**4th and 6th classes**

**9th March 2023.**

**Hugo from the Learning Hub paid us a visit today. We had a very enjoyable and challenging workshop where we had to work together to build a boat.**

**BUILD-A-BOAT AND HOPE IT FLOATS ENGINEERING ACTIVITY**

Dear Future Engineer,

Your challenge is to **build a boat capable of floating as many coins** as possible, you will be given the weight of one coin.

You will be provided a list of materials and their “prices” per unit, and a “worksheet”.

Build your boat to meet the **size regulations** (if any of the dimensions is exceeded, challenge is failed) within, and test **how many coins it can float** within allocated time **– 45 minutes.**

You will have to calculate the total cost of your boat.

This is a team challenge (**you will be working in teams of 3 or 4**), each team will need **scissors, ruler, pencil, and a calculator.**

**Plan of action:**

* First – split into teams.
* Second – draw your design of the boat (on the “worksheet”)
* Third – “purchase” your materials using the order form, plan the construction, calculate the total cost of materials
* Fourth – construct the boat.
* Fifth – when the boat is ready, let it be measured.
* Sixth – test your boat in a big bowl of water by carefully adding coins until it sinks, record the total number of coins, and calculate the total mass.

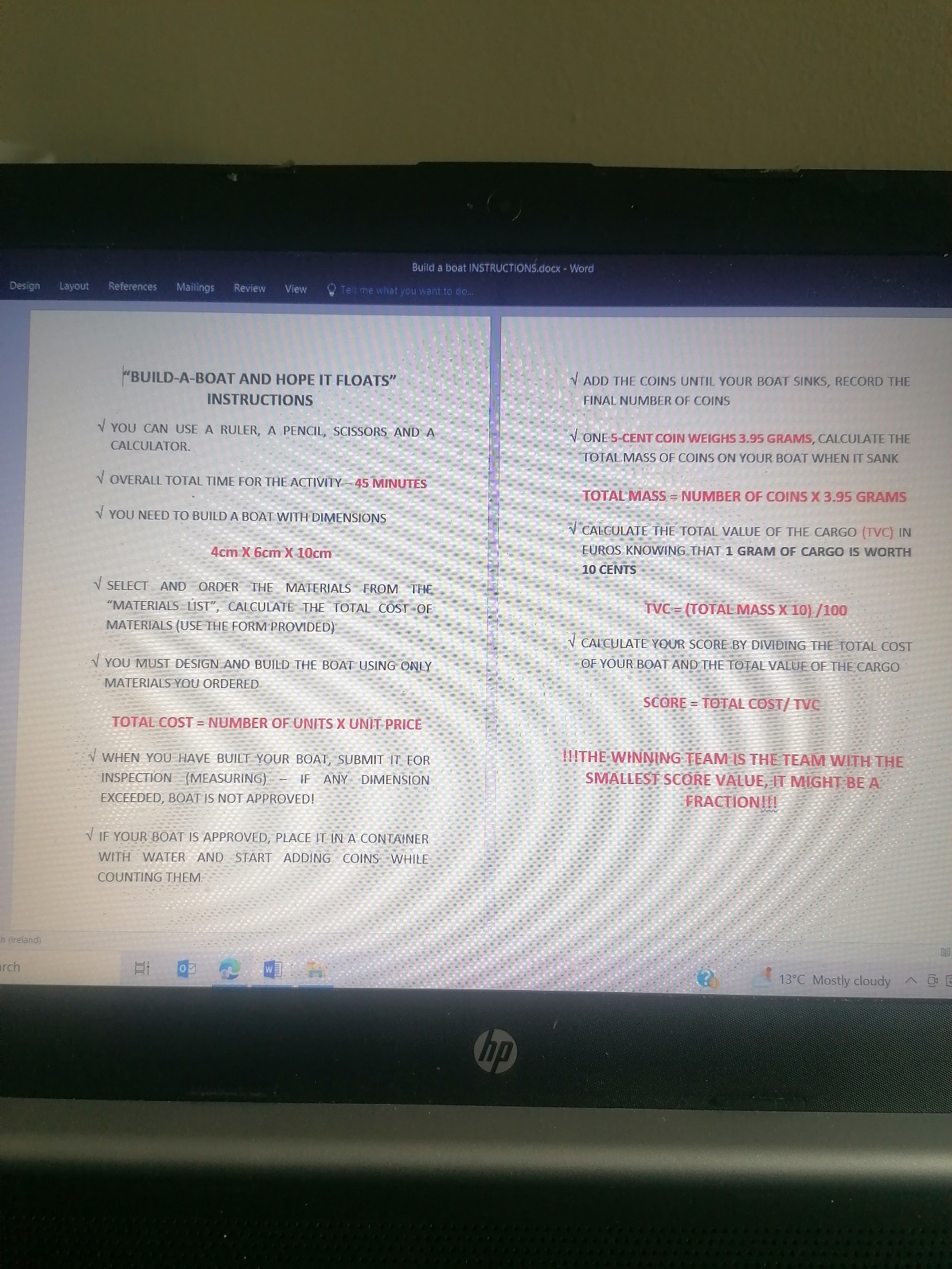
Knowing that 1 gram of the cargo (coins) is worth 10 cents, calculate the total value of the cargo (TVC):

