

Rat Trap Racer Project – Dec 2015/Jan 2016



GOAL: To build a “vehicle” using a single rat trap as the only power source.

I. Teams

Each team will consist of one or two individuals. (0.5 pt extra for alone)

II. Rules

- 1) The Rat trap is your only source of power. No other springs, rubber bands, etc...
(Rat traps are very dangerous so please **BE EXTREMELY CAREFUL!!!**)
- 2) The rat trap must be kept intact. You may drill to attach only, glue, tape or nail but no cutting the trap.
- 3) The vehicle must have wheels and remain in contact with the ground at all times.
- 4) The traveled distance will be measured from the starting line by Mr. Hughes room forward to where the vehicle stops or hits the wall.
- 5) The design must fit into a 12” X 12” X 24” box when loaded for the start.

III. Ideas

- 1) Don’t wait until the day/night before to build and test!!!!!!
- 2) Check out previous year’s vehicles on the website. Make sure the wheels are straight and move easily.
- 3) Try your idea at home or in the hallway after school before race day.
- 4) I do have materials such as balsa wood, CD’s, and tray’s. First come, first served.

IV. Grading

This project will be part of your test grade and is worth 40 pts.

Workable Design	17.5 pts
Distance traveled	+0.5 pt for each 5 feet traveled
Research	5 pts
Project Report	10 pts

Include the following information in your report: construction methods; discuss the success/failure of your tests; what worked in your design and what didn’t; would you make any changes in your design if you had to do this again; results of your runs; applications of Physics that were used in the design.

V. Timeline (Dependent upon the Semester Test schedule)

- Dec 14th – Project introduction, group choices, Rat traps handed out when ready
Dec 21st – Research due
Jan 13th and Jan 14th – design and testing days
Jan 15th and Jan 18th - Race day
Jan 20th – Report due.

Good luck and have fun, but be SAFE!!!!!!

Rat Trap Racer Project – Dec 2014



GOAL: To build a “vehicle” using a single rat trap as the only power source.

I. Teams

Each team will consist of one or two individuals. (1 pt extra for alone)

II. Rules

- 1) The Rat trap is your only source of power. No other springs, rubber bands, etc...
(Rat traps are very dangerous so please **BE EXTREMELY CAREFUL!!!**)
- 2) The rat trap must be kept intact. You may drill to attach only, glue, tape or nail but no cutting the trap.
- 3) The vehicle must have wheels and remain in contact with the ground at all times.
- 4) The traveled distance will be measured from the starting line by Mr. Hughes room forward to where the vehicle stops or hits the wall.
- 5) The design must fit into a 12” X 12” X 24” box when loaded for the start.
- 6) All entries must be ready on race day 1 or will receive a 5 point penalty.

III. Ideas

- 1) Don’t wait until the day/night before to build and test!!!!!!
- 2) Check out previous year’s vehicles on the website. Make sure the wheels are straight and move easily.
- 3) If the vehicle is too heavy, it will not move. If it is too light, it will not go in a straight line.
- 4) Try your idea at home or in the hallway after school before race day.
- 5) I do have materials such as balsa wood, CD’s, and tray’s. First come, first served.

IV. Grading

This project will be part of your test grade and is worth 80 pts.

Workable Design	35 pts
Distance traveled	+1 pt for each 5 feet traveled
Research	10 pts
Project Report	20 pts (Website format add link to your homepage)

Be sure to include the following information in your web report: construction methods; discuss the success/failure of your tests; what worked in your design and what didn’t; would you make any changes in your design if you had to do this again; results of your runs; applications of Physics that were used in the design. Please include a link to your journal on your rat trap home page.

V. Timeline

- Dec 1st – Project introduction, group choices, Rat traps handed out when ready
- Dec 8th – Research due
- Dec 16th and 17th – design and testing days
- Dec 18th and 19th – Race day
- Dec 23rd – Google website report due.

Good luck and have fun, but be SAFE!!!!!!

Rat Trap Racer Project – Dec 2013



GOAL: To build a “vehicle” using a single rat trap as the only power source.

