

June 11th

Memory verse

I am the resurrection and the life; he that believeth in me, though he were dead, yet shall he live.
John 11:25

Today's lessons are linked by a theme of weather and climate. We start with two underwater stories.

Something to think about¹

Jacques-Yves Cousteau, (1910-1997) French naval officer, wartime French resistance member, oceanographer, marine biologist and ocean explorer was born on **11th June**.

Cousteau was known for his brilliant films of underwater life, made possible by his invention with a colleague of the aqualung in 1943. This was the device which made scuba diving possible. After the war, in the 1950s he modified a Second World War wooden hulled minesweeper into the research vessel, Calypso, for ocean exploration.



Cousteau was a gunnery officer in France during the war and later a member of the French Resistance against the German occupation of the country. He was later awarded the Legion of Honour for his espionage work during the war. Cousteau's experiments with underwater film-making began during the war.

Few people knew more about the oceans of the world than Cousteau. Although by no means a believer in the Bible's account of the world's origins Cousteau said:

Were the crust of Earth to be levelled with great mountain ranges like the Himalayas and ocean abysses like the Mariana Trench evened out, no land at all would show above the surface of the sea. Earth would be covered by a uniform sheet of water-more than 10,000 feet deep! So overwhelming the ocean seems to be.²

This is an interesting comment and helps us to understand what happened at the time of Noah's flood before mountains such as Everest had been formed.³

Cousteau pioneered what is called "saturation diving" and developed cameras for use in the depths of the ocean. This research and his work in marine geology and methods of exploring the sea were very valuable to the oil industry.

Cousteau's work made him deeply interested in ecology. When he saw all the destruction of natural habitats, especially those of the oceans, that was going on around him, Cousteau was close to despair. He had bravely helped his country resist the Germans. Now he saw the whole world seemingly headed for destruction as natural resources were squandered, habitats were destroyed and the growth of population seemed to outstrip resources. Cousteau performed an interesting calculation. As he explained in a 1991 interview:

¹ Illustration: Dgho, CC BY-SA 3.0, via Wikimedia Commons

² <https://creation.com/was-noah-a-martian>

³ See <https://creation.com/media-center/youtube/where-did-the-water-come-from-for-the-flood-creation-magazine-live-highlight> for more information.

...when I was in the United States, I tried to construct a mathematical model to find out how many people our planet could support with the income, purchasing power, and amenities enjoyed by the average American at that time. The data at my disposal were not very precise and right from the start I knew that the approximation would be of the order of 40 to 50 per cent. At that time, I was friendly with the director of the Oceanographic Laboratory of the University of Southern California, whose researchers served my colleagues and myself as advisers. With the parameters I had at my disposal, I came up with the figures of 700 million. Seven hundred million people enjoying a standard of living comparable to that of the average American! Fifteen years ago our planet was unable to provide an agreeable life for more than 700 million people! World population was then four billion!

I was alarmed by the results of my research and told the laboratory director about it. Do you know what he said? That my results were highly optimistic. He had constructed the same model as I had and had come up with a figure far lower than mine! Since then I have been obsessed by the problem of the habitability of the planet.

Cousteau had resisted the Nazis with their ideas of killing some people so that others who they considered more worthy to survive could thrive. Now he came to this chilling conclusion:

Getting rid of [harmful] viruses is an admirable idea, but it raises enormous problems. In the first 1,400 years of the Christian era, population numbers were virtually stationary. Through epidemics, nature compensated for excess births by excess deaths.....

What should we do to eliminate suffering and disease? It's a wonderful idea but perhaps not altogether a beneficial one in the long run. If we try to implement it we may jeopardize the future of our species.

It's terrible to have to say this. World population must be stabilized and to do that we must eliminate 350,000 people per day. This is so horrible to contemplate that we shouldn't even say it but the general situation in which we are involved is lamentable.⁴

What has gone wrong with Cousteau's thinking that he is prepared to contemplate *eliminating people*?

Lacking a Biblical world-view, thinkers such as Cousteau make the mistake of assuming that it is human beings who are in ultimate control of the world and that they are responsible for ensuring the survival of the human race on the planet – for ever. But what does the Bible say?

... all things were created by him, and for him: And he is before all things, and by him all things consist. (Colossians 1: 16b-17).

