

## Pollution in our biosphere

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This group of colleagues came with diverse backgrounds and it was quickly clear that we needed to brainstorm what we could achieve together during the week of Putting CLIL into Practice at Anglia School.

English, Maths, Science, Geography, History all represented, one of the colleagues suggested something to do with our biosphere and this led smoothly to looking at pollution in our biosphere. Finally, another colleague suggested plastic in our biosphere. What a great idea for a CLIL project!

The table below summarizes our brainstorm on the theme ‘Plastic pollution in our biosphere’. After the brainstorm you can find all the activities that we produced in our week together. Note: it is a huge topic, and while we couldn’t produce resources for all the ideas in the brainstorm, we made a good start. Send us your ideas!

Plastics – before, now, after

Before	now	after
What’s the problem?	Get students to investigate:	Are we doomed to drown in plastic?
Find texts and images which represent the biosphere levels and the link to water pollution.	Plastic at home (how much plastic they use in a week)	What are the alternatives available to us today? (organic plastics)
When was plastic invented?	Plastic at school (how much plastic, where it is used, is it recycled?)	What ideas can your students come up with for alternatives which don’t yet exist?
Find images and texts/write texts about the first use of plastics (Bakelite, 1862 patent).	Plastic locally – is there evidence of plastic litter (cigarette butts, wrappers, etc.) in the local areas?	What are the realistic solutions?
Find images and texts describing the process of how plastic is made.	Plastic in Italy (country) – what are the statistics about plastic production and use in Italy? Find the numbers and make activities for students to analyze data.	Changes Get your students to commit to small changes in their own lives. Can they manage without buying anything in plastic for one week? How did they get on? Was it easy? Could they go further?
Create activities which help guide learners through processing this input material.	Plastic in the world – how does Italy compare with other countries globally? What is the situation globally? Get students to explore the floating ‘islands’ of trash in the oceans. What happens to aquatic life polluted by plastic?	Develop activities which support learners in their output, namely writing and speaking.
	Uses Look at the advantages and disadvantages of plastics in our lives.	

## The life cycle of a plastic bag – UNSDG 12 Responsible Consumption and Production

<https://www.youtube.com/watch?v=GLgh9h2ePYw>

Tell your class they are going to watch a nature documentary about the life cycle of a plastic bag. Watch the mockumentary with Jeremy Irons and then put students in groups of 3.

Hand out the description cards cut up onto separate cards.

Tell them to read the description cards and complete the timeline of the film by placing them in the order they saw them.

Create a printout of the timeline with 12 stages, or get students to create their own in their notebooks like the one given below.

Play the clip once again if necessary.

1	2	3	4	5	6
12	11	10	9	8	7



Answers:

- 1 dropped by a family shopping
- 2 blows around the supermarket car park
- 3 flies into the air
- 4 is carried into a city park
- 5 rolls across the grass
- 6 is played with by a dog
- 7 rolls down the street
- 8 flies through the night
- 9 flows into the drain
- 10 floats into the river
- 11 rolls down the beach
- 12 joins the Pacific garbage patch



<b>is dropped by a family shopping</b>	<b>blows around the supermarket car park</b>	<b>flies into the air</b>
<b>is carried into a city park</b>	<b>rolls across the grass</b>	<b>is played with by a dog</b>
<b>rolls down the street</b>	<b>flies through the night</b>	<b>flows into the drain</b>
<b>floats into the river</b>	<b>rolls down the beach</b>	<b>joins the Pacific garbage patch</b>

When students have recreated the timeline with the descriptor cards, hand out the language support for talking about the life cycle of the plastic bag.  
Get students to try to retell the story in using the language support.

<b>Adverb phrases:</b>	Then Following that After that Afterwards Also In addition to	Finally Eventually In the end At the end Lastly
<b>Verb phrases:</b>	moves across is carried (by) is transported rolls (into) ends up goes to is stuck is trapped	goes in goes into floats is take to travels
<b>Noun phrases:</b>	drain pipe river breach sea Pacific ocean	garbage patch dolphin seal turtle whale bird dog

Now get students still in their groups to create a story of another plastic item from beginning to end. Students can choose any single-use plastic item they like. If they need ideas, they might choose from this list: plastic bottle/plastic straw/plastic bag/plastic bottle top/plastic sweet wrapper/cotton bud

Tell them to use the timeline as a structure, and to refer to the language support you gave them to help them write in full.