I. Teams

Each team will consist of one or two individuals. (1 pt extra for alone)

II. Rules

- 1) The Rat trap is your only source of power. No other springs, rubber bands, etc...
(Rat traps are very dangerous so please **BE EXTREMELY CAREFUL!!!**)
- 2) The rat trap must be kept intact. You may drill to attach only, glue, tape or nail but no cutting the trap.
- 3) The vehicle must have wheels and remain in contact with the ground at all times.
- 4) The traveled distance will be measured from the starting line by Mr. Hughes room forward to where the vehicle stops or hits the wall.
- 5) The design must fit into a 12” X 12” X 24” box when loaded for the start.
- 6) All entries must be ready on race day 1 or will receive a 5 point penalty.

III. Ideas

- 1) Don’t wait until the day/night before to build and test!!!!!!
- 2) Check out previous year’s vehicles on the website. Make sure the wheels are straight and move easily.
- 3) If the vehicle is too heavy, it will not move. If it is too light, it will not go in a straight line.
- 4) Try your idea at home or in the hallway after school before race day.
- 5) I do have materials such as balsa wood, CD’s, and tray’s. First come, first served.

IV. Grading

This project will be part of your test grade and is worth 70 pts.

Workable Design	35 pts
Distance traveled	1 pt for each 5 feet traveled
Journal-(Test)	2 pts for each entry, Mr. Duhrkopf will give you the entry days.
Project Report	20 pts (Website format add link to your homepage)

Be sure to include the following information in your web report: construction methods; discuss the success/failure of your tests; what worked in your design and what didn’t; would you make any changes in your design if you had to do this again; results of your runs; applications of Physics that were used in the design. Please include a link to your journal on your rat trap home page.

V. Timeline

Nov 2013 – Project introduction, group choices, Rat traps handed out when ready
Each Wednesday in December until in class design days, then everyday – Journal entries
2 days prior to semester tests – design and testing days
Semester Test Day – Race day
Jan 5th – Google website report due.

Good luck and have fun, but be SAFE!!!!!!

Rat Trap Racer Project – Dec 2012



GOAL: To build a “vehicle” using a single rat trap as the only power source.

I. Teams

Each team will consist of one or two individuals. (1 pt extra for alone)

II. Rules

- 1) The Rat trap is your only source of power. No other springs, rubber bands, etc...
(Rat traps are very dangerous so please BE EXTREMELY CAREFUL!!!)
- 2) The rat trap must be kept intact. You may drill, glue, tape or nail but no cutting the trap.
- 3) The vehicle must have wheels and remain in contact with the ground at all times.
- 4) The traveled distance will be measured from the starting line by Mr. Hughes room forward to where the vehicle stops or hits the wall.
- 5) The design must fit into a 12” X 12” X 24” box when loaded for the start.
- 6) All entries must be ready on race day 1 or will receive a 5 point penalty.

III. Ideas

- 1) Don’t wait until the day/night before to build and test!!!!!!
- 2) Check out previous year’s vehicles on the website. Make sure the wheels are straight and move easily.
- 3) If the vehicle is too heavy, it will not move. If it is too light, it will not go in a straight line.
- 4) Try your idea at home or in the hallway after school before race day.
- 5) I do have materials such as balsa wood, CD’s, and tray’s. First come, first served.

IV. Grading

This project will be part of your test grade and is worth 70 pts.

Workable Design	35 pts
Distance traveled	1 pt for each 5 feet traveled
Journal-(Homework)	10 pts for each entry, Mr. Duhrkopf will give you the entry days.
Project Report	20 pts (Website format add link to your homepage)

Be sure to include the following information in your web report: construction methods; discuss the success/failure of your tests; what worked in your design and what didn’t; would you make any changes in your design if you had to do this again; results of your runs; applications of Physics that were used in the design. Please include a link to your journal on your rat trap home page.

V. Timeline

Dec 2012 – Project introduction, group choices, Rat traps handed out, 1st journal entry
Each T/F until in class design days, then everyday – Journal entries
Dec 18th & 19th – design and testing days
Dec 20th or 21st – Race day

Good luck and have fun, but be SAFE!!!!!!

Rat Trap Racer Project – Jan 2012



GOAL: To build a “vehicle” using a single rat trap as the only power source.

