

Summer Week 4 – Science Lesson 1

Can I understand that changing environments pose danger to living things?

For our science topic we have been looking at living things and the ways they can be grouped and classified. Today we are taking our learning about living things and looking at the ways changing environments can pose danger.

Over hundreds of years living things become adapted to certain environments. It can be the way that they hunt for food, such as polar bear fur allowing them to stalk prey on the ice. It can be where they have their young, such as turtles laying their eggs on the beach. Or even how and when they hibernate over winter.

With changing environments some of these things become harder and the animals are not having time to adapt to survive the changes. Melting ice caps mean less hunting for polar bears, busy beaches and littering mean unsafe hatching environments for baby turtles and more extreme weather patterns change temperatures for hibernation.

We are going to look at some ways environments are changing and the danger that they pose to living things.

1. Deforestation



Rainforests cover only 6% of the Earth but they are home to 50% of all plant and animal species.

What is deforestation?

Deforestation occurs when trees are cut down across a wide area which is then permanently cleared for another use.



Did You Know...?

Every 20 minutes, an area of rainforest the size of 20 football pitches is cut down. If this rate continues, there will be no rainforests in 100 years.

**Palm oil plantation
in an area that was
once forest.**



What does it mean?

Rainforests are often known as the 'lungs of the Earth'. The trees absorb harmful carbon dioxide and produce 20% of the oxygen in Earth's atmosphere. Without this the carbon dioxide can damage the ozone layer.

Deforestation contributed to India's deadly mudslide, experts say. "Deforestation leads to land erosion, which leads to landslide."— Medha Patkar, environmental activist. The trees soak up the water from the heavy rainfalls, if they aren't there then the water causes dangerous erosion.

What can we do?

Choose recycled or certified sustainable wood products to reduce the need for deforestation



Look for products that no longer use palm oil. This will reduce the need for large Palm Oil plants



2. Urbanisation

Urbanisation means that there are more and more people living in built-up urban areas, rather than in rural areas. This means that more houses and roads are being built on land that was once untouched.



What has happened?



When we build another road, or housing estate, pave our back garden or make a driveway, we are taking away food sources from a hedgehog's environment, because worms, slugs and snails don't live on roads or concrete!



It is thought that their numbers have declined from about 30 million in the 1950s to about 1.5million now.



Hedgehogs are nocturnal and can travel between 1 and 2 miles at night foraging for food. When we put fences between each garden, we cut off their chance to move around and look for food or find a mate.

What can we do?

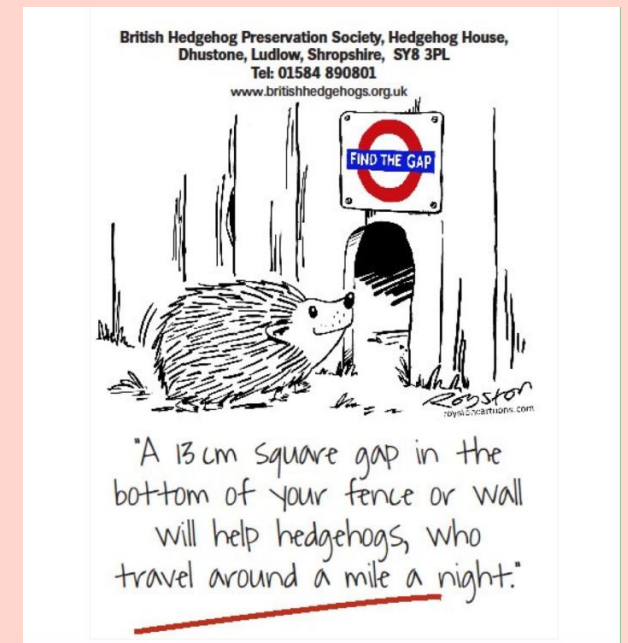


Watch this clip

https://www.dailymotion.com/video/x4zf79h_bbc1-countryfile-autumn-diaries-episode3-26oct16-helping-the-hedgehog-from-extinction_animals to

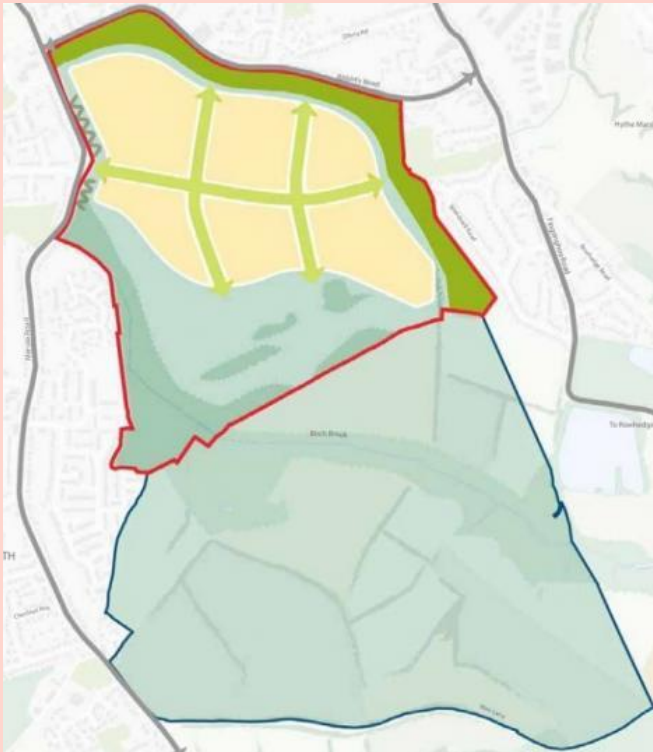
find out some ways that we could help hedgehogs.

