

# Making Waves

Inventing for a  
better ocean

KS3 Teacher Guide

DOGGER BANK  
WIND FARM



South Tyneside Council

Little  
Inventors

# Will your imagination change the world?

## Take part in the Making Waves: Inventing for a better ocean challenge!

The ocean covers more than 70% of our planet, and is essential to all life on Earth. But human factors like overpopulation, travel, noise and industrialisation have taken their toll on life beneath the waves.

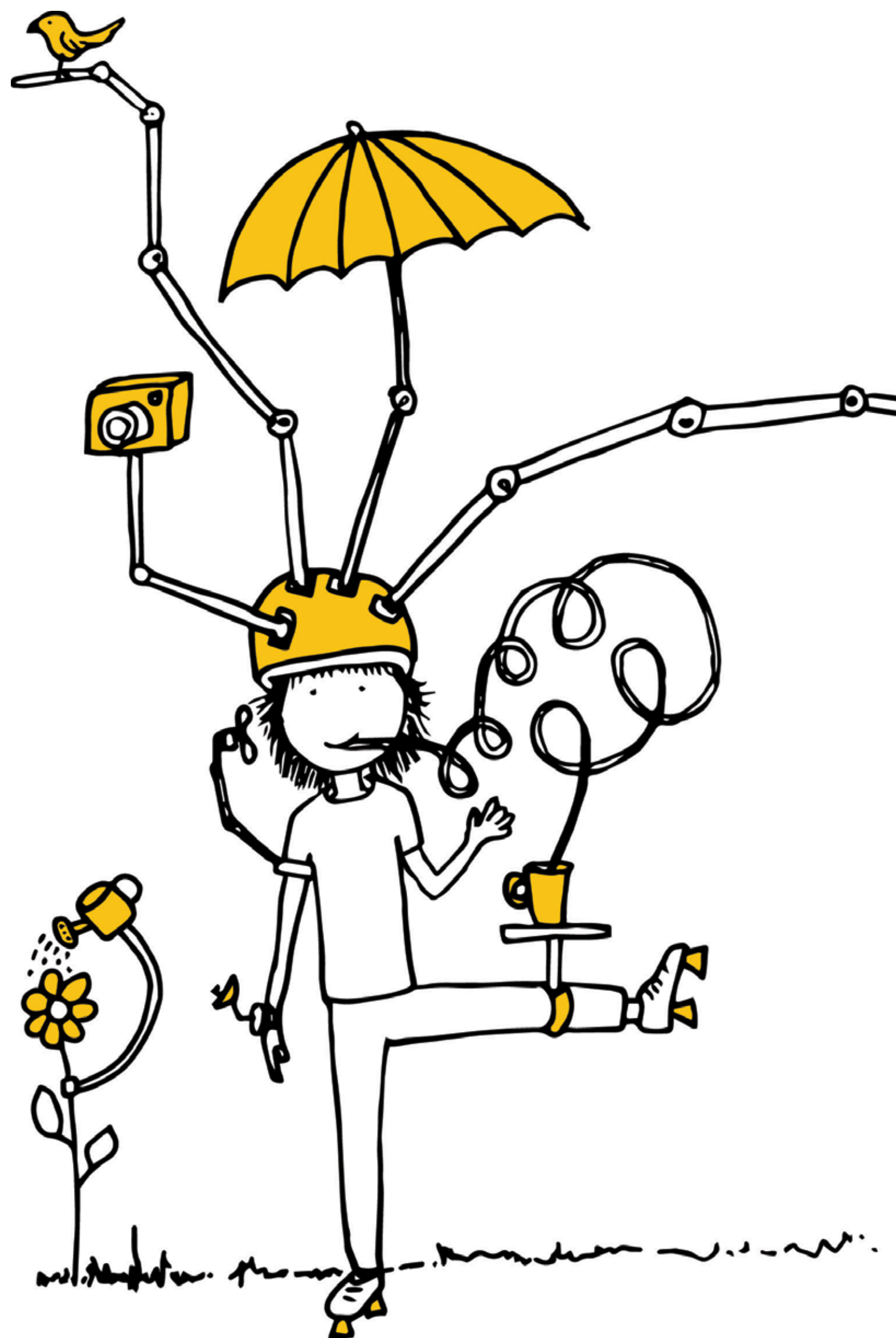
We need to build a better future for our oceans with science, invention, and innovation at the heart of it all. The more we understand our oceans, the better we can learn to look after them and bring them back to health.

That's why we've partnered with Dogger Bank Wind Farm and South Tyneside Council to bring you our latest invention challenge:

Making Waves! Inventing for a better ocean.

So listen up, because we're about to head out into the big blue!