I. Teams

Each team will consist of one or two individuals. (2 pts extra for alone)

II. Rules

- 1) The Rat trap is your only source of power. No other springs, rubber bands, etc...
(Rat traps are very dangerous so please **BE EXTREMELY CAREFUL!!!**)
- 2) The rat trap must be kept intact. You may drill, glue, tape or nail but no cutting the trap.
- 3) The vehicle must have wheels and remain in contact with the ground at all times.
- 4) All entries are allowed only 3 runs as part of the project. The traveled distance will be measured from the starting line by Mr. Hughes room forward to where the vehicle stops or hits the wall.
- 5) The design must fit into a 12” X 12” X 24” box when loaded for the start.
- 6) All entries must be ready on race day 1 or will receive a 5 point penalty.

III. Ideas

- 1) Don’t wait until the day/night before to build and test!!!!!!
- 2) Check out previous year’s vehicles on the website. Make sure the wheels are straight and move easily.
- 3) If the vehicle is too heavy, it will not move. If it is too light, it will not go in a straight line.
- 4) Try your idea at home or in the hallway after school before race day.
- 5) I do have materials such as balsa wood, CD’s, and tray’s. First come, first served.

IV. Grading

This project will be part of your test grade and is worth 70 pts.

Workable Design	35 pts (2 pts extra credit max for looking like a rat)
Distance traveled	1 pt for each 4 feet traveled first 3 runs, then 6 feet/pt any extra runs if time
Journal-(Homework)	10 pts for each entry, Mr. Duhrkopf will give you the entry days.
Project Report	20 pts (Website format add link to your homepage)

Be sure to include the following information in your web report: construction methods; discuss the success/failure of your tests; what worked in your design and what didn’t; would you make any changes in your design if you had to do this again; results of your runs; applications of Physics that were used in the design. Please include a link to your journal on your rat trap home page.

V. Timeline

Dec 2011 – Project introduction, group choices (1 or 2), Rat traps handed out, 1st journal entry

Each T/F until in class design days, then everyday – Journal entries

Jan 10th & 11th – design and testing days

Jan 12th – One race day

Jan 16th – Google website report due.

Good luck and have fun, but be SAFE!!!!!!

Rat Trap Racer Project – Jan 2011



GOAL: To build a “vehicle” using a single rat trap as the only power source.

I. Teams

Each team will consist of one or two individuals. (2 pts extra for alone)

II. Rules

- 1) The Rat trap is your only source of power. No other springs, rubber bands, etc...
(Rat traps are very dangerous so please **BE EXTREMELY CAREFUL!!!**)
- 2) The rat trap must be kept intact. You may drill, glue, tape or nail but no cutting the trap.
- 3) The vehicle must have wheels and remain in contact with the ground at all times.
- 4) All entries are allowed only 3 runs as part of the project. The traveled distance will be measured from the starting line by Mr. Hughes room forward to where the vehicle stops or hits the wall.
- 5) The design must fit into a 12” X 12” X 24” box when loaded for the start.
- 6) All entries must be ready on race day 1 or will receive a 5 point penalty.

III. Ideas

- 1) Don’t wait until the day/night before to build and test!!!!!!
- 2) Check out previous year’s vehicles on the website. Make sure the wheels are straight and move easily.
- 3) If the vehicle is too heavy, it will not move. If it is too light, it will not go in a straight line.
- 4) Try your idea at home or in the hallway after school before race day.
- 5) I do have materials such as balsa wood, CD’s, and tray’s. First come, first served.

IV. Grading

This project will be part of your test grade and is worth 70 pts.

Workable Design	35 pts (2 pts extra credit max for looking like a rat)
Distance traveled	1 pt for each 4 feet traveled first 3 runs, then 6 feet/pt any extra runs if time
Journal	1 pt for each entry, Mr. Duhrkopf will give you the entry days.
Project Report	20 pts (Website format add link to your homepage)

Be sure to include the following information in your web report: construction methods; discuss the success/failure of your tests; what worked in your design and what didn’t; would you make any changes in your design if you had to do this again; results of your runs; applications of Physics that were used in the design. Please include a link to your journal on your rat trap home page.

