

Derby Car/Race Car Design Detailed Instructions

1. Have playdoh and drawings out on tables. Ask participants to not touch anything until instructed.
2. Introduce yourselves
3. Explain how engineering drawings help plan projects
 - a. Engineering drawings are used to plan projects. They show multiple angles of a machine, system or object, and allow the designer to draw out plans. Drawings are helpful in deciding scale, arrangement and layout.
 - b. [Watch video](#) about race car design techniques
 - c. Then hand out drawing templates for the derby cars
 - i. Sheets are scale drawings of derby car dimensions, showing top, side, front and back views of the car
 - ii. Drawings show the block you start with – you can use to plan how to cut your wood and paint your design
 - iii. Take a sheet and demonstrate how each view works, but showing your model car and how it would look in the drawings
 - iv. Explain how engineering paper has squares on it to help you measure
4. Give them time to do their own car designs
 - a. Make sure colored pencils and crayons get passed out
 - b. Give them 5-10 minutes for this
5. When it seems like most of them have finished this, move on to the section about 3D modeling.
 - a. Explain how this is the next step after 2D drawings.
 - b. Show how the wheel assemblies go together, and how to use the Playdoh to make a 3D version of their drawing
 - c. Stress that they should try to make the 3D car look like the 2D drawing they just made
6. Give them 5-10 minutes to make 3D models
7. Hand out drawings and matching pictures of real engineering systems.
 - a. Help students identify objects on the drawing and matching object in the picture