

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

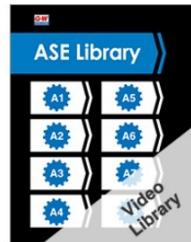


Modern Automotive Technology 11e, Image Library

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.



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

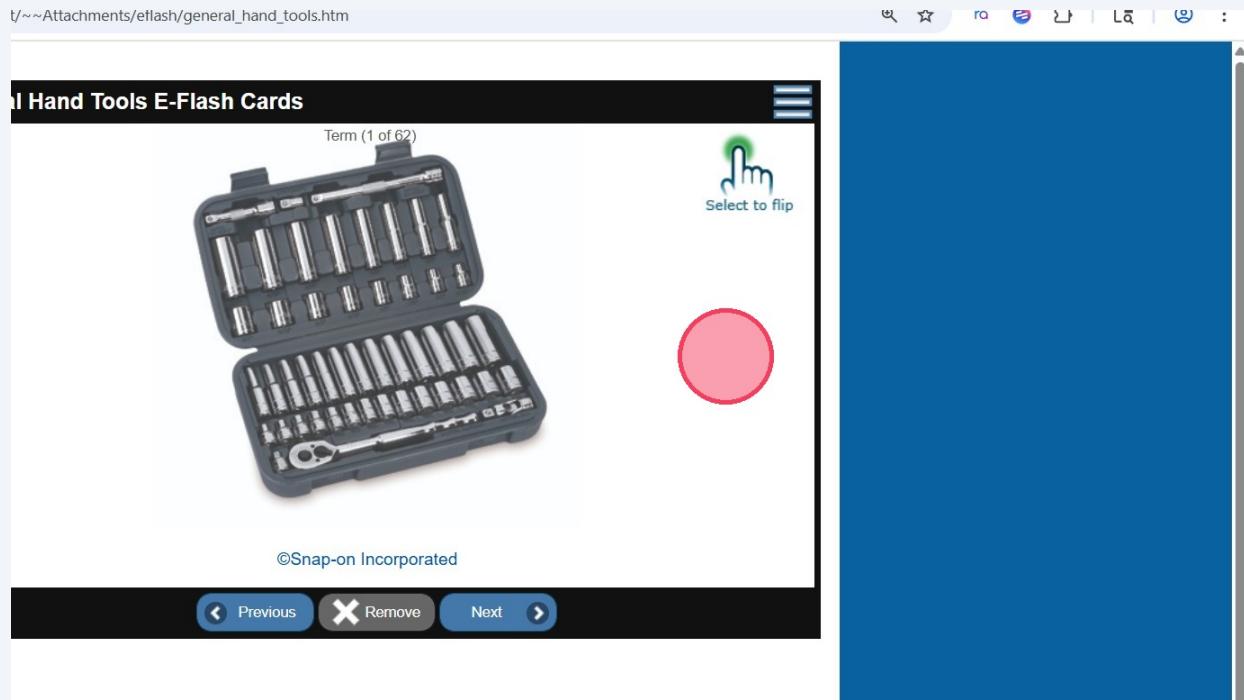
 Automatic Transmissions and Transaxles

 Manual Drive Trains and Axles

 Auto Brakes

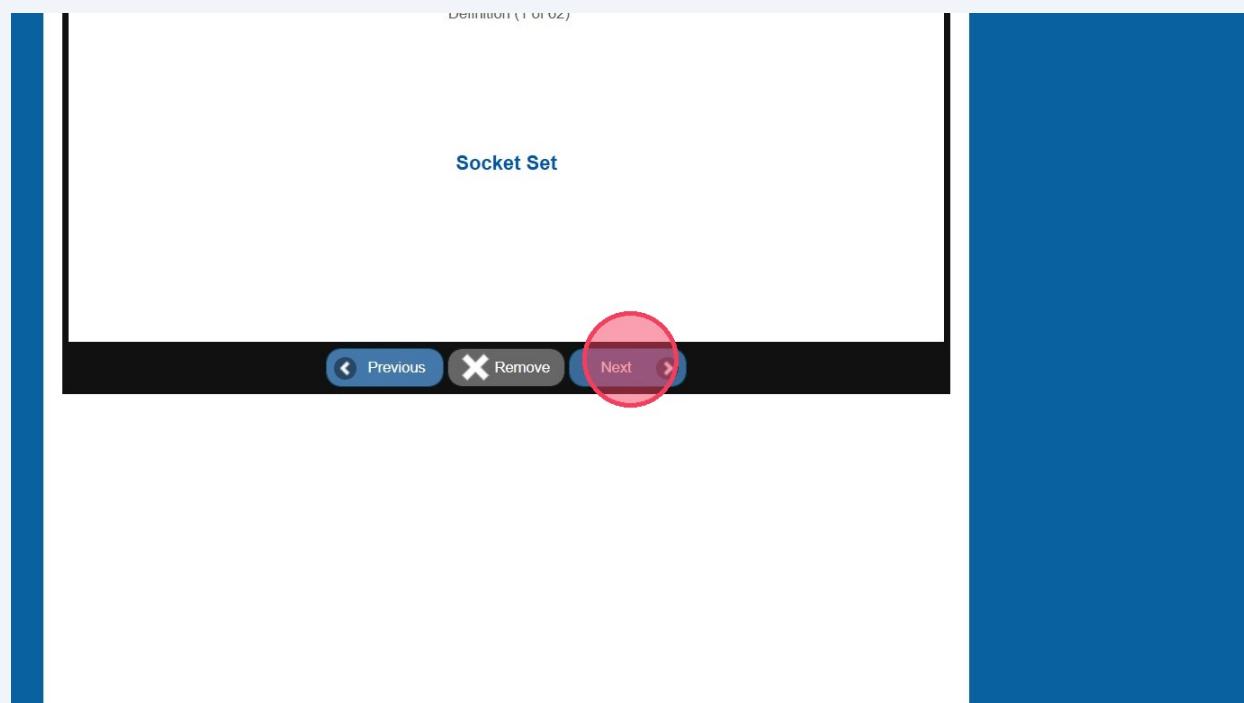
4

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.

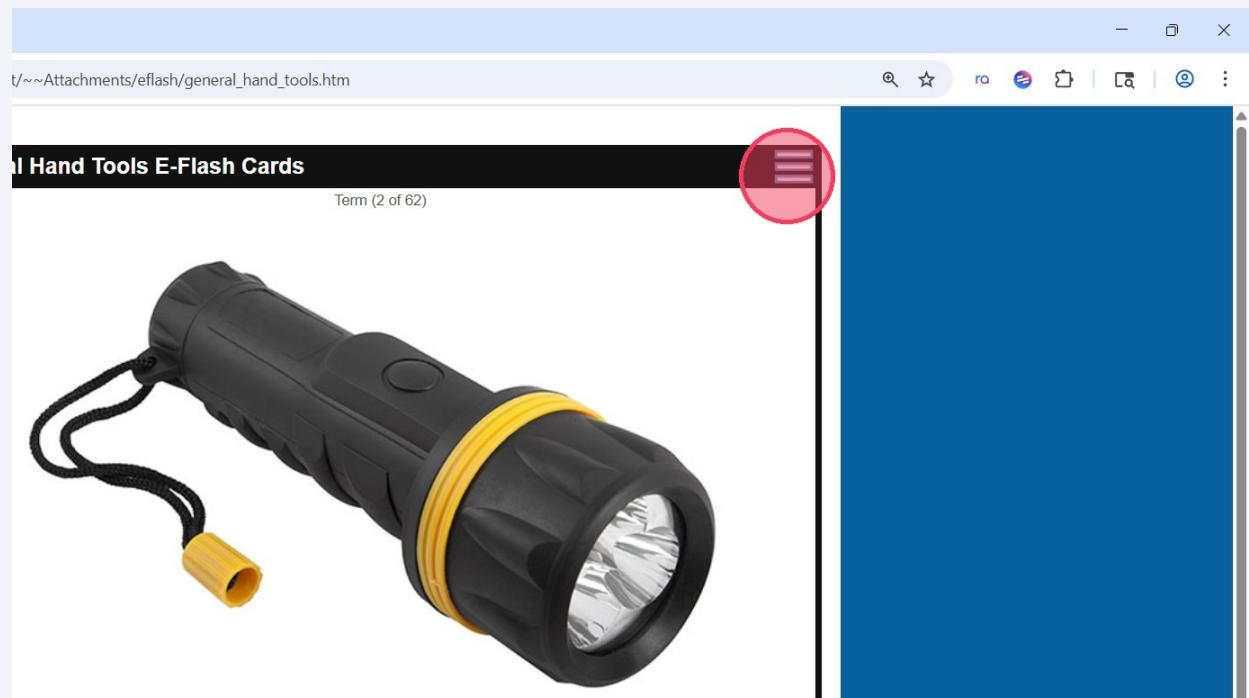


5

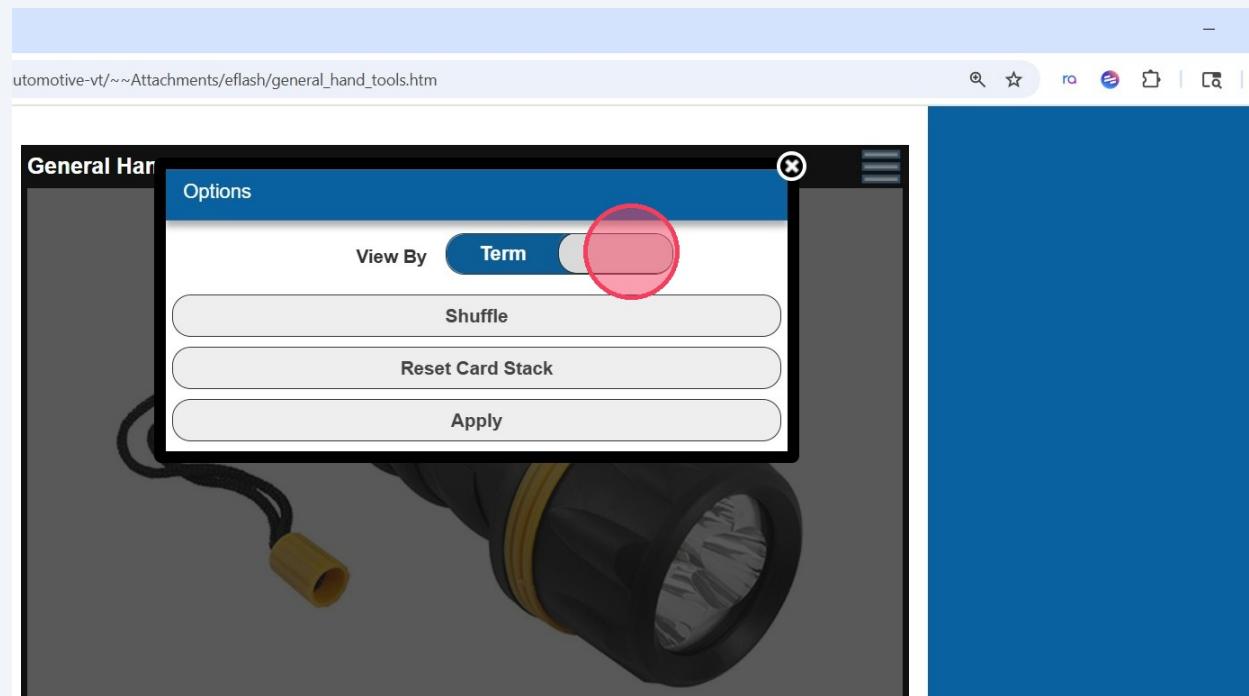
Select Next to go to the next tool.



