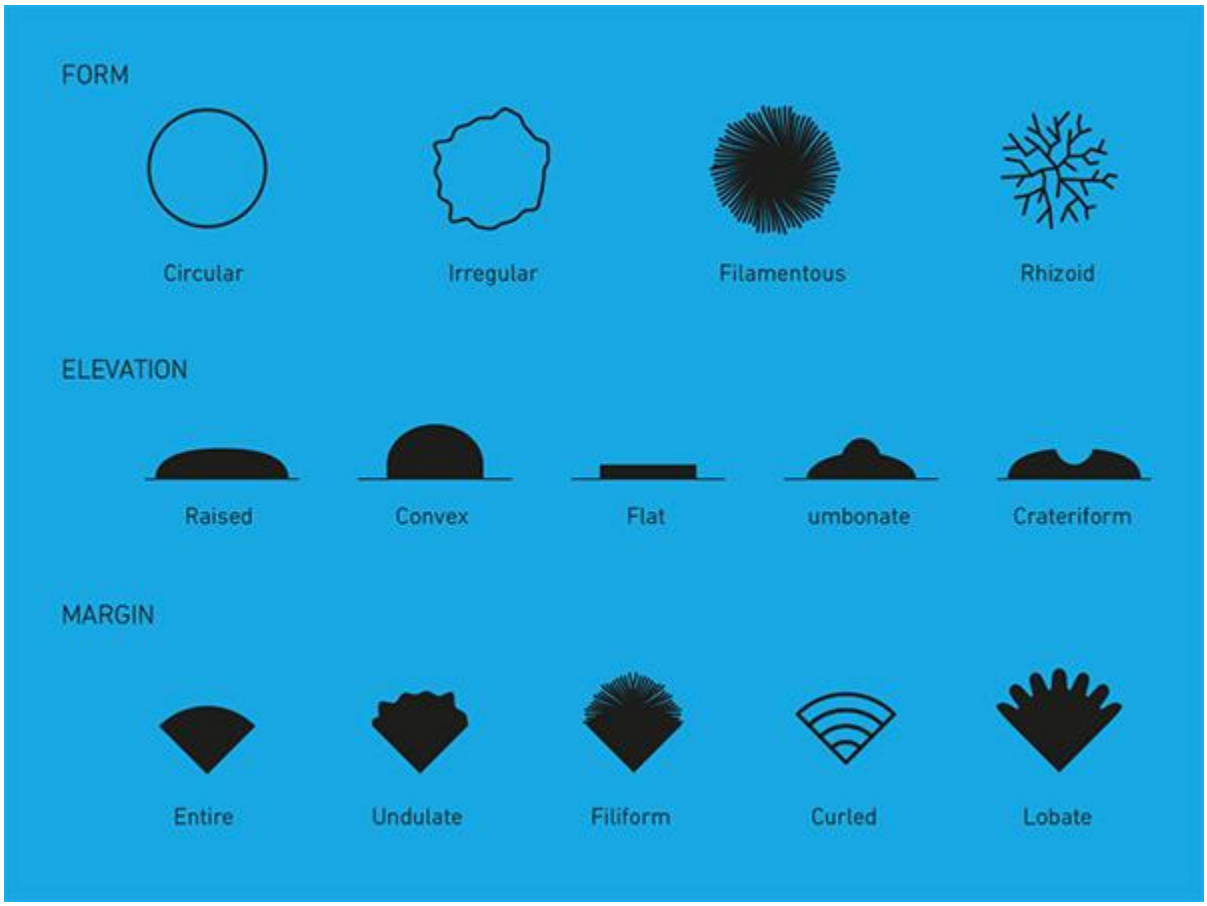
