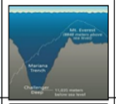
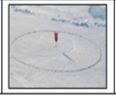
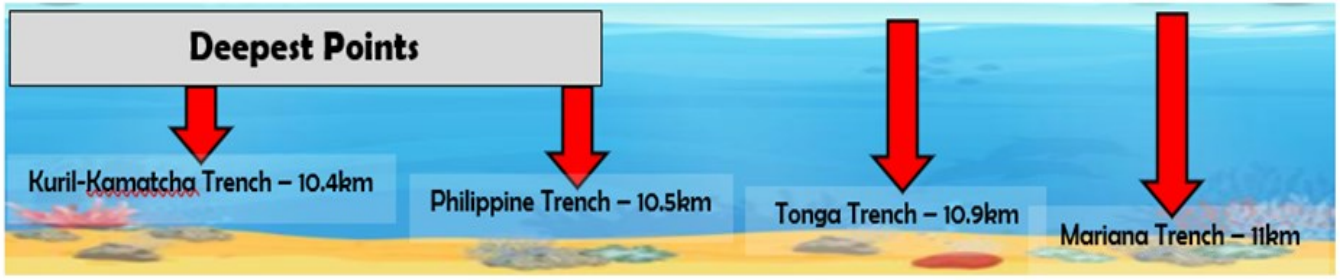
Year 4 Spring Term Knowledge Organiser

KEY QUESTION: What is the human impact on the Oceans?

Ocean Vocabulary

Atlantic	sunlight
Pacific	photosynthesis
Indian	predator
Artic	prey
Antarctic	Sunlight layer
trench	Twilight layer
stream	Midnight zone
tide	Abyss
continent	adaptations
equator	Micro-plastics
temperature	Plastic
depth	Micro-plastics
salinity	poisonous
acidity	injured

Interesting Features			
Mariana Trench		The Mariana Trench is the deepest part of the Ocean. Its very deepest point, the Challenger Deep, is 10,971 metres deep! Even though it is very deep, a few people have visited it in submarines!	**Where?** Pacific Ocean, near the island of Guam.
Hawaiian Islands		The Hawaiian Islands are a series of eight islands in the Pacific Ocean. Even though they are a long way from the mainland, the islands are a state of the USA. They contain several large volcanoes.	**Where?** 1500km across the Pacific Ocean.
Gulf Stream		The Gulf Stream is a huge, warm, ocean current that moves from the Gulf of Mexico to North America and Europe. It helps to keep these places from getting too cold in the winter time.	**Where?** Atlantic Ocean, from central America northern to Europe.
Tides		Tides are the rise and fall of the levels of the ocean. They are caused by the pull of gravity from the Moon. Tides cycle as the Moon moves around the Earth. Therefore the oceans are always rising and falling.	**Where?** All over the world, in all oceans!
North Pole		The North Pole is actually a frozen part of the Arctic Ocean – there is no land beneath the ice! Because the ice keeps shifting on the ocean beneath, people keep having to move the flag that marks the Pole!	**Where?** In the middle of the Arctic Ocean.



Layers of the Ocean

Sunlight Zone – up to 200m below the surface of the ocean

There is plenty of sunlight and heat in this zone although they both get less the deeper you go. Due to the light and warmth, this is the layer with the most life, including:

- seaweed which plant feeders eat;
- fast swimming hunters, such as dolphins (mammals which breathe air) and salmon;
- coral reefs.

Humans enjoy this layer for activities such as swimming, fishing and sea transport.

Twilight Zone – up to 1000m below the surface of the ocean

This layer has only faint sun rays reaching it due to its depth. It is home to some of the strangest sea animals, which often have large eyes to help them see, including:

- the sea cucumber;
- the swordfish;
- the wolf eel;
- the octopus.

No plants grow within this layer so creatures either feed by filtering the water or by hunting other creatures at speed. Humans can dive to this layer but must wear protective suits due to the extreme pressure and the lack of warmth.

Midnight Zone – up to 4000m below the surface of the ocean

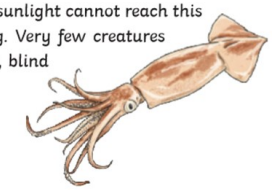
The Midnight Zone makes up 90% of the ocean. It gets its name from the fact that sunlight cannot reach this layer but some light can be seen from the creatures that produce their own light, such as:

- the anglerfish;
- the viperfish;
- the jellyfish.

There are large numbers of creatures living within this layer and many of them are red or black due to the low light levels. Some creatures, such as the sperm whale, dive to these depths to hunt for food.

Abyss – up to 6000m below the surface of the ocean

This layer contains three quarters of the ocean bed, which is covered with thick mud made from the remains of dead animals. The sunlight cannot reach this layer at all, so it is pitch-black and near freezing. Very few creatures live here but those that do are mainly transparent, blind invertebrates, such as:



- sea stars;
- amphipods (shrimps);
- squid.

The Trench – up to 11,000m below the surface of the ocean

The Trench is also known as the ocean floor. It is a series of narrow, underwater valleys which can only be explored using specialist scientific equipment. This is due to the high pressure and the near freezing temperatures. There is no natural light in this zone but different creatures can be found, such as sea stars.

Plastic Pollution

Plastics are a big problem for ocean life. It is thought that over eight million **tonnes** of plastic finds its way into the ocean every year. It can be anything from plastic bags to food wrappers and even glitter. Across the world, coastal and deep-sea areas are being affected.

How Does It Get into the Ocean?

Plastic finds its way into the ocean in many different ways. Humans are mostly responsible for not disposing of plastic correctly.

Plastic which is dropped on the ground eventually gets blown into rivers and streams, which carry it to the sea. If plastic is thrown away properly but is not recyclable, it ends up on a **landfill**. From here, it can be blown into rivers, too. Worst of all, if plastic is flushed away down drains, it goes straight into the water.

How plastic pollution affects our oceans.

How Can We Help?

More people than ever are aware of the damage that plastic is doing to the environment. There is good news about what is being done and what you can do to help.

- Say 'no' to plastic bags – reuse old bags or carry a backpack.
- Refill and reuse – instead of buying bottled drinks, fill up your own bottles at home.
- Sort your rubbish – use recycling bins, don't put plastic down drains and never leave litter on the ground.

Although plastic is a threat to our world and oceans, there are good things happening. It's important to think, reuse and recycle.

Activities to complete at home

1. Create an ocean in an egg carton— which creatures and other underwater objects could you include?
2. Use the Internet to research and write about mysteries, legends, and customs related to the ocean.
3. Create a poster showing things people can do to protect and preserve the oceans.
4. Create a piece of art based on the ocean— you could paint, draw, collage ...
5. Write an acrostic poem using the word ocean.
Think about the adjectives, verbs and adverbs you could use in each line.

These are the main texts we will be using next term