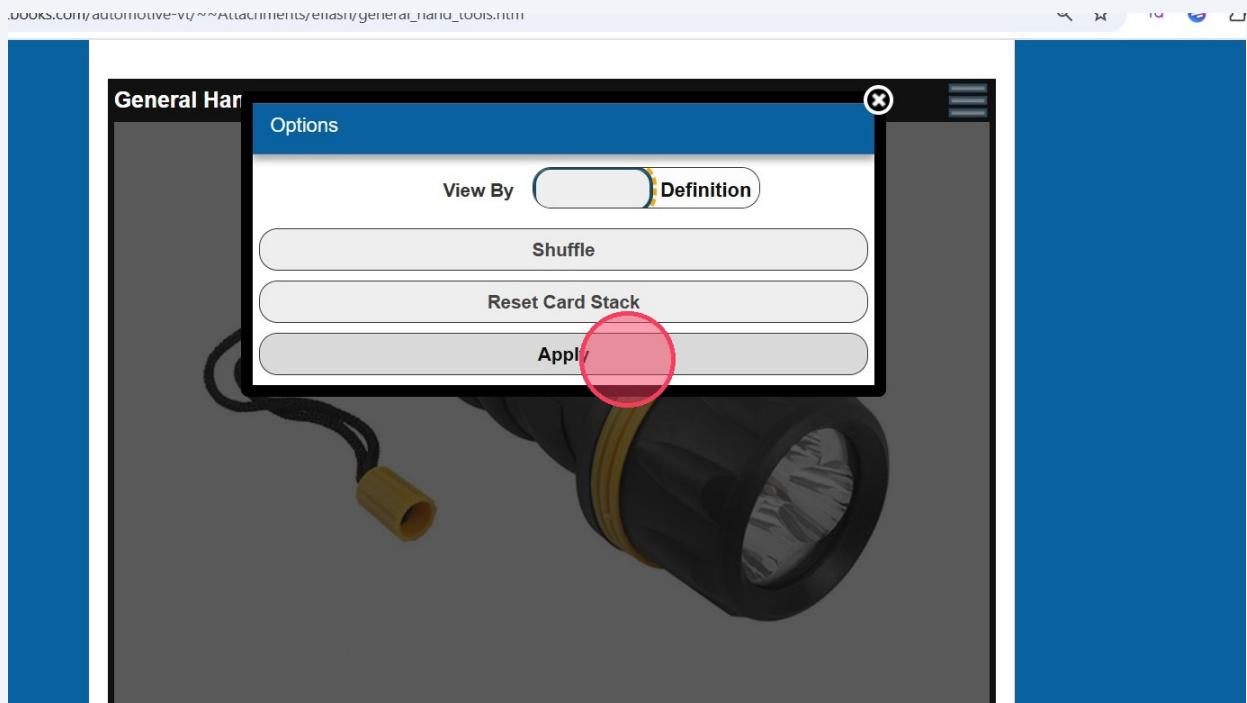
6 To see more options, select the Menu in the upper right-hand corner



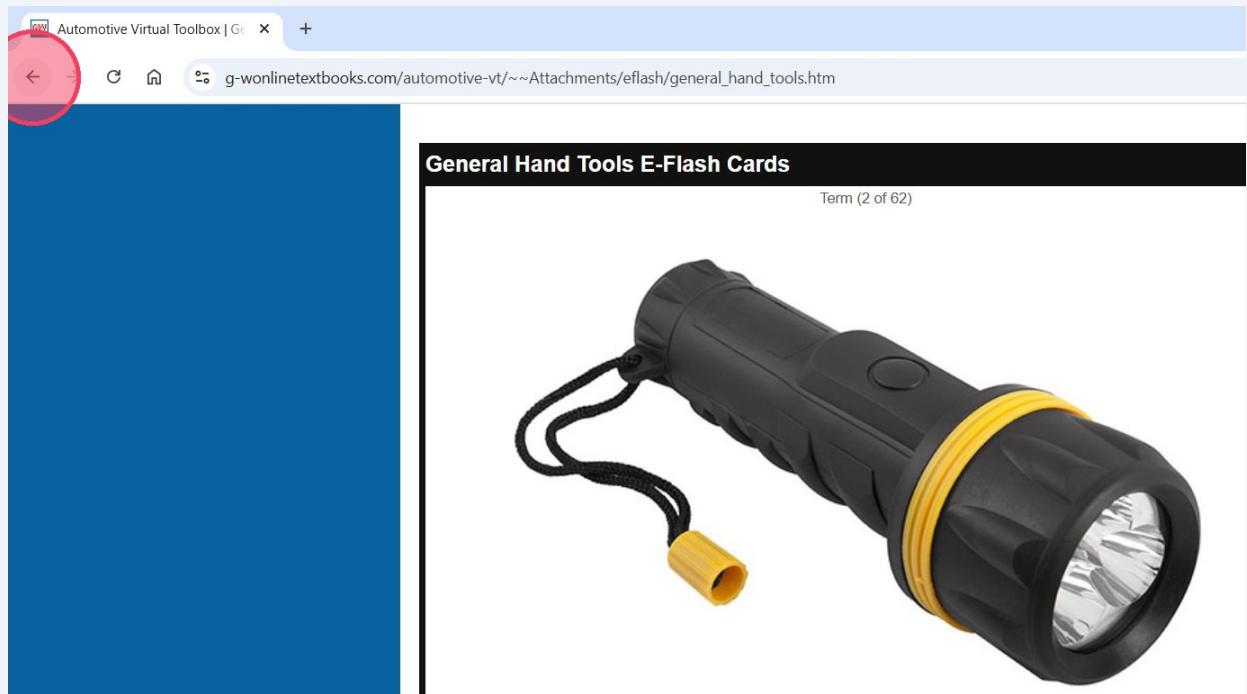
7 and change the "View By" Term or Definition



8 And Apply the changes when ready.

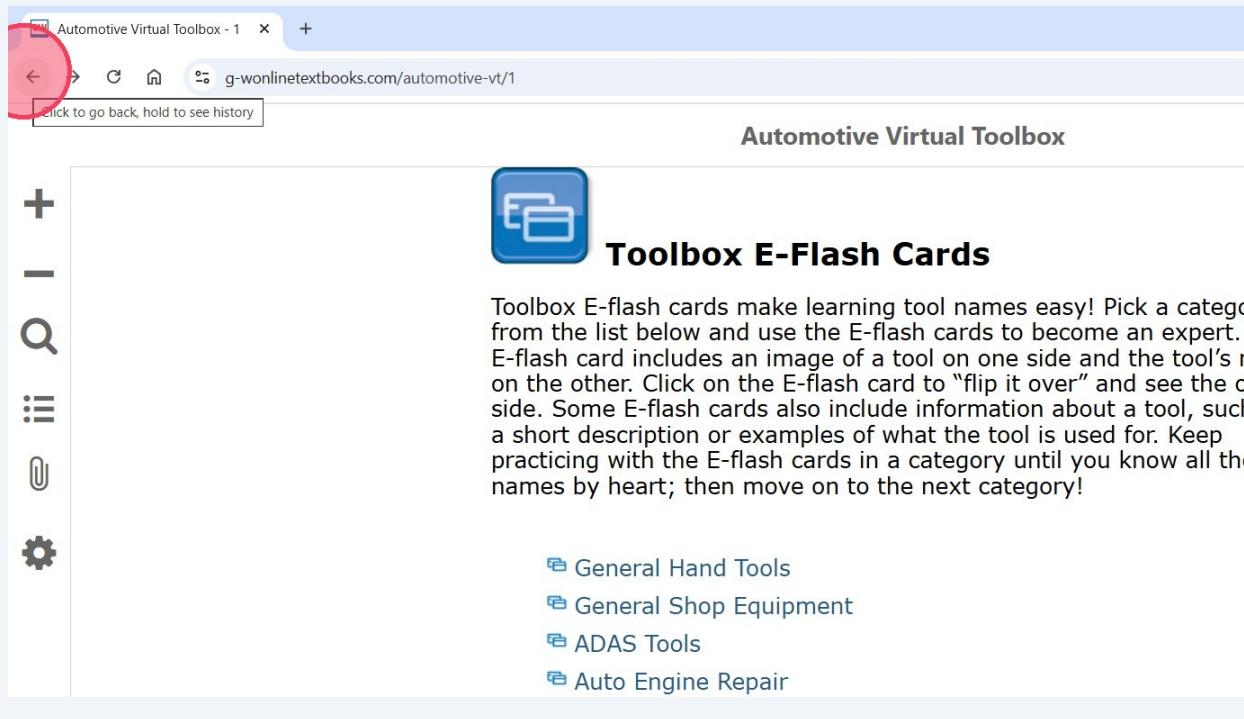


9 Select the Back button to return to the previous screen



10

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



The screenshot shows a web browser window titled 'Automotive Virtual Toolbox - 1'. The URL is 'g-wonlinetextbooks.com/automotive-vt/1'. A red circle highlights the browser's back button. Below the browser is a sidebar with icons for zoom, search, and other functions. The main content area is titled 'Automotive Virtual Toolbox' and 'Toolbox E-Flash Cards'. It explains that E-flash cards make learning tool names easy, with categories like General Hand Tools, General Shop Equipment, ADAS Tools, and Auto Engine Repair. A red circle highlights the 'Toolbox E-Flash Cards' title.

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 names by heart; then move on to the next category!

