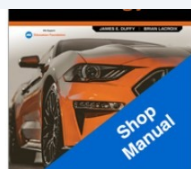


Navigating the Automotive Virtual Toolbox, ASE Video Library, and Multimeter Simulations on G-W Online



Navigating the Automotive Toolbox

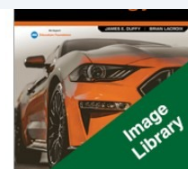
1 Let's begin by selecting the Automotive Virtual Toolbox.



Modern Automotive Technology
11e, Shop Manual



Modern Automotive Technology
11e, Instructor Resources



Modern Automotive Technology
11e, Image Library

Mo



Automotive Virtual Toolbox



ASE Series Video Library



Multimeter Simulations

<https://www.g-wonlinetextbooks.com/automotive-vt/>

2

This interactive activity contains Toolbox E-flash Cards to help your students identify tools like a pro. Select the link to learn more.



Skilled technicians use a lot of tools, and learning to identify all of these tools can be challenging. By practicing with this virtual toolbox—which contains Toolbox E-flash Cards—you'll learn how to identify tools like a pro.



[Toolbox E-Flash Cards](#)

3

Select a category from the flash card decks provided.



Toolbox E-Flash Cards

Toolbox E-flash cards make learning tool names easy! Pick a category from the list below and use the E-flash cards to become an expert. Each E-flash card includes an image of a tool on one side and the tool's name on the other. Click on the E-flash card to "flip it over" and see the other side. Some E-flash cards also include information about a tool, such as a short description or examples of what the tool is used for. Keep practicing with the E-flash cards in a category until you know all the tool names by heart; then move on to the next category!

- ☒ General Hand Tools
- ☐ General Shop Equipment
- ☐ ADAS Tools
- ☐ Auto Engine Repair
- ☐ Auto Suspension and Steering
- ☐ Auto Engine Performance
- ☐ Auto Electricity and Electronics
- ☐ Automatic Transmissions and Transaxles
- ☐ Manual Drive Trains and Axles
- ☐ Auto Brakes

4

An image of a tool will display and the user may click on the e-card to flip the card over to see if their guess was correct.

t/~Attachments/eflash/general_hand_tools.htm

Hand Tools E-Flash Cards

Term (1 of 62)



Select to flip

©Snap-on Incorporated

Previous Remove Next

5

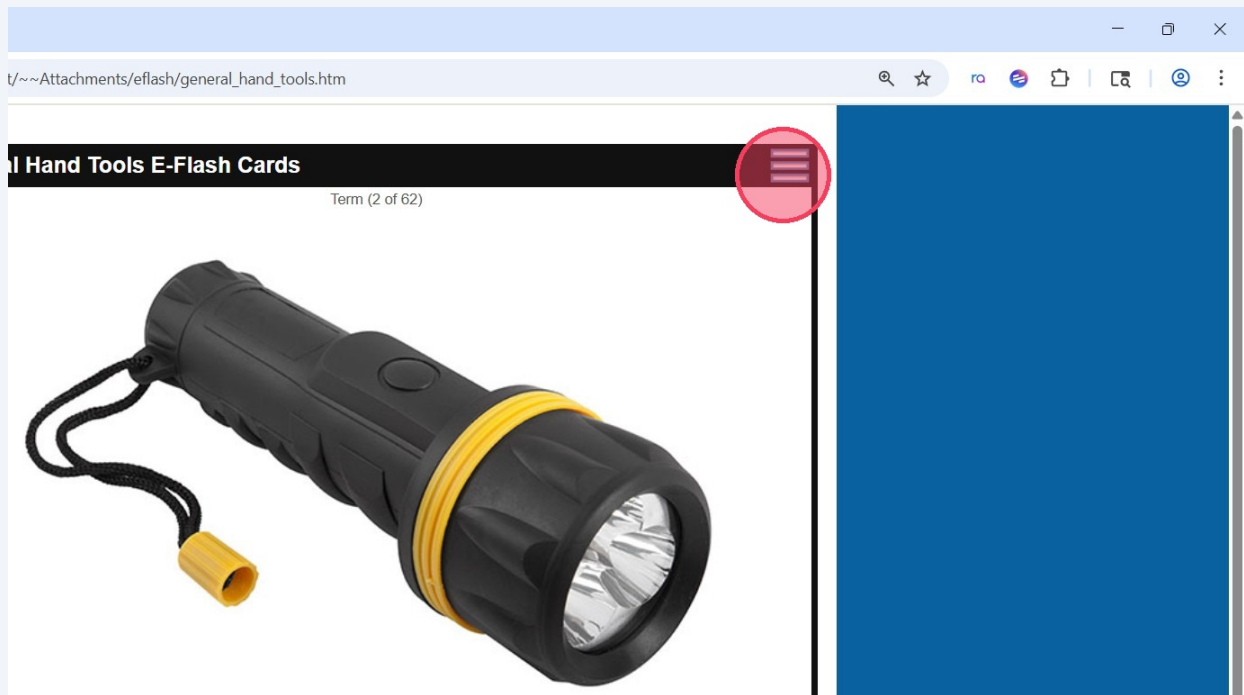
Select Next to go to the next tool.

Definition (1 of 62)

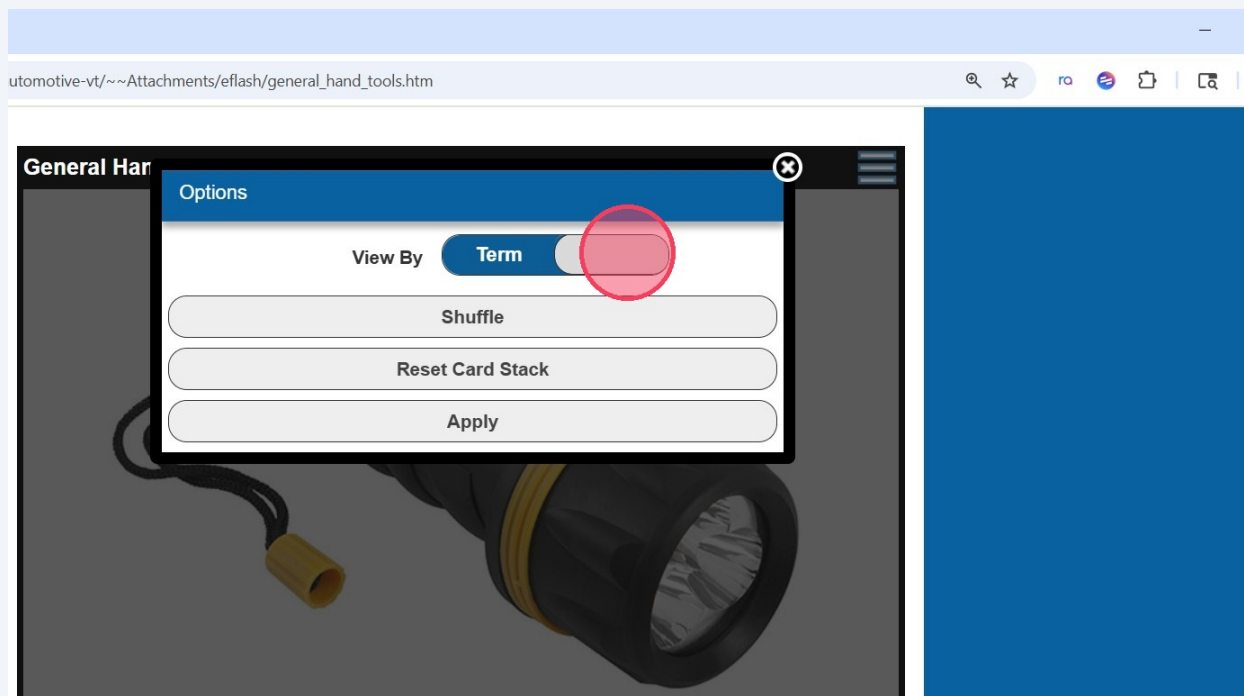
Socket Set

Previous Remove Next

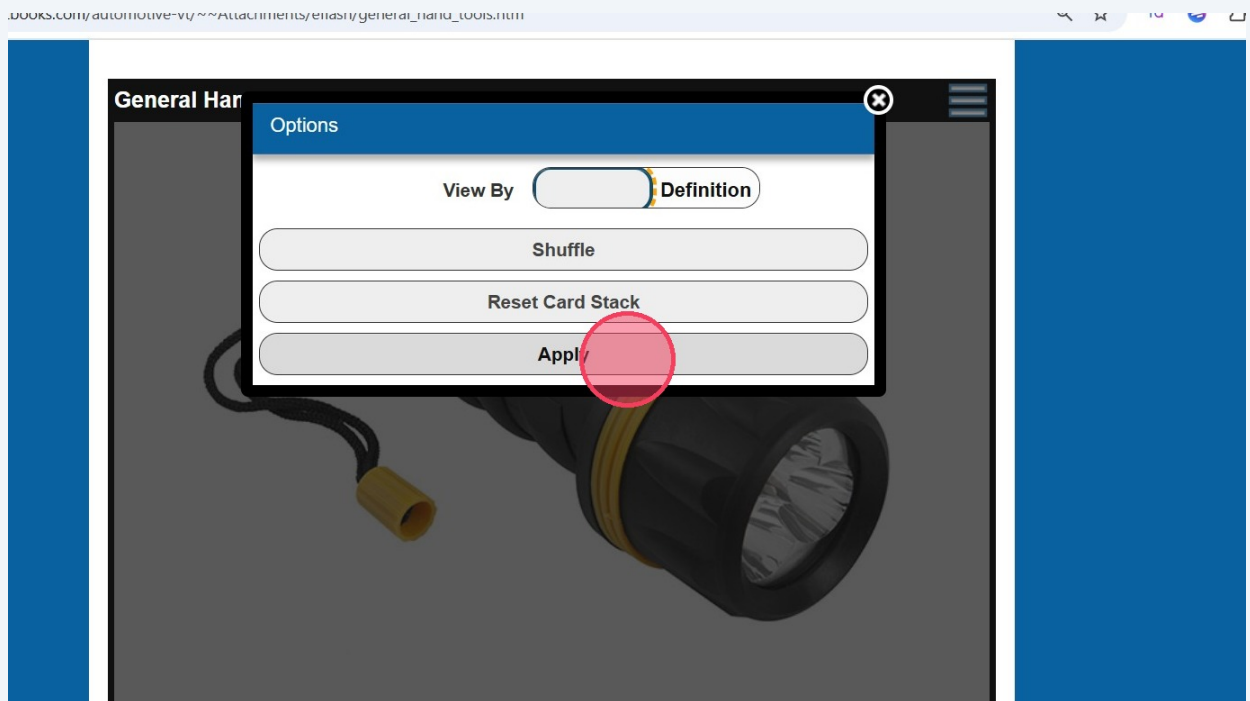
- 6 To see more options, select the Menu in the upper right-hand corner



