

CHAPTER 7- HYBRID & ELECTRIC VEHICLES

ACTIVITY 1: Chart the history of electric and hybrid electric vehicles

Activity Objective: Create a Gantt chart or diagram that shows the evolution of electric and hybrid electric vehicles up to the current types to include PHEVs

Definition: Most hybrid vehicles use a high-voltage battery pack and a combination electric motor and generator to help or assist a gasoline engine. The internal combustion engine (ICE) used in a hybrid vehicle can be either gasoline or diesel, although only gasoline-powered engines are currently used in hybrid vehicles. An electric motor is used to help propel the vehicle, and in some designs, it is capable of propelling the vehicle alone without having to start the internal combustion engine.

The hybrid electric vehicle did not become widely available until the release of the Toyota Prius in Japan in 1997, followed by the Honda Insight sold in the United States starting in 1999. Then in 2001, the first Toyota Prius was introduced in the United States. By 2010, there were several electric vehicles for sale although often in limited parts of the country and in limited numbers. Electric vehicles include the Tesla, Nissan Leaf, and Chevrolet Volt.

REVIEW VIDEOS:

Different types of hybrid electric vehicles Hybrid Cars explained

<https://www.youtube.com/watch?v=3T5ShFUkeFA>

Difference between hybrid and electric <https://www.youtube.com/watch?v=64-R-j7xdic>

Materials: Chapter 8, chart or graphing paper, computer flowchart program like MS Visio computer, printer. Internet Access

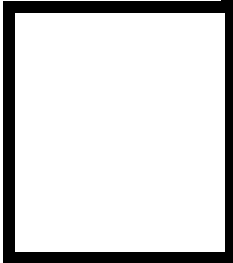
Procedure:

1. Work as partners or small teams
2. Research and brainstorm the history of electric vehicles up to the current HEVs and plug-in hybrids like the Chevy VOLT or BOLT
3. Based on the text in chapter 8 and the Internet search, create a chart that shows the evolution of electric and hybrid electric vehicles.



RUBRIC

4 World-Class Learner	3 Proficient Learner	2 Developing Learner	1 Emergent Learner
Learner at this level has gone beyond mastery of knowledge, skills, & attitudes described in project. World-class learner consistently exhibits high-quality performance.	Learner at this level has had opportunities to apply knowledge, skills, & attitudes of component of project. Proficient learner has mastered essential attributes, thus proving mastery.	Learner at this level has been exposed to & had opportunity to apply knowledge, skills, & attitudes of project. Developing learner may have only a few essential attributes to master before mastery.	Learner at this level may or may not have been exposed to knowledge, skills, & attitudes required by academic standards of the project.



- 1 = Emergent Learner**
- 2 = Developing Learner**
- 3 = Proficient Learner**
- 4 = World-Class Learner**