

Teacher's Guide

HOW MY DAD FISHES FOR THE FUTURE



Recycle me

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How to use *How my dad fishes for the future*

How my dad is an in-depth, feature-rich educational tool that examines our ocean ecosystem, enabling learners in geography and science to focus on:

1. The ocean's crucial role for our planet and for our survival
 2. The impact of human interaction with the ocean ecosystem, looking at how we use, modify and change it through fishing
 3. Key concepts in ocean sustainability including sustainable fishing, marine protected areas and quotas
- By default, the piece will work 'out-of-the-box' on any modern browser or device. All you need is an active internet connection.
 - Because How my dad is packed full of videos, imagery and animation, it can take a few seconds to load, especially on slower internet connections. As such, it's a good idea to open the page a minute or so before you wish to use it.
 - How my dad also benefits from in-built navigation, allowing you to quickly jump to between major sections on any device.

Using *How my dad* on a projector or interactive whiteboard

The piece will work on the following operating systems and browsers.

OPERATING SYSTEM	OPERATING SYSTEM VERSION	BROWSER	BROWSER VERSION
Mac OSX	Mojave High Sierra Sierra	Chrome Safari Firefox	Latest version
Windows	10	Internet Explorer Edge Chrome Firefox	Latest version
Windows	7	Internet Explorer	11



We would always recommend making sure you have the most up-to-date version of the browser you are using. Although Shorthand tries hard to support older versions of browsers, newer versions often change or introduce new functionality meaning they have to update the platform. Unfortunately, sometimes this results in older versions of browsers experiencing issues.

The piece should also work with all major brands of interactive whiteboard including SMART, Promethean and Genee World, but Shorthand is yet to complete extensive testing of these.

Using *How my dad* on a tablet or smartphone

We've worked hard to optimise How my dad for tablets and smartphones. It should work on any modern device with Android or iOS installed. The table below lists specific requirements. As before, it is a good idea to ensure that you have a recent version of your operating system and browser installed to minimise any compatibility issues.

OPERATING SYSTEM	OPERATING SYSTEM VERSION	BROWSER	BROWSER VERSION
iPad (5th gen & above)	Latest iOS	Safari	Latest version
iPad mini (2 & above)	Latest iOS	Safari	Latest version
iPad Pro	Latest iOS	Safari	Latest version
iPhone (5s & above)	Latest iOS	Safari	Latest version
iPhone X	Latest iOS	Safari	Latest version
Android phones	Latest Android	Chrome	Latest version



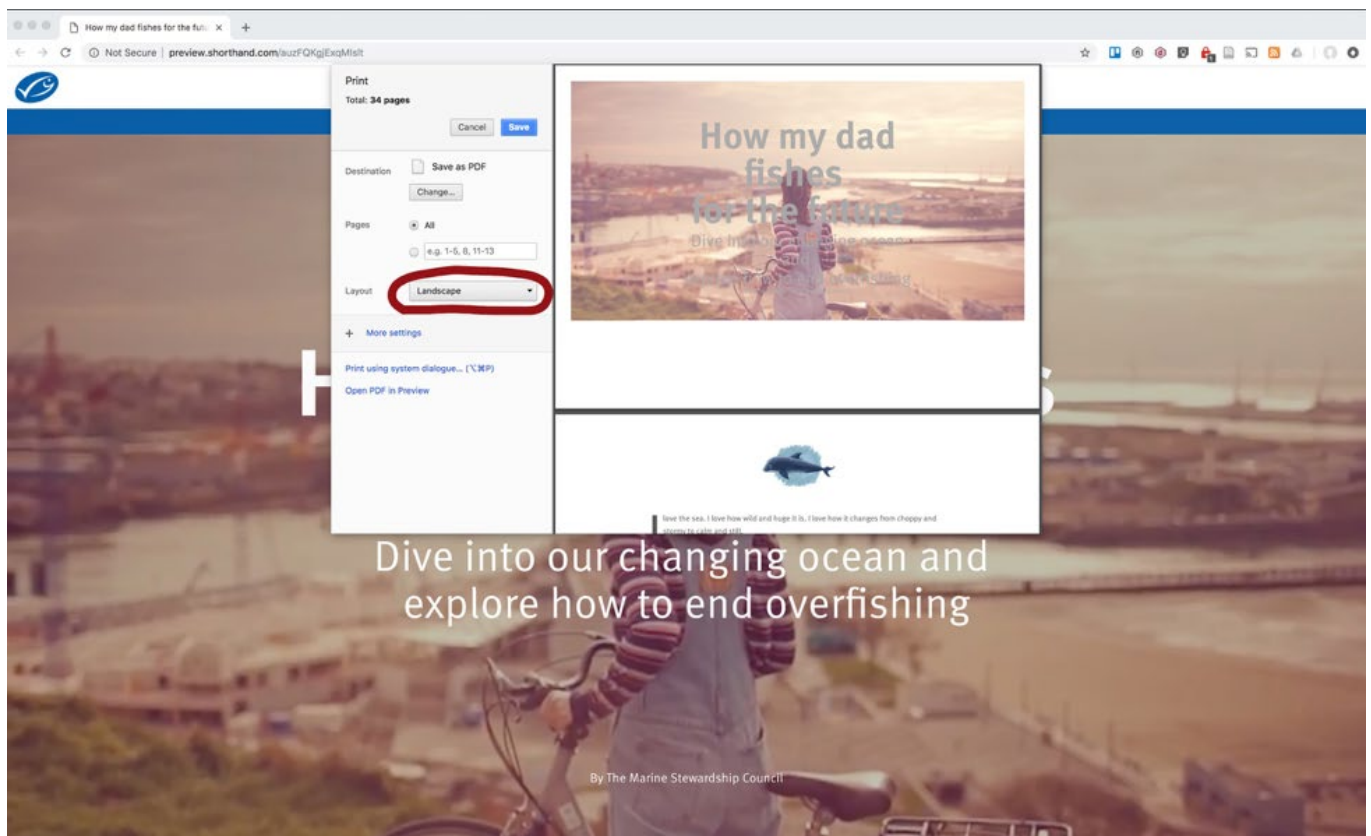
Using a virtual reality viewer for the 360-degree tour of the fishing boat

