

Driver Education
Classroom and In-Car Curriculum

Unit 14

Tire Safety and Maintenance



Unit 14 Tire Safety and Maintenance

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Unit 14 Tire Safety and Maintenance

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Overview, Objectives and Words to Know

Unit 14 Introduction Lesson Content



Overview

Unit 14 will help the student become familiar with tire safety and know how to perform tire maintenance on their vehicle. This unit will provide steps to help drivers maintain the tires, including why it is important to maintain the tires, how to check tire pressure with a tire pressure gauge, check tread depth using the Penny Test and determine the condition of the tires. The student will understand how to care for tires, determine if they need new tires and buy the correct tires.



Objectives

The student will:


1. Describe how safe tires can save your life.
2. Identify steps to maintain the vehicle's tires, including checking the tire pressure, tread depth and condition of the tires.
3. Identify tire conditions, including under-inflation, uneven wear issues, tire damage and vibration issues.
4. Describe how to care for tires including tire rotation, alignment and balancing.
5. Explain how to determine if you need new tires and how to buy the correct tires for a vehicle.
6. Define key words associated with the unit objectives.



Words to Know

- | | | |
|--|--|---|
| <ul style="list-style-type: none"> • 2/32 of an inch • Over-inflated tires • Penny Test • Pounds per square inch (psi) • Spare tire | <ul style="list-style-type: none"> • Tire alignment • Tire balancing • Tire pressure • Tire pressure gauge • Tire professional • Tire rotation | <ul style="list-style-type: none"> • Tread wear • Tread depth gauge • Tread wear indicators • Under-inflated tires • Uneven tread wear |
|--|--|---|

Unit 14 Tire Safety and Maintenance

Unit 14 Introduction		Lesson Overview Time Frame – 45 minutes
Teacher Information and Resources		
Slides	PowerPoint Slides 14.1 – 14.49	
Videos	14.2.1 Checking Your Air Pressure (53 seconds) 14.2.2 The Penny Test (42 seconds) 14.5 Installing Two New Tires (1 minute 15 seconds)	
Video Review	14.2.1 Video Review: Checking Your Air Pressure 14.2.2 Video Review: The Penny Test 14.5 Video Review: Installing Two New Tires	
Fact Sheets	14.1 Safe Tires Can Save Your Life 14.2 Steps to Maintain Your Tires 14.3 Tire Maintenance Issues 14.4 Tire Maintenance 14.5 Buying Tires 14.6 Words to Know Definitions Page	
Worksheets	Worksheet 14.2.1 Checking Your Tread Depth Worksheet 14.2.2 Checking Your Air Pressure	
Learning Activities	14.0 Key Words – Word Wall 14.2 Checking Your Air Pressure and Tread Depth 14.3 Good Tires vs. Damaged Tires, Poor Tread, Poor Inflation	
Unit 14 Test	Unit 14 Test – Tire Safety and Maintenance – 10 questions	

Unit 14 Tire Safety and Maintenance

Key Words

Unit 14 Activity Lesson Content



Unit Objectives:

Student will define the meaning of the key words in Unit 14.

Lesson Content

Materials and Resources

Key Words

➤ Learning Activity 14.0

Throughout the instruction of Unit 14, conduct learning activity to help students with vocabulary and spelling of key words.

➤ Learning Activity 14.0: Key Words – Word Wall

Learning Activity 14.0

Key Words – Word Wall



Topic

Word Wall

Information

Students begin to assimilate a new language in driver and traffic safety education. Some words are familiar, but others are new. The use of a word wall helps students with vocabulary and spelling as well as provides students with a tool for reference without “giving away” answers.

Materials Needed

1. Make word cards out of paper, poster board, or card stock cut in strips.
2. Markers in various colors.
3. A space to post words (i.e., bulletin board).
4. Tape or stapler and staples to affix cards on the word wall.



Learning Activity

1. As the instructor introduces new words in a unit, the instructor should post these words on the word wall.
 - a. The instructor should remind students to use the words on the wall for recall and correct spelling.
 - b. When an instructor poses a question and a student correctly answers the question, the instructor should allow that student to make a word strip and post the strip in the designated location on the word wall. Because this is new learning, recalling words are part of the learning process.
 - c. Students often enjoy decorating their word with a particular flair, color, or design.
2. Words may remain posted for just the unit or remain posted throughout the course.

Unit 14 Tire Safety and Maintenance

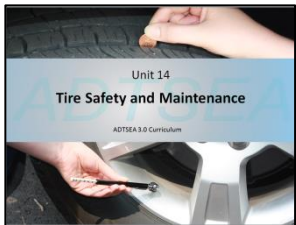
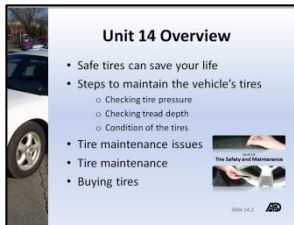



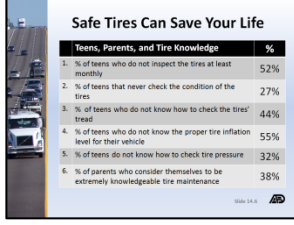
Unit Objectives and Safe Tires Can Save Your Life

Part 1 Lesson Content



Lesson Objective:

Student will describe how safe tires can save your life.

Lesson Content	Materials and Resources
<p><u>Unit Objectives</u></p> <p>➤ Slides 14.1 through 14.2</p> <p>Give an overview of what students should know and be able to do by the end of the unit.</p> <p><u>Tire Safety</u></p> <p>➤ Fact Sheet 14.1</p> <p>Duplicate and distribute Fact Sheet 14.1 for students to use as a resource and study guide.</p> <p>➤ Slides 14.3 through 14.6</p> <p>Introduce the complexity of tires and statistics on the number of teens involved in crashes attributed to tire-related issues. Identify the issues with teens not knowing how to properly inspect and maintain their vehicle's tires.</p> <p>Ask students to raise their hand if they know how to check the tire pressure, check the tire tread using the Penny Test and know how to change a flat tire.</p>	<p>➤ Slides 14.1 through 14.2: Title and Overview</p> <div style="display: flex; justify-content: space-around;">   </div> <p>➤ Fact Sheet 14.1: Tire Safety Can Save Your Life</p> <p>➤ Slides 14.3 through 14.6: Safe Tires Can Save Your Life</p> <div style="display: grid; grid-template-columns: 1fr 1fr; gap: 10px;"> <div>  </div> <div>  </div> <div>  </div> <div>  </div> </div>



Safe Tires Can Save Your Life

Fact Sheet 14.1 Content Information

Safe Tires Can Save Your Life

Tires are complex. They are not just black and round. They are made of many components.



1. Inner liner
2. Textile casing
3. Bead wire
4. Sidewall
5. Steel belts to provide stability for the tread
6. Nylon based cords embedded in rubber
7. Tread

Automobile crashes are the number one killer of teens in the U.S., with nearly 2,500 deaths each year (*Source: Insurance Institute for Highway Safety*). Of the 2.2 million vehicle crashes taking place annually, 12 percent involve inexperienced drivers and tire-related issues such as insufficient tread depth or improper tire inflation. (*2012 NHTSA Study: Tire-Related Factors in the Pre-Crash Phase*).

- 52% of teens don't inspect their tires at least monthly
- 27% of teens never check the condition of their tires
- 44% of teens don't know how to check tire tread
- 55% of teens don't know the proper tire inflation level for their car
- 32% of teens don't know how to check tire pressure
- 38% of parents consider themselves to be extremely knowledgeable about tire maintenance

(*Source: Michelin/FIA Road Safety Perception Survey*)

Crashes due to tire maintenance are preventable and simple steps can save lives. Driving on underinflated or overinflated tires or tires with low tread can lead to safety issues on the road.

Steps to Maintain Your Tires

Part 2 Lesson Content



Lesson Objective:

Student will be able to identify steps to maintain the vehicle's tires, including checking the tire pressure, tread depth and condition of the tires.


