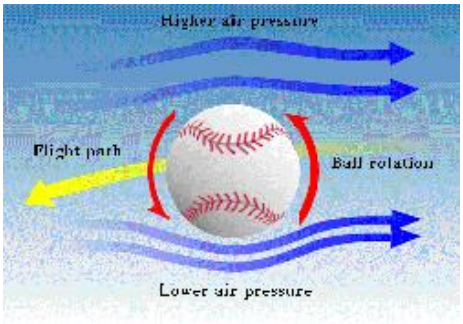

Sports Physics

Due Dates:

Proposal: April 25, 2007
PowerPoint: May 8, 2007
Experiment/Report: May 11, 2007
Presentation: May 8—18, 2007

Purpose:

- to find physics applications in sports
- to design and conduct a physics experiment related to a selected sport

Materials:

Internet access and library resources, sports equipment, measurement equipment relevant to selected sport, etc

Procedure:

You may work alone or with a partner!

1. Select a sport.
2. Research the sport AND the physics of the sport.
3. Develop proposal for sports physics experiment. (Discuss with teacher).
4. Submit proposal
5. Conduct experiment
6. Prepare formal lab report
7. Prepare PowerPoint presentation for class

Proposal: (10 points) Due April 25, 2007 (-2 points per day late!) SUBMIT VIA EMAIL

- State purpose or hypothesis and provide details about materials, procedure, and time frame for conducting experiment.

PowerPoint: (20 points) Due May 8, 2007 (- 2 points per day late!) SUBMIT VIA EMAIL
(6—12 slides with details about purpose, materials, procedure, results, and conclusion)

Experiment: 20 points Due with Report on May 11, 2007 (- 2 points per day late!)

- Photo documentation, raw data, and journal entries (labeled, dated), etc.

Report: (40 points) Due May 11, 2007 (- 2 points per day late!) SUBMIT VIA EMAIL

- Introduction (2--4 paragraphs) (Background information on the sport and the physics of the sport. Remember to cite sources properly!)
- Purpose/Hypothesis, Materials, Procedure (details of what you actually did!)
- Results (data charts, graphs, etc.)
- Discussion (Describe your results with specific reference to your data charts and graphs. (2—4 paragraphs) Include error analysis and suggestions for improvement)
- Conclusion
- Works Cited (MLA format)

Presentation: (10 points) In Class May 11--18, 2007

Resources to get you started on your research

Sport Science (http://www.exploratorium.edu/sports/)

Physics of Sports (http://home.nc.rr.com/enloephysics/sports.htm)

Project Grading Rubrics

Proposal (10 points) (-2 points per day late!)

10	8	5	0
Experimental design clear and concise Proposal emailed by due date		Experimental design unclear /not concise Proposal emailed by due date	Missing or incomplete or not emailed

Experiment (20 points) (-2 points per day late!)

20	15	10	0
Photographs depict equipment and procedure .Sequence of events clear for Journal entries describe where, what, when, how, and problems. Raw data included. All photos, data, journal entries labeled and dated	Photographs depict equipment and procedure. Sequence of events mostly clear. Journal entries describe where, what, when, how, and problems. Raw data included. Photos, data, journal entries not labeled or not dated	Photographs depict equipment or procedure but not both. Sequence of events unclear. Journal entries present but incomplete. .Raw data included but unclear. Photos, data, journal entries not labeled and dated	Missing or incomplete

Report (40 points) (-2 points per day late!)

40	30	20	0
Clear and complete report on physics of selected sport and experimental results NO grammar or spelling errors Correct citation of sources within/essay (MLA).Works Cited included (MLA)	Clear and complete report on physics of selected sport and experimental results 1 or more grammar or spelling errors. Correct citation of sources within/essay (MLA) Works Cited included (MLA)	Unclear and or incomplete report on physics of selected sport and experimental results Sources not cited within essay and/or Works Cited NOT included.	Missing, incomplete, or hand-written.

PowerPoint (20 points) (-2 points per day late!)

10	8	5	0
No more than 6 slides, slides easy to read and NOT TEXT DENSE, Clear and concise description of physics of selected sport, experimental design, results, and conclusion		More than 6 slides, or slides not easy to read or slides TEXT DENSE, or unclear presentation of physics of selected sport, experimental design, results, and conclusion.	Missing or incomplete

Presentation (10 points)

10	8	5	0
Information presented in engaging manner and NO READING of notes. PowerPoint slides used effectively.	Information presented in engaging manner and some READING of notes. PowerPoint slides used effectively for part of presentation.	Information READ at audience and/or PowerPoint slides not used to support presentation	No presentation