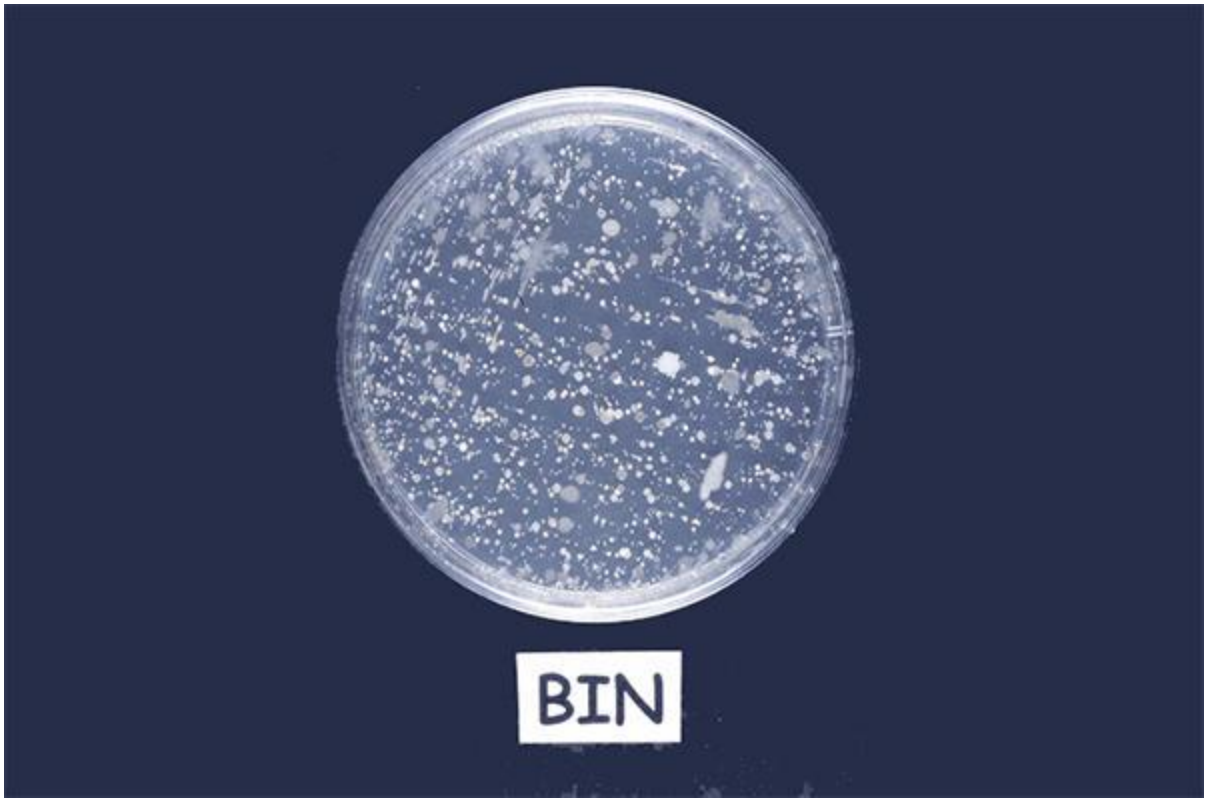
Observing bacteria in a Petri dish