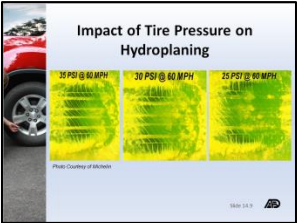
Lesson Content	Materials and Resources
<p><u>Importance of Maintaining Your Tires</u></p> <p>➤ Fact Sheet 14.2</p> <p>Duplicate and distribute Fact Sheet 14.2 for students to use as a resource and study guide.</p> <p>➤ Slide 14.7</p> <p>Discuss the importance of maintaining your tires and how it can ensure your safety and prevent breakdowns. It also helps you save money by extending the life of your tires and saving on fuel.</p> <p>Emphasize under-inflated tires are one of the biggest causes of using excess fuel.</p>	<p>➤ Fact Sheet 14.2: Steps to Maintain Tires</p> <p>➤ Slide 14.7: Tire Maintenance is Important</p> <div data-bbox="998 905 1295 1127"> </div>

Steps to Maintain Your Tires

Fact Sheet 14.2 Content Information

Why It Is Important to Maintain Your Tires?

- **It ensures your safety.** Your tires are the only point of contact that your vehicle has with the road – they need to be in good working condition at all times to ensure your safety. Maintaining your tires helps protect you from avoidable breakdowns and crashes.
- **It can help save you money by extending the life of your tires.** Checking tire air pressure, and regular tire maintenance such as rotation, alignment and inspections can help you save money.
 - Simple things like checking your tires pressure to make sure that they are properly inflated can make a real difference in how long your tires last.
 - Under or over-inflated tires don't wear evenly and won't last as long. For example a tire that should normally last 60,000 miles may be worn out by 48,000 miles.
 - Also, since the front and rear axles and right and left sides of your car wear down your tires differently, rotating your tires regularly between the different positions will ensure they wear evenly and last longer.
- **It can save you money on fuel.**
 - **Under-inflated tires are one of the biggest causes of using excess fuel.**
 - Under-inflated tires have higher rolling resistance, which means it takes more effort from the engine to move your vehicle, which uses excess fuel.

Steps to Maintain Your Tires	Part 2 Lesson Content
Lesson Content	Materials and Resources
<p><u>How to Maintain Your Tires</u></p> <p>➤ Slide 14.8</p> <p>Discuss what to do to maintain your tires and avoid any problems, such as inspecting your tires, checking the air pressure, driving at reasonable speeds and using your spare tire.</p> <p>Emphasize to not rely on a low tire warning light as they do not activate until dangerously low. Digital monitoring systems are accurate.</p> <p>➤ Slide 14.9</p> <p>Discuss the impact of tire pressure on hydroplaning.</p>	<p>➤ Slide 14.8: Tire Maintenance</p>  <p>➤ Slide 14.9: Impact of Tire Pressure on Hydroplaning</p> 

Steps to Maintain Your Tires

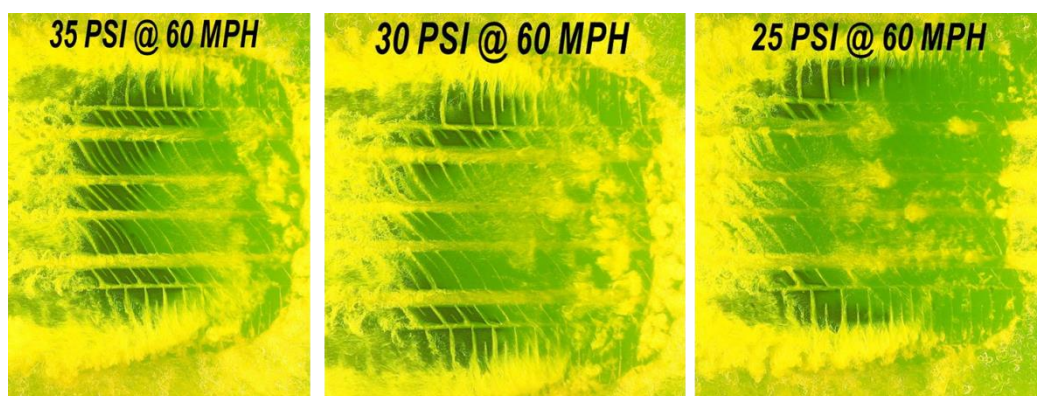
Fact Sheet 14.2
Content Information

How to Maintain Your Tires

To avoid any problems, follow these important care tips:

- **Inspect your tires:** You may not always notice if one of the tires has damage. Inspect your tires regularly for wear and any damage to avoid sudden problems. Also, have a professional inspect your tires every year.
- **Check the air pressure:** Driving with incorrect tire pressures can affect a vehicle's handling and braking, particularly in wet conditions, and can seriously compromise your safety. Driving on severely under-inflated tires can cause heat build-up and eventually a premature failure. Check your tire pressure monthly and before every long trip. **Do not rely on a low tire warning light as they do not activate until dangerously low. Digital monitoring systems are more accurate.**

Note the impact of tire pressure on hydroplaning:



- **Driving at high speed can damage your tire:** At greater speeds, tires have a greater chance of being damaged by road hazards or heat build-up. High speeds can also contribute to a rapid air loss or even a sudden tire explosion, which can cause the loss of control of the vehicle.
- **Use your spare tire!** If you see any damage to a tire or wheel, replace it with the spare tire and have the tire checked immediately by a professional.

Steps to Maintain Your Tires	Part 2 Lesson Content
Lesson Content	Materials and Resources
<p><u>Checking Your Air Pressure</u></p> <p>➤ Video Review 14.2.1</p> <p>Duplicate and distribute Video Review 14.2. Students should complete the worksheet as they watch the video.</p> <p>➤ Slides 14.10 through 14.12 – Video 14.2.1</p> <p>Discuss the topics in Video 14.2.1</p> <p>Play Video 14.2.1</p> <p><i>Checking Your Air Pressure</i></p> <p>(Time: 53 seconds)</p> <p>After viewing, review Video Review 14.2.1, using Answer Key to gauge student understanding of the video.</p>	<p>➤ Video Review 14.2.1 and Answer Key: Checking Your Air Pressure</p> <p>➤ Slides 14.10 through 14.12: Video 14.2.1 <i>Checking Your Air Pressure</i></p> <div data-bbox="824 789 1117 1010"> </div> <div data-bbox="1130 789 1425 1010"> </div> <div data-bbox="979 1052 1274 1274"> </div>

Steps to Maintain Your Tires

Video Overview 14.2.1



Video Overview 14.2.1: Checking Your Air Pressure

Title

Checking Your Air Pressure

Time

53 seconds

Topics Covered

1. Demonstration of how to check the air pressure of your tires.

Video Review

1. Have students complete a video review worksheet as they watch the video.
2. After viewing the video, review the worksheet to gauge students' understanding of the video.

Instructor Notes

Unit 14 Tire Safety and Maintenance

Steps to Maintain Your Tires

Video Review 14.2.1

Video Review 14.2.1: Checking Your Air Pressure

Name

Date

1. When should you check your tires air pressure?

2. What is the recommended number or pounds per square inch (psi) for the vehicle in the video?

3. Does the tire in the video have the correct amount of air pressure?



Unit 14 Tire Safety and Maintenance

Steps to Maintain Your Tires

Video Review 14.2.1

ANSWER KEY


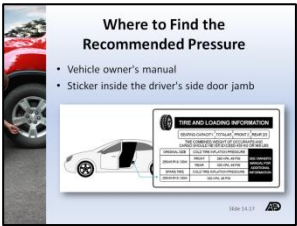
Video Review 14.2.1: Checking Your Air Pressure ANSWER KEY

Name

Date

To see the answer key you must contact the ADTSEA office.