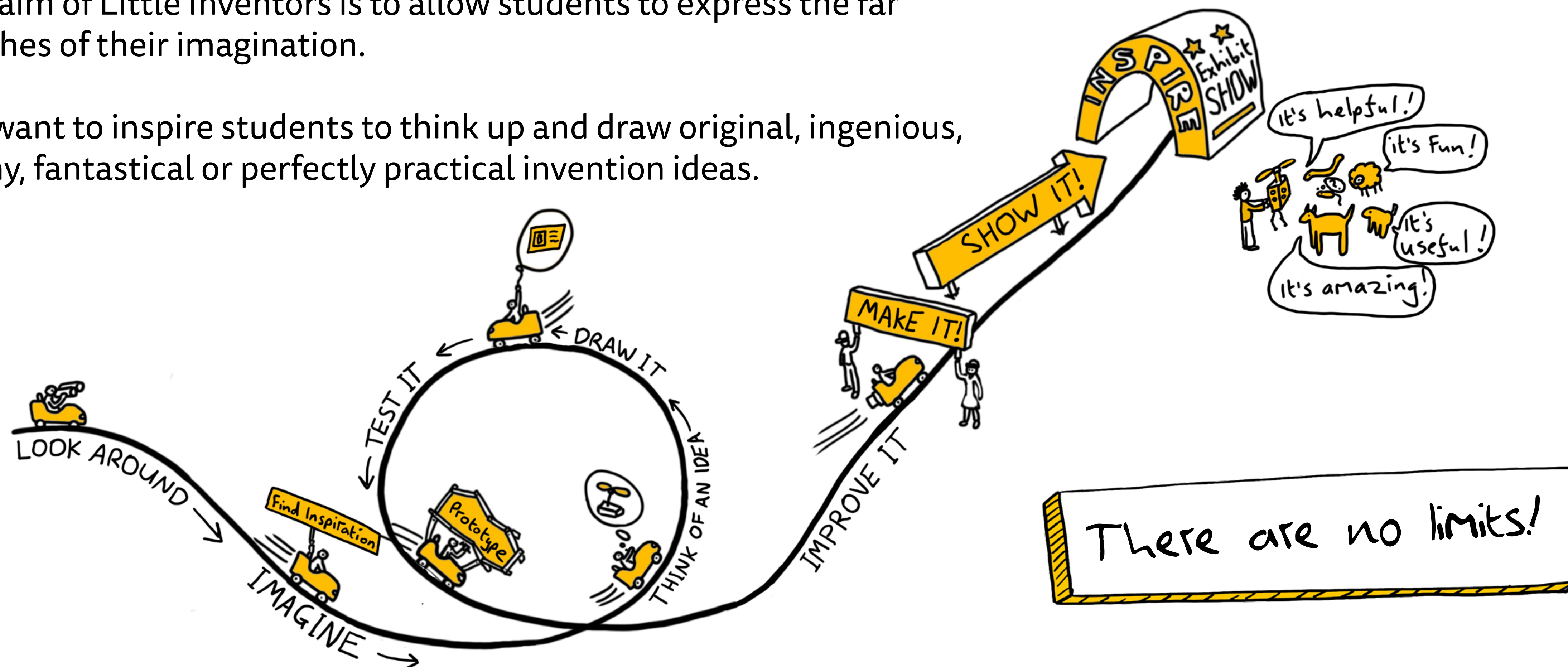


Play the challenge launch video!

# What's the aim of the project?

The aim of Little Inventors is to allow students to express the far reaches of their imagination.

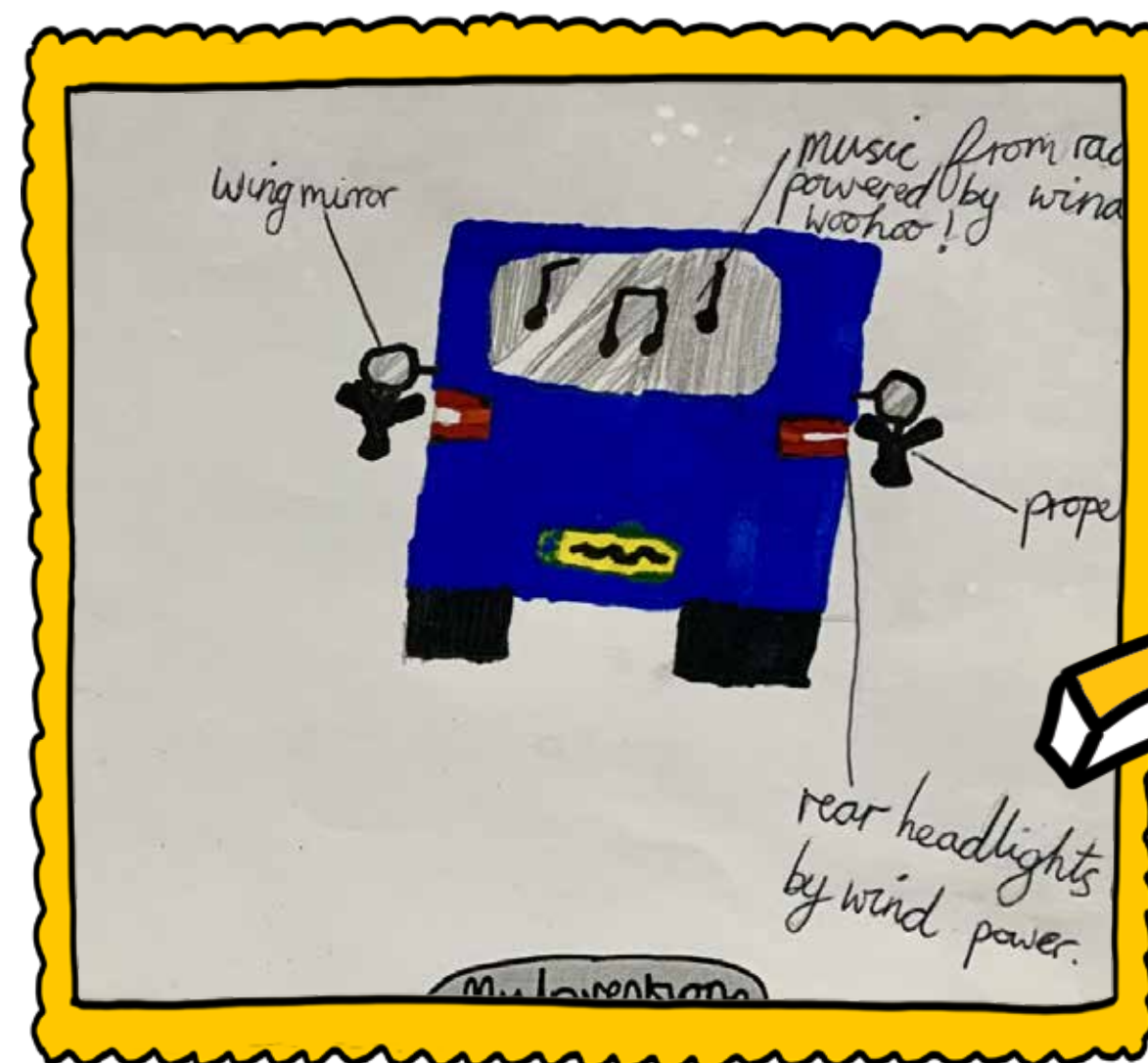
We want to inspire students to think up and draw original, ingenious, funny, fantastical or perfectly practical invention ideas.



