ADOPT A COASTLINE

City of Joondalup

NAME

STUDENT ACTIVITY

THE OCEAN IS NOT A RUBBISH BIN

Rubbish is anything that is unwanted, things that are thrown away. It could be apple cores, plastic bottles, paper, lawn clippings, empty cereal boxes, lolly wrappers, cans, glass jars, old furniture or tetra packs. All of these things could be rubbish. Rubbish that is found in the ocean is called marine debris.

Rubbish can be biodegradable or non-biodegradable. Biodegradable substances can be broken down into carbon dioxide, water and biomass by very tiny microorganisms called bacteria and fungi. Food rots because the bacteria and fungi eat it and break down the food into nutrients. The nutrients return to the soil or air. Non-biodegradable substances cannot rot, as bacteria and fungi cannot eat them. Even if they can break up into very small pieces they still stay the same.

Put the above items into the correct group.

Biodegradable	Non-Biodegradable

Just because a substance can biodegrade doesn't mean we can just throw it on the ground. Many people think it is okay to throw apple cores or left over picnic food into the bush. These scraps are eaten by native animals like possums, bandicoots, birds, skinks and kangaroos. If they are not eaten by animals they breakdown into nutrients and return to the ecosystem. There are negative consequences of this action.

1. Discarded food like apple cores attract animals to the side of the road where they could be hit by a car.

2. Human food is not native animal food. Native animals can get sick from eating human food because it's not part of their natural diet or it may have germs on it.

3. Australian plants are used to not having fertiliser or nutrient rich soil. By adding nutrients to soil through rotting food, weeds are encouraged to grow. Weeds compete with native plants for space, nutrients and sunlight. Many times the weeds win and the native plants cannot grow.

4. Rotting food or dog faeces near lakes or rivers leach extra nutrients into the water. The extra nutrients cause algal blooms which choke up the waterway, blocking the sunlight and using up all the oxygen. This can cause fish, water animals and plants to die.

Some non-biodegradable substances are more harmful to the environment than others. Glass or aluminium can be reused or recycled. Plastic does not biodegrade. It will break up into extremely small pieces but it will still be plastic. What is so bad about this?

1. Animals can get plastic rings or fishing line stuck around their bodies. Animals don't have hands to pull the plastic or fishing line off so it will stay there. As their bodies grow the plastic gets tighter and tighter, cutting into their skin. This can kill the animal.

2. Marine wildlife, such as fish, mistake plastic for food.

    a. Plastic pieces floating in the sea look like little fish or plankton.

    b. Plastic shopping bags look like jellyfish.

The plastic pieces stay in the fish, birds or turtles stomach because their bodies cannot digest it. After a while their stomachs are so full of plastic they cannot eat anymore and slowly starve to death.

Plastic attract toxins called Persistent Organic Pollutants (POP's). Examples of POP's are BPA's (Bisphenol A) found in polycarbonate plastics. Plastic water bottles are often made of plastic with BPA. PCB's (Polychlorinated biphenyls) is another POP which is found in paint and electrical wiring. Pesticides (dichlorodiphenyl trichloroethane - DDT) and industrial chemicals also contain POP's. These toxins stick to the outside of the plastic so when they are eaten, the animal also eats the toxins. POP's stay in the body forever because they are not biodegradable. When a fish, bird or human eats fish or seafood they also eat the toxins.

TASK: Create a Poster

Now you know more about how rubbish is dangerous for marine wildlife it's time to tell others. Design and create a poster about the dangers of rubbish in the ocean that you can display around your school or local shopping centre.

Posters need to be:

- Colourful
- Eye-catching – use pictures to get people's attention
- Informative – your poster needs to say something, always make sure your information is correct
- Readable – use BIG and small writing. Make your sentences clear and to the point
- Large – A3 or larger is good
- Creative – use collage, newsprint, different fonts, cartoons, different types of media (pen, paint, pencil...)
- Full - use the whole page.