Steps to Maintain Your Tires	Part 2 Lesson Content
Lesson Content	Materials and Resources
<p><u>Checking Your Air Pressure</u></p> <p>➤ Slides 14.13 through 14.14</p> <p>Discuss when and how often you should check your tire pressure. Emphasize that you should check all tires including the spare monthly, when tires are cool to receive the correct tire pressure reading.</p> <p>Emphasize to check your spare tire and that the spare tire should be inflated to 60 psi, or what is written on the driver's door sticker because spare tires do not have the same structural components as a regular tire so you need to compensate with a higher psi.</p> <p>➤ Slide 14.15</p> <p>Discuss where to find the recommended pressure for your tires.</p> <p>Emphasize to use the sticker on your driver's door to find the recommended pressure. Do not use the number on your tire's sidewall, as this does not indicate the pressure needed in your tire. It indicates the maximum amount of pressure, not what is recommended for your vehicle.</p> <p>The weight of the vehicle determines the tire pressure and the number on the driver's door provides the pressure for the vehicle.</p>	<p>➤ Slides 14.13 through 14.14: Checking Your Air Pressure</p> <div data-bbox="824 541 1424 762">  </div> <p>➤ Slide 14.15: Where to Find the Recommended Pressure</p> <div data-bbox="980 1142 1274 1365">  </div>

Steps to Maintain Your Tires

Fact Sheet 14.2

Content Information

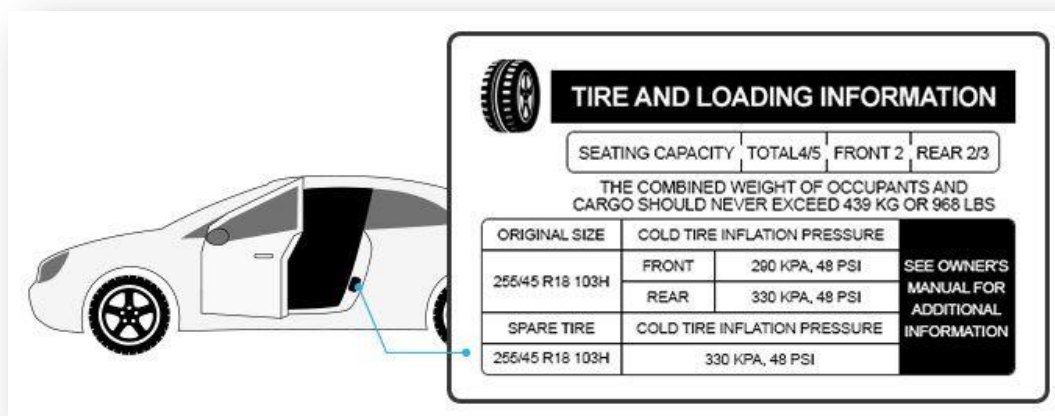
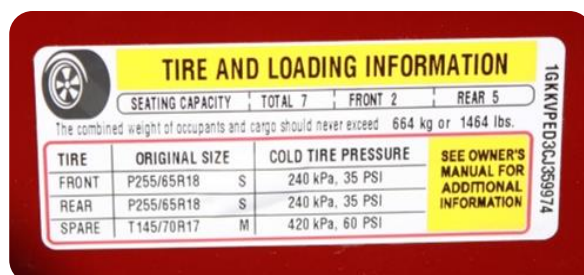
Checking Your Air Pressure

General Guidelines

- Check the pressure of all your tires monthly, including the spare and that the lug nuts are properly tightened. Even if you don't see any damage, tires can lose up to 1 psi - pounds per square inch - every month.
- Check your tire pressure before making a long trip.
- For best results, check your tire pressure when tires are cool– before driving the car or if it has covered less than 3 miles at low speed to receive the correct tire pressure reading.
- If the tire is hot, add 4-5 psi to the car manufacturer's recommended pressure value or wait until it has cooled down, which is an average of three hours after parking the car. A hot tire will have increased tire pressure because driving causes the tires to heat up and the air inside them to expand.
- Never deflate a hot tire.

Where to find the recommended pressure for your tires?

- In the vehicle owner's manual.
- On a sticker on the inside driver's side door jamb.



Steps to Maintain Your Tires	Part 2 Lesson Content
Lesson Content	Materials and Resources
<p><u>Checking Your Air Pressure</u></p> <p>➤ Slides 14.16 through 14.18</p> <p>Discuss how to check the pressure of your tires and add air to your tires.</p> <p>Air vs. Nitrogen Nitrogen does not provide any real benefits over compressed air. Nitrogen is dry air with the oxygen removed. Because nitrogen replaces oxygen, less air can escape your tires, and your inflation pressure stays higher longer, but there are other sources of leaks. The most important thing is to check your tire pressure.</p> <p>➤ Slide 14.19</p> <p>Discuss the recommended type of tire pressure gauge to use.</p> <p>➤ Slide 14.20</p> <p>Discuss why it is important to check your tire pressure correctly.</p>	<p>➤ Slides 14.16 through 14.18: How to Check Your Tire Pressure</p> <div data-bbox="862 520 1409 940"> </div> <p>➤ Slide 14.19: About Pressure Gauges</p> <div data-bbox="998 1087 1292 1310"> </div> <p>➤ Slide 14.20: Getting it Right is Important</p> <div data-bbox="995 1478 1292 1701"> </div>

Steps to Maintain Your Tires

Fact Sheet 14.2

Content Information

Checking Your Air Pressure

How to check your tire pressure?

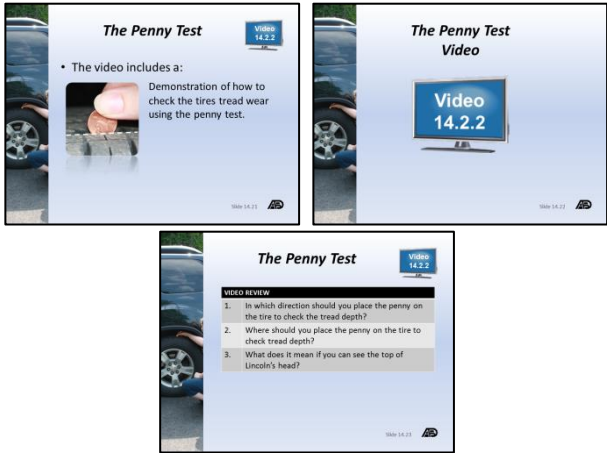
1. Purchase a trusted pressure gauge.
2. Open your car door and on the inside jamb you should find a sticker with your vehicle's recommended psi (the measurements for tire pressure).
3. Check your tires "cold" – before you've driven or at least three hours after you've driven.
4. Insert pressure gauge into the valve stem on your tire. (The gauge will "pop" out and show a number. When you hear a "psst" sound, that's air escaping the tire. This shouldn't affect pressure substantially, unless you hold down the air pressure gauge too long.)
5. Compare the measured psi to the psi found on the sticker inside the driver's door or in the owner's manual.
6. If your psi is above the number, let air out until it matches. If it's below, add air (or have a professional help you) until it reaches the proper number.
7. To add air to the tire insert the air hose into the tire valve and add air in short bursts. Check the pressure with your tire gauge. If you add too much, let some out by pressing the pin on the tire valve with the back of the air hose nozzle. Keep checking the tire pressure until right.

About pressure gauges

- Be careful if you are using a pressure gauge provided in gas stations. The pressure gauge is often not reliable.
- Buy a high-quality pressure gauge and check its accuracy with a tire professional.

Getting it right is important

- Under-inflated or over-inflated tires can wear down faster than expected, have reduced grip, and can consume more fuel. It just takes a few minutes a month to help ensure your safety and the longevity of your tires.

Steps to Maintain Your Tires	Part 2 Lesson Content
Lesson Content	Materials and Resources
<p><u>The Penny Test</u></p> <ul style="list-style-type: none"> ➤ Video Review 14.2.2 <p>Duplicate and distribute Video Review 14.2.2. Students should complete the worksheet as they watch the video.</p> <ul style="list-style-type: none"> ➤ Slides 14.21 through 14.23 – Video 14.2.2 <p>Discuss the topics in Video 14.2.2</p> <p>Play Video 14.2.2</p> <p><i>The Penny Test</i></p> <p>(Time: 42 seconds)</p> <p>After viewing, review Video Review 14.2.2, using Answer Key to gauge student understanding of the video.</p>	<ul style="list-style-type: none"> ➤ Video Review 14.2.2 and Answer Key: <i>The Penny Test</i> ➤ Slides 14.21 through 14.23: Video 14.2.2 <i>The Penny Test</i> <div data-bbox="824 827 1427 1276">  </div>

Steps to Maintain Your Tires

Video Overview 14.2.2



Video Overview 14.2.2: The Penny Test

Title

The Penny Test

Time

42 seconds

Topics Covered

1. Demonstration of how to check the tires tread wear using the Penny Test.

Video Review

1. Have students complete a video review worksheet as they watch the video.
2. After viewing the video, review the worksheet to gauge students' understanding of the video.