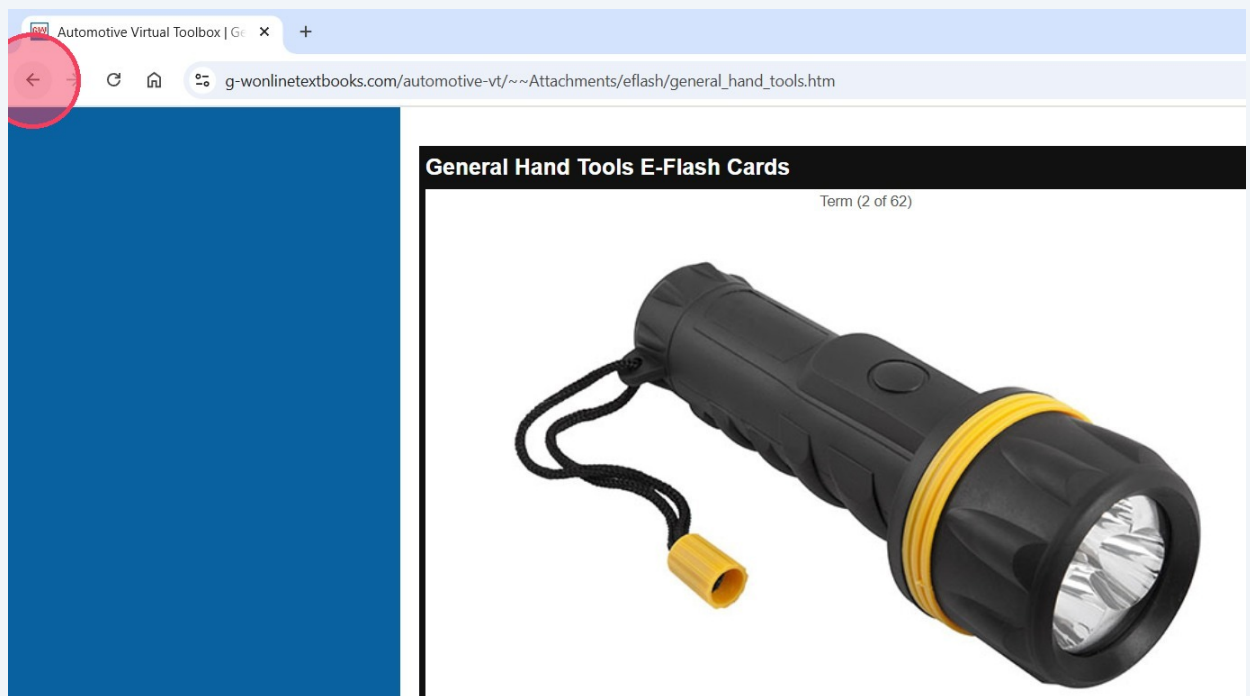
- 7 and change the "View By" Term or Definition



8 And Apply the changes when ready.



9 Select the Back button to return to the previous screen



10

and select a new category of cards or go back until you reach your Bookshelf of Digital Resources.

Automotive Virtual Toolbox

Toolbox E-Flash Cards

Toolbox E-flash cards make learning tool names easy! Pick a category from the list below and use the E-flash cards to become an expert. E-flash card includes an image of a tool on one side and the tool's name on the other. Click on the E-flash card to "flip it over" and see the other side. Some E-flash cards also include information about a tool, such as a short description or examples of what the tool is used for. Keep practicing with the E-flash cards in a category until you know all the tool names by heart; then move on to the next category!

- General Hand Tools
- General Shop Equipment
- ADAS Tools
- Auto Engine Repair

Navigating the ASE Video Library

11

Let's take a look at the ASE Video Library

Modern Automotive Technology 11e, Shop Manual

Modern Automotive Technology 11e, Instructor Resources

Modern Automotive Technology 11e, Image Library

Modern Automotive Technology 11e, Image Library

Automotive Virtual Toolbox

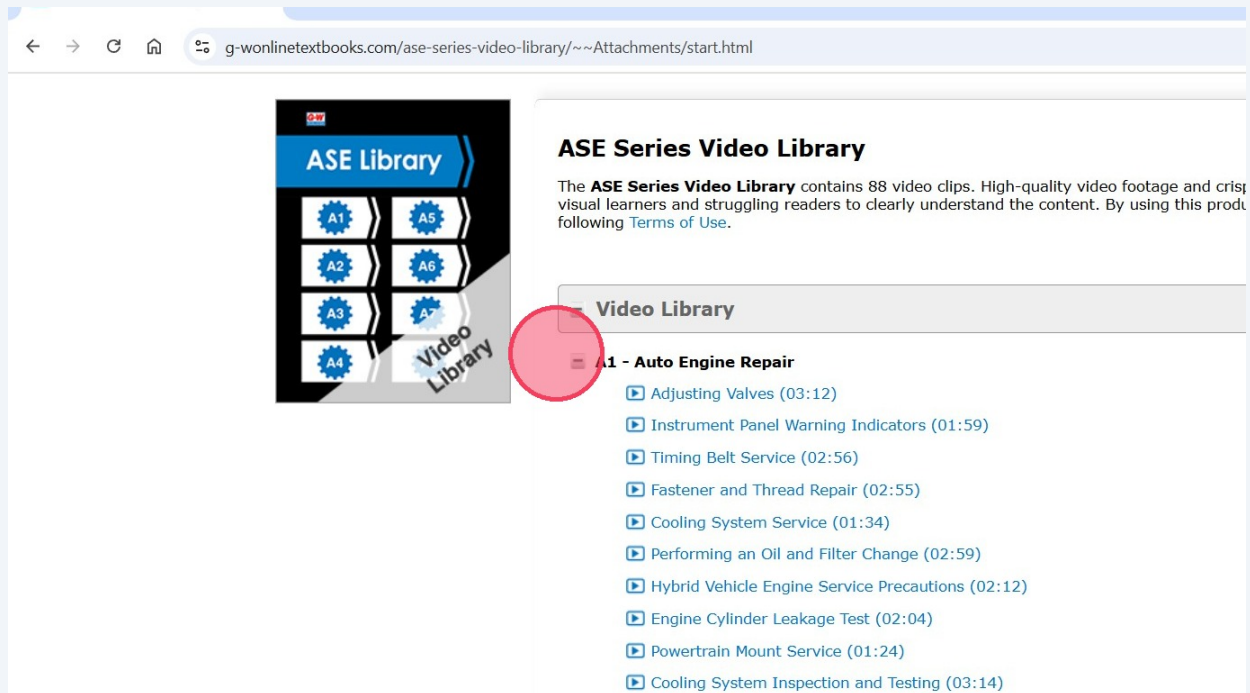
ASE Series Video Library

Multimeter Simulations

www.g-wonlinetextbooks.com/ase-series-video-library/~Attachments/start.html

12

The ASE Series Video Library contains 88 video clips divided into different sections from A1 - A8 of the ASE Series as well as a section on Safety.



← → ↻ 🏠 🔍 g-wonlinetextbooks.com/ase-series-video-library/~Attachments/start.html

ASE Library

ASE Series Video Library

The **ASE Series Video Library** contains 88 video clips. High-quality video footage and crisp visual learners and struggling readers to clearly understand the content. By using this product, please read the following [Terms of Use](#).

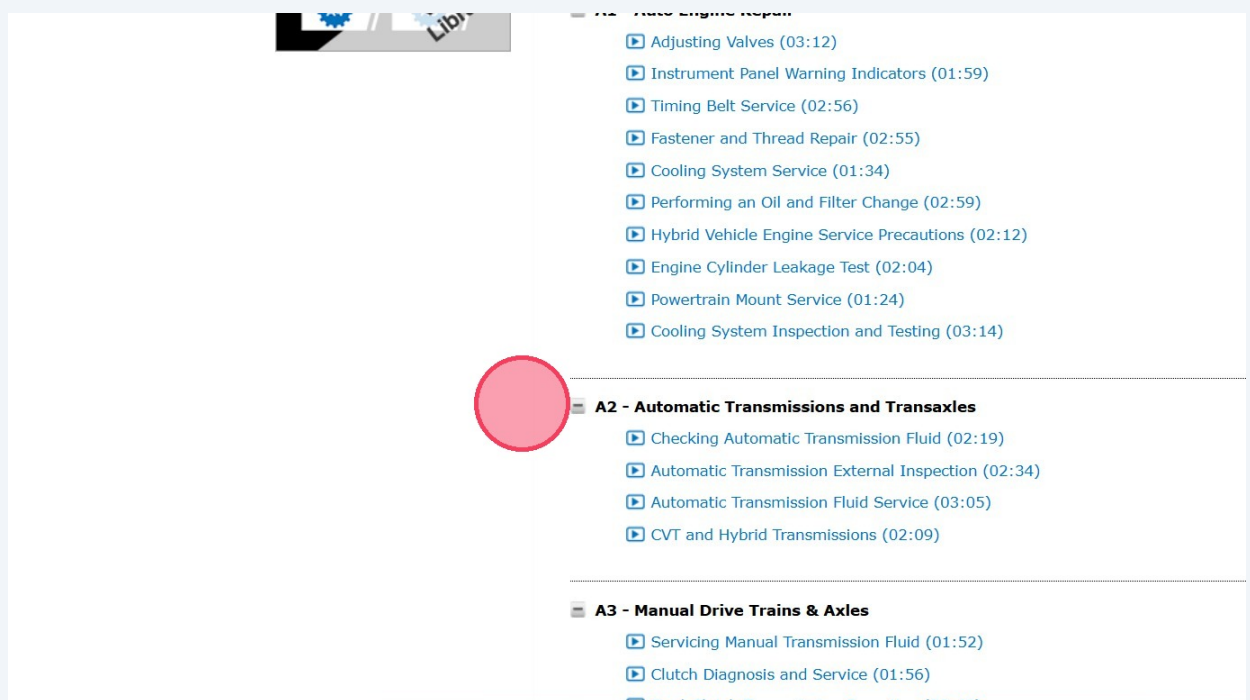
Video Library

A1 - Auto Engine Repair

- ▶ Adjusting Valves (03:12)
- ▶ Instrument Panel Warning Indicators (01:59)
- ▶ Timing Belt Service (02:56)
- ▶ Fastener and Thread Repair (02:55)
- ▶ Cooling System Service (01:34)
- ▶ Performing an Oil and Filter Change (02:59)
- ▶ Hybrid Vehicle Engine Service Precautions (02:12)
- ▶ Engine Cylinder Leakage Test (02:04)
- ▶ Powertrain Mount Service (01:24)
- ▶ Cooling System Inspection and Testing (03:14)

13

Instructors may use these videos to help struggling readers clearly understand the content.