V. Timeline

Dec 2010 – Project introduction, group choices (1 or 2), Rat traps handed out, 1st journal entry
Each M/Th until in class design days, then everyday – Journal entries
Jan 10th & 11th – design and testing days
Jan 12th – One race day
Jan 17th – Google website report due.

Good luck and have fun, but be SAFE!!!!

Rat Trap Racer Project – Feb 2010



GOAL: To build a “vehicle” using a single rat trap as the only power source.

I. Teams

Each team will consist of one or two individuals. (2 pts extra for alone)

II. Rules

- 1) The Rat trap is your only source of power. No other springs, rubber bands, etc...
(Rat traps are very dangerous so please BE EXTREMELY CAREFUL!!!)
- 2) The rat trap must be kept intact. You may drill, glue, tape or nail but no cutting the trap.
- 3) The vehicle must have wheels and remain in contact with the ground at all times.
- 4) All entries are allowed only 3 runs as part of the project. The traveled distance will be measured from the starting line by Mr. Hughes room forward to where the vehicle stops or hits the wall.
- 5) The design must fit into a 12” X 12” X 24” box when loaded for the start.
- 6) All entries must be ready on race day 1 or will receive a 5 point penalty.

III. Ideas

- 1) Don’t wait until the day/night before to build and test!!!!!!
- 2) Check out previous year’s vehicles on the website. Make sure the wheels are straight and move easily.
- 3) If the vehicle is too heavy, it will not move. If it is too light, it will not go in a straight line.
- 4) Try your idea at home or in the hallway after school before race day.
- 5) I do have materials such as balsa wood, CD’s, and tray’s. First come, first served.

IV. Grading

This project will be part of your test grade and is worth 70 pts.

Workable Design	35 pts (2 pts extra credit max for looking like a rat)
Distance traveled	1 pt for each 4 feet traveled first 3 runs, then 6 feet/pt any extra runs if time
Journal	1 pt for each entry, Mr. Duhrkopf will give you the entry days.
Project Report	20 pts (Website format add link to your homepage)

Be sure to include the following information in your web report: construction methods; discuss the success/failure of your tests; what worked in your design and what didn’t; would you make any changes in your design if you had to do this again; results of your runs; applications of Physics that were used in the design. Please include a link to your journal on your rat trap home page.

V. Timeline

Jan 19th – Project introduction, group choices (1 or 2), Rat traps handed out (before chapter 8)
Each M/W/F until in class design days , then everyday – Journal entries
Day 2 and 3 – design and testing days (after Chap. 8)
Day 4 – One race day
Day 5 on next Monday after race day – Google website report due.

Good luck and have fun, but be SAFE!!!!

Rat Trap Racer Project – Jan 2009



GOAL: To build a “vehicle” using a single rat trap as the only power source.

I. Teams

Each team will consist of one or two individuals. (3 pts extra for alone)

II. Rules

- 1) The Rat trap is your only source of power. No other springs, rubber bands, etc...
(Rat traps are very dangerous so please BE EXTREMELY CAREFUL!!!)
- 2) The rat trap must be kept intact. You may drill, glue, tape or nail but no cutting the trap.
- 3) The vehicle must have wheels and remain in contact with the ground at all times.
- 4) All entries are allowed only 3 runs as part of the project. The traveled distance will be measured from the starting line by Mr. Hughes room forward to where the vehicle stops or hits the wall.
- 5) The design must fit into a 12” X 12” X 24” box when loaded for the start.
- 6) All entries must be ready on race day 1 or will receive a 5 point penalty.

III. Ideas

- 1) Don’t wait until the day/night before to build and test!!!!!!
- 2) Check out previous year’s vehicles on the website. Make sure the wheels are straight and move easily.
- 3) If the vehicle is too heavy, it will not move. If it is too light, it will not go in a straight line.
- 4) Try your idea at home or in the hallway after school before race day.
- 5) I do have materials such as balsa wood, CD’s, and tray’s. First come, first served.

IV. Grading

This project will be part of your test grade and is worth 70 pts.