# What's in it for my students?

Students will be invited to draw and submit their own inventions to appear on the online invention gallery, where they will be reviewed by the Little Inventors team and Dogger Bank wind farm.

Their idea might be chosen as a Little Inventors Team Favourite, turned into an animation, or brought to life by one of our Magnificent Makers!



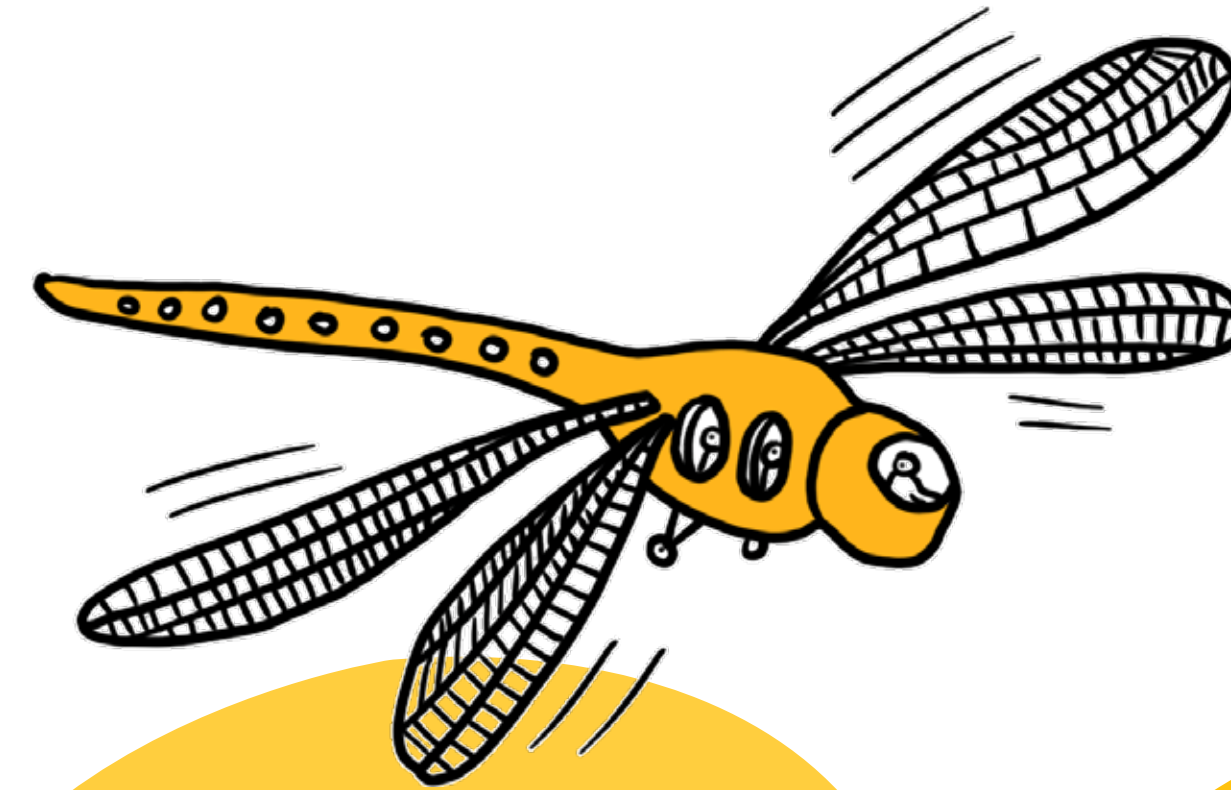
Wind Mirrors by Isaac, age 9



Brought to life by Ford Aerospace

In 2024 Isaac's was shortlisted for Young Innovator award at The Engineer's Collaborate to Innovate Awards!