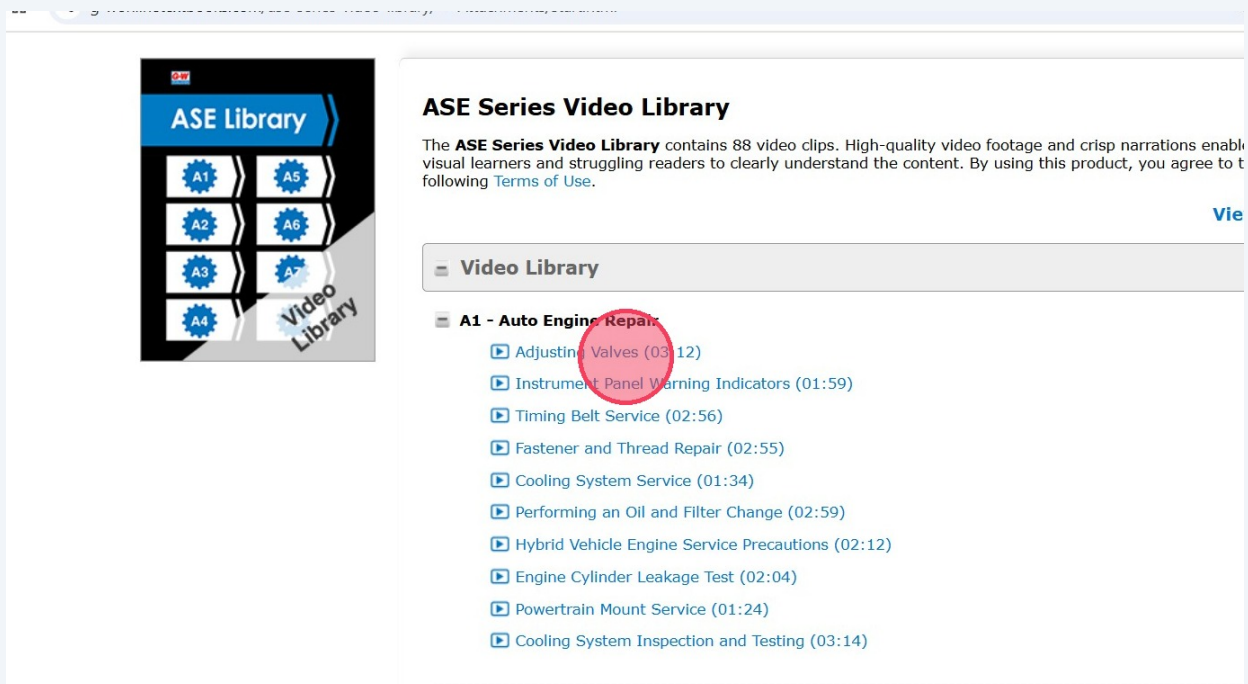
A2 - Automatic Transmissions and Transaxles

- ▶ Checking Automatic Transmission Fluid (02:19)
- ▶ Automatic Transmission External Inspection (02:34)
- ▶ Automatic Transmission Fluid Service (03:05)
- ▶ CVT and Hybrid Transmissions (02:09)

A3 - Manual Drive Trains & Axles

- ▶ Servicing Manual Transmission Fluid (01:52)
- ▶ Clutch Diagnosis and Service (01:56)

14 Select a link to view the video.



ASE Library

ASE Series Video Library

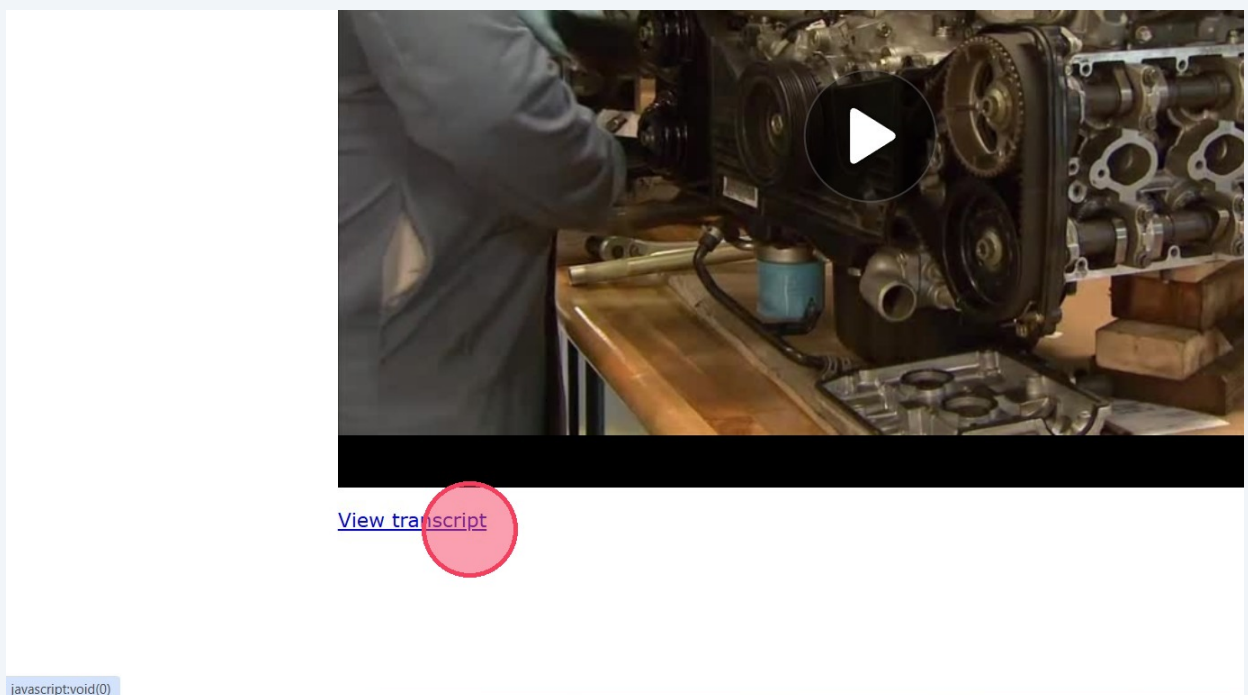
The **ASE Series Video Library** contains 88 video clips. High-quality video footage and crisp narrations enable visual learners and struggling readers to clearly understand the content. By using this product, you agree to the following [Terms of Use](#).

Video Library

A1 - Auto Engine Repair

- ▶ **Adjusting Valves (03:12)**
- ▶ Instrument Panel Warning Indicators (01:59)
- ▶ Timing Belt Service (02:56)
- ▶ Fastener and Thread Repair (02:55)
- ▶ Cooling System Service (01:34)
- ▶ Performing an Oil and Filter Change (02:59)
- ▶ Hybrid Vehicle Engine Service Precautions (02:12)
- ▶ Engine Cylinder Leakage Test (02:04)
- ▶ Powertrain Mount Service (01:24)
- ▶ Cooling System Inspection and Testing (03:14)

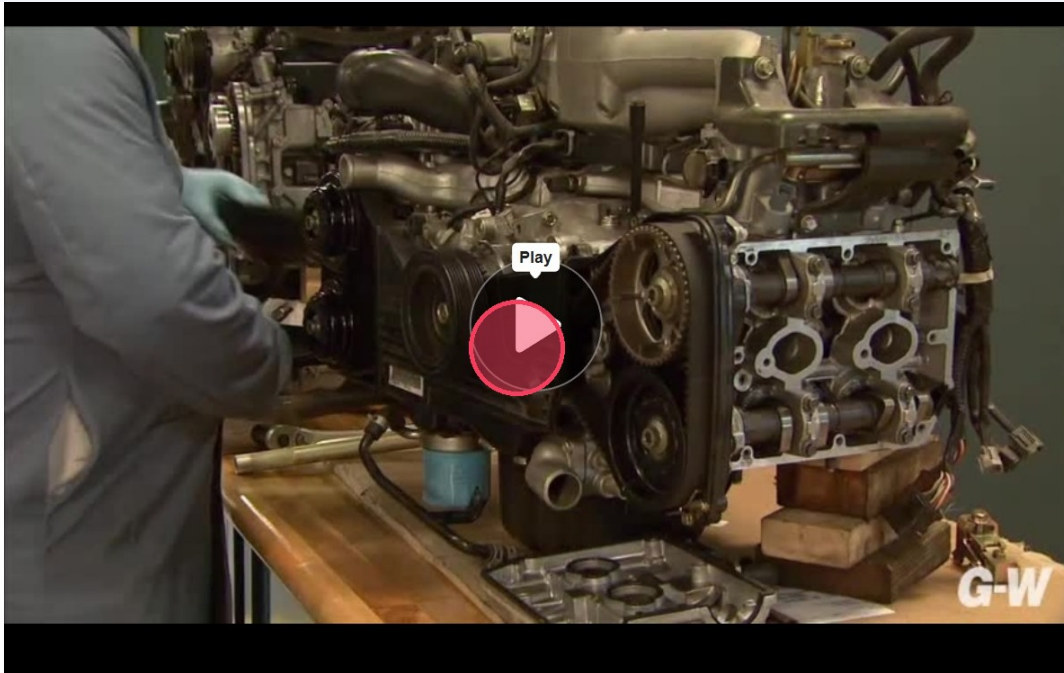
15 If you would like to view the transcript, please select the View transcript link beneath the video player.



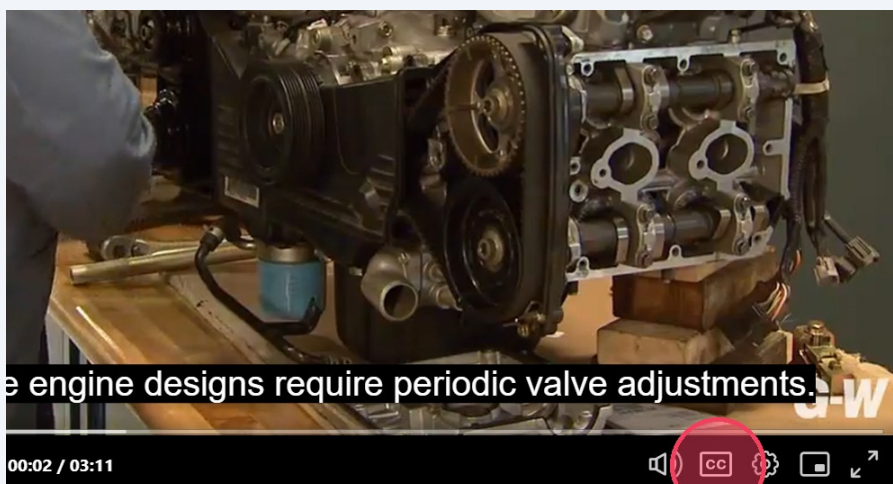
[View transcript](#)

javascriptvoid(0)

- 16 Select the Play button to view this video.



