 4. Pass the inoculating loop through the Bunsen flame to sterilise it. Do not heat the inoculating loop as this could cause the agar to melt. 5. Open the vial of sterilised water and pass the rim of the vial through the Bunsen flame. 6. Dip the inoculating loop into the sterilised water then reseal the vial. 7. Lift the agar plate lid slightly, pointing away from your face. Draw a Z shape on the plate with inoculating loop then immediately replace the agar plate lid. 8. Pass the loop through the flame again. 9. Use two small pieces of tape to secure the lid. Do not seal around the lid as this will create an airtight seal. 10. Incubate the plate for 48 hours at 25C.	This practical should be carried out before B3.1 Core Practical Antibiotics to give students hands-on experience with a safe microbiology experiment. Use this practical to identify and help any students who do not show correct aseptic technique. Consult CLEAPSS GL269 and associated documents for a guide. The agar plates will take a few days to show growth. Plan the timing for a results lesson with your technician. If aseptic technique is followed correctly, the agar plate will show no growth. If the plate does show evidence of bacterial growth, then the student has made a mistake.

General Teacher Notes
A risk assessment must be completed for this practical. The risk assessment should be specific to the class concerned and written only by the teaching member of staff. If you are not comfortable with aseptic technique and microbiology work, please consult your technician and CLEAPSS about whether it is safe to carry out this practical. Microbiology practicals can be incredibly hazardous if not carried out correctly. Consult CLEAPSS GL269 for more information.
Clearing up
Put all used equipment into the provided disinfectant bath. Put all plates to be incubated into their own tray. Return clean equipment and chemical bottles to the tray the equipment was delivered in. Report any breakages or spills to the technician immediately.

Technician Notes	Hazcards	Clearing away
Microbiology work can be incredibly dangerous. If you are not experienced with aseptic technique, consult CLEAPSS. It is strongly advised that at least one technician in your school attend a training course to ensure they can carry out microbiology-related tasks safely. Never incubate agar plates at human body temperature (37 C). Once the plates are finished with, ensure they are properly sterilised with an autoclave or pressure cooker before disposal.	Consult CLEAPSS GL269 for more information.	Provide disinfectant baths in beakers.