Put out some food for them. Leave an area in your garden for them to forage in, talk to your neighbours about making a 'hedgehog highway' between all of your gardens.



Is this happening locally?

There is a large petition going ahead to protect the Middlewick Ranges from becoming a 1000 home housing estate. This would mean losing the area of natural land that is there.



Middlewick Ranges (The Wick) have never been built on. Their extensive - and nationally declining - grassland and other habitats support protected birds and nationally scarce species including beetles, butterflies, moths, bats, snakes, lizards, mammals and plants.



3. Global Warming



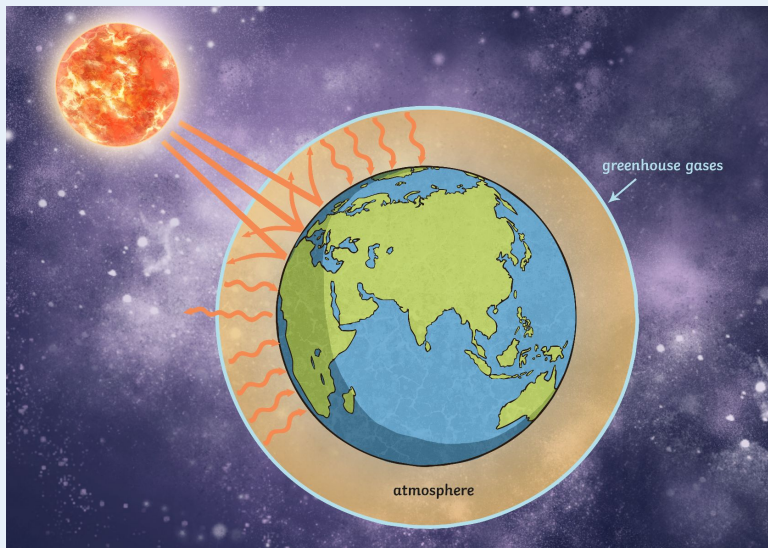
The world is getting warmer because we are burning more fossil fuels releasing greenhouse gases. This is also called climate change.



What Is Climate Change?

Planet Earth is surrounded by a layer we call the atmosphere, which contains a layer of gas. This gas enables the Sun's rays to get through and heat up the earth.

This gas is incredibly important, as it also allows some of the heat from the Sun, to go back into space, so that Earth does not get too hot, and we are not damaged by the strong rays from the Sun.



The greenhouse gases have thickened the layer of the atmosphere so less gases can be released back into space. This means the planet is slowly getting warmer. This is climate change.

What is the impact?



Glaciers and sea ice are shrinking, which is causing sea levels to rise. If this continues there could be flooding in areas near the coast. Polar bears hunt from the sea ice, less sea ice means a smaller area for hunting. There are approximately only 20000 left in the wild.

Some scientists think that global warming will also cause more extreme weather such as hurricanes, drought and flooding in different areas. Damaging more environments.



What can we do?

Make some small changes, for example...

Keep an eye on your food miles. The transportation of food burns a lot of fossil fuels. If possible, buy local, seasonal produce (unfortunately strawberries don't naturally grow in December). We have looked at this in our Advantage Curriculum growing our own plants.

Make fewer car journeys – walk if you can, or use public transport. This will burn less fuel.



4. Intensive farming

Farming is getting more and more intense as the demand for food by a growing population increases. There are over 7 billion people on the planet. This number keeps growing.

By 2100, there could be 11.2 billion people! All of these people need food so land is cleared for farming.



What is the impact?

Hedges are being removed to make fields larger. Wildflowers were much more abundant before the changes to the environment. Wildflowers are important for the natural cycle of bees. These pollinators encourage a diversity of plants which provide food and homes for insects, birds, hedgehogs and even bats.



What can we do?



Plant some more wildflowers – anywhere you can! Encourage others to do the same. It can be as easy as letting your lawn grow a little longer than usual. We often see daisies, dandelions and clover appear in longer gardens and even the school field.

5. Nature Reserves



We looked at four ways that human impact on the planet is changing environments for living things and how this is damaging natural habitats. It is important to remember that we are making positive changes too. Humans are now more than ever aware of the impact they are having on the planet.

Are humans making any positive changes to environments?

Yes!



What is the impact?



These areas are being allowed to flourish once again. When we manage an area by protecting native species, encouraging growth, stopping pollution and invasive species then the living things in that area can thrive.

Today every country in the world has a protected area system. Protected areas cover around 15.4% of the world's land area and 3.4% of the global ocean area.

The number of designated protected areas rose between 1990 and 2014 from 13.4 million km² to 32 million km² of the total area covered.

What can we do?

Help nature reserves by volunteering or picking up litter, or learning about what they are doing and telling others, or respecting the area and the signs.



Get a bit muddy! Encourage others to work with you to protect your own little space. What is happening in your garden, or you park, at the local allotments? Is there anything that you could do to help?

Today's task

Pick one of the four ways humans are damaging the environment (deforestation, global warming, intensive farming and urbanisation) and writing a short persuasive letter to our Prime Minister, Boris Johnson, about why we should be doing more about it in the U.K.

There is an example persuasive letter and some sentence starters to help as support.