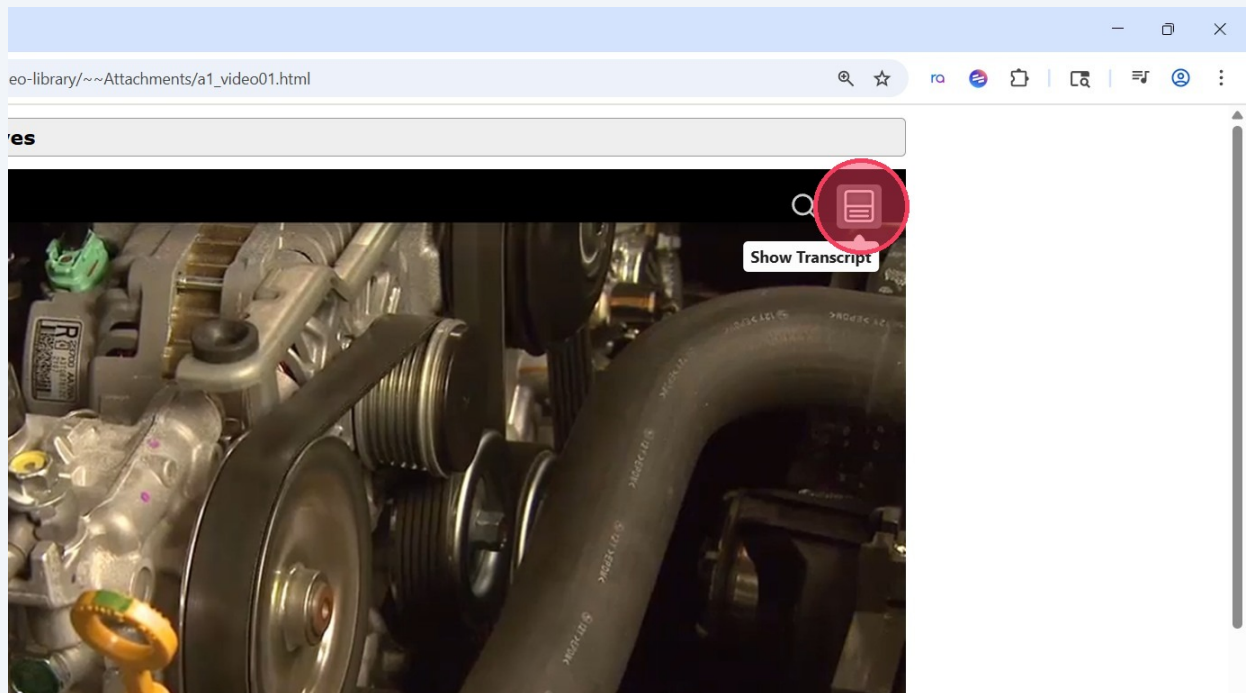
- 17 You may toggle the closed captioning feature on or off.



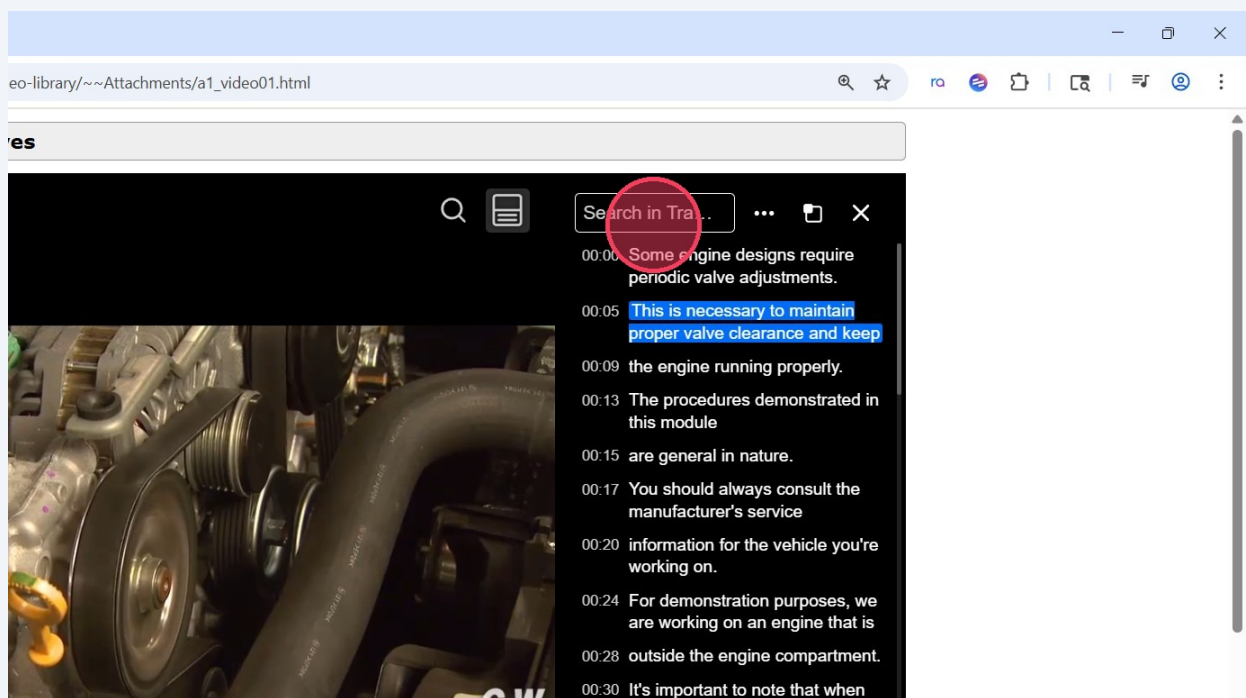
s

is require periodic valve adjustments. This is necessary to maintain proper valve clearance and keep the
perly.

- 18 Another Accessibility feature offered in the video player is a searchable transcript.

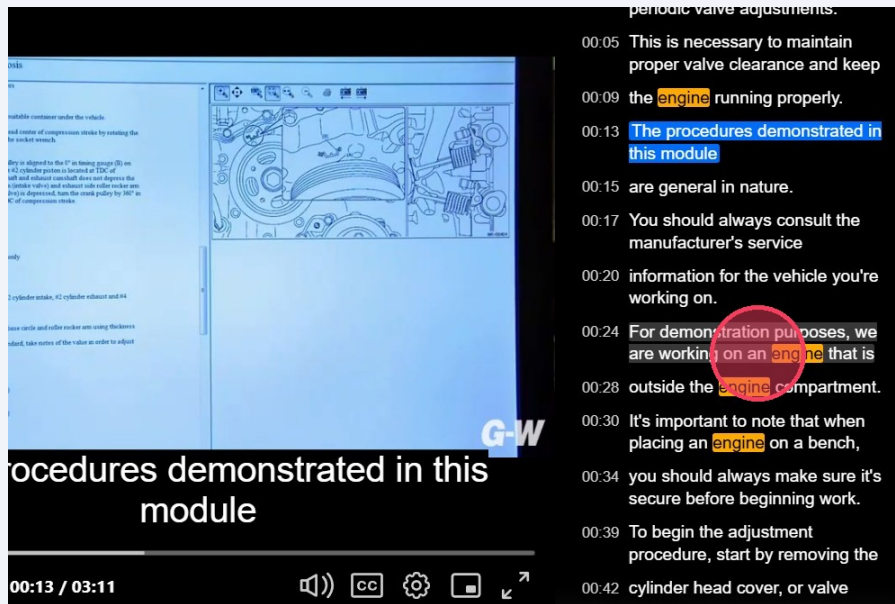


- 19 Some users may want to review a specific section of the video which they may do by conducting a keyword search in the transcript.



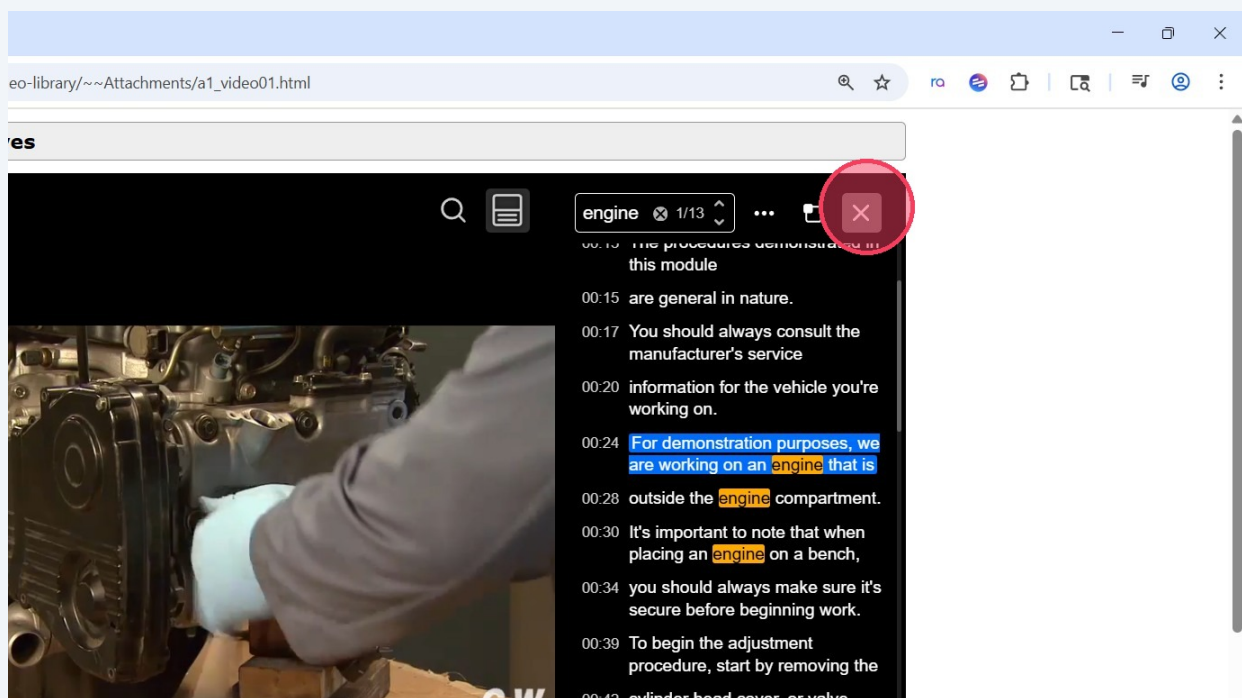
20

Once the search results appear, they may select the specific timestamp for that section of the video to which they'd like to skip.



21

Select the X to close this feature when you are ready to proceed with the video.



22

Other features including Pause, Volume, skipping ahead by 10 seconds or back are also available in this video player.



