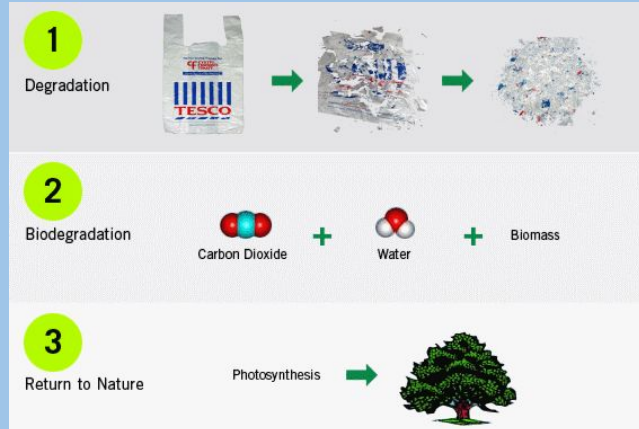


# PLASTIC WASTE

**Matt, Nathan and Kyle**

# WHAT IS BIODEGRADATION?

Biodegradation is a process that microbial organisms transform the structure of chemicals introduced into the environment so basically a carbon based material is changed through a chemical process from complex molecules into simple molecules and then after a while the molecules return to the atmosphere.



# PROPERTIES THAT LIMIT BIODEGRADATION OF PLASTICS

Since plastics have are made up of carbons with single bonds this means that plastic is unreactive and is hard to break down and almost impossible. This is because there is nothing to eat them / break them down unlike food scraps were they aren't as strong as plastics and there is things that eat them.

# WHAT CAN DEGRADE PLASTICS

Plastic bags don't biodegrade but they can break down releasing harmful chemicals that can disrupt hormones and glands that affect almost every organ and cell in the bodies of animals and humans. Scientists have made a discovery that bacteria from the guts of a worm can degrade polyethylene. This worm is called the waxworm and is a moth larva that can break down polyethylene without any pretreatment steps using bacteria found in its gut.



# HOW LONG DOES IT TAKE PLASTICS TO DEGRADE NATURALLY

If you Drop a bottle on the floor, you'll be thankful for the plastic.but the bad thing is that plastic is almost unbreakable.this is why we use plastic to make most containers and bottles. Drop the same bottle on the ground and we have a problem! Because plastics like PET don't decompose the same way organic material does. Wood, grass and food scraps undergo a process known as biodegradation when they're buried. But when plastic is put into the earth the bacteria in the soil find it hard to break the plastic down. This is why plastic can take up to a whole lifetime to degrade naturally.

# HOW ARE PLASTICS POLLUTING THE OCEAN AND OTHER ENVIRONMENTS

Plastic is everywhere. It's in our clothes, phones, cars, banknotes and much more. It's unlikely that anyone could go 10 minutes without touching some sort of plastic. This is why it's not hard to believe that large amounts of plastic are ending up in the ocean. It is estimated that 8.8 million tons of plastic entered the ocean every year. How does this affect marine life? Fish in the North Pacific ingest 12,000 to 24,000 tons of plastic each year. This can cause injury to the intestines and death. This plastic can also be transferred up the food chain to larger fish. Sea turtles often mistake plastic debris for food. Plastic bags are the most common plastic found in sea turtles' stomachs. Current research says that half of the world's sea turtles have consumed some sort of plastic in their life.



# WHAT ARE MICROPLASTICS, WHY ARE THEY USED AND WHY ARE SOME COUNTRIES BANNING THEM

Microplastics are 1 mm small plastic particles are They are added to cosmetics, detergents and other personal care products. They are not biodegradable.

Countries are banning them because they want to protect the marine ecosystem. Microbeads can flow directly from the bathroom drain into sewer system can have negative impacts on human health because they absorb persistent organic pollutants.

THE END

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