

Pinewood Derby Design Challenge

For Secondary Education

Time required: 3 periods of 50 minutes

Overview	Students are to use the engineering design process to construct a Pinewood Derby Car. The cars will then be raced on a track. To see who has the most effective design.
Objectives	Following this lesson students will have knowledge of: <ul style="list-style-type: none">• The engineering design process• How to use the required tools• How to organize the design process using Squareleaf.net.
Standards	Standards for Technological Literacy Standard 9.I: Established design principles are used to evaluate existing designs, to collect data, and to guide the design process. Standard 9.J: Engineering design is influenced by personal characteristics, such as creativity, resourcefulness, and the ability to visualize and think abstractly
Materials	Materials needed for the project: <ul style="list-style-type: none">• Pinewood Derby kits• Woodworking tools• Finishing products (paint, stain, ect.)• Internet Access
Procedures	Before this lesson, students should be taught a lesson about the engineering design process. After that lesson, students will have the necessary knowledge to be able to demonstrate the different stages an engineering design model. Day One: <ul style="list-style-type: none">• Students will draft a design of their car• Once their design is approved, they will start cutting on their blocks to make their cars.• Students will use Squareleaf to map their design process for that day's activities Day Two: <ul style="list-style-type: none">• Students will finish cutting and sanding down their wood blocks.• Students will paint or stain their cars• Again they will use Squareleaf to show demonstrate what processes they used that day. Day Three: <ul style="list-style-type: none">• Students will race the cars. The class will have one winner in the racing contest.• Students will vote on the car that looks the best. The class will have one winner.• Students will write a reflection of what they learned, and what they would do differently next time.
Evaluation	Students are graded on the organization and detail in the documentation of the engineering design process, and their completion of the reflection paper. The engineering design process will also be a subject on the unit test.



http://delusionsofgrandeur.org/wp-content/uploads/2010/02/Pinewood_derby_cars_02A.jpg