[Hide transcript](#)

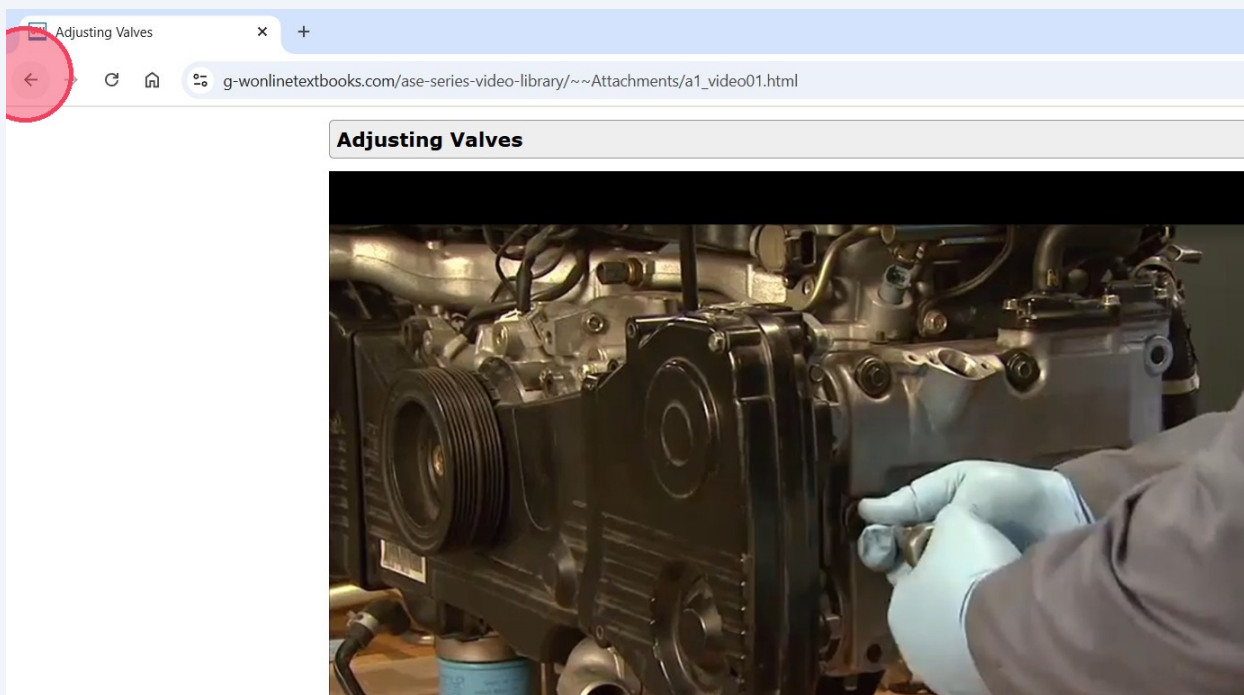
Transcript

Adjusting Valves

Some engine designs require periodic valve adjustments. This is necessary to maintain proper valve clearance an engine running properly.

23

Select the Back button to view the rest of the videos available in this title.



24

A section on Safety, General Service, and Repair Tasks may be found towards the bottom of the video library.

A8 - Auto Engine Performance and Driveability

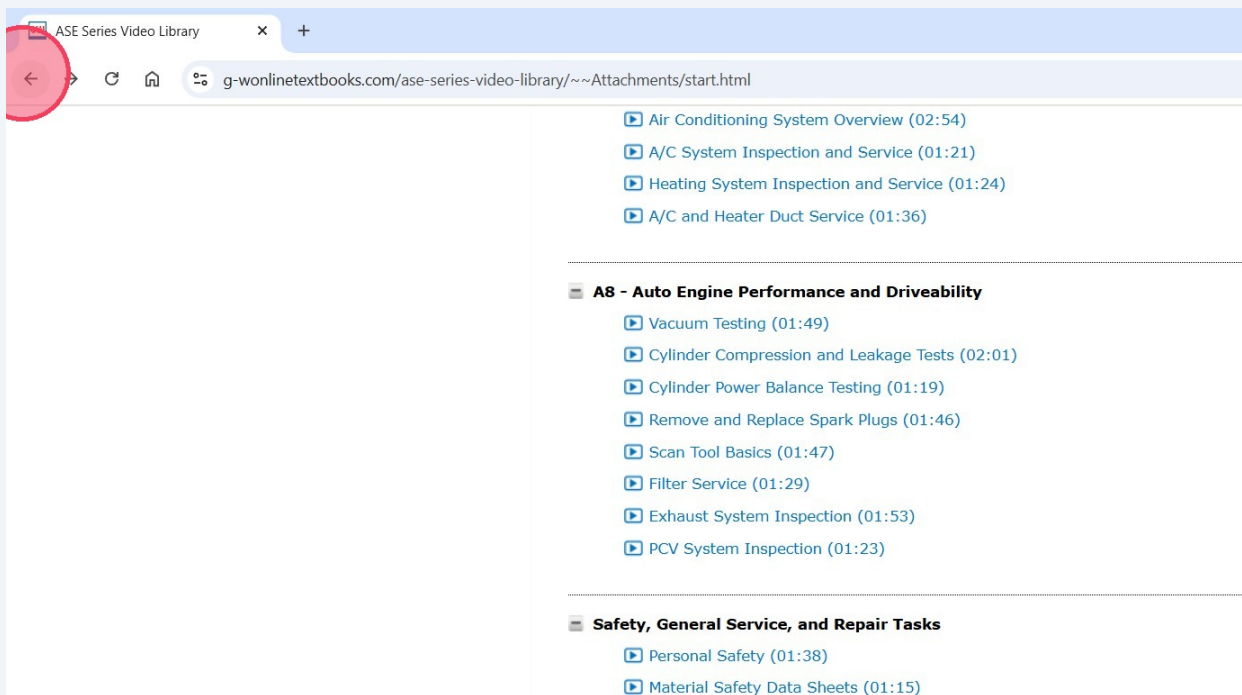
- ▶ Vacuum Testing (01:49)
- ▶ Cylinder Compression and Leakage Tests (02:01)
- ▶ Cylinder Power Balance Testing (01:19)
- ▶ Remove and Replace Spark Plugs (01:46)
- ▶ Scan Tool Basics (01:47)
- ▶ Filter Service (01:29)
- ▶ Exhaust System Inspection (01:53)
- ▶ PCV System Inspection (01:23)

Safety, General Service, and Repair Tasks

- ▶ Personal Safety (01:38)
- ▶ Material Safety Data Sheets (01:15)
- ▶ Lifting with a Hoist (03:25)
- ▶ Using a Floor Jack (01:17)
- ▶ Using a Fire Extinguisher (01:33)
- ▶ Vehicle Inspection Part A (03:18)
- ▶ Vehicle Inspection Part B (01:55)
- ▶ Measurements (02:04)
- ▶ Using a Micrometer (01:55)
- ▶ Vehicle Identification (01:28)

25

Select the Back arrow to return to the Bookshelf of Digital Resources.



The screenshot shows a web browser window with the title "ASE Series Video Library". The address bar displays the URL: g-wonlinetextbooks.com/ase-series-video-library/~Attachments/start.html. The browser's navigation bar includes a back arrow, which is circled in red. The main content area displays a list of video topics under the heading "A8 - Auto Engine Performance and Driveability". Below this, there is a section titled "Safety, General Service, and Repair Tasks" which is partially visible.

A8 - Auto Engine Performance and Driveability

- ▶ Air Conditioning System Overview (02:54)
- ▶ A/C System Inspection and Service (01:21)
- ▶ Heating System Inspection and Service (01:24)
- ▶ A/C and Heater Duct Service (01:36)

A8 - Auto Engine Performance and Driveability

- ▶ Vacuum Testing (01:49)
- ▶ Cylinder Compression and Leakage Tests (02:01)
- ▶ Cylinder Power Balance Testing (01:19)
- ▶ Remove and Replace Spark Plugs (01:46)
- ▶ Scan Tool Basics (01:47)
- ▶ Filter Service (01:29)
- ▶ Exhaust System Inspection (01:53)
- ▶ PCV System Inspection (01:23)

Safety, General Service, and Repair Tasks

- ▶ Personal Safety (01:38)
- ▶ Material Safety Data Sheets (01:15)

Navigating the Multimeter Simulations

26

Let's explore the **Multimeter Simulations** in Modern Automotive Technology.



Technology Manual



Modern Automotive Technology 11e, Instructor Resources



Modern Automotive Technology 11e, Image Library



Modern Automotive Technology 11e, G-W Assessment



Toolbox



ASE Series Video Library

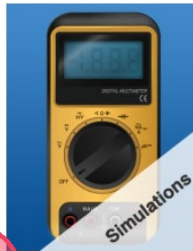


Multimeter Simulations



27

The Multimeter Simulations contain 12 simulations that consist of 24 individual problems.



Multimeter Simulations

The **Multimeter Simulations** contain 12 simulations that consist of 24 individual problems. They give student valuable experience performing voltage, amperage, and resistance measurements with a simulated multimeter. Students can practice installing the test leads in the correct meter jacks, selecting the proper meter function, preparing the circuit, and placing the test probes in the circuit without fear of damaging the meter.

In many of the simulations, students are given the circuit diagram and asked to predict the value before performing the multimeter test. This drills the students on the application of Ohm's law to simple circuits. The simulated tests then allow the students to test their predictions, providing immediate feedback. In the final simulations, students are asked to apply their knowledge of Ohm's law, the simulated multimeter, and basic circuits to perform simple troubleshooting exercises.

[Collap](#)

Simulation 1 Measuring Resistance in a Series Circuit ▼

▶ Simulation 1 Problem 1

Simulation 2 Measuring Amperage in a Series Circuit ▼

28

Looking at the first simulation, Measuring Resistance in a Series Circuit,

Multimeter Simulations

g-wonlinetextbooks.com/multimeter-simulations/~Attachments/start.html

The **Multimeter Simulations** contain 12 simulations that consist of 24 individual problems. They give student valuable experience performing voltage, amperage, and resistance measurements with a simulated multimeter. Students can practice installing the test leads in the correct meter jacks, selecting the proper meter function, preparing the circuit, and placing the test probes in the circuit without fear of damaging the meter.

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Collap

Simulation 1 Measuring Resistance in a Series Circuit ▼

▶ Simulation 1 Problem 1

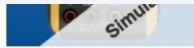
Simulation 2 Measuring Amperage in a Series Circuit ▼

▶ Simulation 2 Problem 1
▶ Simulation 2 Problem 2
▶ Simulation 2 Problem 3

Simulation 3 Measuring Voltage Drop in a Series Circuit ▼

▶ Simulation 3 Problem 1

29 select **Problem 1**.



The **Multimeter Simulations** contain 12 simulations that consist of 24 individual problems. They give student valuable experience performing voltage, amperage, and resistance measurements with a simulated multimeter. Students can practice installing the test leads in the correct meter jacks, selecting the proper meter function, preparing the circuit, and placing the test probes in the circuit without fear of damaging the meter.

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[Collap](#)

Simulation 1 Measuring Resistance in a Series Circuit ▼

[▶ Simulation 1 Problem 1](#)

Simulation 2 Measuring Amperage in a Series Circuit ▼

[▶ Simulation 2 Problem 1](#)

[▶ Simulation 2 Problem 2](#)

[▶ Simulation 2 Problem 3](#)

Simulation 3 Measuring Voltage Drop in a Series Circuit ▼

[▶ Simulation 3 Problem 1](#)

[▶ Simulation 3 Problem 2](#)

g-wonlinetextbooks.com/multimeter-simulations/~Attachments/~../index.html

30 In each simulation, students will be given the **Objective**

Multimeter Simulations

Measuring Resistance in a Series Circuit: Problem 1

Objective

In this problem, you will use the multimeter to measure resistance at various points in the series circuit.

Instructions

Select the correct multimeter lead locations and meter setting, and then choose the correct positions in the circuit. Use your mouse to drag and drop elements within the simulation or use the provided drop-down menus to operate the simulation.

Score

Each question has a possible score of 4 points. For each incorrect attempt at a question, you will lose 1 point. For a question incorrectly answered 2 times, you would get a score of 2 points (4 possible points – 2 incorrect attempts = 2 points).

Things To Remember

- The circuit must be disconnected from the power source when resistance measurements are made.

