

## Engineering Challenge:

**Invent something to clean up or prevent plastic pollution.**

### Solving the Plastic Pollution Problem:

Did you know that plastic pollution is one of the biggest problems we face today within the world? While there are a lot of very important uses for plastic, when people are done using it, it can end up in the sea, polluting our beaches and hurting animals. One of the types of plastic pollution that does a lot of damage is fishing plastic, which is often accidentally washed into the sea, like when fishing nets break during a storm.

You can learn more about the problem with beach plastics from one of the Cornish Plastic Pollution Coalition volunteers Tegan. <https://www.youtube.com/watch?v=Wm8IkXiUKvc>



Beachcleaning in Cornwall with the CPPC

Even though this is a big problem, there is a lot we can all do to help! Today we are going to use our engineering skills to try to come up with an invention that could help prevent plastic from getting into the sea or to help clean it up.

## Your Invention:

This is your chance to come up with your very own invention to help in the fight against plastic. It could be a robot, a machine or something people use when doing beach cleans. Or maybe it's something that stops plastic from going into the ocean to begin with, like plastic alternatives or recycled things. In our video tutorial, we've shown some examples of awesome inventions people have created around the world to try to help with this problem. What can you come up with?

You are allowed to use any materials you want, and feel free to be creative with how it will work.

## Don't Forget the Sea Life!

When inventing something that will help protect the seas, don't forget the animals and plants that live there. Try to make sure your invention doesn't damage their habitat, destroy plants or possibly hurt animals such as crabs and other creatures who love to dig down in the sand.



## Challenge Options:

There are lots of different ways to share your invention ideas.

1. **Draw your invention.**

Professional engineers often use drawing and plans to help come up with their inventions. They might have one big drawing or lots of little drawings to help show detail. They might also want to create one drawing that is more of a plan on how they will make the invention and another drawing that shows their invention being used.

A lot of inventors will have a sketch book where they draw up a number of different ideas before they settle on a final design, so take your time and feel free to explore with a lot of different ideas. Your first idea might be great or it could take 10 ideas before you find an idea that really makes you happy.

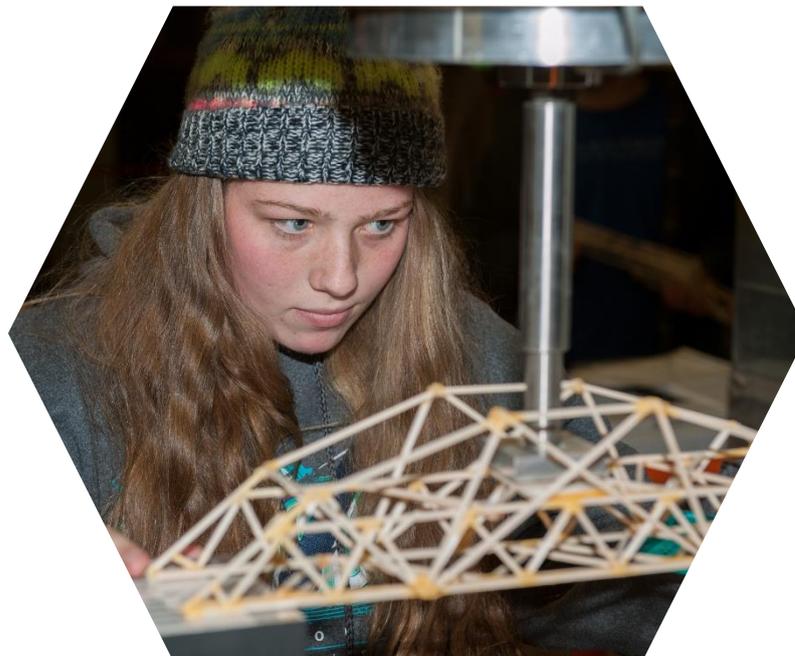


*Fact: Did you know that Thomas Edison created over 3,000 different plans before he figured out how to make the light bulb work?*

## 2. Build a model of your invention.

If you prefer to make things rather than draw, you could build a model of your invention using things you have around the house. Models are a wonderful way to help people understand your idea and for you to test out how it might work. Most engineers construct a model of their creation to test how it will work.

Feel free to get creative with materials you have around the house. Your final invention might be made of something you don't have at home, but that is OK. For example, if your invention is made of metal, you could use foil for your model to show what it would look like. Foil is also great for moulding interesting shapes. Just be sure to recycle it when you are done. Cardboard is also great for making models, especially as you can draw things on it, like where buttons might go. You could also use building toys like Lego. Even rolled up paper can be great if you have some glue or tape.





## Share your invention with us!

You've come up with a great invention; now it's time to share your engineering skills with the world. Share what you've made with us. You can send us a picture of your drawing or model via email at [info@tecgirls.co.uk](mailto:info@tecgirls.co.uk), and we will feature it in our blog post on the Hack Week. Or with your adult's permission, you can share it with us on Facebook or Twitter in a message or by tagging us into your post. We would love to reshare it with the world. Please use the hashtag #GGHW2021, so we are sure to spot it.

We will tag all posts with our partners at the Cornish Plastic Pollution Coalition, UNESCO UK, Cornwall Council's STEM learning team and the G7 Summit. They are very excited to see what all you future engineers come up with.

*Note: While we would love to see all your smiling faces, you do not have to be in the picture yourself if you or your parents do not want you to. But it would be nice to know your first name and your age so we can let people know this was your idea. Please do not include any surnames for privacy reasons.*