###### C:\Users\awhite\Documents\Aileen\rotary TT\branding\RBT_Logo_RedBlack.jpg

###### 

###### Your Water Engineering Challenge!

**Background**

You are members of a team of **Environmental Civil Engineers**,working for Rochester Bridge Trust.

You have been asked to **design and model** a water filter system.

Your water filter needs to be the right size and sit in the right place for the water to be collected in one place and then travel to be used in another place.

**Brief**

Your challenge is to design, scale model and test a water filter system, which will release its water 20cm above the ground (2 metres in real life) and fit over the guttering provided. The water will then be collected and tested.

**Specification**

1. Your water filter and structures must be fitted not fixed over the guttering.
2. The filter must be raised to at least 20cm off the ground and be supported to sit over the left hand side of the guttering, allowing the water to flow down for collection.
3. The filter must flow quickly enough to collect sufficient water for testing in 90 seconds.
4. The water must be cleaner than it was at the start, using an Opalometer for testing.
5. The filter and its structure must promote its designers (who are the Rochester Bridge Trust and the charity, Water Aid).

**A simple Portfolio must be produced as part of your design and planning and should include**:

1. all labelled drawings;
2. notes on how your team is being organised;
3. notes/labels on how ideas were thought of and developed;
4. notes about the challenges you have overcome; and
5. reasons for choosing the final design.

**Materials**

* You have a pack of materials for making your filter and supporting structure.
* Do not use any other materials.
* You do not need to use all the materials supplied.

**Tools**

* You are only allowed to use the tools provided.
* All cutting, and gluing must be done with great care to keep you safe.
* If you want the card scored, please see the adult who is providing this service using a cutting mat.

|  |  |
| --- | --- |
| **MATERIALS**  1 copy of ‘Water Cleaning Challenge The Challenge.doc’  1 large funnel  Cup of sand, sand, stones  Coffee filter paper  2 x 1000mic grey card, A3  2 x 1500mic grey card, A3  1m string  6 cable ties  6 elastic bands  8 Wooden kebab or candy floss sticks  1 Water Aid logo  1 RBT logo | **TOOLS**  Pencils  Rulers  Small scissors  Felt tip pens, various colours  4 sheets A4 paper for the portfolio.  1 pair large scissors  1 large hole punch  Double sided tape  Glue stick  2 Dessert spoons for measuring out |

**Time**

* **5 mins** Introduction to the task and testing criteria
* **15 mins** Planning and drawing/labelling at least one design each
* **40 mins** Modelling
* **30 mins** Testing
* **10 mins** Prizes and Certificates

**Inspiration from Existing Products:**