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

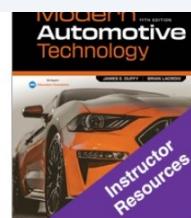
Navigating the ASE Video Library

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
11e
ASE
Video
Library



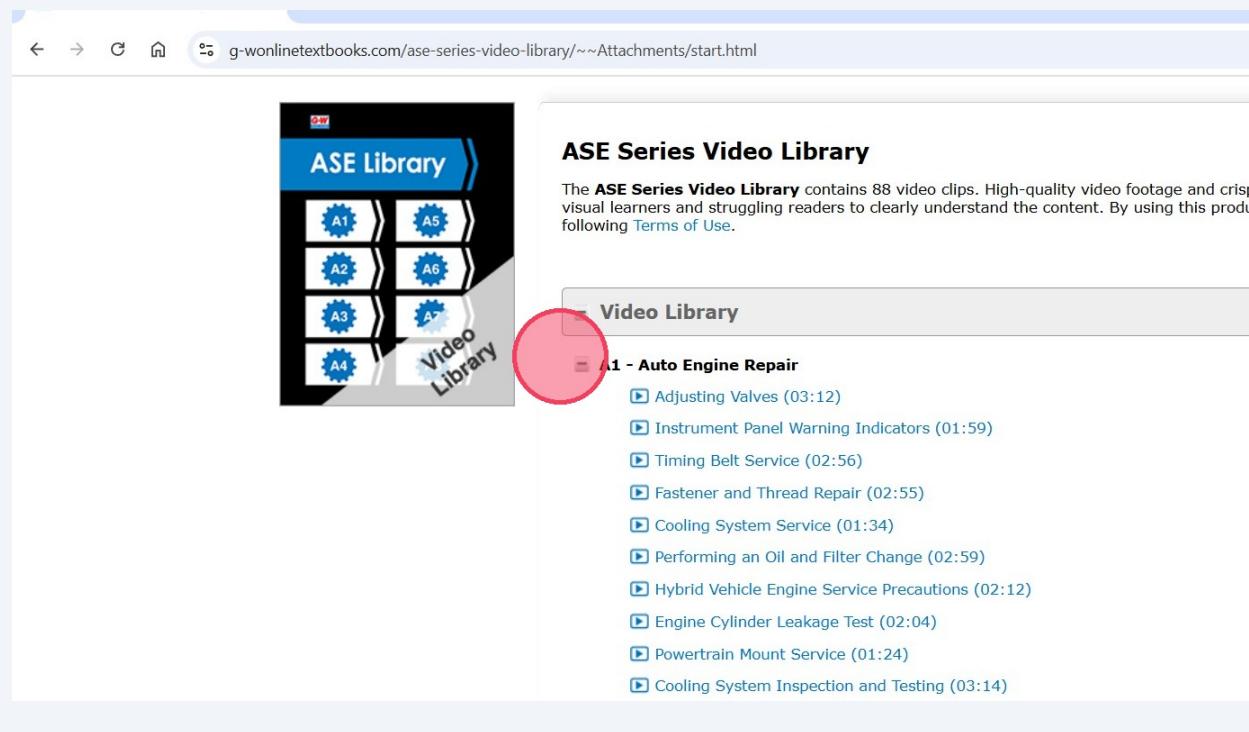
Automotive Virtual Toolbox



Multimeter Simulations

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.

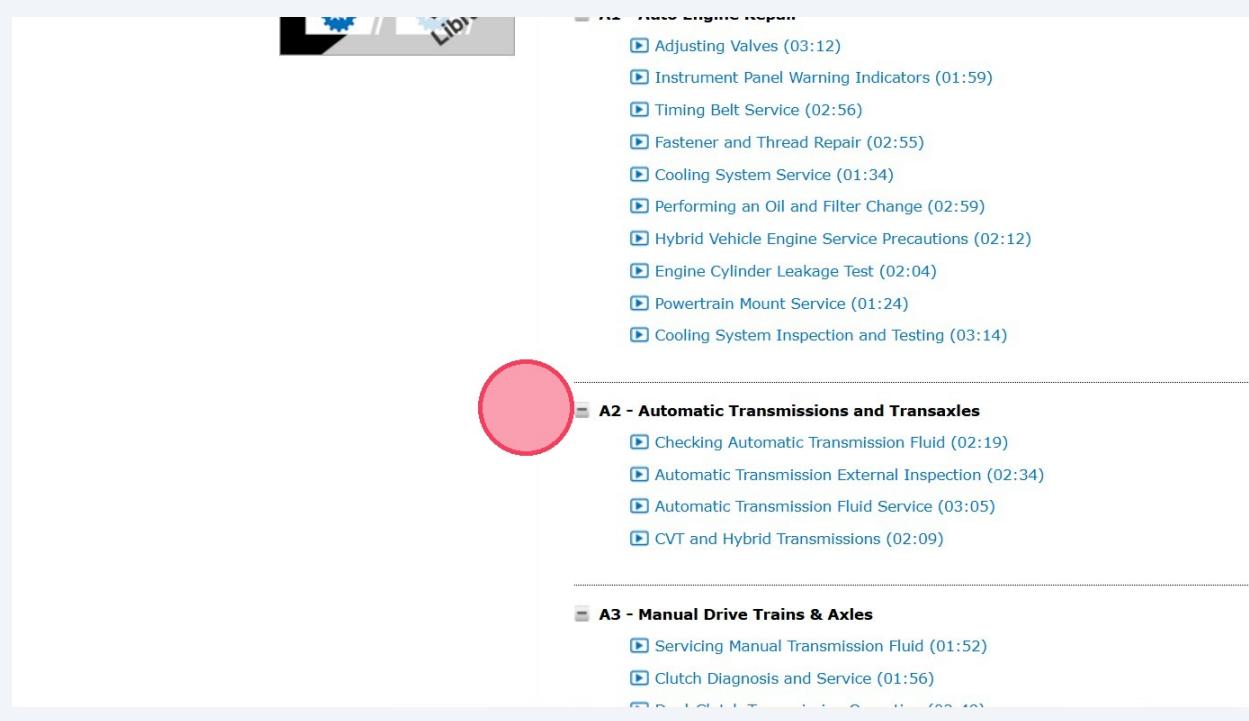


The screenshot shows a web browser displaying the ASE Series Video Library. The URL in the address bar is g-wonlinetextbooks.com/ase-series-video-library/~/Attachments/start.html. The page features a sidebar on the left with a grid of icons for sections A1 through A6, and a larger 'Video Library' section below it. The main content area is titled 'ASE Series Video Library' and contains a brief description: '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 following Terms of Use.' Below this is a 'Video Library' section with a red circle highlighting the 'A1 - Auto Engine Repair' link. Under 'A1 - Auto Engine Repair', there is a list of 10 video clips with their titles and durations:

- 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

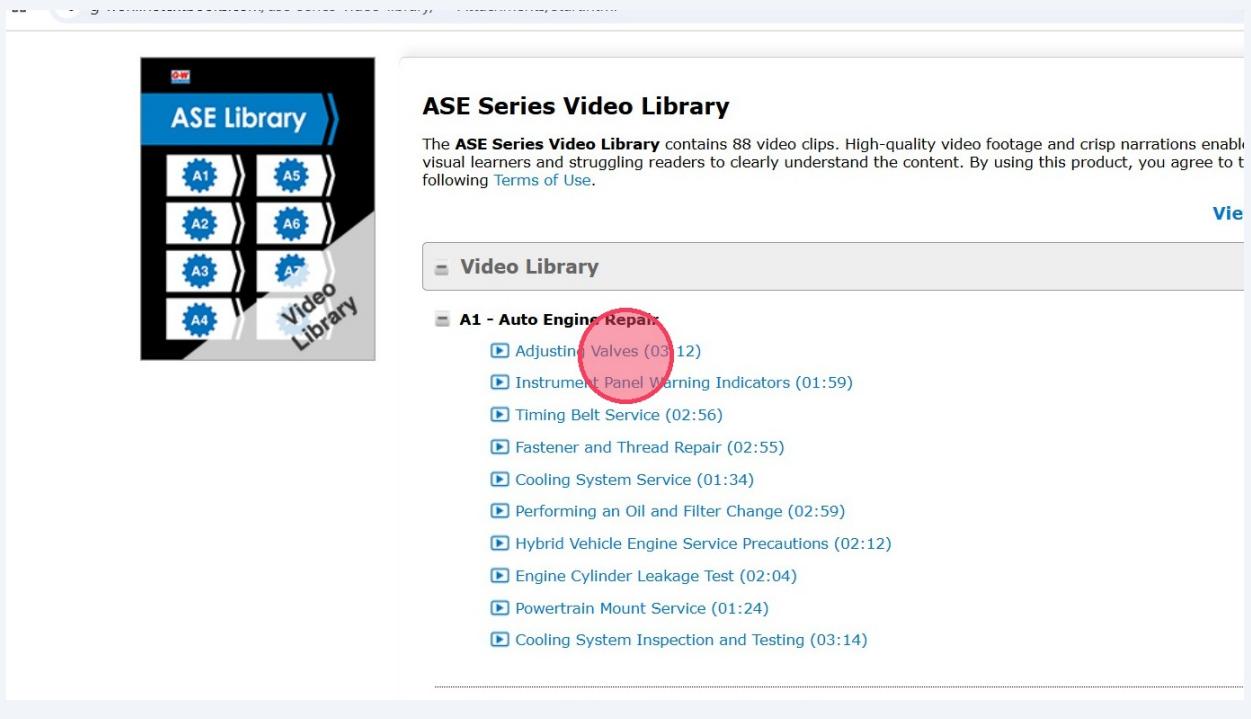
Instructors may use these videos to help struggling readers clearly understand the content.



The screenshot shows a web browser displaying the ASE Series Video Library. The URL in the address bar is g-wonlinetextbooks.com/ase-series-video-library/~/Attachments/start.html. The page features a sidebar on the left with a grid of icons for sections A1 through A6, and a larger 'Video Library' section below it. The main content area contains three sections: 'A1 - Auto Engine Repair' (with a red circle highlighting the link), 'A2 - Automatic Transmissions and Transaxles', and 'A3 - Manual Drive Trains & Axles'. Each section has a list of video clips:

- 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)
- 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)
 - CVT and Hybrid Transmissions (02:12)

14 Select a link to view the video.



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](#).

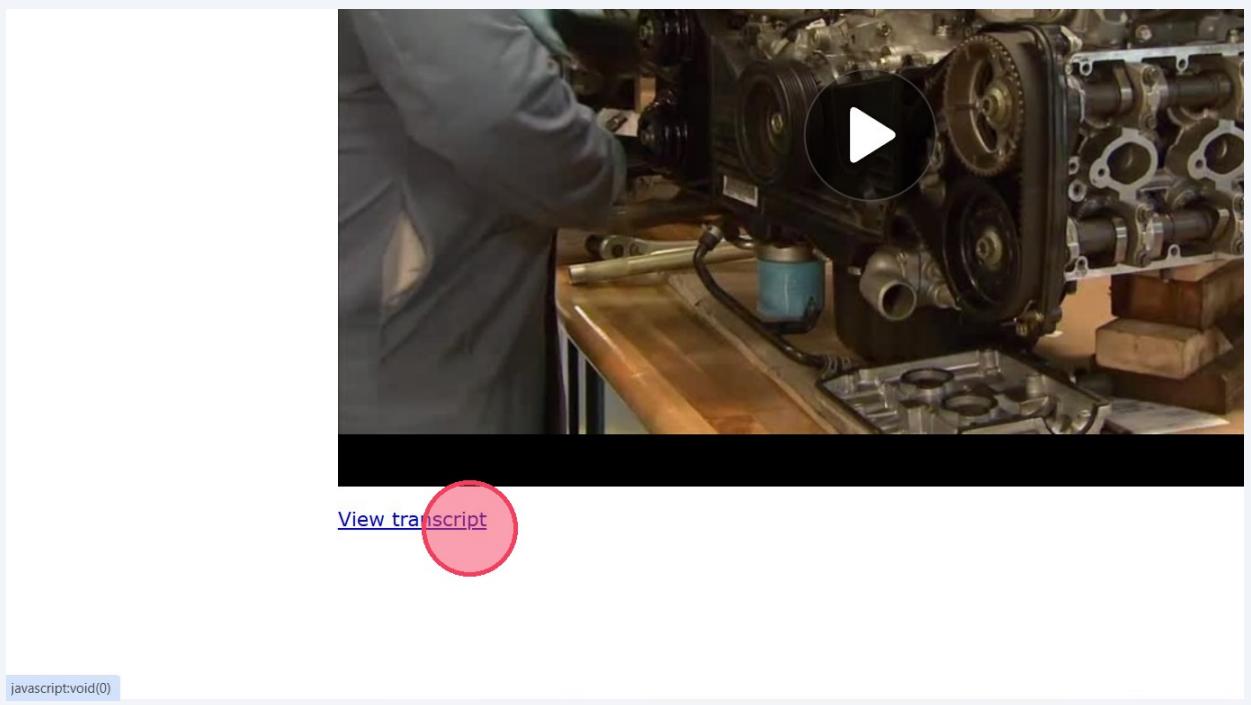
[View transcript](#)

