

AUTOMOTIVE SYSTEMS UNIT

SHORT RESEARCH PROJECT

GUIDELINES

Introduction: The area of basic automotive systems includes a vast amount of worthwhile information to learn about. You and your partner are to research an automotive related system and become semi-experts in that area for this class. You and your partner will teach the rest of the class about the worthwhile and interesting knowledge that you research, discover, and gather regarding your chosen automotive system. Also, you will be responsible to learn about all systems presented.

Purpose: Some of the neatest, coolest types of learning take place when we do projects in which we have a direct personal interest. Also, learning how to find information independently is one of the most important skills to learn in high school because it can help us with learning new things for the rest of our lives.

Parameters:

1. Pick a partner that you can work with for this short project, pick an automotive system that you are both interested in, and sign-in on the research project team sheet.
2. Find out all that you can about the system, what it looks like, how it operates, other systems and parts that it connects with, what can go wrong with it, etc. Use the **6 Questions Sheet**.
3. You will choose a way to orally present the things you learned to the rest of the class. First you will do an oral presentation including a quality PowerPoint presentation. You could also include a handout that you use as you present, a video (3 min. maximum) that you show, a combination presentation, or another way as approved by the instructor. Your grade will also include any other assignments given during the unit.
4. Based on your system, you will be assigned a time and date to offer your wisdom and knowledge to the class so that we can all learn from you about it. You will only have five (5) to seven (7) minutes maximum to present. Organization and planning are very important so that you can cover the major system qualities in the short time allotted.
5. If possible, you should obtain something three-dimensional (device or object related) in addition to your PowerPoint. You should try to obtain a sample of some part or parts of the system that you choose to research. Your presentation can also include a poster (**17" wide by 24" high**). Your poster should show your entire system with all system parts in proper relationship or connection with clear labels identifying the various parts.

Assessment: Assessment will be based on your presentation and your physical product (PowerPoint, etc). System complexity, organization, accuracy, group contribution, time usage, planning, apparent effort level, and visual aids will be included in assessment.

Basic Automotive Systems are Listed Below: (Complexity of System: **High, Medium, & Low**)
(Chapter #s in *Auto Mechanics* by Webster)

Engine Systems

Lubrication system (M) (17-18)
Cooling system (M) (19-20)
Fuel system (M) (21-22)
Starting system (M) (26-27)
Charging system (H) (28-29)
Ignition system (M) (30-31)
Computerized Engine
Control system (H) (54)
Emission system (H) (51-52)
Exhaust system (L) (A.E.)

Power Train Systems

Clutch (M) (32-33)
Manual Transmission (M) (34-35)
Torque Converter (H) (36)
Automatic Transmission (H) (36-37)
Drive Line (RWD & FWD) (L) (38-39)
Differential (M) (40-41)

Chassis Systems

Suspension system (M) (42-43)
Steering system (M) (44-45)
Braking system (M) (46-47)

Comfort Systems

Heating system (L) (50)
A/C system (H) (50)