Instructor Notes

Unit 14 Tire Safety and Maintenance

Steps to Maintain Your Tires

Video Review 14.2.2

Video Review 14.2.2: The Penny Test

Name

Date

1. In which direction should you put the penny into the tire tread?

2. Where should you place the penny on the tire to check the tread depth?

3. What does it mean if you can see the top of Lincoln's head?



Unit 14 Tire Safety and Maintenance

Steps to Maintain Your Tires

Video Review 14.2.2

ANSWER KEY

Video Review 14.2.2: The Penny Test ANSWER KEY



Name

Date

To see the answer key you must contact the ADTSEA office.



Unit 14 Tire Safety and Maintenance

<div style="display: flex; justify-content: space-between;"> Steps to Maintain Your Tires Part 2 Lesson Content </div>	
Lesson Content	Materials and Resources
<p><u>Checking Your Tread Wear</u></p> <p>➤ Slides 14.24 through 14.25</p> <p>Discuss the importance of checking your tires tread wear and how it effects driving in wet conditions.</p>	<p>➤ Slides 14.24 through 14.25: Checking Your Tires Tread Wear</p> <div style="display: flex; justify-content: space-around;">   </div>

Steps to Maintain Your Tires

Fact Sheet 14.2

Content Information

Checking Your Tread Wear

General Guidelines

- To effectively grip the road, evacuate water and maintain control, tires need to have a safe amount of remaining tread. If the grooves in the tire design have almost disappeared, the tire will simply not grip the road as well. This is particularly dangerous in wet or wintry conditions.

Here is an example of different tread wear and how it effects driving in wet conditions:

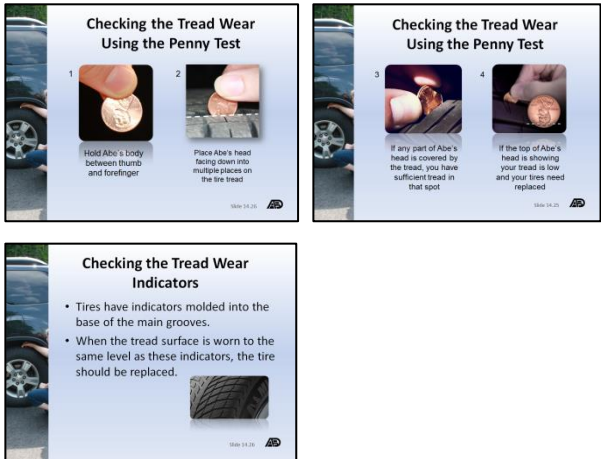
Full Tread Depth at 55 mph in Wet Conditions



Half Tread Depth at 55 mph in Wet Conditions



- Plus, if you drive with tires under the legal tread limit, depending on the state you drive in, you may be fined.
- You should check the wear of tires regularly. Once every month, or before you go on a long trip, check tires for wear and damage problems. See below on how to check tread wear yourself. If tires are approaching the legal limit or if you have any doubts, get them checked by a tire professional.

Steps to Maintain Your Tires	Part 2 Lesson Content
Lesson Content	Materials and Resources
<p><u>Checking Your Tread Wear</u></p> <p>➤ Slides 14.26 through 14.28</p> <p>Discuss two methods that can be used to check your tread wear: the Penny Test and checking the tread wear indicators.</p> <p>Emphasize when conducting the Penny Test to check multiple points on the tire tread to check for wear. If the top of Abe's head is showing your tread is low and your tire's need checked by a professional.</p> <p>➤ Worksheets 14.2.1 and 14.2.2</p> <p>Duplicate and distribute Worksheets 14.2.1 and 14.2.2. Have each student complete the worksheets in class or take this worksheet home to answer questions on tread wear and tire pressure.</p> <p>Review the student answers to the worksheet.</p>	<p>➤ Slides 14.26 through 14.28: Checking Your Tread Wear</p> <div data-bbox="824 541 1421 997">  </div> <p>➤ Worksheet 14.2.1 and 14.2.2: Checking Your Tread Wear and Tire Pressure</p>

Steps to Maintain Your Tires

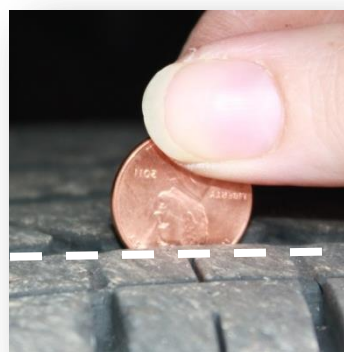
Fact Sheet 14.2 Content Information

Checking Your Tread Wear

Two methods to check the tread wear:

1. Use the Penny Test

- Take a penny and hold Abraham Lincoln's body between your thumb and forefinger.
- Insert the penny into multiple points in the tread across the tire to check for wear. Do the Penny Test on multiple places on the tire tread because tires can wear unevenly. If the top of Lincoln's head is covered by the tread, you've got over 2/32nd's of an inch of tread in that spot.
- If you can see a space between the tread and the top of Lincoln's head, your tread is below approximately 2/32 of an inch. Your car's ability to grip the road in adverse conditions is greatly reduced. 2/32nd's of an inch is the distance between the top of Lincoln's head and the bottom of the penny.



2. Check the tread wear indicators.

- Tires have tread wear indicators molded into the base of the main grooves.
- When the tread surface is worn to the same level as these indicators, the tire is at the legal limit and should be replaced.

Steps to Maintain Your Tires

Worksheet 14.2.1

Checking Your Tread Wear

Name _____

Date _____

Directions: Fill in the correct answers for each question below.

_____ 1. When checking the tires tread depth, in which direction should you place the penny?

A. Lincoln's head up



B. Lincoln's head down



C. Lincoln's head backwards



_____ 2. When conducting the Penny Test, what is indicated if you can see a space between the tread and the top of Lincoln's head?

A. The tires are worn and should be replaced

B. The tires have sufficient tread in that spot

C. The tires are worn but do not need to be replaced yet

_____ 3. If your tread gets below 2/32 of an inch, your car's ability to grip the road in adverse conditions is greatly reduced. True or False.

_____ 4. You should check your tires tread with the Penny Test every 6 months.
True or False.

5. What is the importance of checking the tread depth?

Unit 14 Tire Safety and Maintenance

Steps to Maintain Your Tires

Worksheet 14.2.1 ANSWER KEY

Checking Your Tread Wear ANSWER KEY

Name

Date

Directions: Fill in the correct answers for each question below.

To see the answer key you must contact the ADTSEA office.



Unit 14 Tire Safety and Maintenance

Steps to Maintain Your Tires

Worksheet 14.2.2

Checking Your Air Pressure

Name

Date

Directions: Fill in the correct answers for each question below.

- _____ 1. You should check your tire's air pressure after driving the vehicle when the tires are hot. True or False.
- _____ 2. What should happen when you insert a manual tire pressure gauge into the valve stem on your tire?
- A. The tire gauge will click when it is ready
 - B. The tire gauge will pop out, but you will not hear any noise
 - C. The tire gauge will pop out and you will hear a "psst" sound
- _____ 3. If your vehicle's recommended tire pressure is 32 psi and the tire pressure gauge indicates your tire pressure is 30 psi what should you do?
- A. Let air out of the tire
 - B. Add air to the tire
 - C. Replace your tires
- _____ 4. Tires have been known to lose up to 1 psi every month.
True or False.
5. What is psi and where can you find your vehicle's recommended tire pressure?



