**Design Challenge: Phase 1**

The watershed needs your help! Microplastics have invaded our beaches and lie in wait among the sand.

**What can you do** to help solve this problem?

**Instructions**

Complete phase 1 and draw a beach cleaning machine to help!

***Brainstorm*** using teamwork and creativity to answer the

questions and draw your very own beach cleaning machine model. In phase 2, you will use this design to help you build a real 3-dimensional model! Each question you answer leads you closer and closer to getting out of the storm!

First, review your knowledge by answering the following question:

**Why are microplastics a problem?**

**What will you use?**

As a group, look at the kit inventory. These are some of the materials you will have to build your 3-dimensional machine model in phase 2. Circle the materials you want to use for your machine! You can use as many or as few as you would like. There will also be some surprise, recycled items to help you bring your drawing to life in phase 2.

**What will your machine look like?**

Time to design!

Use the blank pieces of paper, pencils, and erasers in front of you.

Work together to draw a 2-dimensional (flat on paper) model of your very own beach cleaning machine!

**What will power your machine?**

All machines need a power source. It could be powered by burning wood or coal like a train. Someone could push it like a lawnmower. It could use gas or electricity from solar panels. It could use wind like sailing ships or something else completely different! Write down your answer and draw it on your machine!

**What is your signature feature?**

This is a unique part of your machine. It can be a creative way of solving the problem, or an artistic touch. Add one to set your group apart from the rest!

**Attach the picture of your completed beach cleaning machine design to the front of this worksheet.**

Congratulations, team! You have braved the storm and completed Phase 1. Now you are ready for phase 2, building your very own 3-dimensional beach cleaning machine!