# Key Project Dates



Teacher training  
session & launch

15th October  
2024

Challenge  
close

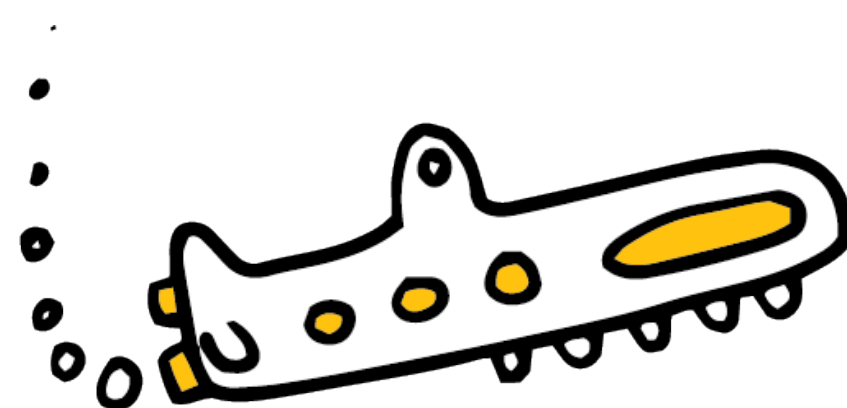
30th April  
2025

Winner  
selection

May  
2025

Bringing to life  
process

June - July  
2025





# Invention Challenge



We need your wisdom and creative energy! Covering more than 70 percent of our planet, oceans are among the Earth's most valuable natural resources. It's full to the brim of incredible food, ingredients for medicines, inspiration and mysteries we haven't yet unlocked. But time is running out as many habitats and sea creatures are dying because of human activities including noise and waste pollution. If we all help to look after the living things under the waves, they can carry on helping us too.

Did you know that dolphins rub themselves along the corals to help cure them of diseases? And corals are helping humans to develop new medicines that may even be able to treat cancer!



Can you to invent something to help protect the health of our oceans?

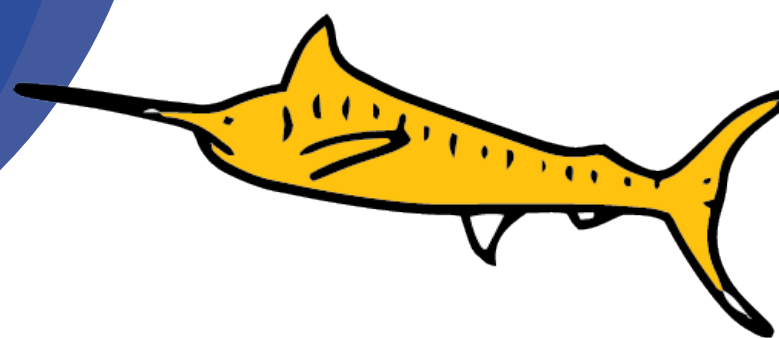
Identify the source of a problem and come up with something truly innovative to solve it! We can't wait to see your ideas.

# Learning content

Students will explore ocean themed topics through a **creative lens**, delving into the **wonders of the ocean**. Using the presentations in the resource pack you will introduce them to creative thinking techniques and teach them the content they need to know to come up with their own **brilliant inventions**.

Students will get creative about how they can **invent a way to help protect the ocean**. The activities will allow students to **gather information** and creative ideas to develop some unique and exciting sparks of inspiration that will guide them on to designing their final invention!

The presentations are also available as **narrated videos** which can be played directly to your students to speed things up or used for yourself to revise the content.



# Resource pack checklist



Use this Resource pack checklist to make sure you have all of the core materials to hand to deliver the challenge!

All resources are available at [southtyneside.littleinventors.org](https://southtyneside.littleinventors.org)

Your lessons and activities can be adapted to suit your specific learning environment and students' needs