**TVC = Number of coins x Mass of one coin (grams) x 10 cents/gram**

Calculate your score:

**Score = Total cost / TVC**

The winning team is the team with the smallest score (it might be a **“BUILD-A-BOAT AND HOPE IT FLOATS”**

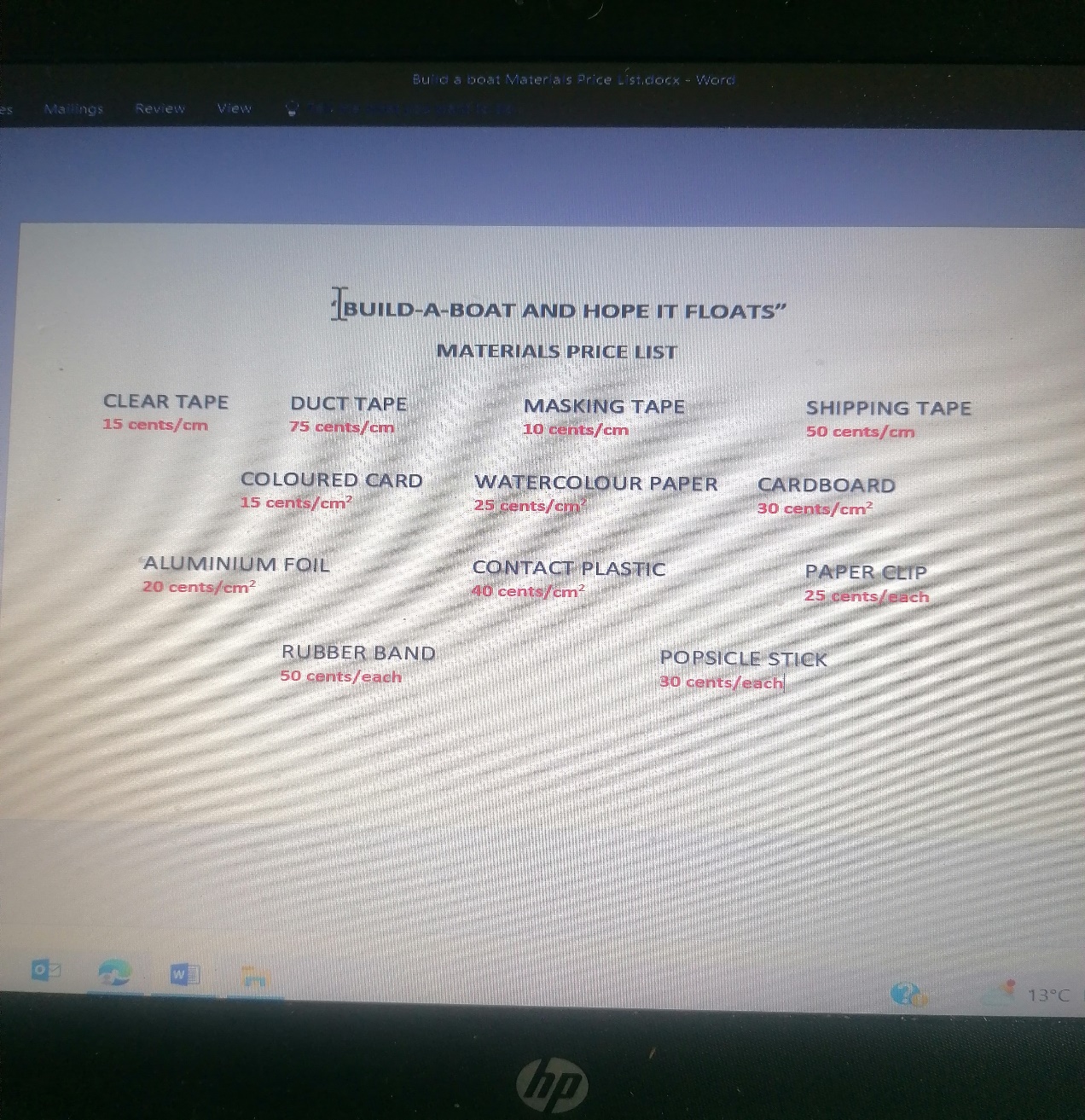
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**MATERIALS ORDER FORM**

**TEAM NAME:……………………………………………………………………..**

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| --- | --- | --- | --- |
| **MATERIAL** | **NUMBER OF UNITS** | **UNIT PRICE** | **COST** |
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**Total cost for the materials………………………..**

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