

Investigations with Micro-Organisms

When using micro-organisms for investigations there are certain regulations that must be followed so as to allow projects to be entered into the NIWA Auckland City Science and Technology Fair.

These regulations are from the **Safety and Science Guidelines** from the Ministry of Education
The full document can be viewed here

http://www.nzase.org.nz/files/stanz-resources_4_1277119556.pdf

Information relating to micro-organisms can be found on P 34 - 35.

The important regulations that must be followed are:

Culturing Micro-organisms

- Human or animal sources of micro-organism, other than skin, must not be used. Including blood and **saliva**
- Skin surfaces may be used only if cultures remain sealed
- Samples must **not** be taken **from toilets and toilet areas**, including sinks and door handles
- Known pathogens, other than genetically crippled strains of Escherichia coli, must not be used
- Samples must **not** be taken from **rubbish bins and drinking taps**
- Sterile swab sticks should be used to inoculate plates
- All cultures should be labelled with students' names and date
- **Petri dishes should be covered and sealed** to prevent contamination and the spreading of spores. Adhesive tape can be used to securely seal the dishes
- Petri dishes should be **incubated upside down**
- Incubating at 35° to 40°C must be avoided because this tends to select organisms adapted to the human body. **Temperatures of 25°C or below should be used.**
- All cultures must be destroyed before disposal by being heated in a **pressure cooker** for at least twenty minutes and plastic dishes must be disposed of. As an alternative, dishes could be soaked in a **10% bleach solution** for three days.

Using Micro-organisms?

If you are using Micro-organisms in your investigation you must complete the **Care and Safety Form** on the next page, have it checked by your teacher and put it into your log book to be available for judges to view as required.

Review of Care and Safety Using Micro-organisms

Student(s) Name(s): _____

School: _____

Name of Teacher Supervisor: _____

Date: / /20

For use
of
reviewer

1. **Investigation's Title:** _____

2. **Aim of Investigation:** _____

3. **Type of Micro-organisms:** What general type of micro-organisms will I be using?

4. **Source:** Where will I get these micro-organisms from?

5. **Incubation:** How will I incubate / grow these micro-organisms

6. At what **temperature** will the micro-organisms be kept?

7. **If growing micro-organisms in agar plates will I:**

- seal the plates using Sellotape
- place the plates upside-down when incubating them?
- not open the plates again during the experiment?
- take pictures to record the growth of the micro-organisms?
- get rid of the plates as soon as I have completed my experiment?

8. **At the end of the investigation how will I dispose of the micro-organisms?**

Signature of Student(s) _____

For Reviewer to Fill Out

- Proceed as planned**
- Please reconsider these points and re-present for review**

Date: _____

Signature _____