We've created a 360-degree virtual reality tour of the Dad's fishing boat to fully immerse your class in what life is like aboard a modern vessel. To get the best out of this, learners will need to use a virtual reality viewer like Google Cardboard. If viewers aren't available, there are three options:

1. Use any smartphone without a viewer for a slightly less immersive experience
2. Load the video on an interactive whiteboard. Most modern devices will allow anyone driving them to pan a 360-degree video around
3. Use the photo tour of the vessel instead (immediately after the video in How my dad)

Printing *How my dad*

Shorthand only has limited support for printing. The best way is simply to print from your browser to PDF, ensuring the page is landscape rather than the default portrait.



Once you have converted it to PDF, you can print it as you would any document. Note that not all background imagery will be printed. However, all text will be.

Answers to exercises

Exercise one: Tracking the global fishing fleet

How does the fishing pressure compare between the UK and the Arctic?

- Fishing pressure is higher (there are more dots) around the UK, compared to the Arctic Ocean, north of Norway.
- This is for a number of reasons:
 - It would take fishers a lot longer (and a lot more fuel) to reach the Arctic than to reach 'inshore' fishing grounds around the UK, such as those in the North Sea and the English Channel.
 - Such trips would take several weeks and require larger boats (a distance water fishing fleet) with sleeping quarters for fishers and large amounts of space onboard to store the catch and transport it back to port.
 - Ice sheets cover the Arctic Ocean for large parts of the year, making them inaccessible to fishing.
 - Even though global warming is causing some of these vast ice sheets to melt, commercial fishing has been banned across large parts of the Arctic Ocean as a preventative measure. This is because we do not yet know enough about the health of fish stocks living across the vast area, and what level of fishing would be sustainable.
 - The ban will last until at least 2034. During this time, researchers will conduct critical research to find out more about fish stocks in the Arctic.

Exercise two: More and less

Between 1950 and 2016, what happened to global fish production?

- It increased from 19 million tonnes to 92 million tonnes, an increase of 384%.

And what has happened to the proportion of global stocks that are overfished, fully fished and underfished? Why do you think this might be?

- The proportion that are overfished increased from 10% to 33%.
- The proportion that are fully fished has increased from 51% to 60%.
- The proportion that are underfished has reduced from 39% to 7%.

Why might this have happened?

- Global demand for fish has increased, due to a growing global population as well as a growing middle class with more disposable income to buy fish. More boats are therefore on the water to meet this demand.
- Fishing methods have become more advanced, meaning that a single fishing boat can catch many more fish now than it could in 1950. This is due to boats having bigger nets (some big enough to swallow a 747 jumbo jet!), bigger engines (allowing them to travel greater distances), and technologies such as sonar which help them to locate larger schools of fish underwater and catch more of them.
- Traditional fisheries management has also prioritised short term economic gains over the long-term sustainability of fish stocks. This is in part because our oceans have long been considered 'inexhaustible' supplies of food.



Exercise four: Where my dad fishes

(NB: you will need to register on Global Fishing Watch <https://globalfishingwatch.org/> to use the vessel search feature for this exercise. This is quick, easy and free.)

In 2018, Dad took a longer journey with his fishing boat. Up the coast of which country did he travel, and in which main direction?

- Dad travelled north from the NE coast of France, up the east coast of the UK (travelling through the North Sea).
- This is because herring migrate between the English Channel and the North Sea over the course of the year.
- Dad would have been moving with the herring stocks allowing him to continue fishing until the quota had been used.

Exercise five: MPAs around the world

Marine Protected Areas (MPAs) are parts of the ocean where certain activities like fishing are restricted or not allowed.

- The world's largest MPA is in the Ross Sea, Antarctica. It is over 2 million km² in area.
- It would be difficult to establish an MPA that size around the UK as there would be lots of competing interests. For example, hundreds of commercial fisheries operate in the waters around the UK, as well as cargo ships, passenger ferries and mining for resources such as oil.
- The [IUCN Green List](#) is a list of Protected Areas both on land and in the sea. In order to be listed, the management body responsible for the protected area has to demonstrate that it meets a 'global standard' - a set of criteria that demonstrate it is effectively conserving wildlife.
- The Green List is important because it recognises those protected areas that are operating effectively, and encourages those that are not to improve their practices so that they too can be listed and do not merely exist as a 'paper park'.