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](#)

javascript:void(0)

16 Select the Play button to view this video.



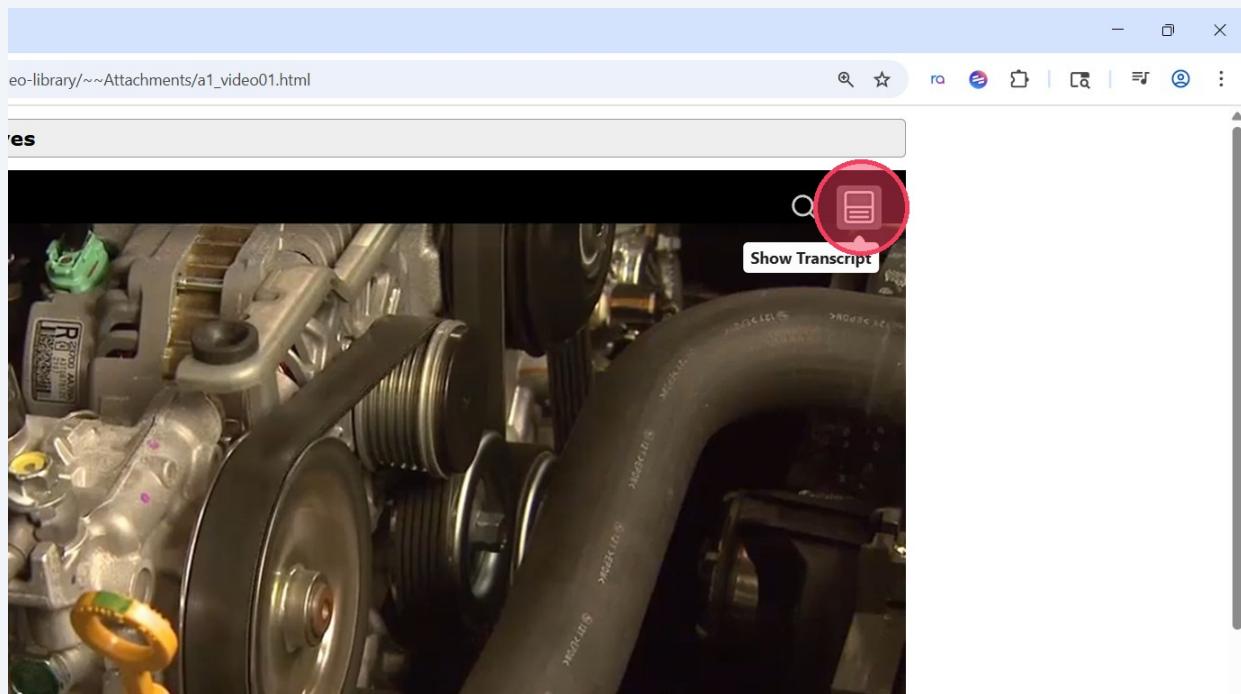
17 You may toggle the closed captioning feature on or off.



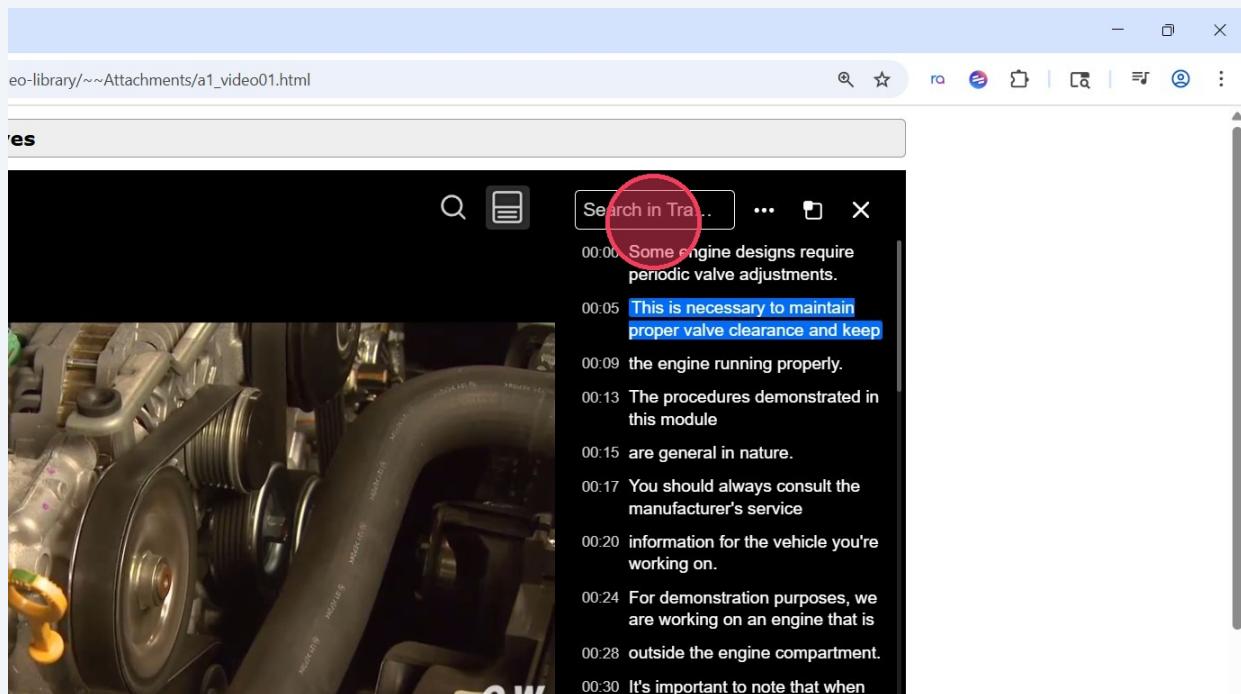
s

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

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.



