**Project- MagLev cars – The MagLev car project has four parts this is PART ONE.**

**Names of people in group:**

**Team Size: 1 or 2 students**

**The challenge: Gather information about MagLev transportation.**

**Before you begin creating MagLev cars, we need to find out about what they are! Your job is to gather information about MagLev transportation and create a power point presentation about MagLev transportation.**

**Some questions to research:**

* **What it is?**
* **How does it work?**
* **Is it a good system of transportation? Why or why not?**
* **Why is it important?**
* **Are there any countries currently using this technology?**
* **Is it cost-efficient?**
* **Is it an environmentally friendly means of transportation?**
* **Interesting facts about MagLev transportation.**

**Each group will be graded by the teacher and another group.**

**Your grade will be based on the rubric.**

**Project- MagLev Cars- Part 1 grade Rubric**

**PowerPoint Presentation- Content**

|  |  |
| --- | --- |
| **0** | **Failed to complete presentation** |
| **1** | **Disorganized, very hard to follow** |
| **2** | **Part of the presentation organized well, but jumbled towards the end.** |
| **3** | **Good organization, a couple of pages could be in better order.** |
| **4** | **Excellent, sensible organization, one page flows to the next.** |

**PowerPoint Presentation- Content**

|  |  |
| --- | --- |
| **0** | **Failed to complete presentation** |
| **1** | **Mentioned answers to very few of the questions suggested for research.** |
| **2** | **Answered few of the questions suggested for research.** |
| **3** | **Answered all the questions suggested for research.** |
| **4** | **Answers all the question suggested for research, and included several interesting facts.** |

**PowerPoint Presentation- Style**

|  |  |
| --- | --- |
| **0** | **Failed to complete presentation** |
| **1** | **Rather plain presentation** |
| **2** | **Good presentation, including many pertinent picture and graphics** |
| **3** | **Very good presentation, including many pertinent picture and graphics** |
| **4** | **Excellent presentation, great use of pertinent pictures and interesting graphics.** |

**Cooperation (Note if you work alone max grade is a 3.)**

|  |  |
| --- | --- |
| **0** | **Did not work on presentation at all** |
| **1** | **Little to no teamwork, argued, did not respect each other’s opinions.** |
| **2** | **Attempted very well with others. Worked to get everyone “off task” at all times, not everyone actively involved.**  |
| **3** | **Worked very well with others. Worked to get everyone involved; productive team.** |
| **4** | **Worked extremely well with others. Worked to get everyone involved; productive team.** |

**Total points = 16**

**Project – MegLev Cars – The Maglev car project has Four Parts this is part 2**

**The Challenge: Design and build a MegLev car Team Size: 2**

**Journal : 25%** **The journal will be graded everyday.**

Every day you must write a journal. The journal will include the following:

* Date
* What has been done on the project today and who did the work.
* What will be done on the project during our next class and who will do it.
* Your effort grade. The grade you give your partner. The grade I give you. If not there your effort is a zero.
* Answer to the question on the board.

**Drawings: 15%**

Each team must have sketched and three scaled drawings of the car. The drawings include top, front, side view.

**The Car: 25%**

There will be no weight restriction on the car. However, the weight must be maintained or increased for future events.

The car must make it down the track to receive full credit.

**Worksheet 15%**

The worksheet must be turned in and completed before the race day to be eligible.

**Conclusion : 20%**

Each team must submit a conclusion to this portion of the project. The conclusion must contain:

* What went well
* What should have been done differently
* Results of your tests trips
* How you did in the competition
* Any other information that would increase your grade.

**Race - Winner receives 5 points added to project**

The race will be a single elimination race. Owners will start their cars, but the start and finish will be officiated by classmates. The teacher has final decision over all races.

**Design-Winner receives 5 points added to project**

Classmates will judge cars. Teams may not vote on their own car.

**Project – MegLev Cars –This is part 3**

**Challenge:** Design and build a restraint for an egg for your vehicle.

**Journal: 15 points The journal will be graded everyday.**

Every day you must write a journal. The journal will include the following:

* Date
* What has been done on the project today and who did the work.
* What will be done on the project during our next class and who will do it.
* Your effort grade. The grade you give your partner. The grade I give you. If not there your effort is a zero.
* Answer to the question on the board.

**Restraint Construction – 15 Points**

* The restraint may be made out of any readily available materials.
* The restraint should be constructed to allow an egg to survive when your vehicle is crashed into a cement block.
* Your team will receive 5 bonus points if your egg survives the crash.

**Conclusion : 20 points**

**Each team must submit a conclusion to this portion of the project. The conclusion must contain:**

1. What went well?
2. Did your egg survive?
3. If your egg did not survive, what should your team have done differently? If your egg survived, how could you improve your design?
4. If a person is in an accident in a car what collisions occur during the accident?

(Hint: There are at least three, think about the car and the person inside the car.)

1. Why is it important that a person is properly restrained in their car should they get into an accident?

**Project – MegLev Cars –This is part 4**

**Challenge:** Design and build a bumper for your vehicle.

**Journal: 15 points The journal will be graded everyday.**

Every day you must write a journal. The journal will include the following:

* Date
* What has been done on the project today and who did the work.
* What will be done on the project during our next class and who will do it.
* Your effort grade. The grade you give your partner. The grade I give you. If not there your effort is a zero.
* Answer to the question on the board.

**The Bumper Construction: 15points**

* The bumper may be made out of any readily available materials ex. Balsa wood, string, Styrofoam, cardboard, elastic bands etc.
* The bumper should be constructed to allow your vehicle to bounce away from the cement block after the crash.
* Your team will receive a bonus of 5 points should the car bounce back the farthest!

**Conclusion: 20 Points**

**Each team must submit a conclusion to this portion of the project. The conclusion must contain:**

**1. What went well?**

**2. What problems did you have during the bumper construction?**

**3. If your car did not bounce back up the track, the farthest what should your team have done differently? If your car did bounce up the track farthest, how could you improve your design?**

**4. Why is important that a vehicle have a good bumper? Think about not only the passengers, but also repair and insurance costs. You may want to check out the following web sites for more info.:**

 **http://www.responce.com/tips\_\_tools/car\_\_\_saftey/car\_\_design.asp**

**and http://www.msnbc.com/news/522137.asp#BODY**

**5. Did you like the MegLev project? What part(s) did you like the most? Least? What changes / suggestions do you have to improve it?**