Force and Motion Webquest

1. Physics4Kids

--Read this [article](http://www.physics4kids.com/files/motion_intro.html) to learn the basics of motion and forces. List the following definitions:

1. Force
2. Velocity
3. Acceleration
4. Mass

2. Design a [Roller Coaster](http://www.learner.org/interactives/parkphysics/index.html)

--Design your roller coaster to achieve an overall “thumbs up” rating for fun and safety. List below what the individual designs would be for

1. Height of first hill =
2. Shape of first hill =
3. The exit path =
4. Height of second hill =
5. The loop =

3. The Science of Hockey

--Choose **three** of the questions below to answer. Click on the underlined link to go to the article that will help you answer the question.

1. [Ice](http://www.exploratorium.edu/hockey/ice1.html): Why is ice slippery?
2. [Skating](http://www.exploratorium.edu/hockey/skating1.html): What are the mechanics involved in skating?
3. [Gear](http://www.exploratorium.edu/hockey/gear1.html): What high-tech materials are the players using?
4. [Saves](http://www.exploratorium.edu/hockey/save1.html): How fast is your reaction time? Could you stop the puck?
5. [Shooting](http://www.exploratorium.edu/hockey/shooting1.html): How do you slap a puck 100 miles per hour?
6. [Checking](http://www.exploratorium.edu/hockey/checking1.html): How much energy is generated by a mid-ice collision?
7. [Fitness](http://www.exploratorium.edu/hockey/fitness1.html): How do you get in shape and stay healthy in the game of hockey?

4. The Science of Baseball

--Explore this site, completing the first task “A” below and choosing **one** option for letter “B”.

1. Play the [Fastball Reaction Time Game](http://www.exploratorium.edu/baseball/reactiontime.html). What happened when you tried to react? Record your results in the table below.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trial 1 | Trial 2 | Trial 3 | Trial 4 | Trial 5 | Trial 6 | Trial 7 | Trial 8 | Trial 9 | Trial 10 |
|  |  |  |  |  |  |  |  |  |  |

b. Choose [The Girls of Summer](http://www.exploratorium.edu/baseball/girlsofsummer.html), [How Far Can You Hit One?](http://www.exploratorium.edu/baseball/howfar.html), [Tools of the Trade](http://www.exploratorium.edu/baseball/toolsofthetrade.html), or [Putting Something on the Ball](http://www.exploratorium.edu/baseball/putting_something.html) to read. List 4 things you have learned. Write in complete sentences.

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5. Now that you have completed 1-4, choose a learning game below to explore force, motion, and physics.

|  |  |  |
| --- | --- | --- |
| [Junkyard Wars](http://school.discoveryeducation.com/networks/junkyardwars/dragsterbuilder.html)[M.I. High Forces](http://www.bbc.co.uk/bitesize/ks2/science/physical_processes/forces/play/) | [Ramps and Friction](http://www.learninggamesforkids.com/motion-games/friction-ramp.html)[Trucks and Friction](http://www.bbc.co.uk/schools/scienceclips/ages/6_7/forces_movement.shtml) | [Trucks and Forces](http://www.sciencekids.co.nz/gamesactivities/forcesinaction.html)[Create a Coaster](http://www.funderstanding.com/educators/coaster/) |