Introduction Presentation ☐

Challenge Launch Video ☐

Challenge Presentation ☐

Activated Challenge Presentation ☐

Activity Sheet: Your day in plastic ☐

Activity Sheet: Ocean deep dive ☐

Activity sheet: Ocean mind map ☐

Challenge Cards ☐

Invention Challenge Video ☐

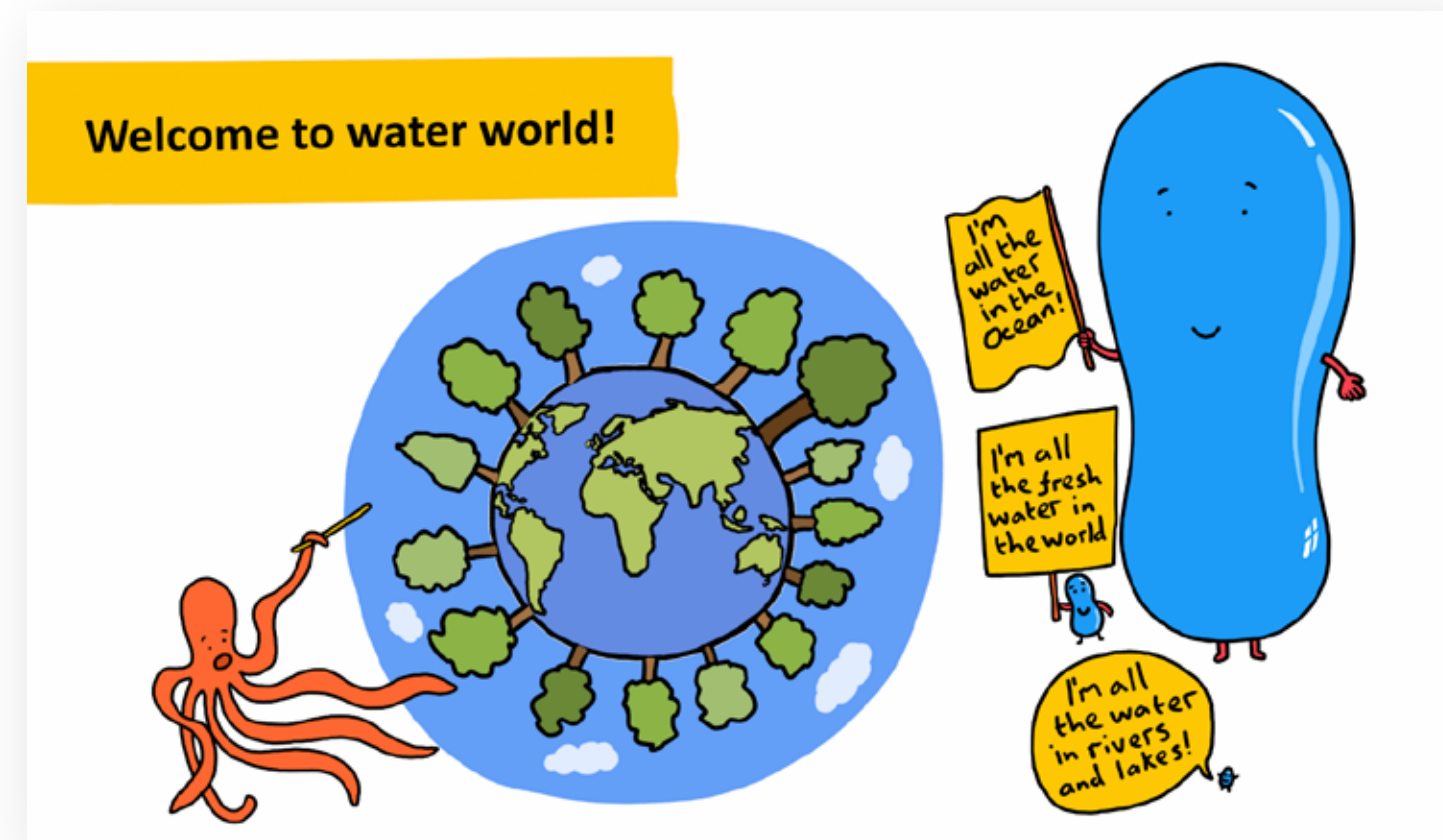
Invention Drawing Sheet ☐

# Digital teaching resources



Introduction Presentation

25 - 30 mins



Challenge Presentation

50 - 60 mins



Activated Challenge Presentation

17 mins

# Printed resources

60 - 120 mins



**Ocean Deep Dive!**

Use this sheet to explore specific ideas or features of the ocean

Pick one thing you are interested to explore about the ocean.

What are the threats or problems?

What could the future look like?

What could be done differently?

What information have you found out?

DOGGER BANK WIND FARM South Tyneside Council

Activity sheet Your day in plastic

**Your day in plastic**

Think of a typical day and when you or someone around use plastic things. Write down what plastic is used, then think of what could be used instead.

In the morning

During the day

During the evening

When travelling

DOGGER BANK WIND FARM South Tyneside Council

Activity sheet Ocean deep dive

**Challenge cards**  
Oceans: Making waves

Cut up the cards and pick one to get started.

What does this make you think about? What problem do you need to solve? What invention can you come up with? You can also make up your own ocean challenge!

Invent a way to reduce noise pollution from drilling underwater

Invent a new type of house for a fish or other ocean creature

Invent a way to make boats sound quieter underwater

MAKE UP YOUR OWN CHALLENGE!

Invent a way to clean up oil spills

Invent something inspired by a coral reef

DOGGER BANK WIND FARM Little Inventors southtyneside.littleinventors.org

Challenge cards

**Ocean state of mind**

Use this mind map to think up ideas for how to protect the ocean

The Ocean

Travel

Creatures

DOGGER BANK WIND FARM South Tyneside Council

Activity sheet Ocean mind map

**My Making Waves Invention**

Draw your invention here! Use a black pen, add colours and labels

Invention name

First name

Age

School

Town/city and country

Tell us more!  
(Who it is for, what it does, how it works!)

MY INVENTION

Upload your idea at southtyneside.littleinventors.org to get feedback. Who knows, it could be made real!