Unit 14 Tire Safety and Maintenance

Steps to Maintain Your Tires

Worksheet 14.2.2 ANSWER KEY

Checking Your Air Pressure ANSWER KEY

Name

Date

Directions: Fill in the correct answers for each question below.

To see the answer key you must contact the ADTSEA office.



Unit 14 Tire Safety and Maintenance

Steps to Maintain Your Tires		Part 2 continued Lesson Content
Lesson Content	Materials and Resources	
<u>Checking Your Air Pressure and Tread Wear</u> ➤ Learning Activity 14.2 Conduct learning activity to gauge student understanding of how to check the tires air pressure and tread wear. If time is short, have the student take this activity home and complete as a homework assignment. Have them bring it back to class and discuss. As an option, have them post a picture and description on social media of them conducting the Penny Test and checking the tire pressure.	➤ Learning Activity 14.2: Checking Your Air Pressure and Tread Wear	

Learning Activity 14.2 Checking Your Air Pressure and Tread Wear



Topic

Checking Your Air Pressure and Tread Wear

Information

New drivers must learn how to determine the recommended pressure for their tires, properly check their air pressure, add air to their tires and check the tread wear of the tires by using the Penny Test. This activity will help to check tire pressure, add air to the tires and check tire tread wear.



Materials Needed

1. Driver education vehicle(s) or personal vehicle
2. Tire pressure gauge
3. Air compressor (if available) or go to a gas station / tire professional
4. A penny
5. Vehicle owner's manual
6. Directions to check the tire pressure and tread depth

Learning Activity Part I

This activity needs to be completed in a parking lot, driveway or range. In groups, as a class or as a take home assignment, all students should practice determining the recommended pressure for their tires by checking the vehicle's owner manual and/or the sticker on the driver's side door jamb and practice checking the tire's air pressure with an air pressure gauge.

1. Purchase or provide a trusted pressure gauge.
2. Check the recommended tire pressure by looking at the vehicle owner's manual and/or on the sticker on the driver's side door jamb.
3. Check your tires "cold" – before you've driven or at least three hours after you've driven.
4. Insert the pressure gauge into the valve stem on the tire. (The gauge will "pop" out and show a number. That's the psi number. When you hear a "psst" sound, that's air escaping the tire. The escaping air shouldn't affect pressure substantially, unless you hold down the air pressure gauge too long.)
5. Compare the measured psi to the psi found on the sticker inside the driver's door or in the owner's manual. DO NOT compare to the psi on your tire's sidewall. The size and the weight of the vehicle determine the recommended psi. The number on the sidewall represents the maximum amount of pressure for the tire, not what is proper for the vehicle.
6. If your psi is above the number, let air out until it matches. If it's below, add air (or have a professional help you) until it reaches the proper number.

Learning Activity 14.2 Checking Your Air Pressure and Tread Wear



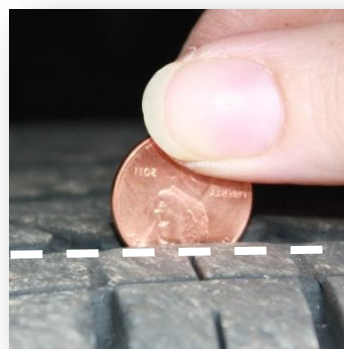
Topic

Checking Your Air Pressure and Tread Wear (continued)

Learning Activity Part II

This activity needs to be completed in a parking lot, driveway or range. In groups, as a class or as a take home assignment, all students should practice checking a tire's tread depth with a penny and checking the tread wear indicators on the tires.

1. Check the tread wear indicators on the tires. When the tread surface is worn to the same level as these indicators, the tire is at the minimum safe limit and should be replaced.
2. Check the tread wear using the Penny Test by:
 - a. Taking a penny and holding Abraham Lincoln's body between your thumb and forefinger.
 - b. Insert the penny into multiple points in the tread across the tire to check for wear. Do the Penny Test on multiple places on the tire tread because tires can wear unevenly..
 - c. If the top of Lincoln's head is covered by the tread, you've got sufficient tread in that spot. If you can see a space between the tread and the top of Lincoln's head, your tread is below approximately 2/32 of an inch. Your car's ability to grip the road in adverse conditions is greatly reduced.
3. Summarize the activity and the importance of checking the tread depth.



Unit 14 Tire Safety and Maintenance

Steps to Maintain Your Tires

Learning Activity 14.2

Checking Your Air Pressure and Tread Wear

Name _____

Date _____

Directions: When completing this activity fill in the following results about your tires.

1. What is the make, model and year of your vehicle?

2. What is your vehicle's recommended pounds per square inch (psi)?

3. What was the tire's psi's when checked with a tire pressure gauge?


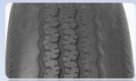




- a. Front driver-side tire psi _____
- b. Rear driver-side tire psi _____
- c. Rear passenger-side tire psi _____
- d. Front passenger-side tire psi _____

4. When conducting the Penny Test indicate for each tire whether the tire passed or failed the Penny Test by circling P or F? Passed (P) good tread, Failed (F) poor tread and tire needs to be replaced

- a. Front driver-side tire P F
- b. Rear driver-side tire P F
- c. Rear passenger-side tire P F
- d. Front passenger-side tire P F



Unit 14 Tire Safety and Maintenance

<div style="display: flex; justify-content: space-between;"> Tire Maintenance Issues Part 3 </div> <div style="text-align: right;">Lesson Content</div>	
 Lesson Objective: Student will identify tire conditions, including under-inflation, uneven wear issues, tire damage and vibration issues.	
Lesson Content	Materials and Resources
<p><u>Tire Maintenance Issues</u></p> <p>➤ Fact Sheet 14.3</p> <p>Duplicate and distribute Fact Sheet 14.3 for students to use as a resource and study guide.</p> <p>➤ Slides 14.29 through 14.33</p> <p>Discuss how to identify under-inflation, uneven wear issues, damage to tires and issues with vibration.</p> <p>To show under-inflation take helium balloon out into the cold air or put in the freezer and let it shrivel up. Then blow dry it with a hair dryer and watch as it fills back up again with air.</p> <p>Also see Unit 3 page 3-17 for activity on the tire's footprint.</p>	<p>➤ Fact Sheet 14.3: Identifying Maintenance Issues</p> <p>➤ Slides 14.29 through 14.33: Identifying Maintenance Issues</p> <div style="display: grid; grid-template-columns: 1fr 1fr; gap: 10px;"> <div data-bbox="824 924 1117 1140"> <p>Tire Maintenance Issues</p> <ul style="list-style-type: none"> • Under-inflation <ul style="list-style-type: none"> – Add air to your tire until it reaches the recommended air pressure – If the tire continues to lose pressure, visit a tire professional  </div> <div data-bbox="1125 924 1417 1140"> <p>Tire Maintenance Issues</p> <ul style="list-style-type: none"> • Uneven wear issues <ul style="list-style-type: none"> – If uneven front or rear tire wear <ul style="list-style-type: none"> ○ Need a front end or four wheel alignment – See a tire professional  </div> <div data-bbox="824 1150 1117 1367"> <p>Tire Maintenance Issues</p> <ul style="list-style-type: none"> • Damage to tires <ul style="list-style-type: none"> – If your tire is damaged by a nail hole or is cut up to 1/4" it may be repaired or replaced by a tire professional  </div> <div data-bbox="1125 1150 1417 1367"> <p>Tire Maintenance Issues</p> <ul style="list-style-type: none"> • Vibration Issues <ul style="list-style-type: none"> ○ Tires that are out of balance can cause a vibration that can lead to <ul style="list-style-type: none"> - driver fatigue - wear on tires and suspension – Visit your tire professional  </div> <div data-bbox="824 1377 1117 1593"> <p>Tire Maintenance Issues</p> <ul style="list-style-type: none"> • Flat Tire <ul style="list-style-type: none"> – Have a plan prepared – Get off the roadway as far as possible – If you are on the interstate, get off at the next exit. – Do not attempt to change a tire if it is risking your safety.  </div> </div>

Tire Maintenance Issues

Fact Sheet 14.3
Content Information

Identifying Maintenance Issues

Some of the most common issues that may occur with your vehicle's tires include, under-inflation, uneven wear issues, tire damage and vibration issues.

