

Transportation Curriculum Outline
RCK High School
Mr. Bliss-Instructor

Week 1: Course Expectations, Grading Policies, Procedures, Contact Information, Safety

Week 2: Trans Systems Model and Application, Students develop PowerPoint Presentation applying systems model to a form of transportation

Week 3-4: Mission Possible Project, Group project where students apply simple machines to complete a task, Simple machine calculations, gear ratios

Week 5: Propulsion, Newton's Laws of motion, Balloon Powered vehicle

Week 6-7: Space Trans, satellites, types of rockets, rocket design and construction, gravity, thrust, height calculations

Week 8: Launch rockets, calculate height

Week 9-10: Airfoils, High/Low Pressure, Airplane Part Functions, Construction Of Air Racer and Airplane

Week 11-13: Energy Report, Choose Alternative Fuel Vehicle or Alternative Heating Home Heating System, Calculate R- Value/ Heat Loss of Bedroom, Azimuth and Zenith

Week 14: Energy Report Presentations

Calculations, Solar Energy, Active vs. Passive , Redesign Home to Passive Solar

Week 15-17: Solar Powered Vehicle Lab, Design, Construction, Testing of Solar Powered Vehicles

Week 18-20: Mag Lev Car design and Testing, Students compile interesting facts concerning mag lev trans.

Week 20-25: Power Technology- Small Engines Lab, students in groups of 2 rebuild small engines, 4 stroke, 2 stroke, diesel engines

Week 26-27: Automotive Trans- Braking Systems, Lubrication Systems, Transmission, Cooling, Electrical, Student reports on the future of these systems

Week 28-29: Hydro Power Labs, Students Design and Test Hydro Powered Vehicles Boat ID, Outboard engine design

Week 30: Alternative Energy, Hydroponics Systems Design

Week 31: Hydroponics System Construction and Planting, w/ongoing progress reports

Week 32: Research of Solar Powered Food Cooking Devices, and Design

Week 33-34: Construction Of Solar Cooking Devices

Week 35: Testing and Redesign of Solar Cooking Devices

Week 36-37: Automotive Maintenance, Oil Changes, Fluid Levels, Tire Changes, Bulb Replacement, Checking Brakes, Exhaust Maintenance

Week 38-40: Final Review, Testing, And Lab Clean-Up