DOGGER BANK WIND FARM South Tyneside Council

Invention drawing sheet

The Challenge cards and Activity booklet can be shared between multiple students

# Go further!

30 - 180 mins



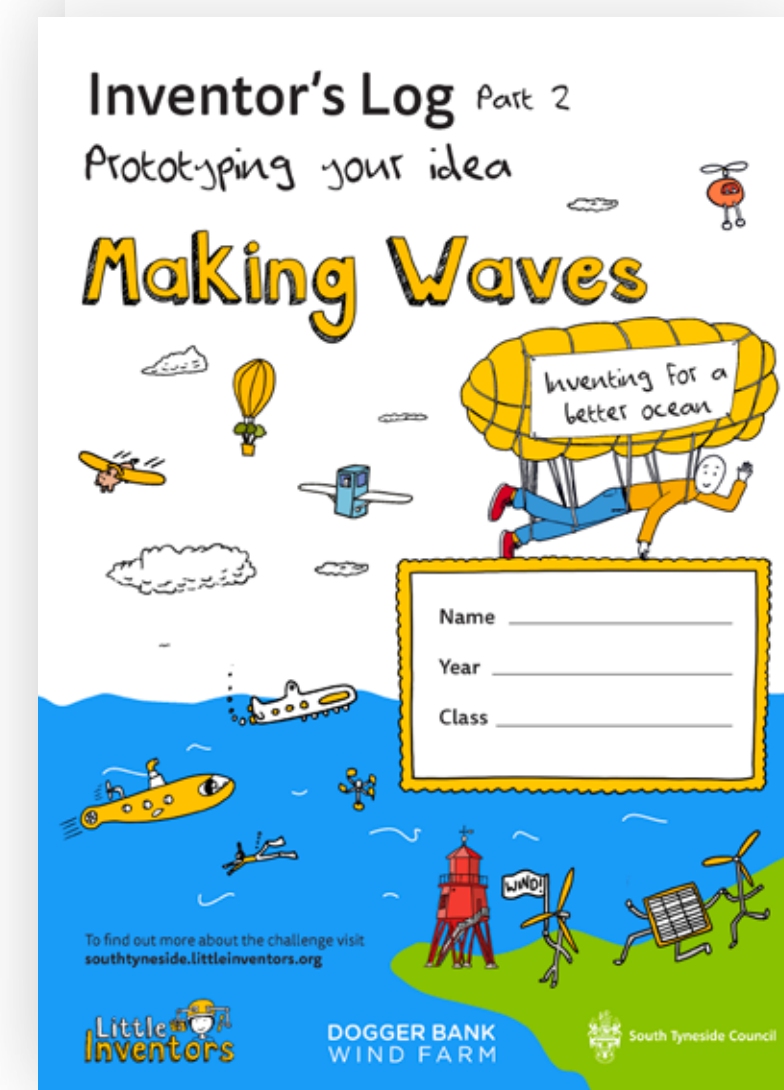
Extension activities for students who want to continue their great work. These activities can form many hours of additional learning and can be dipped into during classtime or at home.