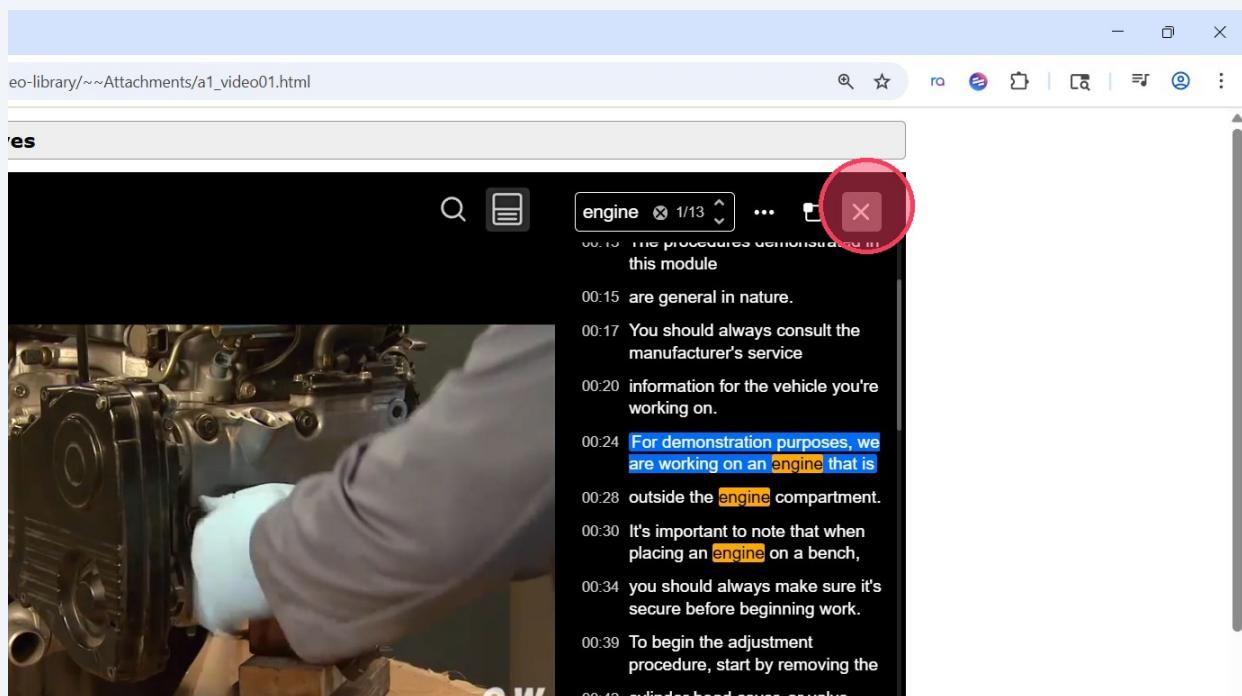
20

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



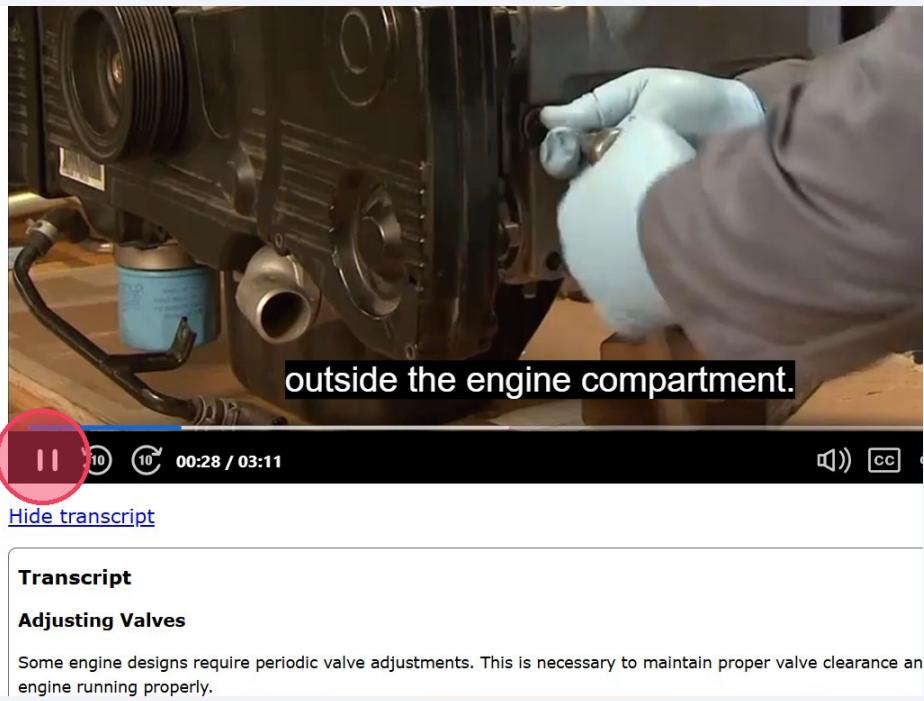
21

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



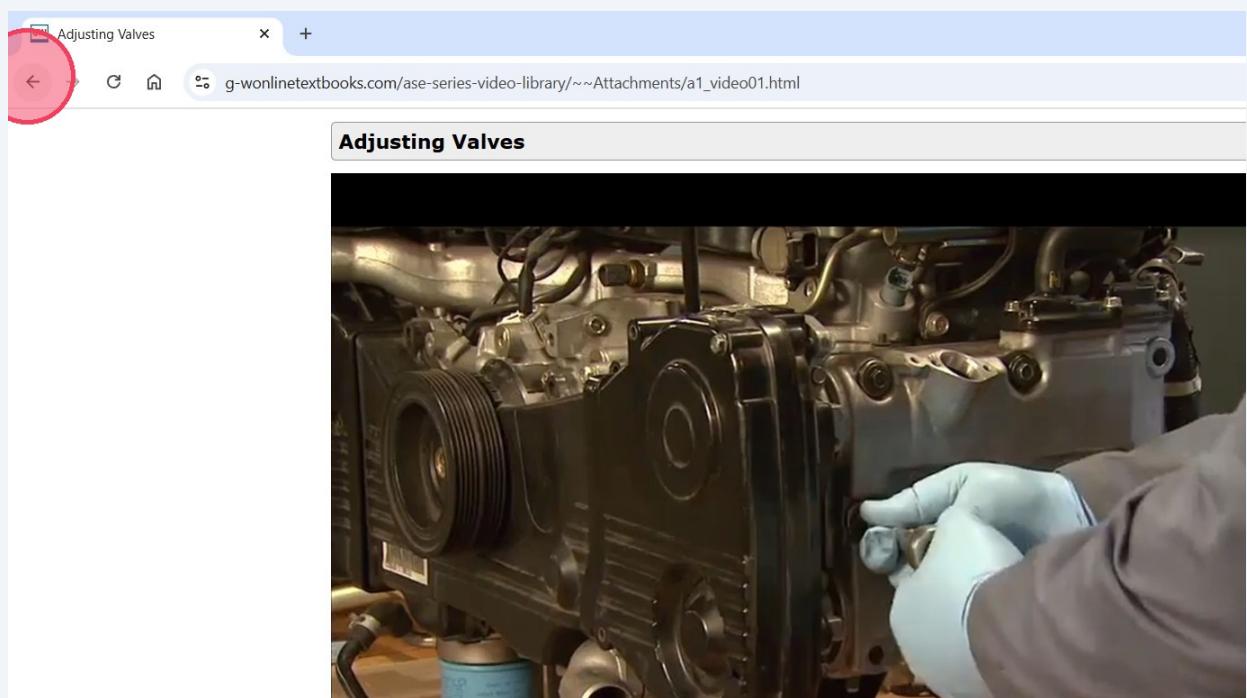
22

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



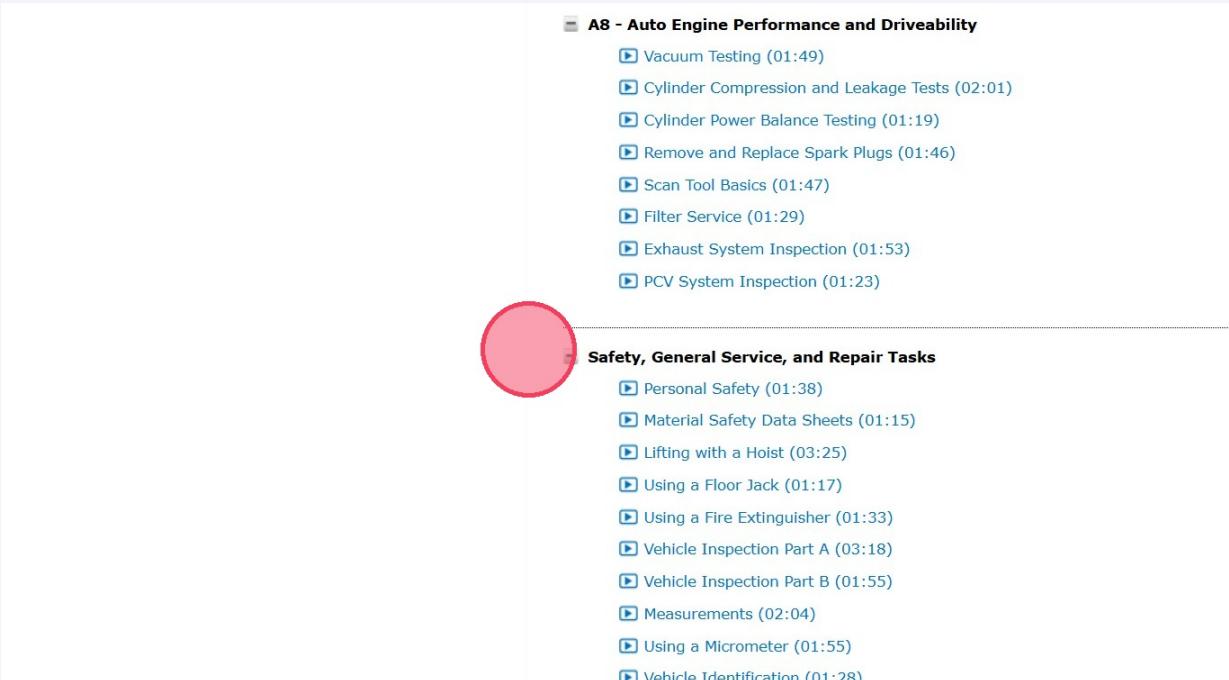
23

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

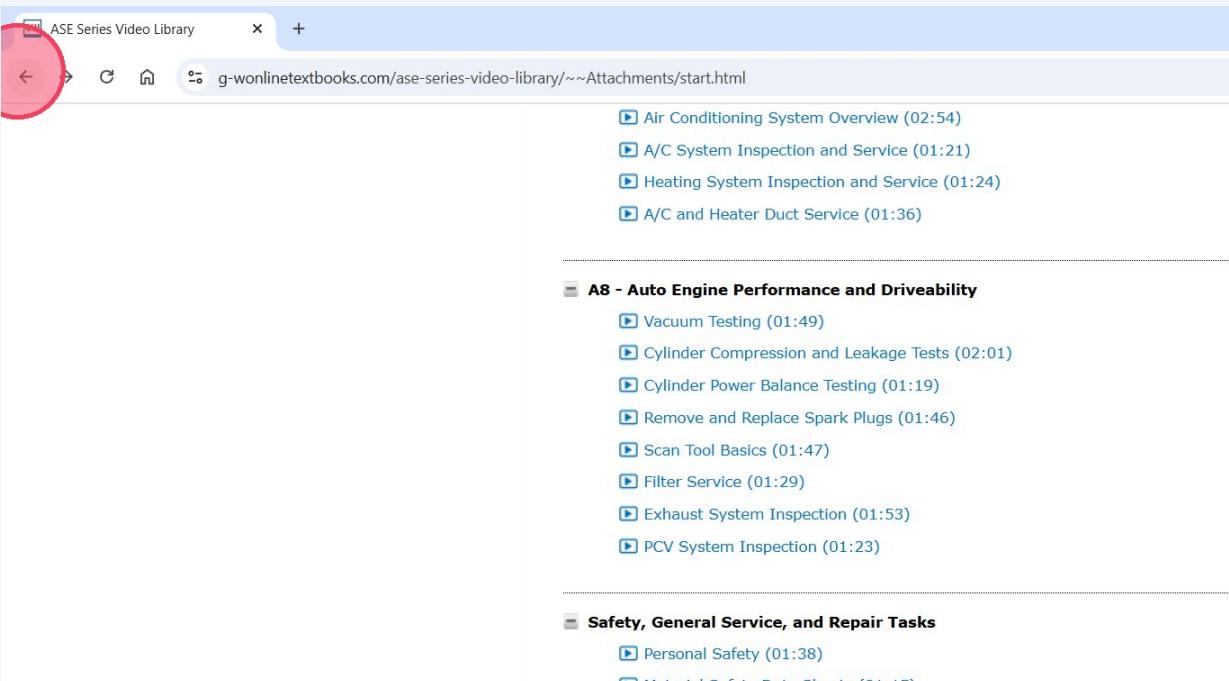
- ▶ Vacuum Testing (01:49)
- ▶ Cylinder Compression and Leakage Tests (02:01)
- ▶ Cylinder Power Balance Testing (01:19)
- ▶ Remove and Replace Spark Plugs (01:46)
- ▶ Scan Tool Basics (01:47)
- ▶ Filter Service (01:29)
- ▶ Exhaust System Inspection (01:53)
- ▶ PCV System Inspection (01:23)

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.



ASE Series Video Library

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

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
Tool



Modern Automotive Technology
11e, Instructor Resources



Modern Automotive Technology
11e, Image Library



Modern Automotive Technology
11e, G-W Assessment



Toolbox



ASE Series Video Library



Attachments/start.html Support



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 students 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 multimeters 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.

[Collapse](#)

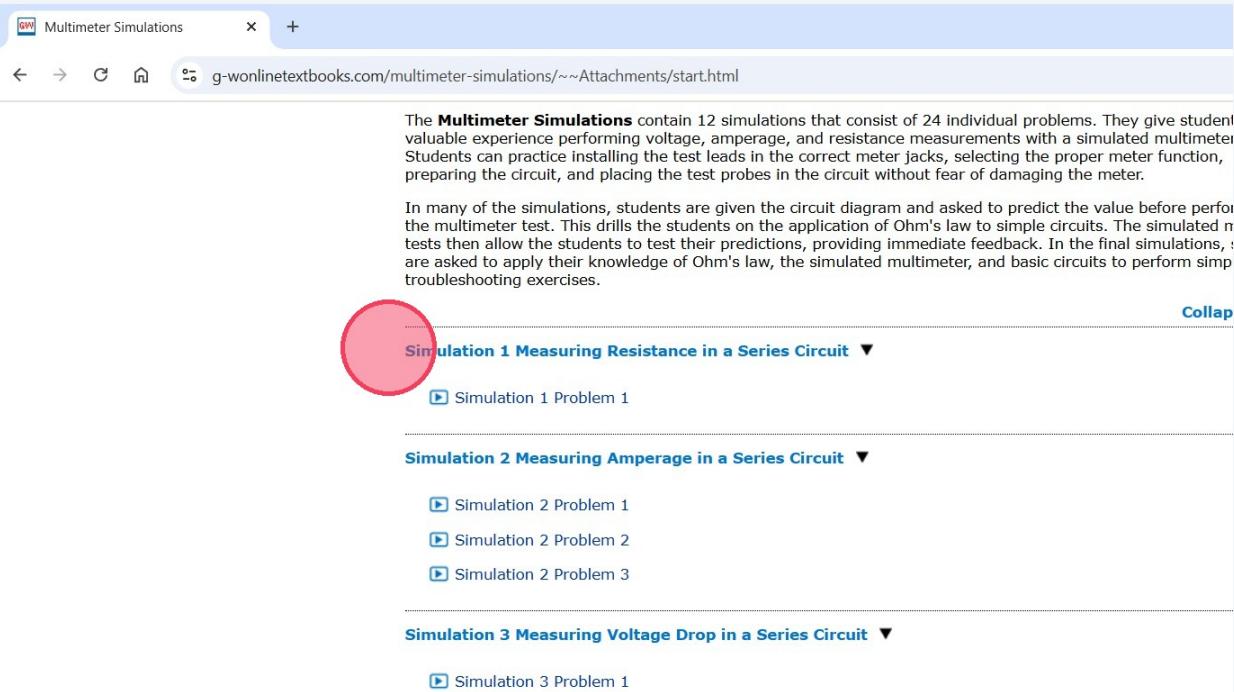
Simulation 1 Measuring Resistance in a Series Circuit ▾

[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 students 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 multimeters 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.