Under-inflation

If your tires are under-inflated add air to your tire until it reaches the recommended air pressure. If your tire continues to lose pressure, visit a tire professional.

**Uneven Wear Issues**

If your tires have uneven front or rear tire wear your vehicle may need a "front end" alignment or a "four wheel" alignment. See your tire professional for assistance.

**Damage to Tires**

If your tire(s) is damaged by a nail hole or is cut up to 1/4" it may be repaired or replaced by a trained professional. Replace your damaged tire with a spare, if available and take your vehicle to a tire professional as soon as possible.

**Vibration Issues**

Tires that are out of balance can cause a vibration that can lead to driver fatigue, premature or uneven tire wear, and unnecessary wear and tear on your vehicle's suspension. Tires should be balanced when they are mounted on wheels for the first time or when they are remounted after being repaired. Visit your tire professional at the first sign of vibration or "shimmy."

**Flat Tire**

Have a plan prepared with your parent in case you get a flat tire, including calling the parent or roadside assistance or learning how to change a flat tire. If you have a flat tire get off the roadway as far as possible. If you are on the interstate get off at the next exit. Do not stop on the interstate. Do not attempt to change a tire if it risks the safety of you or your passengers.



Unit 14 Tire Safety and Maintenance

Tire Maintenance Issues		Part 3 Lesson Content
Lesson Content	Materials and Resources	
<u>Good Tires vs. Damaged Tires, Poor Tread, Poor Inflation</u> ➤ Learning Activity 14.3 Conduct learning activity to gauge student understanding of damaged tires, poor tread and poor inflation.	➤ Learning Activity 14.3: Good Tires vs. Damaged Tires, Poor Tread, Poor Inflation	

Learning Activity 14.3

Good Tires vs. Damaged Tires, Poor Tread, Poor Inflation



Topic

Good Tires vs. Damaged Tires, Poor Tread, Poor Inflation

Information

New drivers must learn how to determine the difference between a good tire and damaged tires, poor tread, poor inflation, etc. This activity will demonstrate the difference between good and poor tires.

Materials Needed

1. Different quality tires (good tires, damaged tires, poor tread, poor inflation).
2. Parking lot with various vehicles to visually inspect tires.

Learning Activity


This activity can be completed in a parking lot. As a class, the teacher will point out visually different quality tires to students in the parking lot, showing the difference between good tires and tires with defects, poor tread and poor inflation.

1. Demonstrate to the class what a good tire looks like vs. damaged tires, poor tread and poor inflation.



Tire with poor tread depth

Unit 14 Tire Safety and Maintenance

Tire Maintenance	Part 4 Lesson Content
<div style="display: flex; align-items: center;">  <div> <p>Lesson Objective:</p> <p>Student will describe how to care for tires including tire rotation, alignment, and balancing.</p> </div> </div>	
Lesson Content	Materials and Resources
<p><u>Tire Maintenance: Tire Rotation, Alignment and Balancing</u></p> <p>➤ Fact Sheet 14.4</p> <p>Duplicate and distribute Fact Sheet 14.4 for students to use as a resource and study guide.</p> <p>➤ Slide 14.34</p> <p>Discuss tire rotation, when it should be done and the benefits.</p> <p>Download vehicle manuals online and show them to the students and how they provide different information on tire rotation, alignment and balancing for different vehicles.</p> <p>➤ Slide 14.35</p> <p>Discuss tire alignment, when it should be done and the benefits.</p> <p>➤ Slide 14.36</p> <p>Discuss tire balancing, when it should be done and the benefits.</p>	<p>➤ Fact Sheet 14.4: Caring for Your Tires</p> <p>➤ Slide 14.34: Tire Rotation</p> <div data-bbox="980 871 1278 1094" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center;">Tire Rotation</p> <ul style="list-style-type: none"> Each tire and wheel is <ul style="list-style-type: none"> Removed from your vehicle and Moved to a different position to ensure that all tires wear evenly and last longer Rotate tires every 6,000 to 8,000 miles <ul style="list-style-type: none"> Extending the life of your tires Improving performance </div> <p>➤ Slide 14.35: Tire Alignment</p> <div data-bbox="1011 1308 1302 1522" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center;">Tire Alignment</p> <ul style="list-style-type: none"> May require slight adjustment of front and/or rear suspension components Have your alignment checked: <ul style="list-style-type: none"> When you hit a sizeable object See wear on outer edges of tires Feel a difference in vehicle handling Every 4,350 miles Good alignment helps minimize wear and tear </div> <p>➤ Slide 14.36: Tire Balancing</p> <div data-bbox="1011 1640 1302 1862" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center;">Tire Balancing</p> <ul style="list-style-type: none"> Balancing or wobbling can occur when <ul style="list-style-type: none"> One area is heavier or lighter than the rest Have your tires balanced when <ul style="list-style-type: none"> A tire is replaced A balance weight is moved or removed You purchase new tires </div>

Tire Maintenance

Fact Sheet 14.4
Content Information

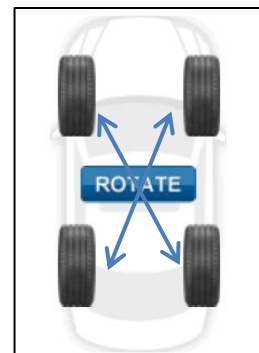
Tire Maintenance: Tire Rotation, Balancing and Alignment

Tire Rotation

During rotation, each tire and wheel is removed from your vehicle and moved to a different position to ensure that all tires wear evenly and last longer.

Tires should be rotated based on your vehicle manufacturer's recommendation or every 6,000 to 8,000 miles. Monthly inspection for tire wear is recommended.

Since the position of the tire on your vehicle can affect how it wears down, regular rotation helps ensure that tires wear evenly, extending the life of your tires and improving performance.

**Tire Alignment**

Is a simple process, which may require slight adjustment of front and/or rear suspension components. If your alignment is off, your vehicle could be unsafe to drive.

You should have your alignment checked when you've hit a sizable object on the road, you see a wear pattern developing on the shoulders (outer edges) of the tires, you notice a difference in your vehicle's handling or when you are steering (vehicle pulls to one side, steering wheel does not return easily after a turn, steering wheel remains at an angle when driving in a straight line), when you replace suspension or steering components, at least every 4,350 miles.



This helps minimize wear and tear and to maximize driver and passenger comfort.

Tire Balancing

A wheel is out of balance when one area is heavier or lighter than the rest. The result is bouncing or wobbling, which can decrease tread life, increase vibration, and cause stress on your vehicle.

You should have your tires balanced when a tire is replaced, when a balance weight is moved or removed and when you purchase new tires.



Unit 14 Tire Safety and Maintenance



Buying Tires

Part 5 Lesson Content



Lesson Objective:

Student will explain how to determine if you need new tires and how to buy the correct tires for a vehicle.