Jesus Christ is the Creator, the world was made for him (not primarily for us) and everything “consists” i.e. “is sustained/upheld/kept in existence/held together” by him. The Bible also tells us that God does not intend that this world shall go on in its present state for ever:

And, Thou, Lord, in the beginning hast laid the foundation of the earth; and the heavens are the works of thine hands: They shall perish; but thou remainest; and they all shall wax old as doth a garment; And as a vesture shalt thou fold them up, and they shall be changed: but thou art the same, and thy years shall not fail. (Hebrews 1:10-12)

Man does have a duty to look after the earth. God charged him with the task of taking care of it when it was created. He was given responsibility over all the creatures (Genesis 1:28) and specifically put in a garden “to dress it and to keep it.” (Genesis 2:15) Man's sin caused vast changes on the earth, bringing death itself into the world and ruining the whole of creation. The

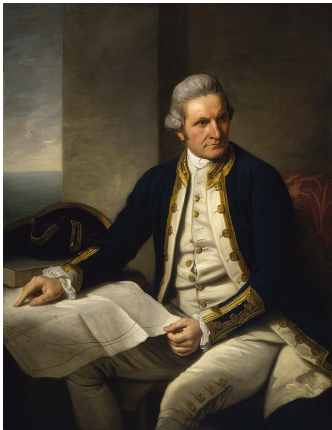
4 <https://en.unesco.org/courier/november-1991/interview-jacques-yves-cousteau-0>

whole creation now “groaneth and travaileth in pain together” (Romans 8:22). This world is not man's final destination.

From this perspective we can see that we do not need to take action to reduce the population of the earth. Rather we should be developing the resources God has generously given to ensure that we produce plenty of food. It is corruption and wars that cause famines, not population growth.

Mathematical exercise

Can you find out exactly what Cousteau meant when he wrote that his “approximation would be of the order of 40 to 50 per cent”?



A sea story to read⁵

It was on 11th June 1770 that Captain Cook discovered the Great Barrier Reef off Australia. He discovered it that is, by running his ship the *Endeavour* right into it, causing severe damage to the wooden hull! Can you find the reef in your atlas? Follow Captain Cook's travels as we go along by looking up the places highlighted in Green.

Captain Cook was on his first voyage of exploration. He had left Plymouth on 26 August 1768 for Tahiti (via Tierra del Fuego) where he was to observe the transit of Venus, although this gave disappointing results as the observations were not as accurate or conclusive as had been hoped.⁶ But now Captain Cook could open the sealed orders he had been given when he left England. Where was he bound for next?

The Admiralty orders were to proceed on a search of the South Pacific for the rich and unknown continent: *Terra Australis*. Captain Cook set off on his hunt. He mapped the coastline of New Zealand with great accuracy. Then he carried on northwards and westwards, reaching the east coast of Australia in April 1770. *Endeavour* then sailed along the Australian coast making maps and charts all the way. Cook went ashore at what is now known as Botany Bay. If you have a good atlas you will see what Captain Cook encountered as he carried on northwards up the coast.

Captain Cook's log books are in the British Library now and so we know what happened. On Monday 11 June 1770 he noted that conditions were good with ‘fine weather and smooth sea’. He knew that there were underwater obstacles, shoals and hidden rocks and he was sailing with great caution. As he went he had the depth of the water constantly sounded and recorded. But despite all his care just before 11 pm the ship collided with what he at first thought was a rock. Coral is sharp and can shred the hull of a modern ship: the *Endeavour* stuck fast and began to fill with water. Now the lives of all on board were at risk along with their precious, maps, charts and specimens. Cook knew their only hope was to lighten the ship so that it would float off and block up the hole temporarily so that they could make for safety. Overboard went the ship's ballast, the canons, “Casks, Hoops, staves, oyle Jars, decay'd stores &Ca” but how could they seal up the hole?

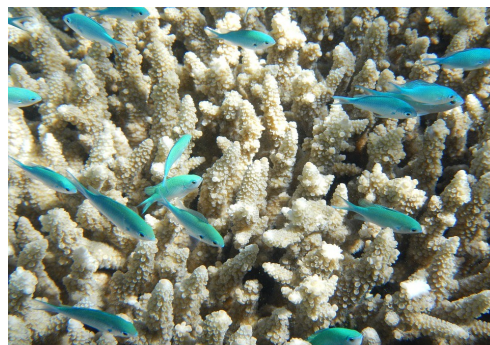
The answer was a technique called “fothering”. This meant filling a sail with pieces of old rope, wool, oakum or anything suitable (they used sheep's dung mixed with the other ingredients on the *Endeavour*). Then ropes are used to haul the filled sail under the ship. The pressure of water rushing into the leak carries the filling material into the leak and pushes the sail in place over it.

⁵ Information from <https://blogs.bl.uk/magnificentmaps/2020/06/great-barrier-reef-discovery.html>, <https://www.nma.gov.au/exhibitions/endeavour-voyage/endeavour-reef> and other sources.

⁶ For information on the Transit of Venus see the lesson for 7th July.

It worked. The Endeavour rose enough and the leak was stopped enough to allow her to make it to the shore for proper repairs. If you want to know what they discovered while on land doing the repairs you will have to wait for the lesson for 7th July!

Years later in 1969, some of the canons thrown overboard that night in 1770 were brought up from the reef. They were so crusted over with coral that they were difficult to recognise.