Workable Design	35 pts (3 pts extra credit max for looking like a rat)
Distance traveled	1 pt for each 4 feet traveled first 3 runs, then 6 feet/pt any extra runs if time
Project Report	20 pts (Website format, add to the Egg Drop project)

The website needs to have a minimum of 3 pages, including the main page, all pages must be linked together, all pages need to have a title, and the web pages need to be organized and easy to read. Be sure to include the following information: construction methods; discuss the success/failure of your tests; what worked in your design and what didn’t; would you make any changes in your design if you had to do this again; results of your runs; applications of Physics that were used in the design. The website will need to include at least one photo of your design. Make sure to be CREATIVE!

V. Timeline

- Dec 19th – Project introduction, group choices (1 or 2), Rat traps handed out
Jan 8th, 9th and 12th – design and testing days
Jan 13th or 14th – Race day during semester test period (90 minutes)
Jan 19th – Google website report due. (Send Mr. Duhrkopf the web address via email)

Good luck and have fun, but be SAFE!!!!

Rat Trap Racer Project – Dec 2007



GOAL: To build a “vehicle” using a single rat trap as the only power source.

I. Teams

Each team will consist of one or two individuals.

II. Rules

- 1) The Rat trap is your only source of power. No other springs, rubber bands, etc...
(Rat traps are very dangerous so please **BE EXTREMELY CAREFUL!!!**)
- 2) The rat trap must be kept intact. You may drill, glue, tape or nail but no cutting the trap.
- 3) The vehicle must have wheels and remain in contact with the ground at all times.
- 4) All entries are allowed only 2 runs as part of the project. The traveled distance will be measured from the starting line by Mr. Hughes room forward to where the vehicle stops or hits the wall.
- 5) The design must fit into a 12” X 12” X 24” box.
- 6) All entries must be ready on race day 1 or will receive a 5 point penalty.

III. Ideas

- 1) Don’t wait until the day/night before to build and test!!!!!!
- 2) Check out previous year’s vehicles on the website. Make sure the wheels are straight and move easily.
- 3) If the vehicle is too heavy, it will not move. If it is too light, it will not go in a straight line.
- 4) Try your idea at home or in the hallway after school before race day.
- 5) I do have materials such as balsa wood, CD’s, and tray’s. First come, first served.

IV. Grading

This project will be part of your test grade and is worth 70 pts.

Workable Design	35 pts (3 pts extra credit for best design and looking like a rat)
Distance traveled	1 pt for each 4 feet traveled
Project Report	20 pts (newspaper article format)

The project report shall contain your construction method, results, improvements, problems, thoughts about the project and the applications of Physics that are being used in designing this Rat Trap Racer.

V. Timeline

This project will start when we complete Chapter 6. We will spend 2-3 days in class building and testing and 2 days racing. Race Day will be set once we begin the project and your vehicle must be ready to race on that day.

Good luck and have fun, but be SAFE!!!!!!

Rat Trap Racer Project – 2007



GOAL: To build a “vehicle” using a single rat trap as the only power source.

I. Teams

Each team will consist of one or two individuals.

II. Rules

- 1) The Rat trap is your only source of power. No other springs, rubber bands, etc...
(Rat traps are very dangerous so please **BE EXTREMELY CAREFUL!!!**)
- 2) The rat trap must be kept intact. You may drill, glue, tape or nail but no cutting the trap.
- 3) The vehicle must have wheels and remain in contact with the ground at all times.
- 4) All entries are allowed only 2 runs as part of the project. The traveled distance will be measured from the starting line by Mr. Hughes room forward to where the vehicle stops or hits the wall.
- 5) The design must fit into a 12” X 12” X 24” box.
- 6) All entries must be ready on race day 1 or will receive a 5 point penalty.

III. Ideas

- 1) Don’t wait until the day/night before to build and test!!!!!!
- 2) Check out previous year’s vehicles on the website. Make sure the wheels are straight and move easily.
- 3) If the vehicle is too heavy, it will not move. If it is too light, it will not go in a straight line.
- 4) Try your idea at home or in the hallway after school before race day.
- 5) I do have materials such as balsa wood, CD’s, and tray’s. First come, first served.

IV. Grading

This project will be part of your test grade and is worth 70 pts.

Workable Design	35 pts (3 pts extra credit for best design and looking like a rat)
Distance traveled	1 pt for each 4 feet traveled
Project Report	20 pts (newspaper article format)

The project report shall contain your construction method, results, improvements, problems, thoughts about the project and the applications of Physics that are being used in designing this Rat Trap Racer.