31 a set of **Instructions**,



Multimeter Simulations

Measuring Resistance in a Series Circuit: Problem 1



Objective

In this problem, you will use the multimeter to measure resistance at various points in the series circuit.



Instructions

Select the correct multimeter lead locations and meter setting, and then choose the correct positions in the circuit your mouse to drag and drop elements within the simulation or use the provided drop-down menus to operate the



Score

Each question has a possible score of 4 points. For each incorrect attempt at a question, you will lose 1 point. For a question incorrectly 2 times, you would get a score of 2 points (4 possible points – 2 incorrect attempts = 2 points).



Things To Remember

- The circuit must be disconnected from the power source when resistance measurements are made.
- The formula for calculating resistance in a series circuit is $R_T = R_1 + R_2 + R_3 + \dots$

32 an explanation of how the simulation will be scored,

Measuring Resistance in a Series Circuit: Problem 1



Objective

In this problem, you will use the multimeter to measure resistance at various points in the series circuit.



Instructions

Select the correct multimeter lead locations and meter setting, and then choose the correct positions in the circuit your mouse to drag and drop elements within the simulation or use the provided drop-down menus to operate the



Score

Each question has a possible score of 4 points. For each incorrect attempt at a question, you will lose 1 point. For a question incorrectly 2 times, you would get a score of 2 points (4 possible points – 2 incorrect attempts = 2 points).



Things To Remember

- The circuit must be disconnected from the power source when resistance measurements are made.
- The formula for calculating resistance in a series circuit is $R_T = R_1 + R_2 + R_3 + \dots$

33 and **Things to Remember** for this particular problem.



In this problem, you will use the multimeter to measure resistance at various points in the series circuit.



Instructions

Select the correct multimeter lead locations and meter setting, and then choose the correct positions in the circuit using your mouse to drag and drop elements within the simulation or use the provided drop-down menus to operate the simulation.



Score

Each question has a possible score of 4 points. For each incorrect attempt at a question, you will lose 1 point. For example, if you answered the first question incorrectly 2 times, you would get a score of 2 points (4 possible points – 2 incorrect attempts = 2 points).



Things To Remember

- The circuit must be disconnected from the power source when resistance measurements are made.
- The formula for calculating resistance in a series circuit is $R_T = R_1 + R_2 + R_3 + \dots$

34 After reading the instructions, select the "**Next**" button on the bottom right of the screen.

Select the correct multimeter lead locations and meter setting, and then choose the correct positions in the circuit for the probes. You can use either your mouse to drag and drop elements within the simulation or use the provided drop-down menus to operate the simulation.

Each question has a possible score of 4 points. For each incorrect attempt at a question, you will lose 1 point. For example, if you answered the first question incorrectly 2 times, you would get a score of 2 points (4 possible points – 2 incorrect attempts = 2 points).

The circuit must be disconnected from the power source when resistance measurements are made.
The formula for calculating resistance in a series circuit is $R_T = R_1 + R_2 + R_3 + \dots$

Next

35

Students can review the Objective and Instructions from this screen if they need a reminder.

Series Circuit: Problem 1

Skip to Content

Question 1

What is the resistance at point B?

Select the correct answer.

☐ 0 Ohms
☐ 1 Ohm
☐ 2 Ohms
☐ 12 Ohms

Submit

Objective

In this problem, you will use the multimeter to measure resistance at various points in the series circuit.

36

These simulations give students valuable experience performing voltage, amperage, and resistance measurements with a simulated multimeter.

Measuring Resistance in a Series Circuit: Problem 1

Battery

Connected

Disconnected

Multimeter Red Lead

☐ A
☐ mAμA
☐ VΩ
☐ Disconnected

Multimeter Black Lead

☐ COM
☐ Disconnected

12 V

Question 1

What is the resistance at point B?

Select the correct answer.

☐ 0 Ohms
☐ 1 Ohm
☐ 2 Ohms
☐ 1 Ohm

Submit

37

In many simulations, students are given the circuit diagram and asked to predict the value before performing the multimeter test.

Measuring Resistance in a Series Circuit. Problem 1

Battery

☐ Connected

☒ Disconnected

Multimeter Red Lead

☐ A

☒ mA μ A

☐ V Ω

☐ Disconnected

Multimeter Black Lead

☐ COM

☐ Disconnected

Multimeter Setting

☐ OFF

Question

What point

Select

☐ 0

☐ 1

☐ 2

☐ 1

Submit

38

The simulated meter tests allow students to test their predictions, providing immediate feedback.

☐ A

☐ mA μ A

☐ V Ω

☐ Disconnected

Multimeter Black Lead

☐ COM

☐ Disconnected

Multimeter Setting

OFF

AC Voltage

DC Voltage

AC Millivolts

Ohms

Diode Test

Amps/Milliamps

Microamps

Question

What point

Select

☐ 1

☐ 2

☐ 1

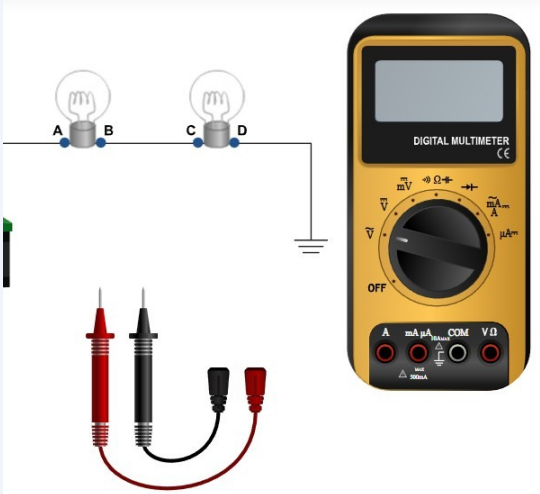
Submit

39 Find the **Question** to the right of the screen,

Simulations/~/Attachments/simulation_01_problem_01/index1.html

Series Circuit: Problem 1

[Skip to Content](#)



Question 1

What is the resistance between point A and point B?

Select the correct option, and then select Submit.

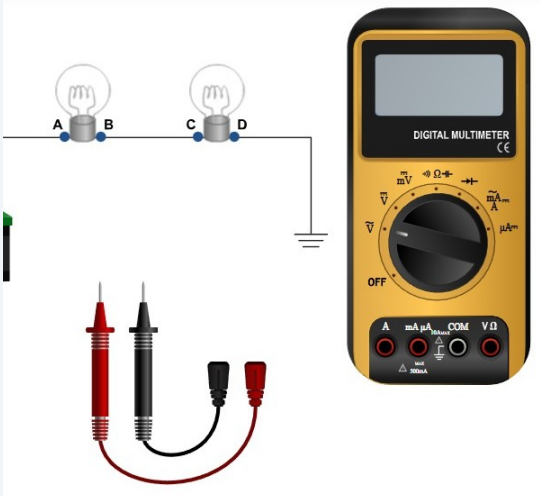
- ☐ 0 Ohms
- ☐ 1 Ohm
- ☐ 2 Ohms
- ☐ 12 Ohms

[Submit](#)

40 select an answer,

Series Circuit: Problem 1

[Skip to Content](#)



Question 1

What is the resistance between point A and point B?

Select the correct option, and then select Submit.

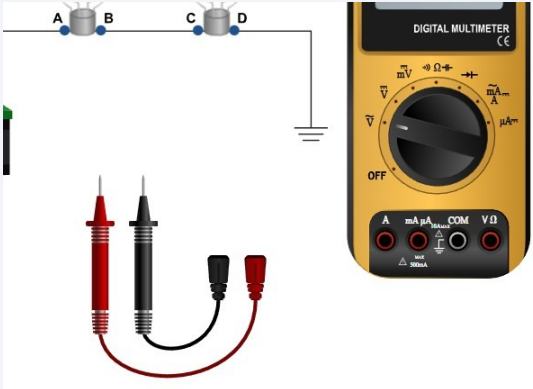
- ☐ 0 Ohms
- ☒ 1 Ohm
- ☐ 2 Ohms
- ☐ 12 Ohms

[Submit](#)

Inter Red Probe: Disconnected

Multimeter Black Probe: Disconnected

41 and select the **Submit** button.



ter Red Probe
Disconnected

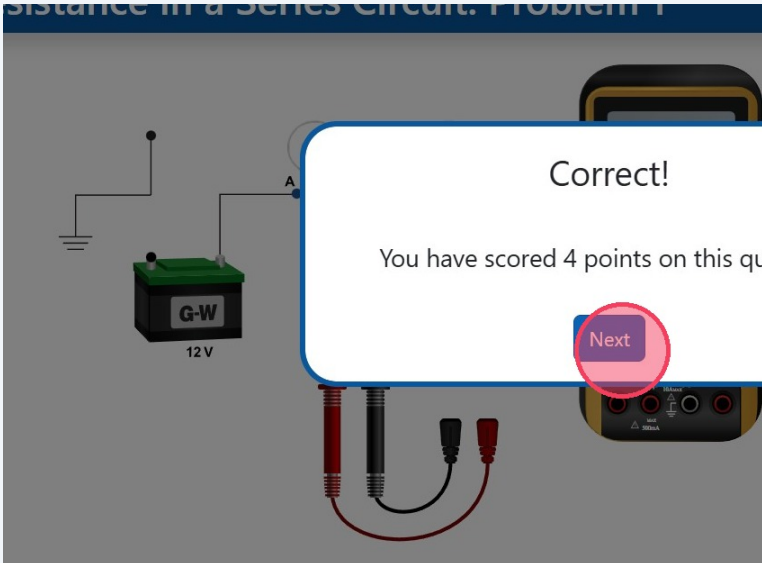
Multimeter Black Probe
Disconnected

Select the correct option, and then select Submit.

- ☐ 0 Ohms
- ☒ 1 Ohm
- ☐ 2 Ohms
- ☐ 12 Ohms

Submit

42 If you answer correctly the first time, you get the highest point value for that question.



Correct!

You have scored 4 points on this question.

Next

Question 1
What is the resistance between point B?

Select the correct option, and then .

- ☐ 0 Ohms
- ☒ 1 Ohm
- ☐ 2 Ohms
- ☐ 12 Ohms

Submit

Multimeter Red Probe
Disconnected

Multimeter Black Probe
Disconnected

43 The next question will appear.

simulations/~/Attachments/simulation_01_problem_01/index1.html

Series Circuit: Problem 1

[Skip to Content](#)

Question 2

What is the resistance between point C and point D?

Select the correct option, and then select Submit.