Get your students to tell their mockumentary to the class when they are ready.



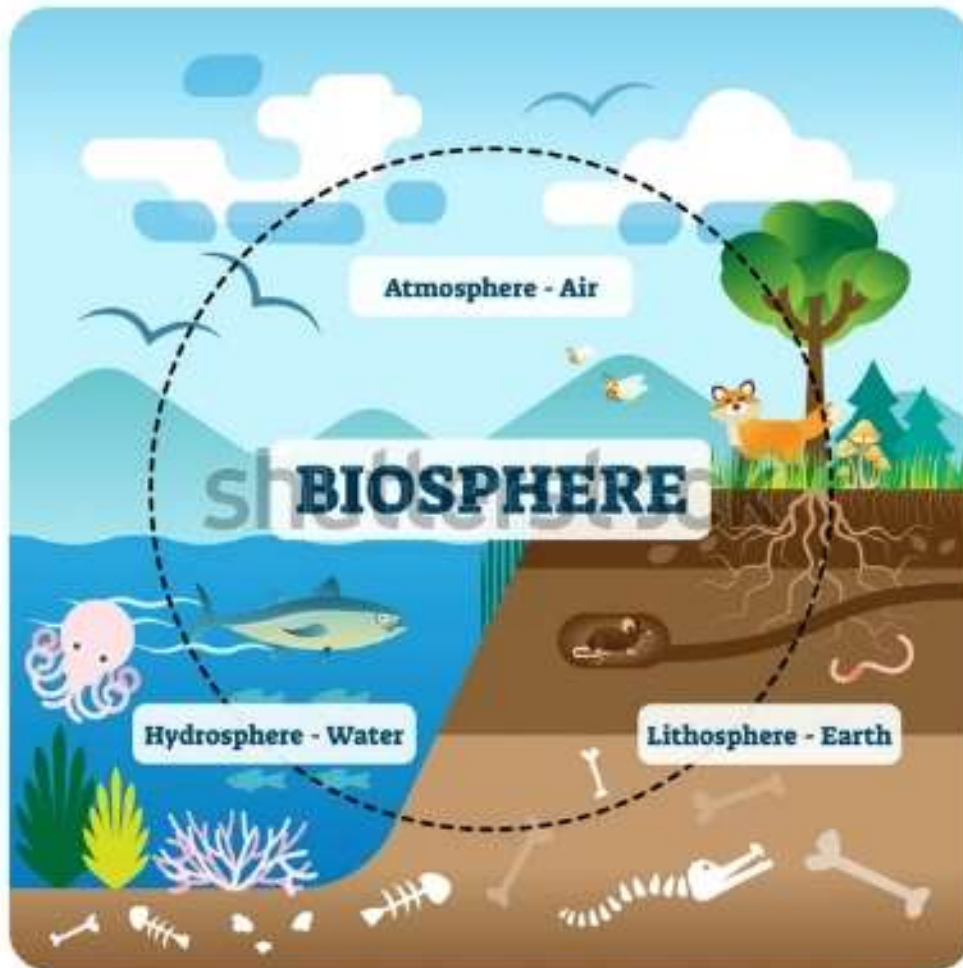
### **Pollution in our Biosphere - UNSDG 14 + 15 (Life on Land, Life below Water)**

Have a class discussion about how plastic pollution gets into our environment. Make reference to the mockumentary stories and while the discussion is ongoing show an image of our biosphere on planet earth showing the different spheres which make up our biosphere.

Aim to draw attention to the interaction between the spheres and how pollution can affect all of the spheres.

An example image is given for reference.

