Does rubbish float or sink?

Explanatory video transcript

(0:07)

Does rubbish float or sink?

Have you ever seen rubbish floating on water?

Have you ever wondered which items of litter will float and which will sink?

Let's focus on some items of rubbish that you might find in the sea or in lakes and rivers.

Let's investigate whether items of rubbish will float or sink.

(0:33)

Did you already carry out your investigation?

What did you find?

Have you found items of rubbish that float? Have you found some that sink? Perhaps you have even found some items of rubbish that neither float on top of the water nor sink to the bottom.

Do you know why some objects float while other objects sink?

(1:01)

Does the shape of the item affect whether it floats or sinks?

Does the size of the item affect whether it floats or sinks?

Does the type of material from which the item is made affect whether it floats or sinks?

Does the item float or sink in the same way if there is salt in the water?

Can you set up your own investigations to try and answer all of these questions?

(1:39)

Objects will float or sink in water due to density, buoyancy and shape.

Buoyancy depends on the density of the object compared to the density of water.

Less dense objects float while denser objects sink.

The shape of the object, its natural buoyancy and the effects of pressure at different depths also play a role.

The amount of salt in the water (its salinity) will also affect whether the objects float or sink.

Salty water has a greater mass than fresh water, therefore it is more dense.

This means that objects that sink in fresh water may float in salty water.

The water in our oceans is salty while water in rivers and lakes is not.

(2:35)

We have found that some items of rubbish float while other items sink.

We have also found that some items of rubbish neither float on the surface of the water nor sink to the bottom, but remain floating underneath the surface of the water.

It is important for us to realise that some items of rubbish may float while others do not as this may help in the way we can remove some of this rubbish from our oceans.

(3:05)

How do you think rubbish ends up in our waterways?

Do you think that rubbish in our waterways can make a difference to the lives of marine wildlife?

Why do you think throwing rubbish into water can be harmful to our environment?

Rubbish in our water is one of the main causes of water pollution.

Other causes of water pollution include: toilet waste, farming pesticides, oil spills, factory waste.

(3:41)

Here are some common items of marine litter found on European beaches.

They include drink bottles, cigarette butts, food wrappers, food containers, plastic bags, cutlery, straws and stirrers, cotton buds, balloons and balloon sticks, cups and lids, sanitary applications.

Rubbish and pollution can really damage our oceans and the wildlife that live in our oceans.

Plastics and other litter can end up in a large ocean garbage patch, affecting our ocean wildlife and local coastlines.

(4:22)

Ocean garbage patches are collections of litter that end up in oceans, seas and other large bodies of water.

Most of this rubbish is not biodegradable.

Many plastics do not wear down.

They simply break into smaller and smaller pieces.

Oceanographers and ecologists recently discovered that about 70% of marine litter sinks to the bottom of the ocean over time.

Here are some of the ocean garbage patches in the world.

(5:03)

So, how are marine creatures affected by rubbish?

Rubbish is eaten by sea creatures and by birds, killing them or causing them to die of starvation when they cannot eat because their stomachs are too full of plastic or other items of rubbish.

Sea creatures can also get caught in rubbish or nets, and fail to survive.

(5:32)

So, how can we help?

Can you suggest a way in which you can help promote the message of keeping our waterways litter free?

We can learn about our oceans, our ocean wildlife and how to prevent our water from becoming polluted.

We can help clean our beaches and shorelines.

We can take responsibility for keeping rubbish and pollution from our oceans.

We can spread awareness among our local community and the wider national and international communities.

We can work together with other students in our school, with other schools and with students from other countries.

We can all work together to promote sustainability.

Let’s do our part to keep our oceans clean and free from litter.