- ☐ 0 Ohms
- ☐ 1 Ohm
- ☐ 2 Ohms
- ☐ 12 Ohms

Submit

44 Make your selection and hit the **Submit** button.

After Red Probe

Disconnected

Multimeter Black Probe

Disconnected

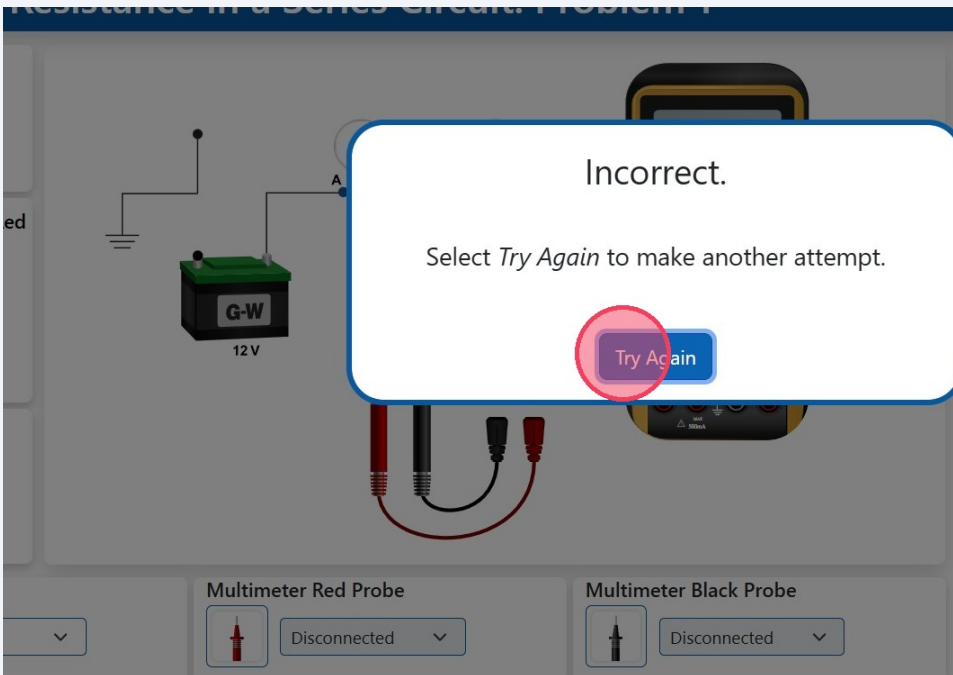
Select the correct option, and then select Submit.

- ☐ 0 Ohms
- ☐ 1 Ohm
- ☐ 2 Ohms
- ☒ 12 Ohms

Submit

45 If you choose incorrectly, you may **Try Again**

Resistance in a Series Circuit: Problem 1



Question 2

What is the resistance between point D?

Select the correct option, and then select Submit.

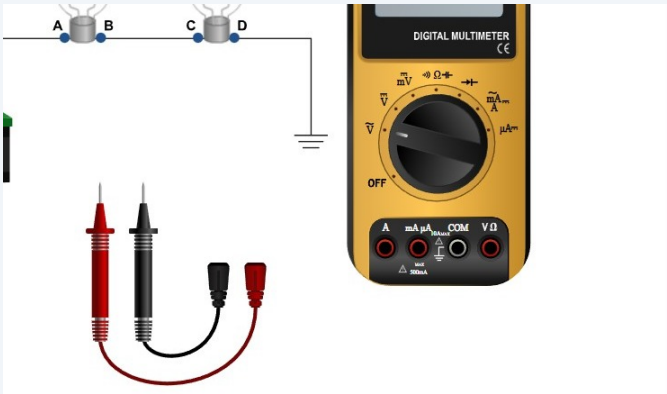
- ☐ 0 Ohms
- ☐ 1 Ohm
- ☐ 2 Ohms
- ☐ 12 Ohms

Submit

Multimeter Red Probe: Disconnected

Multimeter Black Probe: Disconnected

46 but each inaccurate attempt



Select the correct option, and then select Submit.

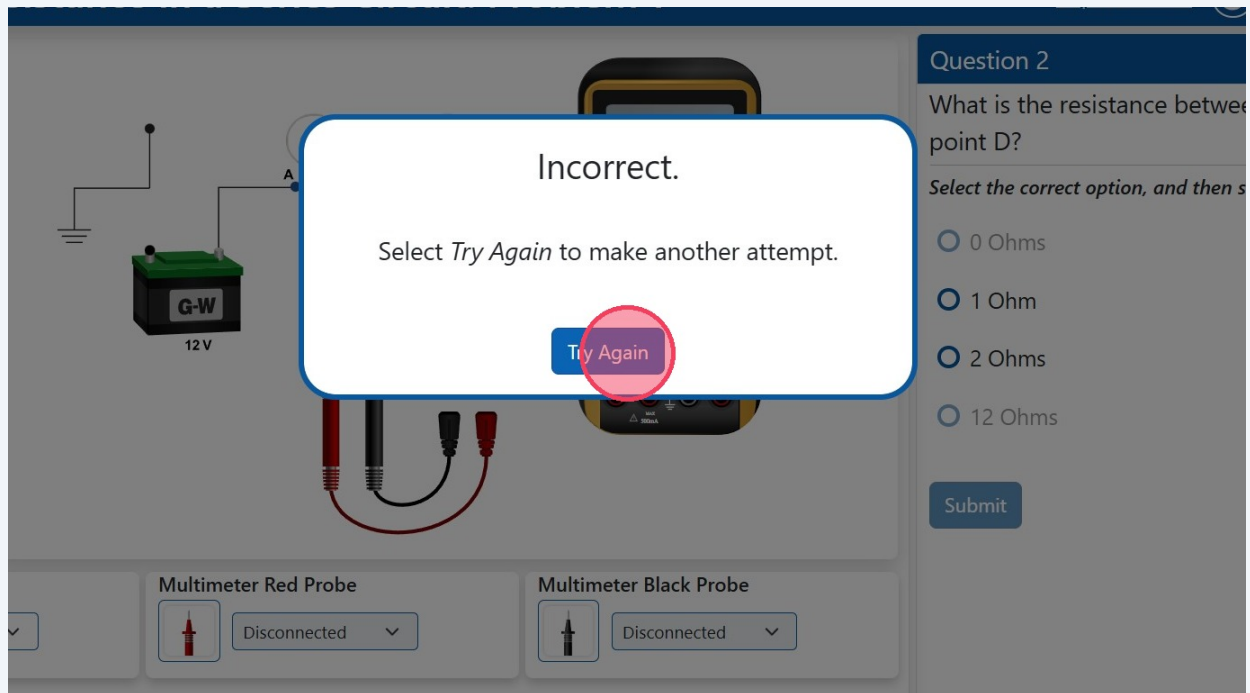
- ☒ 0 Ohms
- ☐ 1 Ohm
- ☐ 2 Ohms
- ☐ 12 Ohms

Submit

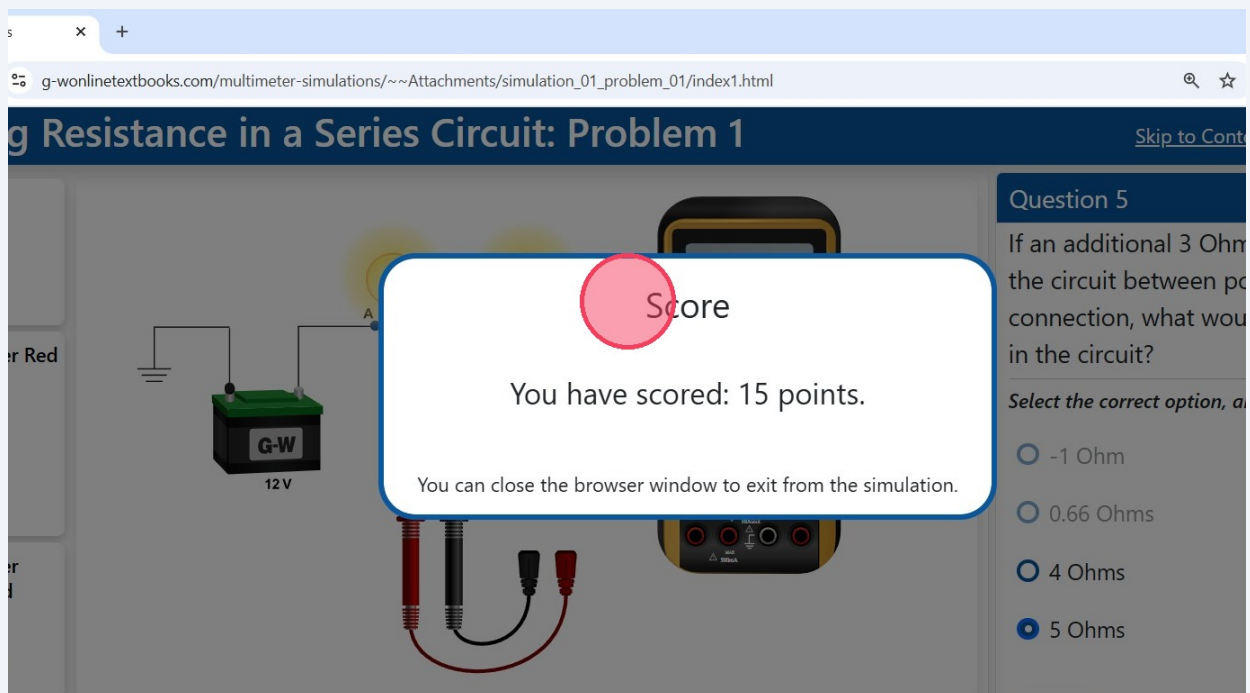
Multimeter Red Probe: Disconnected

Multimeter Black Probe: Disconnected

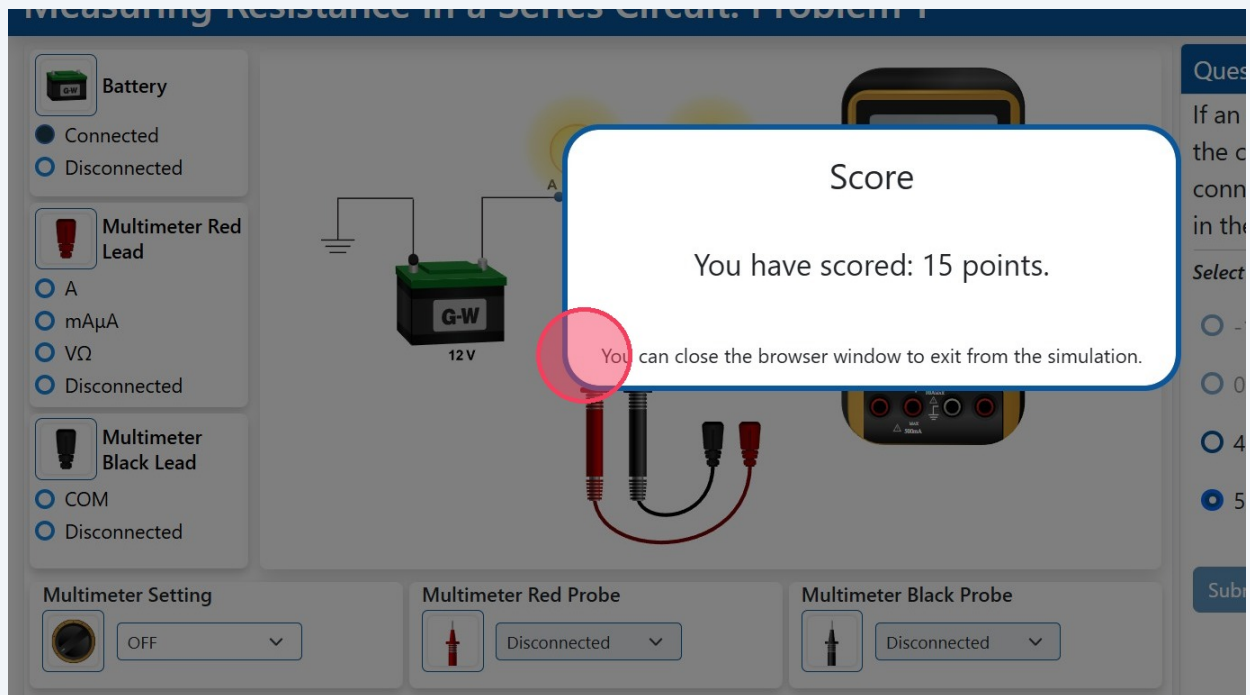
47 results in a lower point value toward your final score.