IV. Grading

This project will start when we complete Chapter 6. We will spend 2-3 days in class building and testing and 1 day racing. Race Day will be set once we begin the project and your vehicle must be ready to race on that day.

Good luck and have fun, but be SAFE!!!!!!

Rat Trap Racer Project – 2006



GOAL: To build a “vehicle” using a single rat trap as the only power source.

I. Teams

Each team will consist of one or two individuals.

II. Rules

- 1) The Rat trap is your only source of power. No other springs, rubber bands, etc...
(Rat traps are very dangerous so please BE EXTREMELY CAREFUL!!!)
- 2) The rat trap must be kept intact. You may drill, glue, tape or nail but no cutting the trap.
- 3) The vehicle must have wheels and remain in contact with the ground at all times.
- 4) All entries are subject to a safety check. Any entries deemed “unsafe” will be disqualified.
- 5) All entries are allowed only 2 runs as part of the project. The traveled distance will be measured from the starting line forward to where the vehicle stops or hits the wall.
- 6) The starting line will be at the doors by Mr. Hughes room.
- 7) The design must fit into a 12” X 12” X 24” box.
- 8) No commercially built cars may be entered, although materials commonly available may be used in the construction of the vehicle. If there is any question as to the validity of an entry, I will have the final say.

III. Ideas

- 1) Don’t wait until the day/night before to build and test!!!!!!
- 2) Check out previous year’s vehicles on the website.
- 3) Make sure the wheels are straight and move easily.
- 4) If the vehicle is too heavy, it will not move. If it is too light, it will not go in a straight line.
- 5) Try your idea at home or in the hallway after school before race day.
- 6) I do have materials such as balsa wood, CD’s, and tray’s. First come, first served.

IV. Grading

This project will be part of your lab grade and is worth 70 pts.

Workable Design	35 pts (5 pts extra credit for best design and fastest)
Distance traveled	1 pt for each 4 feet traveled (max of 30 pts)
Project Report	20 pts

The project report shall contain your construction method, results, improvements, problems, and the applications of Physics that are being used in designing this Rat Trap Racer.

IV. Grading

This project will start when we complete Chapter 7. We will spend 2-3 days in class building and testing and 1 day racing. Race Day will be set once we begin the project and your vehicle must be ready to race on that day.

Good luck and have fun, but be SAFE!!!!

Rat Trap Racer Project – 2004/05



GOAL: To build a “vehicle” using a single rat trap as the only power source.

I. Teams

Each team will consist of two individuals.

II. Rules

- 1) The Rat trap is your only source of power. No other springs, rubber bands, etc...
(Rat traps are very dangerous so please **BE EXTREMELY CAREFUL!!!**)
- 2) The rat trap must be kept intact. No cutting, drilling or nailing. Glue/tape can be used to attach parts.
- 3) The vehicle must have wheels and remain in contact with the ground at all times.
- 4) All entries are subject to a safety check. Any entries deemed “unsafe” will be disqualified.
- 5) All entries are allowed only 2 runs as part of the project. The traveled distance will be measured from the starting line forward to where the vehicle stops or hits the wall.
- 6) The starting line will be at the doors by Mr. Hughes room.
- 7) The design must fit into a 12” X 12” X 24” box.
- 8) No commercially built cars may be entered, although materials commonly available may be used in the construction of the vehicle. If there is any question as to the validity of an entry, I will have the final say.

III. Suggestions

- 1) Make sure the wheels are straight and move easily.
- 2) If the vehicle is too heavy, it will not move. If it is too light, it will not go in a straight line.
- 3) Check out last year’s vehicles on the website.
- 3) Try your idea at home or in the hallway after school before race day.

IV. Grading

The design and testing of your vehicle will be part of your lab grade and worth 50 pts. The written report will be part of your homework grade and worth 20 points.

Design	10 pts
Distance traveled	1 pt for each foot traveled
Project Report	20 pts

Extra Credit will be awarded for the farthest, fastest and most originally designed vehicles.

The project report shall contain your construction method, results, improvements, problems, and the applications of Physics that are being used in designing this Rat Trap Racer.

Good luck and have fun, but be SAFE!!!!!!