Students should examine cultures in containers, which have been taped and closed. Colony morphology is a method that scientists use to describe the characteristics of an individual colony of bacteria growing on agar in a Petri dish. It can be used to help to identify them.

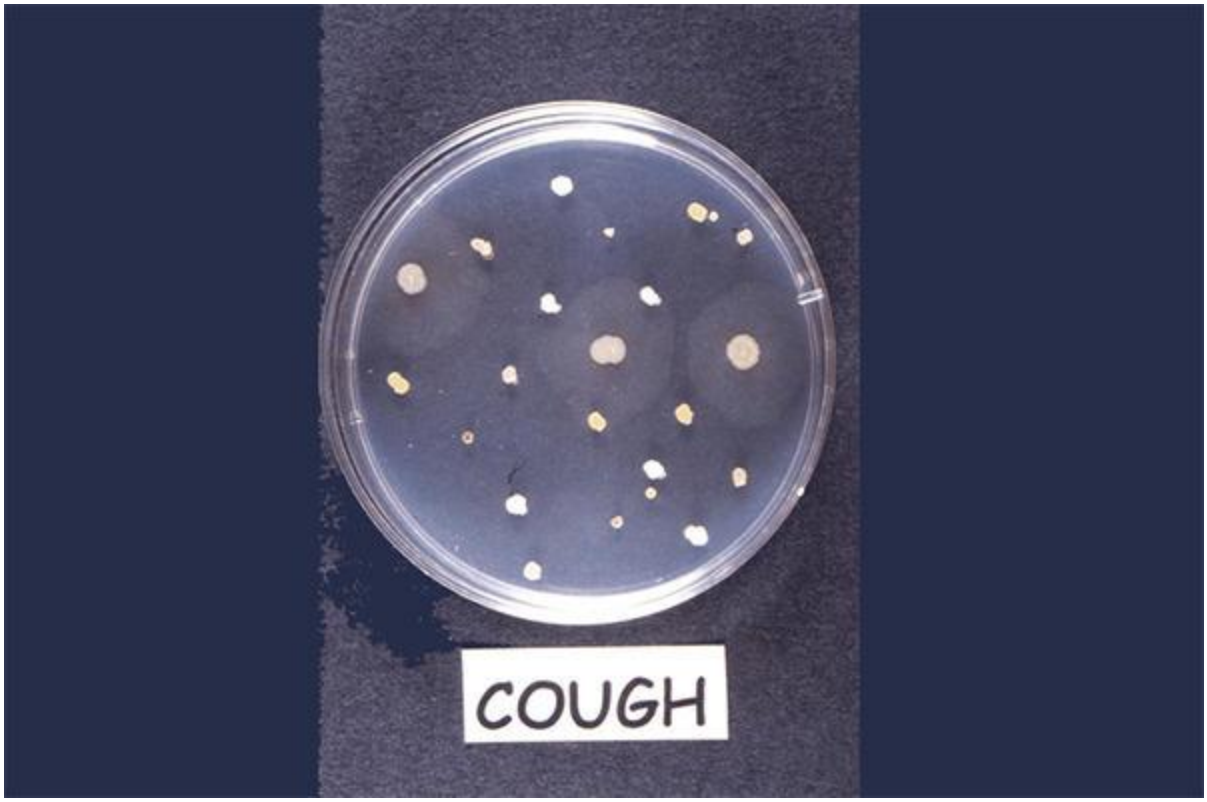


Colony morphology



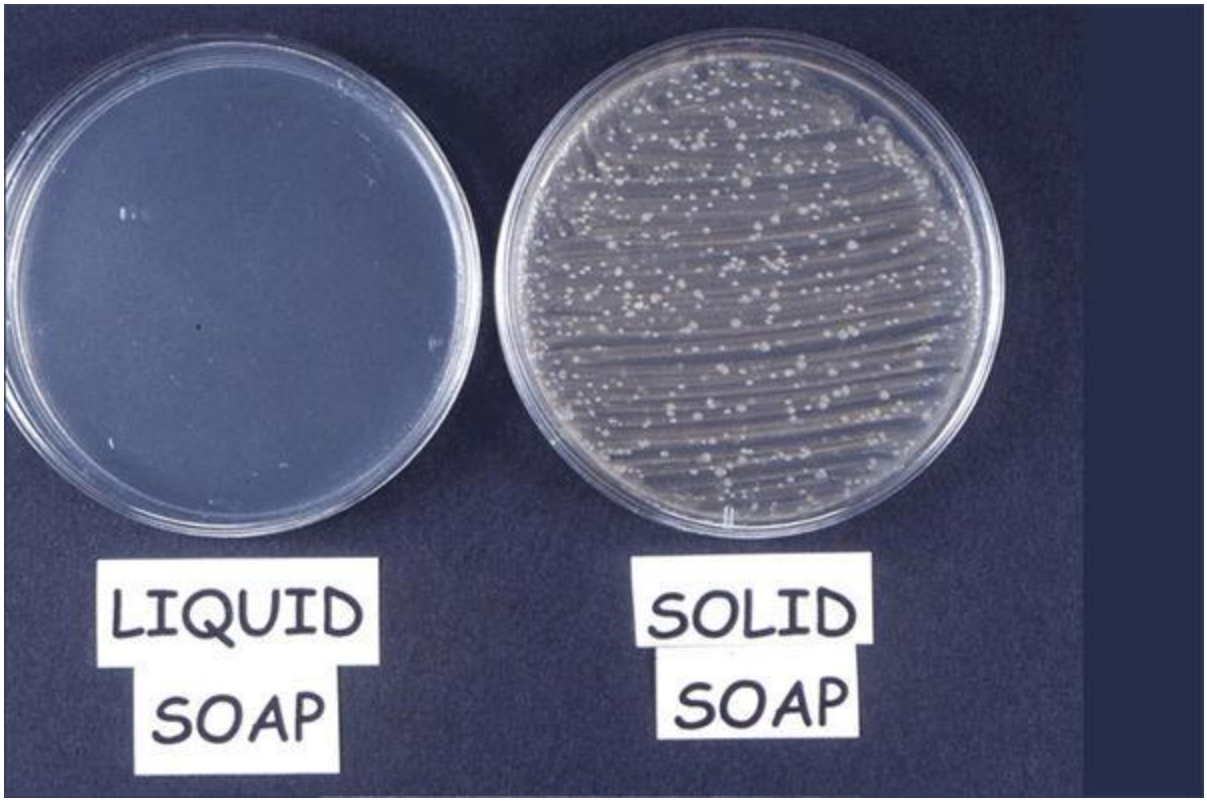
A swab from a bin spread directly onto nutrient agar.

Colonies differ in their shape, size, colour and texture. Can you count how many different colony types there are? Use the diagrams on colony morphology to help you interpret your plate.



A cough that was aimed directly onto nutrient agar.

Colonies differ in their shape, size, colour and texture. Can you count how many different colony types there are? Use the diagrams on colony morphology to help you interpret your plate.



A sample of liquid soap spread onto nutrient agar and a swab from a bar of solid soap also spread onto nutrient agar. Soaps are not designed to kill microbes. They help to wash them of your skin, better than water alone. Why do you think that the solid soap (kept by the sink and handled regularly) had more bacteria living on it than the liquid soap (kept in a dispenser, so not handled) which had none? You may be interested to know that while soaps do not kill microbes they can be quite a good medium for them to grow on!