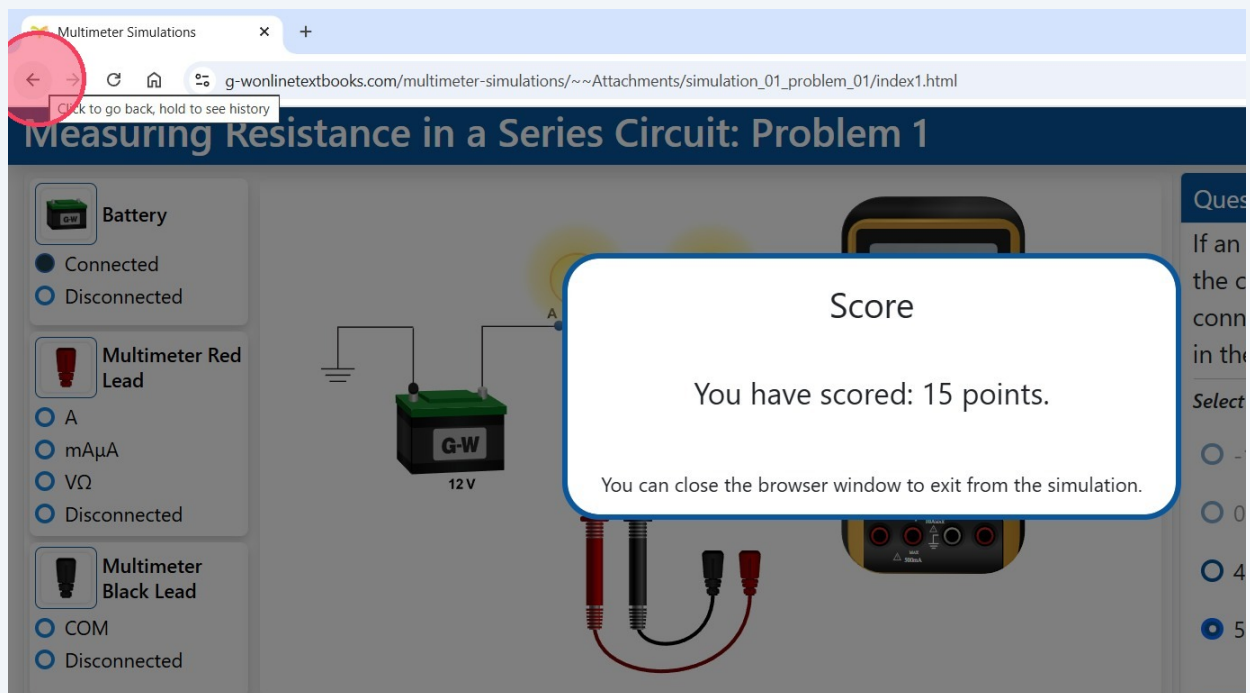
48 Once you have completed the simulation, you will be given a final score.



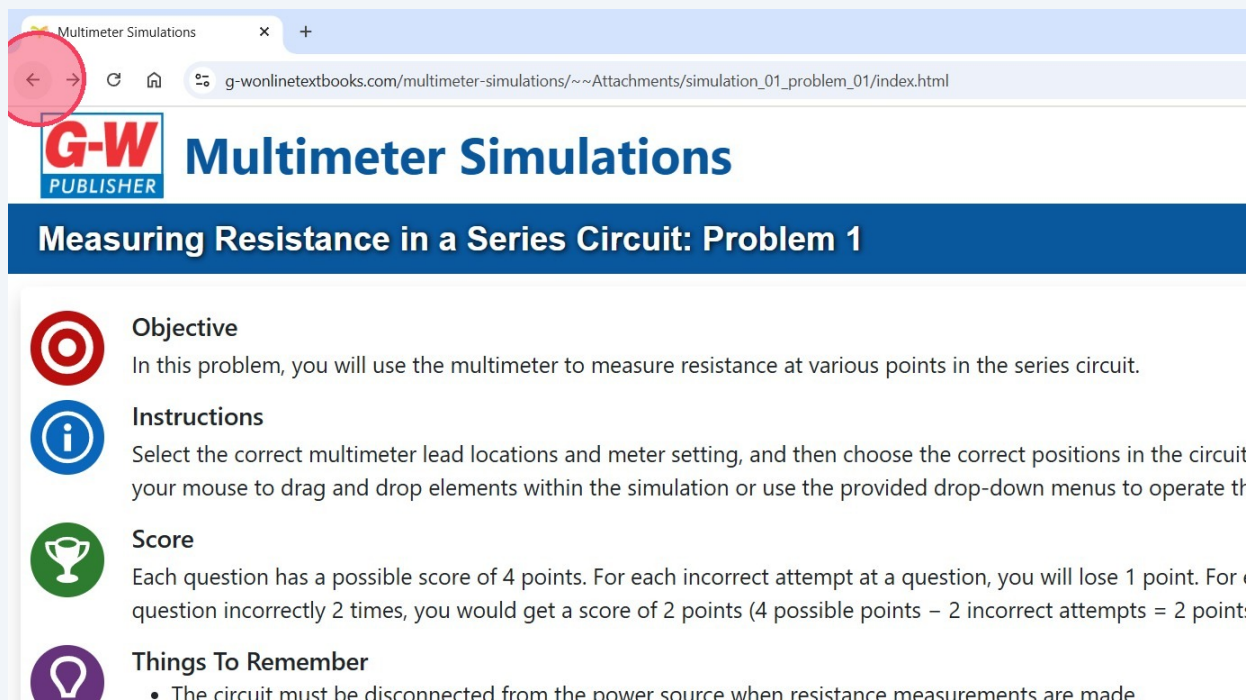
- 49 If you would like to give students a grade for completing the Simulations



- 50 one suggestion is to have them take a screenshot of the score and send that to you, digitally.



51 Select the **Back** arrow to go back to the instructions screen



Objective
In this problem, you will use the multimeter to measure resistance at various points in the series circuit.

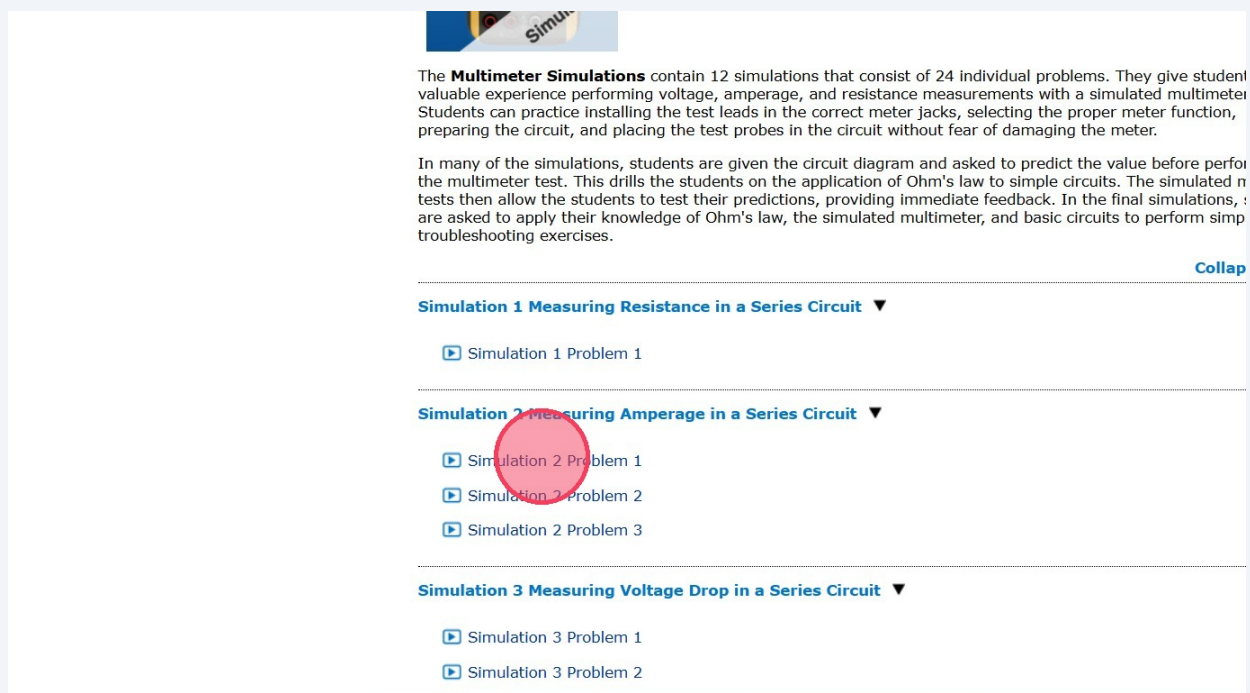
Instructions
Select the correct multimeter lead locations and meter setting, and then choose the correct positions in the circuit your mouse to drag and drop elements within the simulation or use the provided drop-down menus to operate the

Score
Each question has a possible score of 4 points. For each incorrect attempt at a question, you will lose 1 point. For a question incorrectly 2 times, you would get a score of 2 points (4 possible points – 2 incorrect attempts = 2 points).

Things To Remember

- The circuit must be disconnected from the power source when resistance measurements are made.

52 and either select another simulation, or go back to the bookshelf of resources.



The **Multimeter Simulations** contain 12 simulations that consist of 24 individual problems. They give student valuable experience performing voltage, amperage, and resistance measurements with a simulated multimeter. Students can practice installing the test leads in the correct meter jacks, selecting the proper meter function, preparing the circuit, and placing the test probes in the circuit without fear of damaging the meter.

In many of the simulations, students are given the circuit diagram and asked to predict the value before performing the multimeter test. This drills the students on the application of Ohm's law to simple circuits. The simulated tests then allow the students to test their predictions, providing immediate feedback. In the final simulations, students are asked to apply their knowledge of Ohm's law, the simulated multimeter, and basic circuits to perform simple troubleshooting exercises.

[Collap](#)

Simulation 1 Measuring Resistance in a Series Circuit ▼

- ▶ Simulation 1 Problem 1

Simulation 2 Measuring Amperage in a Series Circuit ▼

- ▶ Simulation 2 Problem 1
- ▶ Simulation 2 Problem 2
- ▶ Simulation 2 Problem 3

Simulation 3 Measuring Voltage Drop in a Series Circuit ▼

- ▶ Simulation 3 Problem 1
- ▶ Simulation 3 Problem 2