[Collapse](#)

Simulation 1 Measuring Resistance in a Series Circuit ▾

[Simulation 1 Problem 1](#)

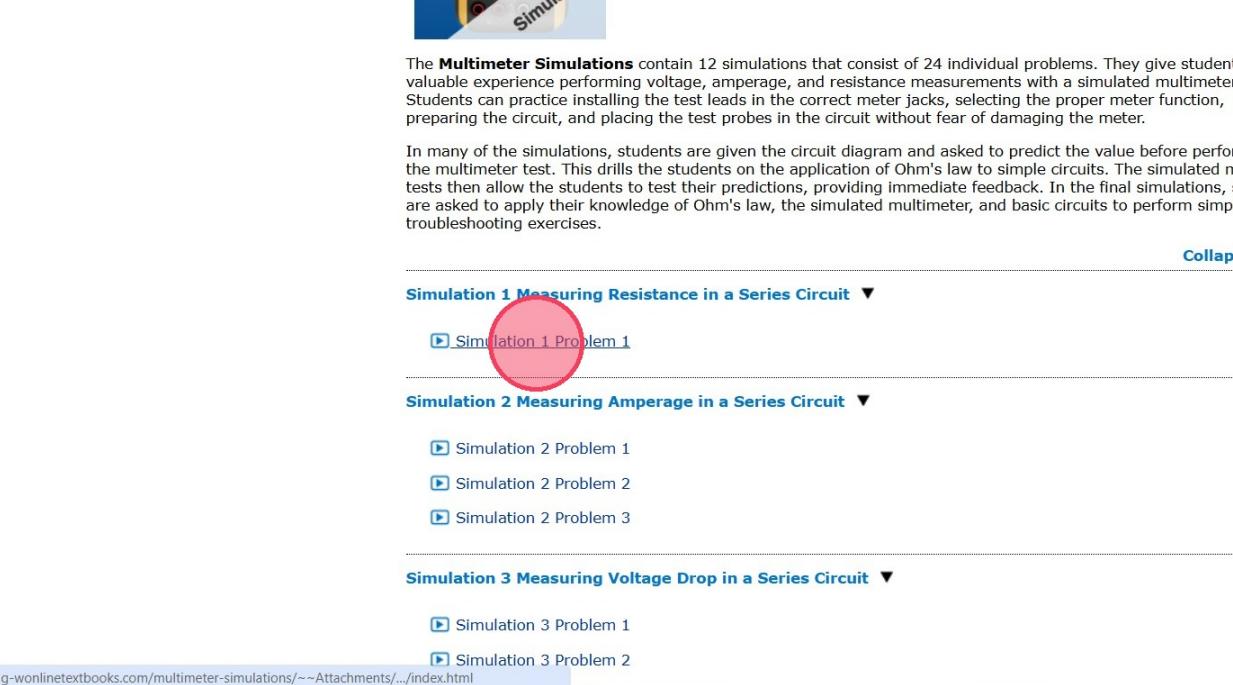
Simulation 2 Measuring Amperage in a Series Circuit ▾

[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.

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 ▾

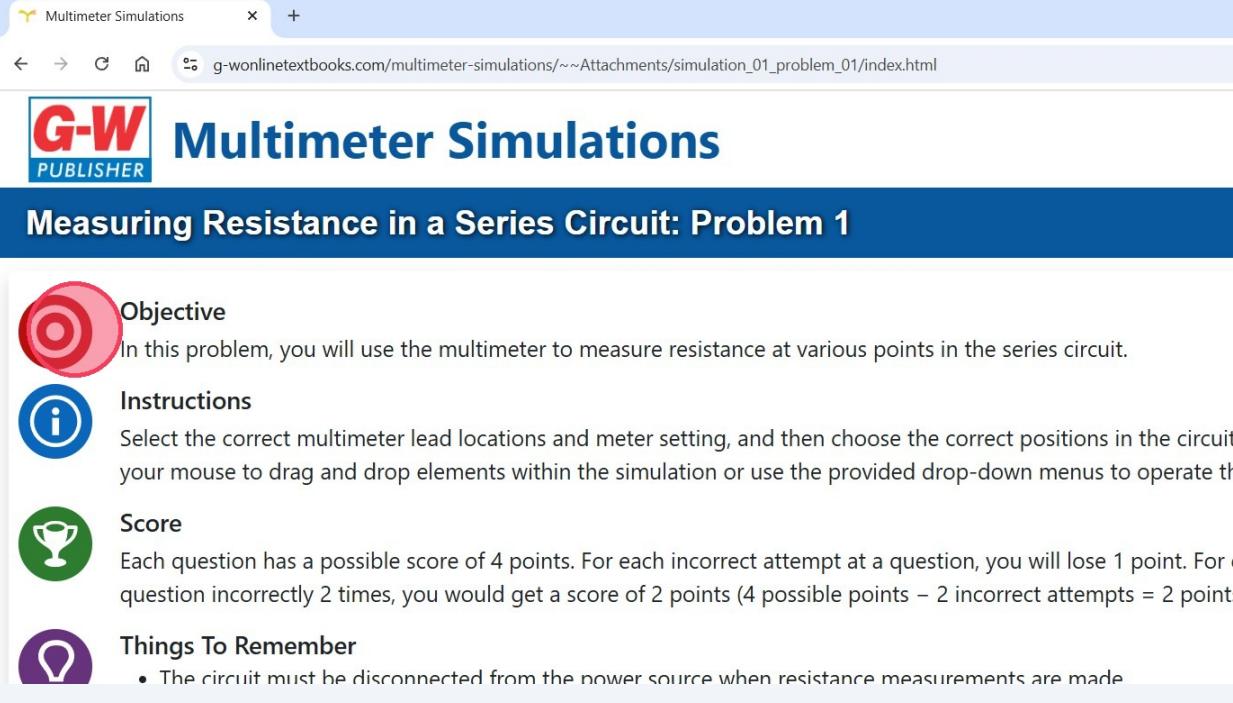
 [Simulation 2 Problem 1](#)
 [Simulation 2 Problem 2](#)
 [Simulation 2 Problem 3](#)

Simulation 3 Measuring Voltage Drop in a Series Circuit ▾

 [Simulation 3 Problem 1](#)
 [Simulation 3 Problem 2](#)

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 them.

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 answer 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.

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 th



Score

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



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 th



Score

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



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 with 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.

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.

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).

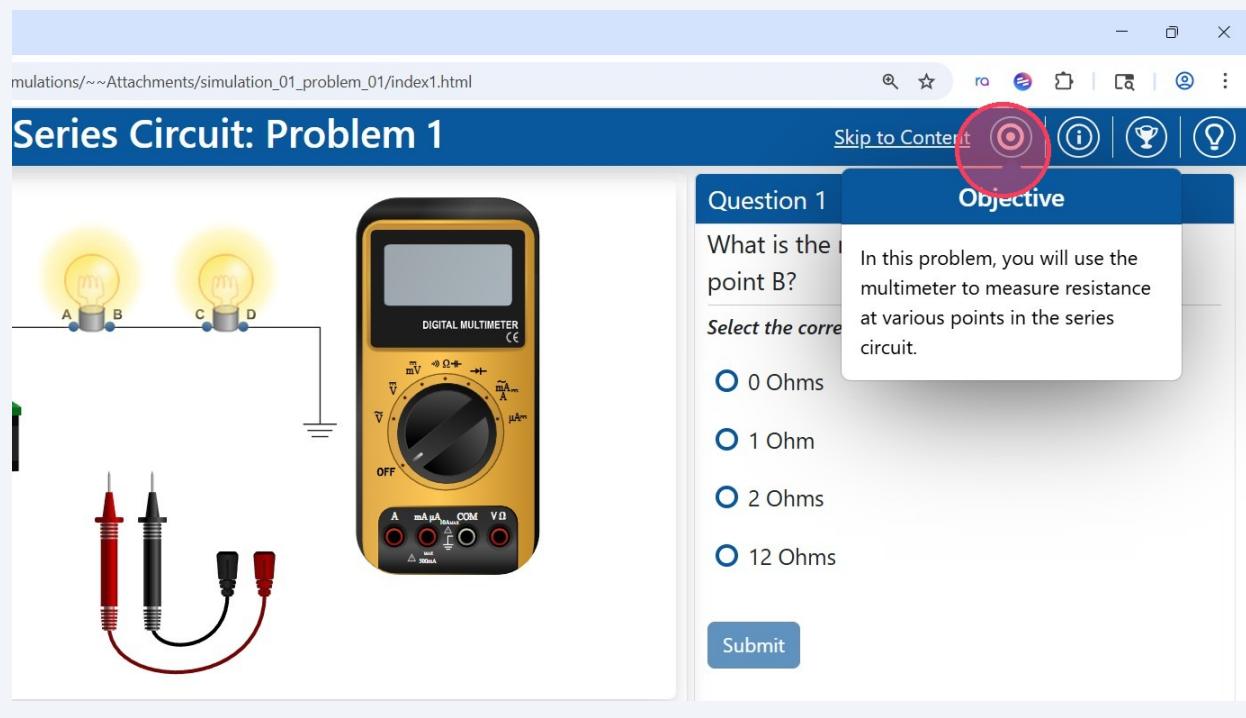
from the power source when resistance measurements are made.

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

Objective

What is the value at point B?