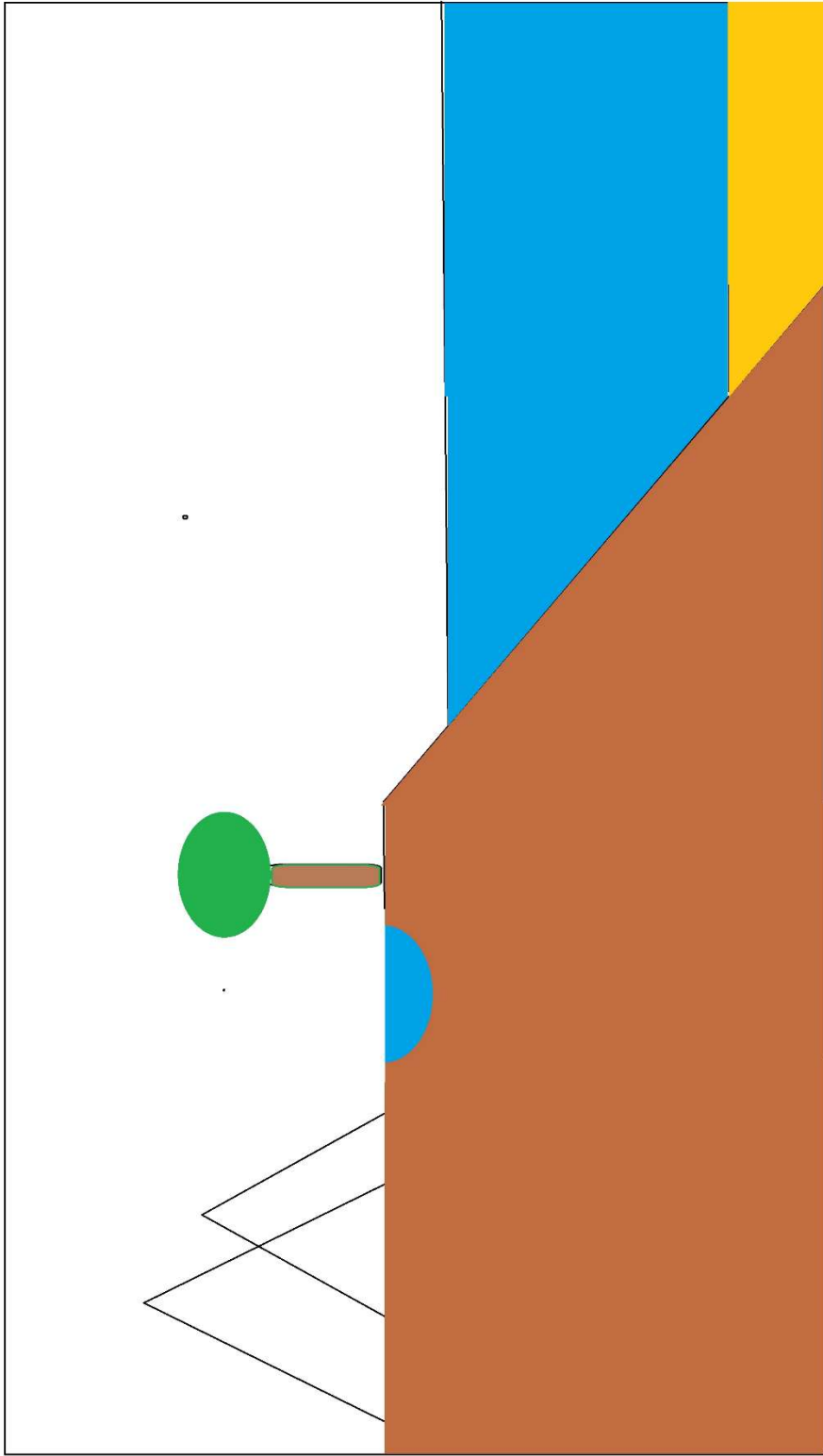
<https://www.shutterstock.com/image-vector/biosphere-vector-illustration-labeled-all-natural-1520499716>



www.shutterstock.com - 1520499716

Show the computer drawn picture of the biosphere to students. Hand out poster sheets to students in groups of 3 along with the word cards and picture cards and get the groups to create their own poster of the spheres representing our biosphere including the other spheres. They should aim to place the terms and images in the poster according to how they agree they should be positioned in their groups.

