

Engine Industry Documents

Media Type: Microsoft® PowerPoint® Presentation

Duration: 63 slides

Goal: To explain documents used in the engine industry including, schematics, diagrams, repair orders, graphs, charts, tables, plots, etc.

Description: During this presentation students will learn how to read engine schematics and diagrams. Students will learn the components of an engine repair order and understand their purpose. Engine document graphical representations are also discussed.

Objectives:

1. To explain engine schematics and diagrams.
2. To describe the purpose and contents of engine repair orders.
3. To discuss the use of graphs, tables, charts and plots in the engine industry.



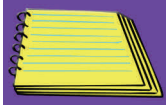
College & Career Readiness Anchor Standards for Writing

Writing Standards for Literacy in History/Social Studies & Technical Subjects		
Research to Build & Present Knowledge	Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.	
	Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.	
	9-12.7	Conduct short as well as more sustained research projects to answer a question or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
	9-12.8	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.

College & Career Readiness Anchor Standards for Reading

Reading Standards for Literacy in Science & Technical Subjects		
Craft & Structure	9-12.4	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9–12 texts and topics.
	Integrate and evaluate content presented in diverse formats and media, including visually and quantitatively, as well as in words.	
Integration of Knowledge & Ideas	9-10.7	Translate quantitative or technical information expressed in words in a text into visual form and translate information expressed visually or mathematically into words.
	11-12.7	Integrate and evaluate multiple sources of information presented in diverse formats and media in order to address a question or solve a problem.

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Lesson Plan

Student and Teacher Notes are available to print in outline format. You can access these documents under the "Printable Resources" section. If student licenses have been purchased, an interactive version of the Student Notes is available in the "Interactive Activities" section. If printing the full PowerPoint® is desired, you may download the file and print the handouts as needed.

Class 1: Begin class by distributing the *Engine Industry Documents Vocabulary Handout*. Instruct students to use them as reference materials throughout the presentation. Show *Engine Industry Documents - Engine Schematics & Diagrams*. Follow the segment with its *Assessment*. Assign the *Identification Activity* for completion.



Slides
1-16

Class 2: Remind students to continue using their *Vocabulary Handout*. Show *Engine Industry Documents - Repair Orders*. Follow the segment with its *Assessment*. Have students complete the *Good vs. Bad Business Management Activity*. Introduce the *Engine Repair Proposal Project*.



Slides
17-34

Class 3: Remind students to continue using their *Vocabulary Handout*. Show slides 35 to 52 of the *Engine Industry Documents - Graphical Representations*. Assign part one of the *Creating & Interpreting Graph Activity* and allow students to work.



Slides
35-52

Class 4: Remind students to continue using their *Vocabulary Handout*. Show slides 53 to 63 of the *Engine Industry Documents - Graphical Representations*. Follow the segment with its *Assessment*. Have students complete part two of the *Creating & Interpreting Graph Activity*.



Slides
53-63

Class 5: Distribute the *Engine Industry Documents Final Assessment* and allow time for students to complete it. Allow the remainder of the class for students to complete their *Projects/Activities*.



Lesson Links

Auto Repair Business Forms

- http://www.ideaautorepair.com/auto_repair_forms.asp?catID=85

Outdoor Power Equipment Institute

- <http://opei.org>



Career & Technical Student Organizations

Skills USA

- Automotive Service Technician
- Diesel Equipment Technology



Career Connections

Using the *Career Connections Activity*, allow students to explore the various careers associated with this lesson. See the *Activity* for more details. *If student licenses have been purchased:* Students will select the interviews to watch based on your directions. *If only a teacher license is purchased:* Show students all the career interviews and instruct them to only complete the interview form for the required number of interviews.

- iCEV50371, John Paul Jones, Heavy Equipment Mechanic, Patrick Tractor Company
- iCEV50461 Travis Walker, Motorcycle Technician, W.G. Custom Cycles
- iCEV50589, Darell Truett, Head Mechanic/Shop Foreman, Patrick Tractor Company

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Lab Activities

Identification

Directions:

Students will identify each part of an internal combustion engine on the *Identification Handout*. Students should label each component.

Creating & Interpreting Graphs

Directions:

Students will research data relevant to the engine service industry. Students will then choose a type of visual representation to display their data. Once the visual representation has been made students will trade it with a classmate. Students will interpret the data and list five facts based on analysis.

Good vs. Bad Business Management

Directions:

Students will research and identify examples of good and bad business management. They must include at least three examples of good and bad business management. Also, students must explain the importance of good management and how it impacts the success of a business. Then, students will write a brief paragraph on the information they found and cite all sources used.



Projects

Engine Repair Proposal

Directions:

Students will utilize schematics, diagrams, service-repair manuals and parts catalogs in order to complete a repair order. Students will use one of the given scenarios in order to complete the project. All sections of the *Engine Repair Proposal Project Handout* should be included.