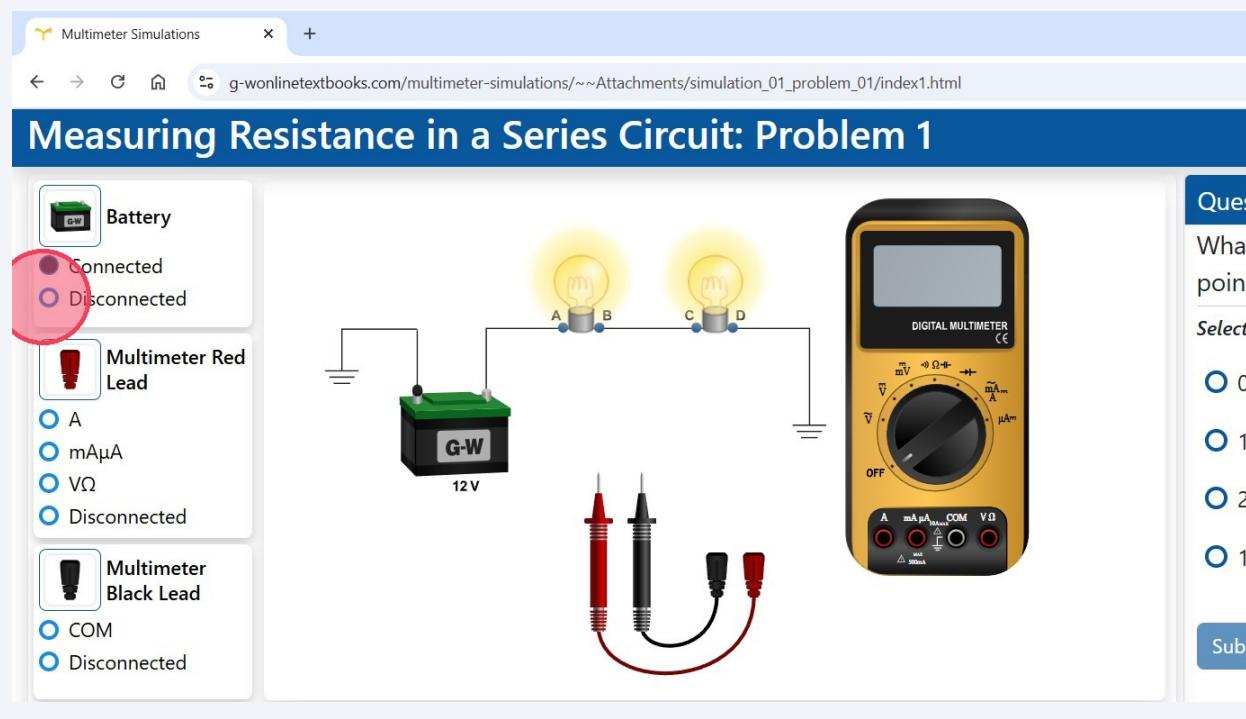
Select the correct answer:

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

Submit

36

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



Multimeter Simulations

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

Question
What is the value at point B?
Select the correct answer:

- 0
- 1
- 2
- 12

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

Multimeter Red Probe
 Disconnected

Multimeter Black Probe
 Disconnected

Ques
What
point
Select
 0
 1
 2
 1

Sub

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
 OFF
 AC Voltage
 DC Voltage
 AC Millivolts
 Ohms
 Diode Test
 Amps/Milliamps
 Microamps

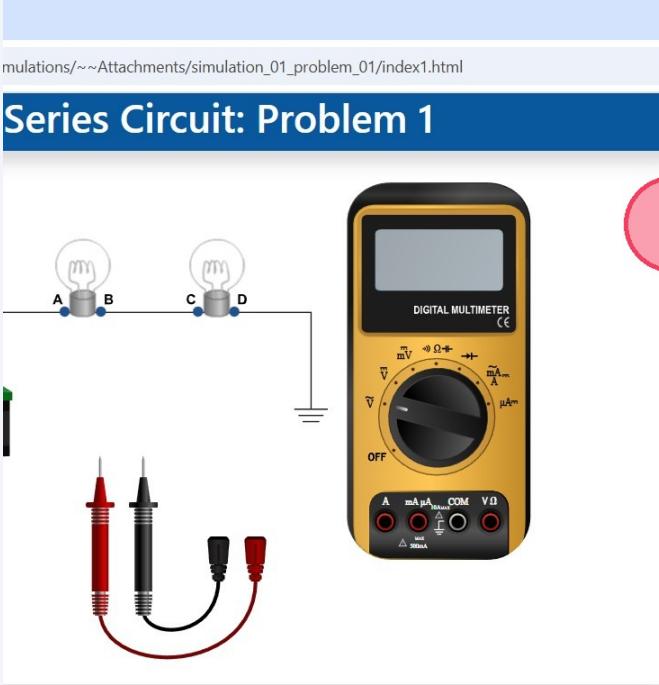
Multimeter Red Probe
 Disconnected

Multimeter Black Probe
 Disconnected

Ques
 1
 2
 1

Sub

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



Series Circuit: Problem 1

Question 1

What is the resistance between point A and point B?

Select the correct option, and then select Submit.

0 Ohms

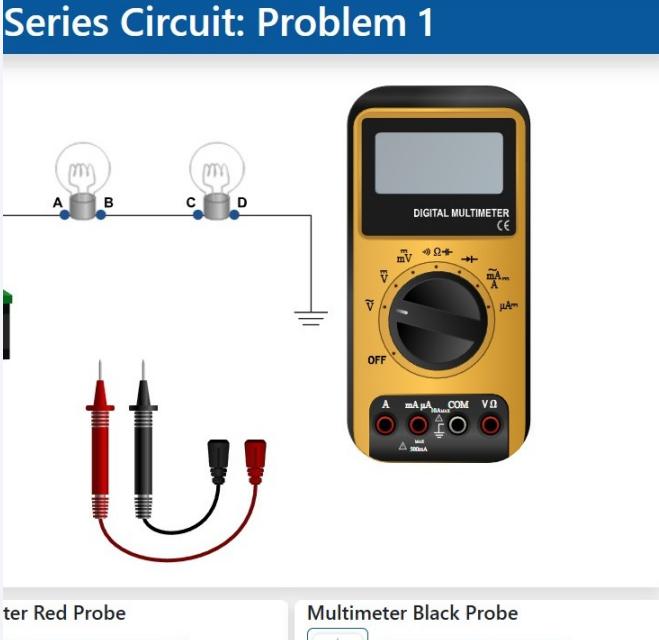
1 Ohm

2 Ohms

12 Ohms

Submit

40 select an answer,



Series Circuit: Problem 1

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

Red Probe

Multimeter Black Probe

Disconnected

41 and select the **Submit** button.

A circuit diagram shows two resistors in series, labeled A-B and C-D. A multimeter is connected in parallel across the middle of the series circuit. The multimeter has its red probe connected to the top wire and its black probe connected to the bottom wire. The multimeter is set to the ohms range. Below the circuit, two dropdown menus are shown: 'Multimeter Red Probe' and 'Multimeter Black Probe', both currently set to '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.

A circuit diagram shows a 12V battery connected in series with a resistor. The resistor is labeled 'A'. A multimeter is connected in parallel across the middle of the series circuit. The multimeter has its red probe connected to the top wire and its black probe connected to the bottom wire. The multimeter is set to the ohms range. Below the circuit, two dropdown menus are shown: 'Multimeter Red Probe' and 'Multimeter Black Probe', both currently set to 'Disconnected'.

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 .

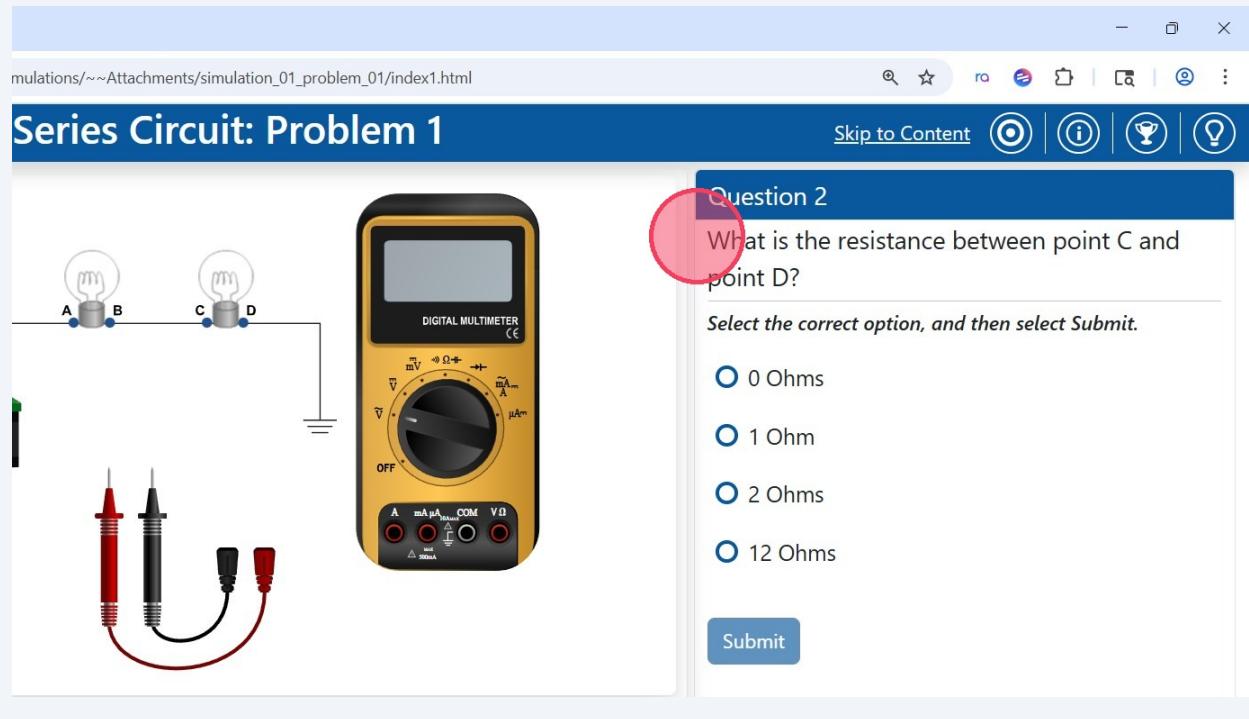
- 0 Ohms
- 1 Ohm
- 2 Ohms
- 12 Ohms

Submit

Made with Scribe - <https://scribehow.com>

22

43 The next question will appear.



Series Circuit: Problem 1

Question 2

What is the resistance between point C and point D?

Select the correct option, and then select Submit.

0 Ohms

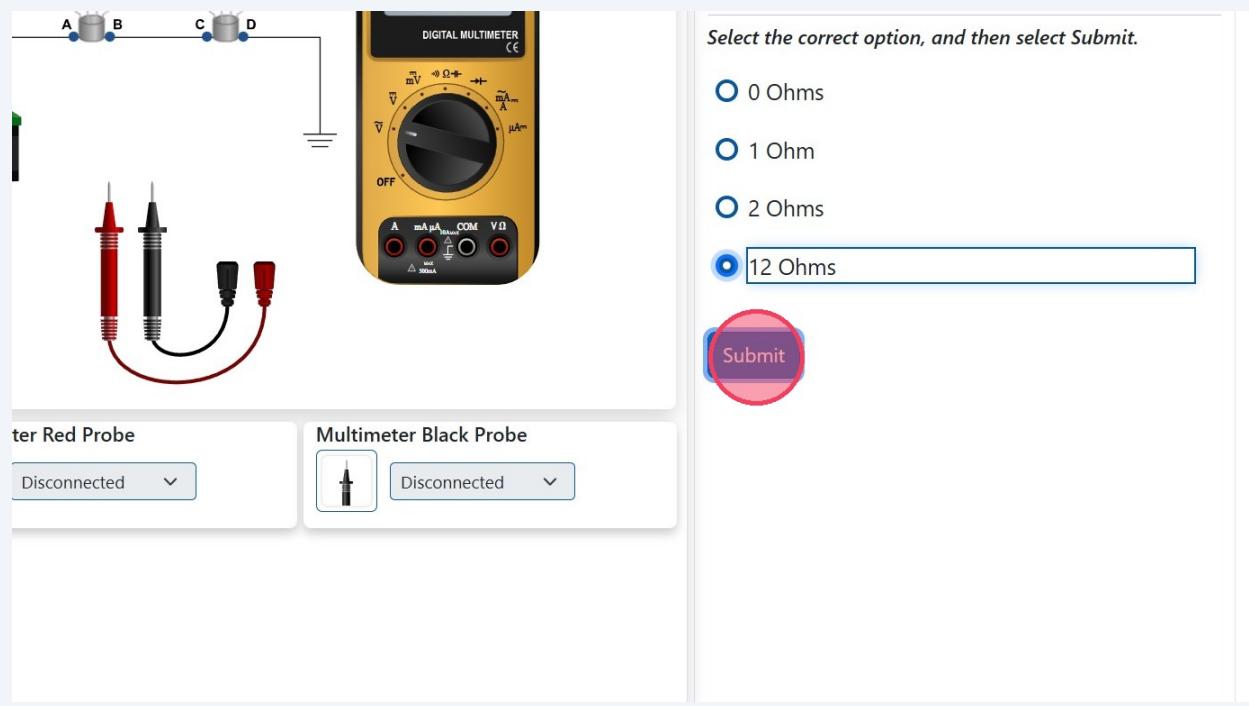
1 Ohm

2 Ohms

12 Ohms

Submit

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



Series Circuit: Problem 1

Select the correct option, and then select Submit.