Today the Great Barrier Reef is one of Australia's great tourist attractions. The numerous tropical islands are popular holiday destinations and diving to see the beautiful underwater life of the reef with its corals and fishes is a memorable experience for visitors. Despite what you often hear about its imminent demise due to man-made “climate change”, the reef is in good health. Dr Mike Emslie, Senior Research Scientist involved in the Long-Term Monitoring Program that keeps a keen eye on the reef called it a “resilient system” and the Program's report for 2019 said that coral cover on two-thirds of the reef, has reached its highest level since records began 36 years ago. *Naturally* occurring climate patterns in the Pacific are the biggest challenge to the reef. In what are known as La Niña years the coral suffers from “bleaching” as it expels the algae that live in its tissues. However, the coral is not dead and in the intervening years it recovers. The Long-Term Monitoring Program's survey shows the coral reefs are even more resilient than anyone has previously forecast and cope well with the ups and downs of earth's climate.⁷

A painting to look at⁸

What is the most famous painting in the world? I expect most people would say the Mona Lisa that we looked at in April.⁹ However, there is no doubt that the most famous painting by a British artist is this one:



7 You can find out more here: https://www.youtube.com/watch?v=1WEbq6BkVnU&list=PL1v9pqs4w1mwBZow_Io30Npityi1O9g9W&index=3

8 Information from <https://creation.com/luke-howard-namer-of-the-clouds>, <https://www.nationalgallery.org.uk/paintings/john-constable-the-hay-wain> and other sources.

9 See the lesson for April 15th.

I expect many of you have seen prints of John Constable's "The Haywain" (1821). John Constable (1776-1837) was born on June 11th. He grew up in the Suffolk countryside and this painting, like many of his other works, is of a place with which he was very familiar, a ford on the river Stour where his family owned some property.

Constable was inspired by the great works of art that we call the "Old Masters". The old Dutch painters often painted waggons crossing streams. Constable owned some of these paintings himself and had seen others of them. However, Constable did not just copy the Old Masters. By his time many of the actual Old Masters paintings had dulled in colour due to age and dirt. The grass in the pictures no longer looked green; it had gone brown with age. Other painters of Constable's time copied this in their pictures just as they saw it, painting their own grass in shades of brown. Constable was different; his grass is really green! Notice his use of red as an accenting colour in the painting; something he often did. Can you see the fisherman with his boat and the dog which help to balance the scene? If you look very carefully you may also distinguish the remains of the horseman and the barrel which Constable has scraped away and painted out of the picture, having changed his mind.¹⁰

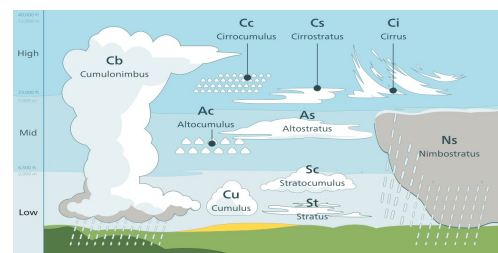
Constable painted "The Haywain" quickly in his London studio using sketches he had made on the spot – some of them years previously. He wrote back to Suffolk to someone else to provide him with a study of the waggon itself, which is why the waggon he painted is not really a hay waggon at all but a wood cart!

Constable's landscape is full of people who are "making hay while the sun shines." Look closely and you will see that the empty waggon is crossing the ford to get to the haymakers who are busy working to load another waggon on the other side of the river.



Constable's painting are famous for their depiction of clouds and this one is no exception. One art critic said that Constable's landscapes made him want to get out his overcoat and his umbrella! Constable said he wanted to apply the "new science of metrology" to his painting. What did he mean by this? He was talking about the work of a Christian pharmacist, Luke Howard, (1772-1864) who invented the classification system for clouds that we still use in a modified form today.¹¹

Howard, who was brought up among the Quakers but later joined the Plymouth Brethren, understood that clouds are important in the study of weather systems. He wrote, "Clouds are subject to certain distinct modifications, produced by the general causes which affect all the variations of the atmosphere; they are commonly as good visible indicators of the operation of these causes, as is the countenance of the state of a person's mind or body." Like so many of the pioneers of scientific discovery, he was a firm believer in the accuracy of the Bible. Luke Howard lived to a ripe old age and as he passed into glory his son read to him the words of Genesis 9:12-15. Read these verses for yourself now and you will see why the son chose them.



To do some cloud spotting of your own, or even to classify the clouds in Constable's picture, look in any good junior science encyclopedia under "clouds."¹² What do you think? Will Constable's haymakers get their hay in in time or will it rain?

10 Watch <https://www.google.com/search?client=firefox-b-d&q=barrel+horseman+Haywain+Constable#fpstate=ive&vld=cid:7415b006,vid:5QcA2ddfzfM> for details.

11 Image: By Valentin de Bruyn / Coton. This illustration has been created for Coton, the cloud identification guide for mobile. - Own work, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=17899555>

12 Or you can print out this guide:<https://dl0.creation.com/articles/p121/c12110/cloud-identification-guide.jpg>