The biosphere on planet Earth



Atmosphere	Hydrosphere	Lithosphere	Biosphere
Humus	Compost	Loam	Sand
Troposphere	Mesosphere	Thermosphere	
Rock layer	Exosphere	Clay	
Stratosphere			



**bat**



**coral**



**sea**



**lichen**



**bird**



**glacier**



**sea urchin**



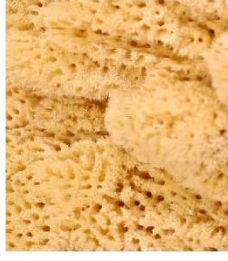
**plant**



**cloud**



**iceberg**



**sponge**



**rocks**



**seed**



**lake**



**starfish**



**worm**



**dragonfly**



**river**



**fungi**

When the groups are ready with their posters hand out the language support for describing the different spheres on planet Earth.

Language support for describing the spheres on planet Earth:

The \_\_\_\_\_ sphere is made up of \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_

The _____ sphere	contains   is made up of   includes	_____
		_____
		_____

Have the groups practice presenting their posters in their groups.

Ask for a volunteer group to present their poster to the class.

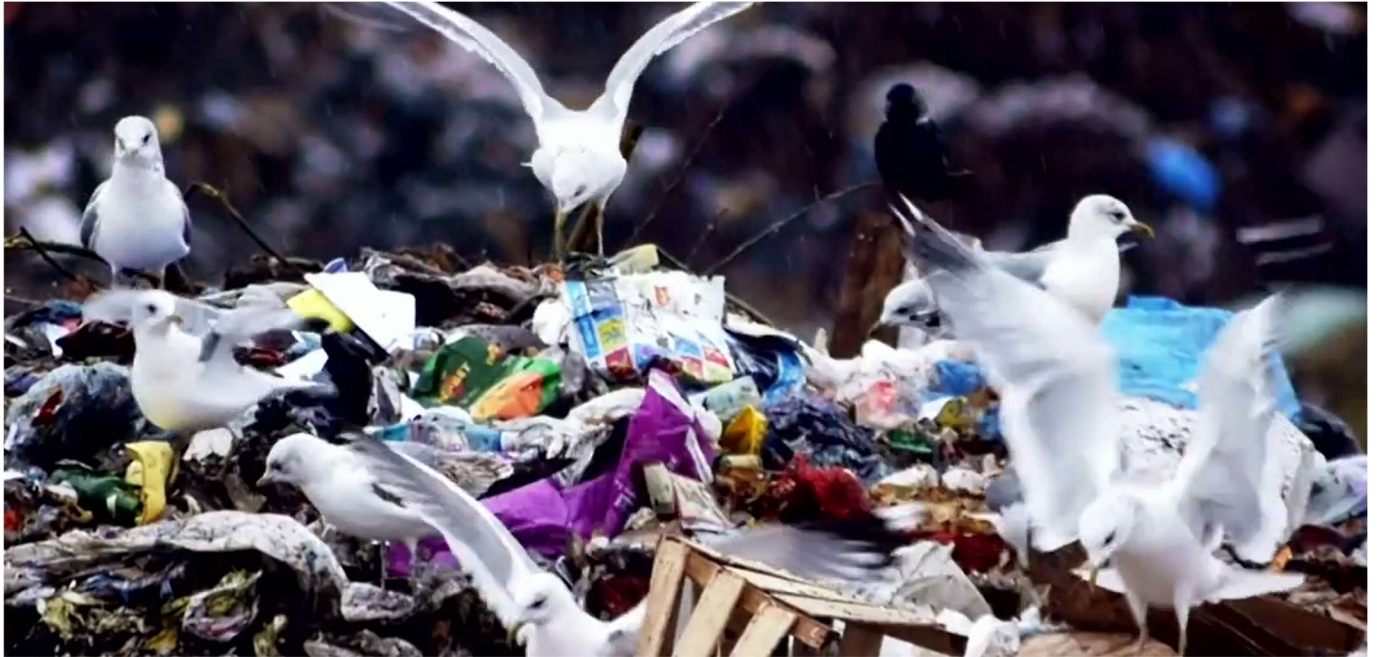




## Plastic pros & cons – UNSDG 12 – Responsible Production and Consumption

Show the image of the rubbish dump and the birds and ask your class what they think the advantages are of plastic.

It can't all be bad!



In fact, it's a good idea to get students to positively identify the advantages while they are seeing the disadvantages in order to be able to argue their position as clearly as possible.

This is a 'read to talk' activity which does exactly that. It gets students reading and as they read they discuss what they are reading. Students read arguments and organize them depending on their position, agreeing, disagreeing and compromising.

