Microbes are all around us

At the end of this investigation you should know…

* that there are microbes all around us
* that there are different microbes in different places
* how to grow microbes safely in the laboratory
* how to recognise microbes on an agar plate

### Procedure

SAFETY: Follow all the instructions your teacher gives you to make sure that…

* you do not grow any dangerous microorganisms
* none of the organisms you grow escape into the environment
* you do not pick up any infections from the material you touch

### Investigation

1. Your group will be given two agar plates. Bacteria and fungi (microorganisms) can grow on these plates.
2. Decide which habitat you would like to investigate.
3. Label the plates with your name, date and habitat.
4. Set up your agar plates and expose them to air or add either pond water or soil to them according to the instructions.
5. Put 2 – 4 pieces of tape on your agar plate to keep the lid on.
6. Give your agar plates to your teacher to incubate.
7. When you get them back, do not open them.
8. Examine your incubated plates and answer the questions.

**QUESTIONS**

1. Which habitat were you investigating?
2. Can you see any difference between the two agar plates?
3. Describe and draw what you see growing on your agar plates here.
4. Why is it important to have control plates?
5. Are there any differences between your plates and the plates from other groups that investigated microbes growing in the same habitat?
6. Are there any differences between your plates and the plates from other groups that investigated microbes growing in different habitats?
7. Can you suggest any reasons for this?

**ANSWERS**

1. State which habitat has been investigated.
2. Students should describe any differences between the plates.
3. Good drawings will show the variety of types of colony and give an idea of the area covered by each colony.
4. To be sure that the microbes we see develop from the materials we have introduced.
5. There may be some variation caused by differences in technique, or natural variability within the samples.
6. Different habitats will probably show different results.
7. Students may be able to explain that conditions are different in different places which will favour some kinds of microbe over others.