Lesson Content	Materials and Resources
<p><u>How to Determine if You Need New Tires</u></p> <ul style="list-style-type: none"> ➤ Fact Sheet 14.6 <p>Duplicate and distribute Fact Sheet 14.6 for students to use as a study guide and resource.</p> <ul style="list-style-type: none"> ➤ Slides 14.37 through 14.39 <p>Discuss how to determine when to replace your tires.</p>	<ul style="list-style-type: none"> ➤ Fact Sheet 14.6: Buying Tires ➤ Slides 14.37 through 14.39: Is My Tire Worn Out? <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div data-bbox="824 884 1117 1104" style="border: 1px solid black; padding: 5px; width: 45%;"> <p style="text-align: center;">Is My Tire Worn Out?</p> <ul style="list-style-type: none"> Replace tires if the tread is worn beyond recommended levels.  <p style="text-align: right; font-size: small;">Slide 14.37 ADTSEA</p> </div> <div data-bbox="1128 884 1421 1104" style="border: 1px solid black; padding: 5px; width: 45%;"> <p style="text-align: center;">Is My Tire Worn Out?</p> <ul style="list-style-type: none"> Inspect your tires regularly and look for: <ul style="list-style-type: none"> ○ Uneven tread wear ○ Shallow tread ○ Troublemakers (rocks, nails, etc.) ○ Damaged areas ○ Damaged valve caps  <p style="text-align: right; font-size: small;">Slide 14.38 ADTSEA</p> </div> </div> <div data-bbox="979 1119 1271 1339" style="border: 1px solid black; padding: 5px; margin-top: 10px; width: 60%; margin: auto;"> <p style="text-align: center;">Pay Attention to the "Feel" of Your Tires</p> <ol style="list-style-type: none"> 1. A rough ride may indicate tire damage or excessive wear. 2. If you notice vibrations or other disturbances stop and inspect your tires. 3. If a tire is damaged, deflate it and replace it with your spare. 4. If you do not see any tire damage take the vehicle to a tire professional. <p style="text-align: right; font-size: small;">Slide 14.39 ADTSEA</p> </div>

Buying Tires

Fact Sheet 14.5
Content Information

Is My Tire Worn Out?

We recommend to replace your tires if:

- The tread is worn beyond the recommended tread depth levels

1. Inspect your tires regularly and look for:

- Uneven tread wear
- Shallow tread
- Troublemakers (rocks, nails, etc.)
- Damaged areas
- Damaged valve caps

2. Pay attention to the “feel” of your tires as you drive.



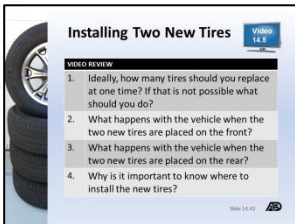
- A rough ride may indicate tire damage or excessive wear.
- If you notice vibrations or other disturbances while driving, immediately reduce speed, drive with caution until you can safely pull off the road and stop, and inspect your tires.
- If a tire is damaged, deflate it and replace it with your spare. If you do not see any tire damage and cannot identify the source of the vibration, take the vehicle to a tire professional for a thorough inspection.

3. See a professional

- If you see something on your tire that you’re not sure about during your inspection, have it examined by your tire professional.

Buying Tires

Part 5 Lesson Content

Lesson Content	Materials and Resources
<p><u>Replacing Your Tires</u></p> <p>➤ Video Review 14.5</p> <p>Duplicate and distribute Video Review 14.5. Students should complete the worksheet as they watch the video.</p> <p>➤ Slides 14.40 through 14.42 – Video 14.5</p> <p>Discuss the topics covered in Video 14.5</p> <p>Play Video 14.5</p> <p><i>Installing Two New Tires</i></p> <p>(Time: 1 minute 15 seconds)</p> <p>After viewing, review Video Review 14.5 to gauge student understanding of the video.</p>	<p>➤ Video Review 14.5 and Answer Key: Installing Two New Tires</p> <p>➤ Slides 14.40 through 14.42: Video 14.5 <i>Installing Two New Tires</i></p> <div>    </div>

Buying Tires

Video Overview 14.5



Video Overview 14.5: Installing Two New Tires

Title

Installing Two New Tires

Time

1 minute 15 seconds

Topics Covered

1. Where you should install two new tires on your vehicle.
2. Why it is important to install two new tires on the rear axle.

Video Review

1. Have students complete a video review worksheet as they watch the video.
2. After viewing the video, review the worksheet to gauge students' understanding of the video.

Instructor Notes

Unit 14 Tire Safety and Maintenance

Buying Tires

Video Review 14.5

Video Review 14.5: Installing Two New Tires

Name

Date

1. Ideally, how many tires should you replace at one time? If that is not possible what should you do?

2. What happens with the vehicle when the two new tires are placed on the front?

3. What happens with the vehicle when the two new tires are placed on the rear?

4. Why is it important to know where to install the new tires?



Unit 14 Tire Safety and Maintenance

Buying Tires

Video Review 14.5 ANSWER KEY





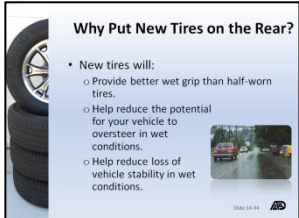
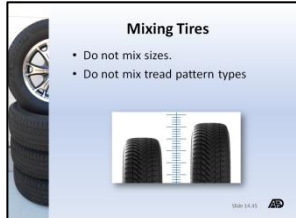
Video Review 14.5: Installing Two New Tires ANSWER KEY

To see the answer key you must contact the ADTSEA office.



Buying Tires

Part 5 Lesson Content

Lesson Content	Materials and Resources
<p><u>Replacing Your Tires</u></p> <p>➤ Slides 14.43 through 14.48</p> <p>Discuss how to replace and buy new tires and what to do if replacing only two tires or mixing tires.</p>	<p>➤ Slides 14.43 through 14.48: Replacing Your Tires</p> <div> <div>  <p>Replacing Your Tires</p> <ul style="list-style-type: none"> Choosing the correct tire Locate the vehicle's tire size <ul style="list-style-type: none"> Vehicle owner's manual or Driver's side door jamb Consult a tire professional to determine the correct tire size. </div> <div>  <p>Replacing Your Tires</p> <ul style="list-style-type: none"> Recommended to replace all four tires at the same time: <ul style="list-style-type: none"> For maximum safety To maintain even wear and traction on all four tires </div> </div> <div> <div>  <p>Replacing Your Tires</p> <ul style="list-style-type: none"> You can replace your tires with <ul style="list-style-type: none"> the same tires or another tire that meet the specifications There are different types of tires depending on the climate you live in. See a tire professional to mount and align new tires </div> <div>  <p>Replacing Only Two Tires</p> <ul style="list-style-type: none"> When replacing two new tires instead of four be sure your new tires are <ul style="list-style-type: none"> Same size Tire type Install two new tires on the rear axle. </div> </div> <div> <div>  <p>Why Put New Tires on the Rear?</p> <ul style="list-style-type: none"> New tires will: <ul style="list-style-type: none"> Provide better wet grip than half-worn tires. Help reduce the potential for your vehicle to oversteer in wet conditions. Help reduce loss of vehicle stability in wet conditions. </div> <div>  <p>Mixing Tires</p> <ul style="list-style-type: none"> Do not mix sizes. Do not mix tread pattern types </div> </div>

Buying Tires

Fact Sheet 14.5
Content Information

Replacing Your Tires

General advice

- A lot goes into choosing the correct tire. You can find your vehicle's tire size in your vehicle owner's manual or on the driver's side door jamb. Consult your tire professional when replacing your tires to determine the correct tire size.
- It is recommended to replace all four tires at the same time for maximum safety to maintain even wear and traction on all four tires.
- Take time to research. You can replace your original equipment tires with the same tire or another tire that meets the original equipment specifications.
- There are different types of tires depending on the climate in which you live (i.e. all-season, summer, and winter tires).
- See a tire professional to mount and align your new tires.

Replacing only two tires

When replacing two new tires instead of four, be sure that your new tires are the same size and tire type as your current tires. Most tire professionals recommend installing the new tires on the rear axle of your vehicle.

Why Put New Tires on the Rear Axle?

- New tires will provide better wet grip than half-worn tires.
- When new tires are installed on the rear, it helps reduce the potential for your vehicle to oversteer and loss of vehicle stability in wet conditions.

What guidelines should I follow when mixing tires?

If no instructions for tire mixing appear in the vehicle owner's manual, adhere to the following guidelines:

- Do not mix sizes. All four tires must be branded with the same tire size.
- Do not mix tread pattern types.

Unit Review and Test

Part 6
Lesson Content



Lesson Objective:

Student will evaluate their knowledge of the content presented in Unit 14 through review questions, key word matchup worksheet and unit test.