You might find that your students want to speak in their mother tongue during discussion in their groups. This may be perfectly acceptable depending on their level of English and knowledge of the topic, but do insist they feed back their 'answers' in English.

This means that the groups in the class may have different organizations of the advantages and disadvantages when they have finished.

It's a good idea to have a class summary discussion afterwards to look at the differences of opinion.

Cut out the header cards and description cards.

Get students to read the cards and talk about them with their group.

Instruct groups to arrange the cards into a structure showing the advantages and disadvantages of plastic.

The structure will look a little bit like a tree diagram with two branches which subdivide further into two other branches and then the groups will list their decisions underneath.

<b>Advantages</b>	<b>Disadvantages</b>	<b>Less important</b>
<b>More important</b>	<b>More important</b>	<b>Less important</b>
<b>Irrelevant</b>	some of it can be recycled	it gets into our waterways, ending up in our oceans
its production cost is low	it is lightweight	it is toxic
it is resistant to corrosion	it is flammable	it is not biodegradable
it is a poor conductor	animals often eat it thinking it is food	it is a durable material
it offers a hygienic packaging material	it keeps food fresh for longer	it adds to litter in our environment
we consume plastic in our foods when it gets into the food chain	it can be used to make many things like roads, utensils, wires, pipes	it has been linked with diseases and illnesses in humans
it can be reused many times	many products made from it are only used once and then thrown away	animals can get trapped in it and be killed

**Plastic Around Me – UNSDG 12 – Responsible Consumption and Production**

**Plastic Around Me – ‘a one-week survey of plastic in my life’**

**Plastic things you buy**

For one week, write down each item of plastic you use in your daily life.  
(wrappers from sweets, plastic drinks bottles, crisps packets, etc.)

**Free time activities**

For one week, write down each plastic item you use/buy during your free time activities.  
(Sports activities, hanging out with friends, cinema, shopping, etc.)

**Food routines**

For one week, write down each item of plastic you use/buy during meal times, and snacks.  
(snack bars, machines, shops, at home in the kitchen, etc.)

**Breakfast**

**Lunch**

**Dinner**

**Drinks**

**Snacks**

Have a discussion with your class about how much plastic there is in their lives. (use mother tongue if you need to)

Tell them you want them to collect information about plastic in their lives over one week.

Hand out the survey sheet and show on your screen. Talk through the questions/focuses to make sure everyone understands what they need to do.

Agree which day the students will return with their completed survey.

### **Analyzing data**

Put the students into 7 groups, one for each section of the survey.

Give each group a name (bought plastic, free time, breakfast, lunch, dinner, snacks, drinks).

Tell them they have 30 minutes to analyze the information and draw results from the data.

Example questions to answer in each group:

How many items of bought plastic are there in the surveys in total?

What is the most common plastic item used in free time activities?

What are the most common foods packed in plastics?

What types of plastic containers are there for drinks?

Writing support for plastic around me

- Write about the numbers of items

There were ... plastic wrappers/stirrers/bottles/tops/... and

The most common item of plastic was the ...

The least common item of plastic was the ...

- What do you think the main problem is?

We think the main problem is ...

### **Graph the data**

Decide in your group how to present the results of your data (pie chart to show proportions of plastic items).

### **Present the data to the class**

#### **Follow-up**

1 What can you do to change something about your use of plastic?

As a class, have a discussion about which items you all agree you could reduce. Agree how much you are going to try to reduce over the next week.

For example, there were 250 plastic wrappers and crisp packets. Why not try to half that number over the next week.

2 Share your results as a class and see how successful you have been.

## Writing about plastic pollution

Write a text explaining some of the problems (at least 5) of plastic, and possible solutions to them.

<b>Problems and consequences</b>	
One of the main problems of plastic pollution is  Another problem of plastic pollution is  A third problem is  Fourth,  Last but not least,	
<b>Possible solutions</b>	
One possible solution is to  Another way of solving the problem of plastic litter is to  Another answer could be to  It's also useful to  It can be helpful to	
<b>Conclusions</b>	
If we want to protect the planet from plastic ...  We might ...  We could ...  We should ...  We must ...  In conclusion, /In short, /To sum up,	