# Micro Organisms

# Microorganisms (microbes) are small, simple and are some of the most important organism on the Earth.

# The word ‘micro’ means that we need a microscope to be able to see them.

# Microbes include things like bacteria, protozoa, fungi, viruses, phytoplankton and algae. Microbes can be singled-celled or be made from multiple cells (multicellular). Microbes can also produce their own food using sunlight (photosynthetic), while some need to take in food.

# Microbes play a vital role in a Wetland Ecosystem as they an important food source for Macroinvertebrates and microorganism, some microbes are vital in nutrient recycling (decomposing) and some microbes are able to break down oil.

# Below are some common examples of microbes

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| BacteriaMonera Kingdom***A group of microscopic, single-celled organisms*** | ProtozoaProtista Kingdom***A group of single-celled organism that live by taking in food*** | FungiFungi Kingdom***A single or multi celled organism that absorbs its food.***  | AlgaeProtista Kingdom ***A group of simple plant-like organisms that live by photosynthesis.*** |
| *T*etanus *-* [***Clostridium tetani***](http://en.wikipedia.org/wiki/Clostridium_tetani)**.*****\**** *E. coli -****Escherichia coli*****\***Blue green Algae ***cyanobacteria*** | Malaria - [Plasmodium falciparum](http://en.wikipedia.org/wiki/Plasmodium_falciparum)\*Amoeba  | Moulds Penicillium\*lichens (relationship between fungus and algae)\* mycorrhiza (relationship between roots and fungus) | Phytoplankton \*Green algae |

# \\uahs3\apps\OFFICE MEDIA CONTENT\FILES\PFILES\MSOFFICE\MEDIA\CNTCD1\ClipArt2\j0229357.wmfThere are 2 microscopes which contain two different types of bacteria.

#  Complete the table be sketching a picture of each

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| **Microbe** | **Description** | **Feeding** | **Found** | **Drawing** |
| **Paramecium**  | A species of protozoa that swims with the help of cilia. | They are protozoa which means they take in food. Mainly feed on bacteria. | In fresh water environment’s.  |  |
| **Amoeba** | A species of protozoa that has no fixed shape and looks like a tiny bag of jelly.  | Also take in food by changing shape and surrounding the food and engulfing it.  | In water and soil. Some are parasites and live inside plants and animals.  |  |

# Focusing in on ALGAE

#  What are 'algae'?

Algae are a very diverse group and include simple, photosynthetic organisms. They range from tiny single-celled organisms such as phytoplankton to multi-cellular organism such as the giant kelp.

**Algae occur in 2 of the kingdoms**

**PROTIST** and **MONERA –** cyanobacteria (blue green algae)

These algae can then be categorised into those that live in **marine environments** such as the brown and red algae species or those that grown in **freshwater environment’s**; mainly green algae species.

**Why study algae?**

These tiny microscopic plants form the base of the food chain in most water. Marine algae produce 70% to 80% of all the oxygen we breathe, while freshwater algae produce 10% of the oxygen that we breath. Therefore about 90% of all the worlds oxygen in made by algae.

![C:\Documents and Settings\greeki\Local Settings\Temporary Internet Files\Content.IE5\EAFWXQO1\MC900251293[1].wmf]()***PRACTICAL***

**Collecting and examining fresh algae at the wetlands**

Collect algae from sites in the wetland complex. Choose sites that have different characteristics, for example: a shallow water site and a deeper water site or still water and moving water or different habitats such as rocks and vegetation.



 **The two different sights I compared were:**

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 **Examining fresh material**

1. Place a drop of water, which contains the algae onto a slide, smaller fragments of algae are easier to observe under a microscope than larger pieces.
2. Carefully lower cover slip onto it.
3. Examine and draw the algae collected from the different wetland sites onto the table below.

 **Results**

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| **Algae Diagram**  | **Location**  | **Structure (see key)**  |
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 **Discussion**

1. What was the most common structure of algae that you found?

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1. Which site had the highest abundance (the most) algae?

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1. Which site had the highest richness (different types) of algae?

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1. Why do you think this is so?

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1. Why are algae and other micro-organisms so important to the healthy functioning of the Urrbrae Wetlands?

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 **Algae Key**

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