A streak plate to isolate single colonies of a specific bacterium found living on a sample of paper. Paper is not a good object for bacteria to live on as it cannot sustain their growth. The bacteria found on the paper are know as transient i.e. they are just passing the time until a better place to live comes along. Handling the paper would transfer the resident bacteria from a person's hand to the paper.

Different types of bacteria will produce different-looking colonies, some colonies may be coloured, some colonies are circular in shape, and others are irregular. A specific terminology is used to describe common colony types. These are:

- Form – what is the basic shape of the colony? For example, circular, filamentous, etc.
- Size – the diameter of the colony. Tiny colonies are referred to as punctiform.
- Elevation – this describes the side view of a colony. Turn the Petri dish on end.
- Margin/border – the edge of a colony. What is the magnified shape of the edge of the colony?
- Surface – how does the surface of the colony appear? For example, smooth, glistening, rough, wrinkled or dull.
- Opacity – for example, transparent (clear), opaque, translucent (like looking through frosted glass), etc.

- Colour (pigmentation) – for example, white, buff, red, purple, etc.

Each distinct colony represents an individual bacterial cell or group that has divided repeatedly. Being kept in one place, the resulting cells have accumulated to form a visible patch. Most bacterial colonies appear white or a creamy yellow in colour, and are fairly circular in shape.

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