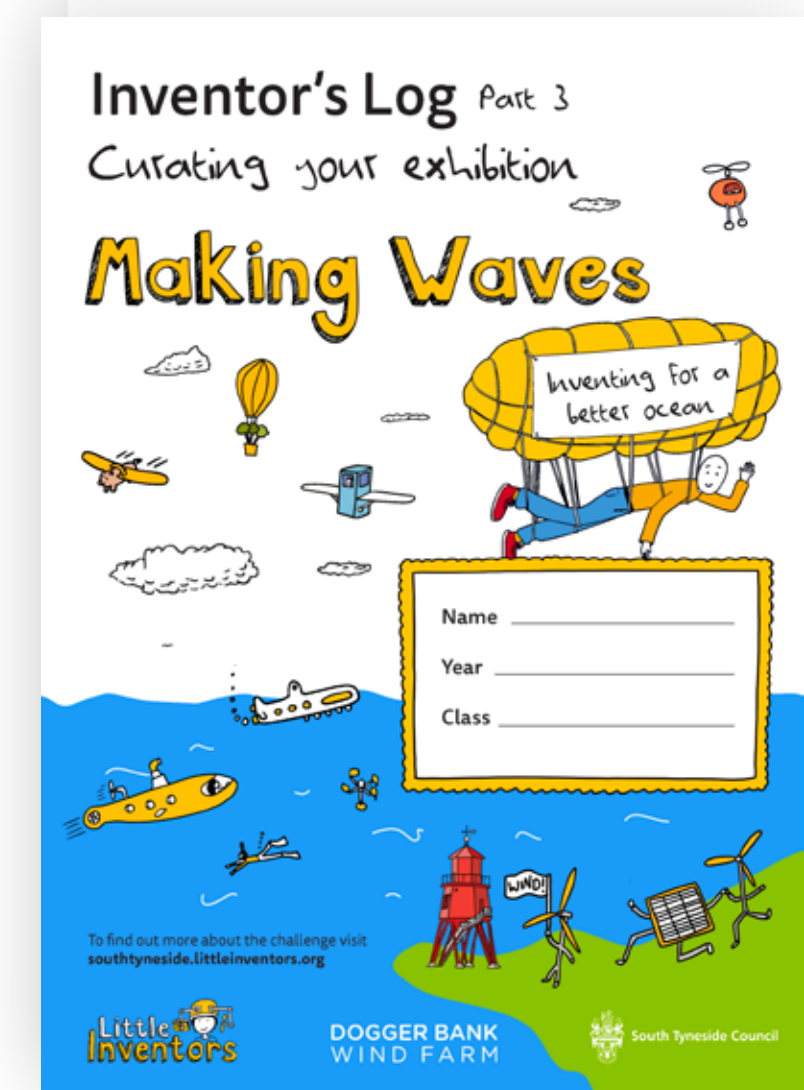
Submarine Prototyping Activity



Take your ideas further



Prototyping your idea



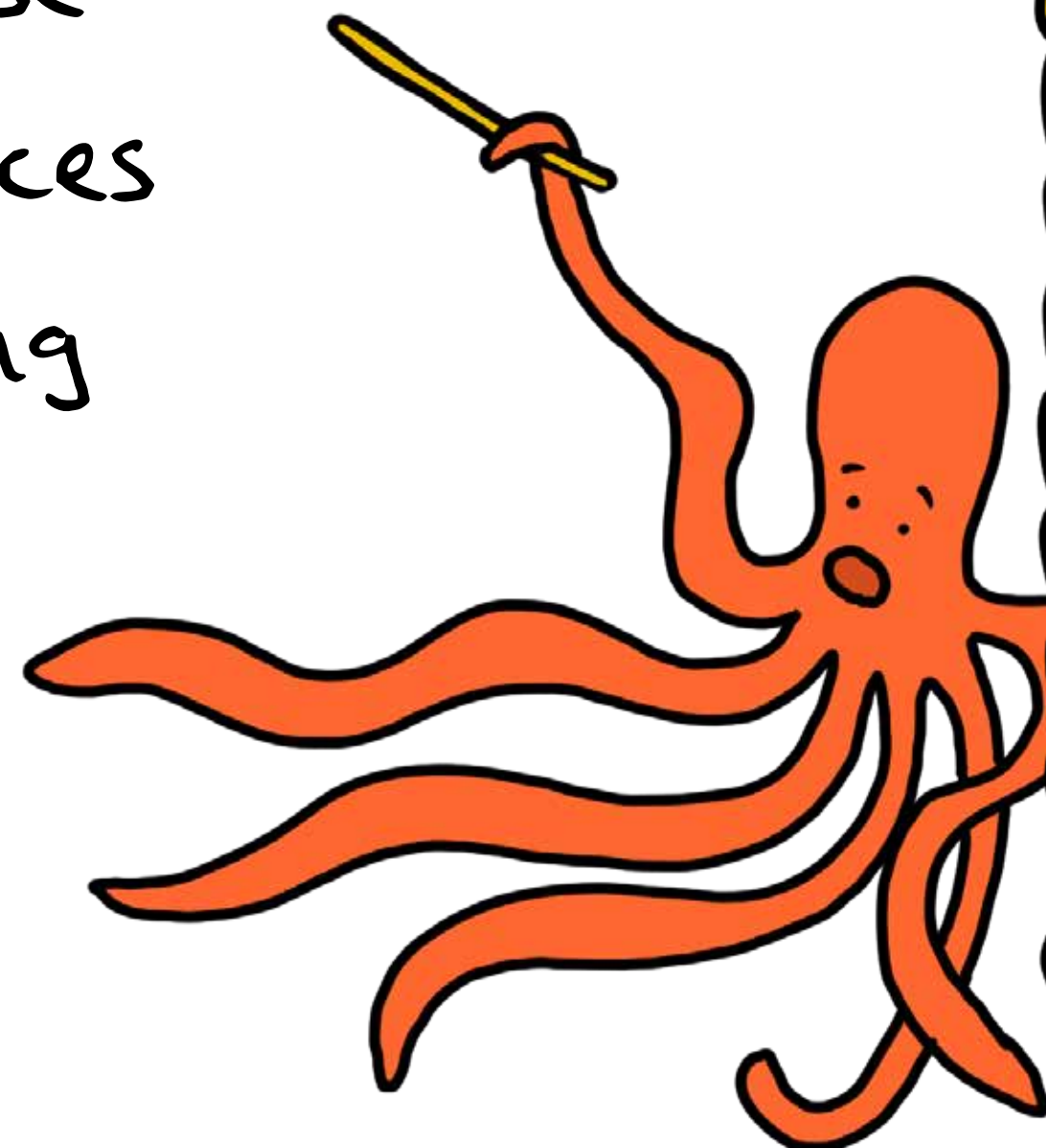
Curating your exhibition

You can also find a  
video tutorial at  
[southtyneside.littleinventors.org](https://southtyneside.littleinventors.org)

# Tips on using the resources

The resources are designed to be worked through from top to bottom intersected with hands-on activities along the way to keep the students engaged and developing their creativity and inventing skills.

It's important to familiarise yourself with the resources before delivering anything to your class.



In addition to the printed materials your class will need:

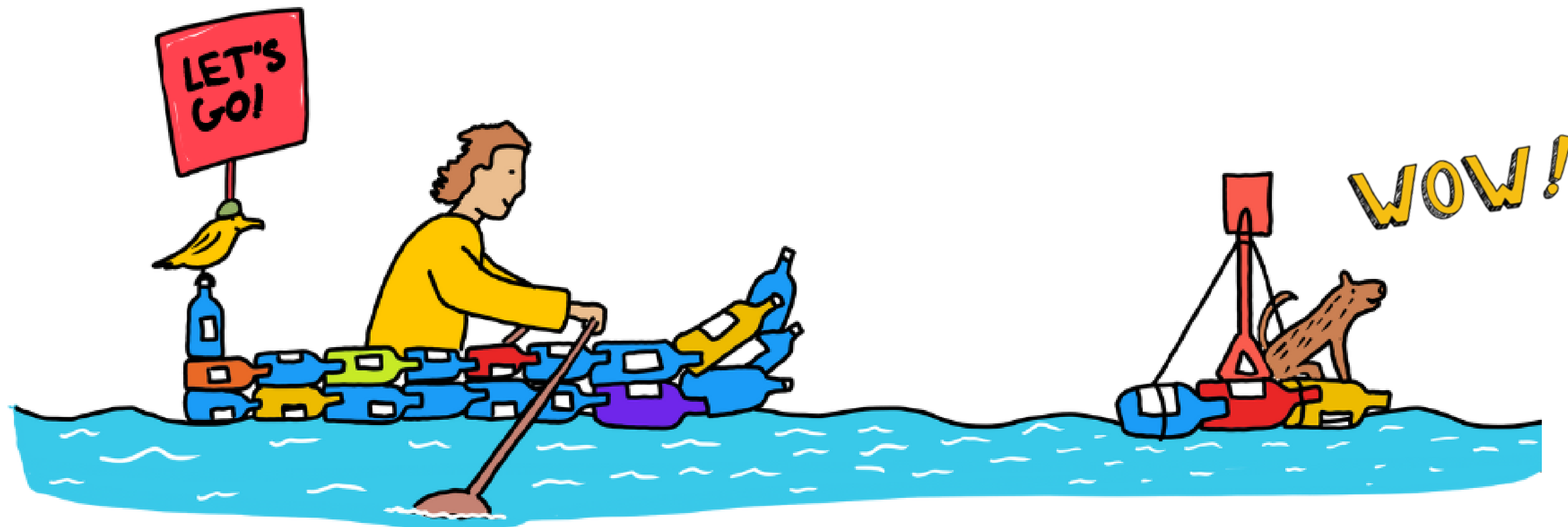
- . Pens and coloured pencils
- . Scissors
- . Junk materials for students that prefer to think with their hands rather than sketching (e.g. cardboard boxes, plastic bottles, pipe cleaners...anything destined for trash that can be re-used to make a model)
- . Additional materials for prototyping are on the submarine prototyping activity



