**Science 8 Balloon Cars**

We will have the next couple of classes to design and build a balloon car. Your car may have any design, but must be “home-made”, not from a pre-fabricated kit. It may not use any other source of stored energy or power other than that supplied by the balloon as it deflates. You will need to provide all materials, except the balloon, which will be provided by your teacher.

You will be expected to plan out your balloon car in class, make a list of supplies that you need, and bring them into class to work on your car during class time.

You are REQUIRED to bring your supplies to class on: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Process**:

1. Using only a balloon for air power (force), you will design a balloon car that will travel far and fast!

**Distance**

You will be scored on how far your balloon car travels from the start line to where it stops.The car cannot be touched after it is released.

**BONUS!!!**

* + **Distance**: Bonus points for the top three cars that travel the farthest per class.
  + **Speed**: Bonus points for the top three fastest cars per class. You will be scored on how fast your balloon car travels from the start line to a line 2.5 m away.

**Grade Wide Races!!!!**

The top 3 cars for distance and speed from each class will race against one another in a grade wide race.

The winner will be determined by either of the following methods:

A) the first car to reach the 2.5 m line OR

B) in the lead when the cars come to rest

1. As you will only have two classes to build your balloon car, come to class prepared with the necessary materials and use your time productively.
2. Test your car for distance and speed and make adjustments if necessary.

**Each car must:**

* use only a balloon for air power. You must use the balloon supplied by your teacher.
* be “home-made”, not from a pre-fabricated kit
* not be modified during the competition and must fit inside a 50 cm x 50 cm x 50 cm box when inflated.

**Evaluation:**  Each student model will be evaluated on the following:

* **Class time –** the student in on task with all the materials brought to each class
* **Creativity –** the student has demonstrated extensive thought of the materials

selected to create their balloon car

* **Balloon Car Construction –** the balloon car is effectively put together and does

not fall apart. It is home-made and fits inside a 50 cm x 50 cm x 50 cm box

when inflated

* **Distance Traveled**- you will receive 1 mark for each meter your car travels up to a

total of 5 marks.

* **Bonus**:
  + **Distance**: Bonus points for the top three cars that travel the farthest per class.
  + **Speed**: Bonus points for the top three fastest cars per class.

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| --- | --- | --- | --- | --- | --- |
|  | **Below Expectations** | **Meets Expectations** | **Above Expectations** | **Total Marks** | **Student Mark** |
| **Use of class time** | Student not using class time productively, did not come to class prepared with materials  (0-2) | Student is on task most of the time, comes to class prepared with materials most of the time  (3-4) | Student in always on task, comes to class prepared with materials  (5) | **5** |  |
| **Creativity** | Little imagination shown, design is simple with minimal effort  (0-2) | Some creativity shown in car of fair to good design and quality,  (3-4) | Imaginative to highly original design, good use of available materials, well thought out (5) | **5** |  |
| **Model Construction** | The balloon car is put together with minimal effort. Improvement is needed in the construction and choice of materials.  (0-4) | The balloon car is well put together. Good effort is evident in the construction and choice of materials. Car may or may not fit in the dimensions specified.  (5-8) | The balloon car is efficiently and effectively put together. Much effort is evident in the construction and choice of materials. Car fits in the dimensions specified.  (9-10) | **10** |  |
| **Distance Traveled** | The balloon car travels 2 m or less.  (0-2) | The balloon car travels 4 m or less.  (3-4) | The balloon car travels 5 m or more.  (5) | **5** |  |

**Marking Rubric:**

**Total: /25**