Lesson Content	Materials and Resources
<p><u>Review Questions</u></p> <p>➤ Review Questions</p> <p>Ask review questions to summarize discussion on Unit 14.</p>	<p>➤ Unit 14 Review Questions</p>

Unit 14 Review Questions



1. Why is it important to maintain your tires?
2. What should you do to avoid any problems with your tires?
3. How often should you check your tires?
4. When should you check your tire pressure?
5. Where can you find the recommended psi for your vehicle?
6. If the psi of your tires is below the recommended psi what should you do?
7. What is the Penny Test used to check for?
8. How do you conduct the Penny Test?
9. If you notice any signs of damage to your tires, such as uneven wear, a nail hole or vibration issues while driving, what should you do?
10. When replacing only two tires on your vehicle where should the new tires be placed?

To see the answer key you must contact the ADTSEA office.

<div> <div>Unit Review and Test</div> <div>Part 6 continued Lesson Content</div> </div>	
Lesson Content	Materials and Resources
<p><u>Words to Know Review</u></p> <p>➤ Fact Sheet 14.6</p> <p>Duplicate and distribute Fact Sheet 14.6. Use the definitions page as a resource for teaching and for the students as a resource and study guide.</p> <p>➤ Worksheet 14.6</p> <p>Duplicate and distribute. Have students complete the worksheet.</p> <p>Review the answers.</p>	<p>➤ Fact Sheet 14.6: Unit 14 Words to Know Definitions Page</p> <p>➤ Worksheet 14.6 and Answer Key: Unit 14 Words to Know Matchup</p>

Unit 14 Words to Know Definitions Page

Fact Sheet 14.6 Content Information



2/32 of an inch – The legal minimum tread depth in the United States. If your car is at or below that your tires need replaced.

Over-inflated tires – Tires with too much air pressure. Air should be removed from the tire to the vehicle's recommended psi.

Penny Test – Used to determine if your tires tread is good or if it is low and needs replaced by inserting a penny with Lincoln's head face down into the lowest part of the tread. It is important to conduct the Penny Test in multiple places on the tire tread, because tires can wear unevenly. If Lincoln's head is covered by the tread the tire is good in that spot, if the top of the head is not covered and can be seen the tread is low and the tire needs replaced.

Pounds per square inch (psi) – The measurement for tire pressure. The recommended psi for your vehicle can be found on the driver's side door jamb of the vehicle or in the vehicle owner's manual.

Spare tire – Extra tire in the trunk of your vehicle if your tire is flat or damaged and needs to be replaced temporarily until it can be checked by a tire professional.

Tire alignment – Slight adjustment of front and/or rear suspension components by a tire professional so your vehicle and tires drive straight and do not pull to one side. This should be done if you hit a sizeable object on the road, you see a wear pattern on the outer edges of the tire, you notice a difference in the vehicle's handling or at least every 4,350 miles.

Tire balancing – The distribution of weight within a tire to which it is attached. If the wheel is out of balance one area is heavier or lighter than the rest. Have your tires balanced when a tire is replaced, when a balance weight is moved or removed and when you purchase new tires.

Tire pressure – The amount of air in your tire(s) measured in psi (pounds per square inch). Incorrect tire pressure can affect a vehicle's handling and braking.

Tire pressure gauge – An instrument or tool used to check the amount of air pressure in your tire(s).

Tire professional – The person who sells, installs and/or repairs tires and is trained in selling, installing, inspecting and repairing tires.

Tire rotation – Each tire and wheel is removed from your vehicle and moved to a different position to ensure that all tires wear evenly and last longer and should be done every 6,000 to 8,000 miles.

Unit 14 Words to Know Definitions Page

Fact Sheet 14.6
Content Information

Tread wear – The overall condition of the remaining tread – is it evenly worn, is there sufficient tread depth remaining?

Tread wear indicators – A mark molded into the base of the main grooves of the tire which shows if the tread surface is worn. When the tread surface is worn to the same level as these indicators, the tire is beyond the minimum safe limit and should be replaced.

Under-inflated tires – Tires with not enough air pressure. Air should be added to the tires to the vehicle's recommended psi.

Uneven tread wear – Grooves across the tire have different depths, which may be an indication of an improperly inflated tire or some other underlying tire or vehicle issue.

Unit 14 Tire Safety and Maintenance

Unit 14 Words to Know Matchup

Worksheet 14.6

Name _____

Date _____

Directions: Match the clues on the left with the words in the list on the right. Place the matching letter in the blank to the left of the number.

- | | |
|--|---------------------------|
| _____ 1. The amount of air in your tire(s). | A. 2/32 of an inch |
| _____ 2. Slight adjustment of front and/or rear suspension components by a tire professional so your vehicle and tires drive straight and do not pull to one side. | B. Over-inflated tires |
| _____ 3. The legal minimum tread depth in the United States. | C. Penny Test |
| _____ 4. An instrument or tool used to check the amount of air pressure in your tire(s). | D. Pounds per square inch |
| _____ 5. The overall condition of the remaining tread. | E. Spare tire |
| _____ 6. Used to determine if your tires' tread is good or if it is low and needs replaced. | F. Tire alignment |
| _____ 7. Each tire is moved to a different position on the vehicle to ensure that all tires wear evenly. | G. Tire balancing |
| _____ 8. Tires with too much air pressure. | H. Tire pressure |
| _____ 9. Grooves across the tire have different depths that may indicate an improperly inflated tire or some other underlying issue. | I. Tire pressure gauge |
| _____ 10. The distribution of weight within a tire to which it is attached. | J. Tire professional |
| _____ 11. A mark molded into the tire which shows if the tread surface is worn. | K. Tire rotation |
| _____ 12. Tires with not enough air pressure. | L. Tread wear |
| _____ 13. The measurement for tire pressure. | M. Tread wear indicators |
| _____ 14. Extra tire in the trunk of your vehicle if your tire is flat or damaged. | N. Under-inflated tires |
| _____ 15. The person who sells, installs and/or repairs tires and is trained in selling, installing, inspecting and repairing tires. | O. Uneven tread wear |



Unit 14 Words to Know Matchup

Worksheet 14.6
ANSWER KEY

ANSWER KEY

Directions: Match the clues on the left with the words in the list on the right. Place the matching letter in the blank to the left of the number.

To see the answer key you must contact the ADTSEA office.


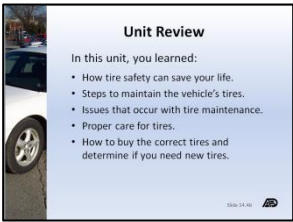



Unit 14 Tire Safety and Maintenance

Unit Review and Test

Part 6 continued

Lesson Content

Lesson Content	Materials and Resources
<p><u>Tire Safety and Maintenance</u></p> <p>➤ Slide 14.49</p> <p>Discuss what the students have learned by the end of this unit.</p> <p>➤ Unit 14 Test</p>  <p>Duplicate and distribute the Unit 14 Test.</p> <p>Collect and grade the test.</p> <p>After returning tests to the students, review the answers and clarify any confusion.</p>	<p>➤ Slide 14.49: Unit Review</p> <div data-bbox="982 497 1273 716">  <p style="text-align: center;">Unit Review</p> <p>In this unit, you learned:</p> <ul style="list-style-type: none"> • How tire safety can save your life. • Steps to maintain the vehicle's tires. • Issues that occur with tire maintenance. • Proper care for tires. • How to buy the correct tires and determine if you need new tires. <p style="text-align: right;">Slide 14.49 </p> </div> <p>➤ Unit 14 Test, page 14-61</p>

Unit 14 Review

Unit 14 Review

In this unit, you learned the following:

- Safe tires can save your life.
- Steps to maintain the vehicle's tires, including checking your tire pressure, tread depth and condition of the tires.
- Identified tire conditions, including under-inflation, uneven wear issues, damage to tires and issues with vibration.
- How to care for tires including, tire rotation, alignment and balancing.
- How to determine if you need new tires and how to buy the correct tires for a vehicle.
- Key words associated with the unit objectives.

To see the Unit Test you must contact the ADTSEA office.

To see the Unit Test you must contact the ADTSEA office.

Unit 14 ANSWER KEY

To see the Unit Test you must contact the ADTSEA office.