# Dropbox

# Google Drive

Alternatively send via WeTransfer to [hello@littleinventors.org](mailto:hello@littleinventors.org).



# My Making Waves Invention

Draw your invention here! Use a black pen, add colours and labels

**KS3**

Invention name \_\_\_\_\_

First name \_\_\_\_\_

Age \_\_\_\_\_

School \_\_\_\_\_

Town/city and country \_\_\_\_\_

**Tell us more!**

(Who it is for, what it does, how it works)

## DEADLINE

## 30th APRIL

## 2025

**MY INVENTION**

**DOGGER BANK**  
WIND FARM

South Tyneside Council

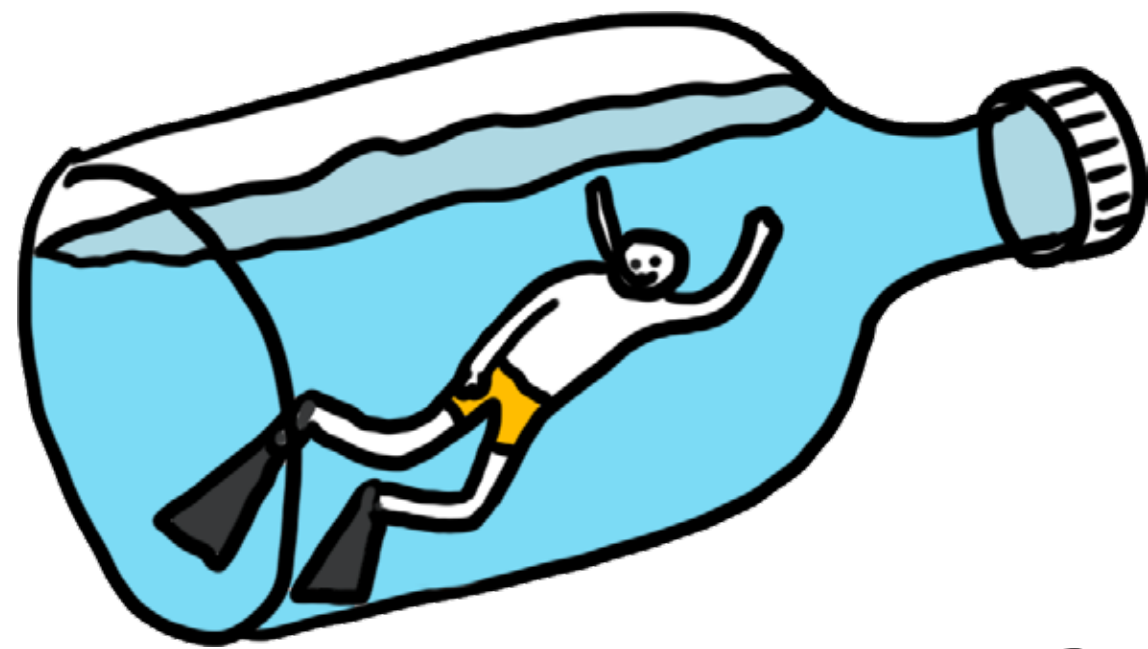
Upload your idea at [southtyneside.littleinventors.org](https://southtyneside.littleinventors.org) to get feedback. Who knows, it could be made real!

The best ideas submitted will be published on the website with feedback from our experts! And one idea will be brought to life by a professional maker!

# What next?

Celebrate all of the hard work completed by the whole class. You may want to explore ideas of how you can showcase all of the inventions at your school.

How about an invention exhibition? You could invite the school community to come and explore all of the fantastic ideas!



[Download the Classroom Exhibition Materials at southtyneside.littleinventors.org](https://southtyneside.littleinventors.org)

# We're here to help



If you have any questions or need any help  
please get in touch with Ellie or Craig at

[hello@littleinventors.org](mailto:hello@littleinventors.org)

We wish you and your  
students the best of luck  
with the challenge and  
can't wait to see the  
inventions!