0 Ohms

1 Ohm

2 Ohms

12 Ohms

Submit

Meter Red Probe

Disconnected

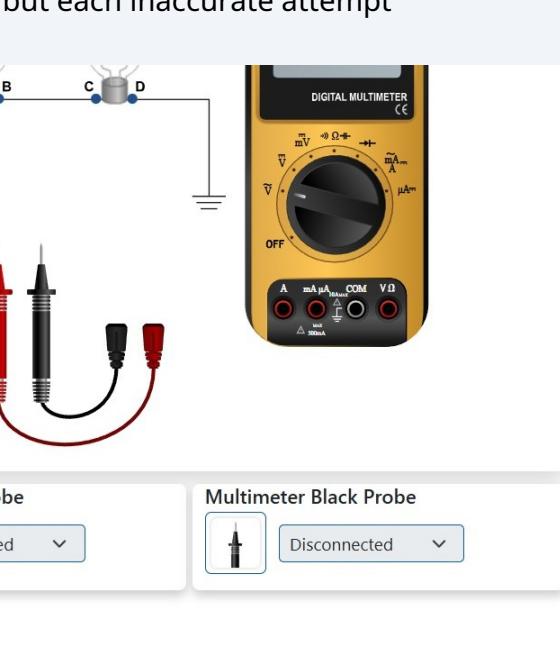
Multimeter Black Probe

Disconnected

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

46 but each inaccurate attempt

46 but each inaccurate attempt



The diagram shows a parallel circuit with two resistors. Resistor 1 (labeled A-B) is 12 ohms. Resistor 2 (labeled C-D) is 12 ohms. A digital multimeter is connected in parallel with Resistor 1. The multimeter has its red probe connected to terminal A and its black probe connected to terminal B. The multimeter is set to the 0 Ohms position. The circuit is connected to a common ground rail.

ter Red Probe

Disconnected

Multimeter Black Probe

 Disconnected

Select the correct option, and then select Submit.

0 Ohms

1 Ohm

2 Ohms

12 Ohms

47

results in a lower point value toward your final score.

A screenshot of a multimeter simulation. A 12V battery is connected in a series circuit with a switch and a bulb. A multimeter is connected across the bulb. A callout box in the center says "Incorrect." Below it, a message says "Select Try Again to make another attempt." A "Try Again" button is highlighted with a red circle. On the left, a "Multimeter Red Probe" dropdown is set to "Disconnected". On the right, a "Multimeter Black Probe" dropdown is set to "Disconnected". To the right of the circuit, a sidebar for "Question 2" asks "What is the resistance between point D?" with options 0 Ohms, 1 Ohm, 2 Ohms, and 12 Ohms. A "Submit" button is at the bottom.

48

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

A screenshot of a multimeter simulation. A 12V battery is connected in a series circuit with a switch and a bulb. A multimeter is connected across the bulb. A callout box in the center says "Score" and "You have scored: 15 points." Below it, a message says "You can close the browser window to exit from the simulation." On the left, a "Multimeter Red Probe" dropdown is set to "Disconnected". On the right, a "Multimeter Black Probe" dropdown is set to "Disconnected". To the right of the circuit, a sidebar for "Question 5" asks "If an additional 3 Ohm resistor is connected in parallel with the bulb, what would be the total resistance in the circuit?" with options -1 Ohm, 0.66 Ohms, 4 Ohms, and 5 Ohms. A "Skip to Content" link is at the top right.

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

Measuring Resistance in a Series Circuit: Problem 1

Score

You have scored: 15 points.

You can close the browser window to exit from the simulation.

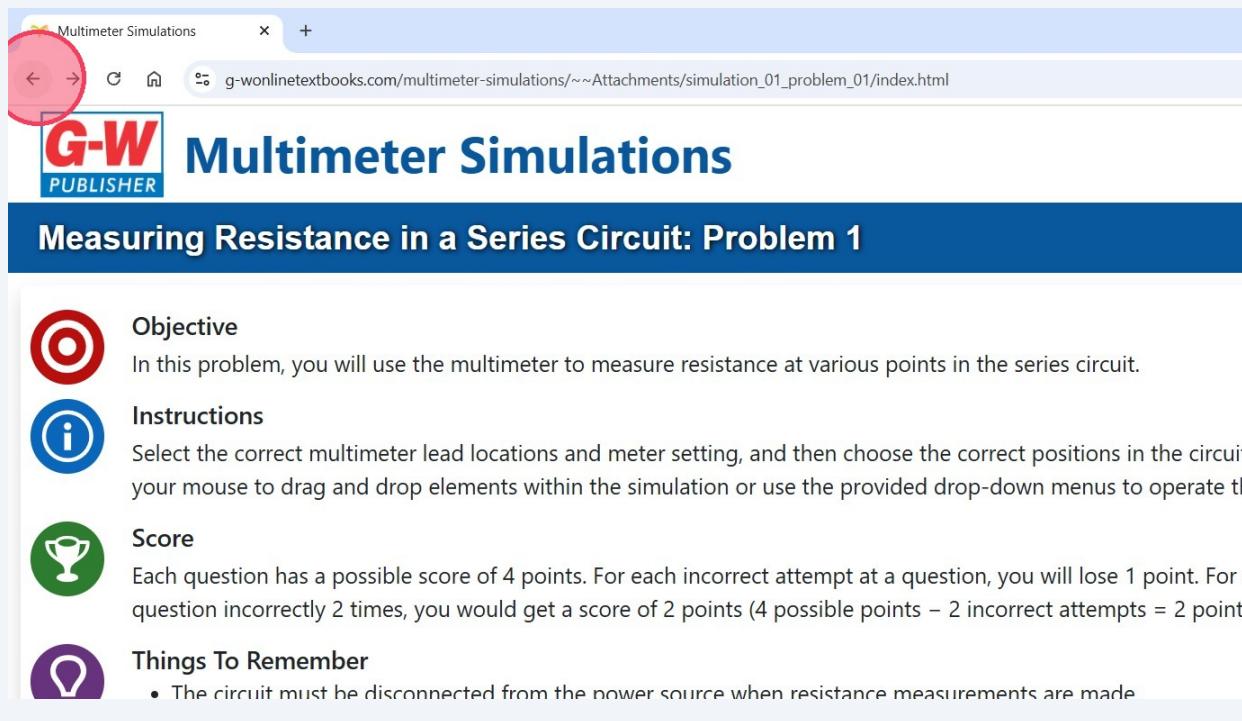
50 one suggestion is to have them take a screenshot of the score and send that to you, digitally.

Score

You have scored: 15 points.

You can close the browser window to exit from the simulation.

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



Multimeter Simulations

G-W PUBLISHER

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.

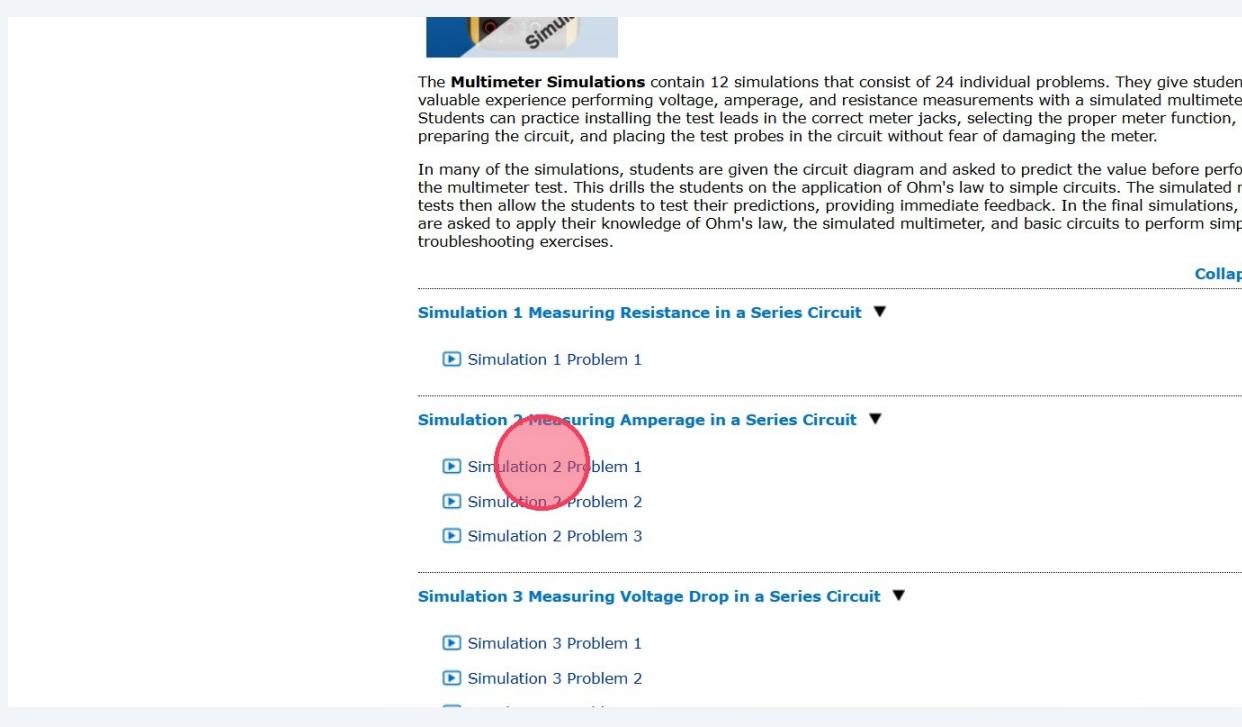
Instructions
Select the correct multimeter lead locations and meter setting, and then choose the correct positions in the circuit. Use your mouse to drag and drop elements within the simulation or use the provided drop-down menus to operate them.

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 answer 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 students 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 multimeters 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.

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