



West Virginia Firewise in the Classroom

Firewise Communities: Reducing the Risk of Wildfire

Lesson 1: What Is Wildfire?

LESSON OVERVIEW

In this lesson students define wildfire and use diagrams and maps to predict, identify and explain West Virginia wildfire locations.

TEACHER NOTES

BEFORE BEGINNING THE ACTIVITY

1. Familiarize yourself with Lesson 1a - Fire Ecology Presentation and Lesson 1 – Fire Ecology-Science of Wildfire PowerPoint slide show on the Disk 4 Teacher DVD has an audio track. When you start the Ecology slide show the audio starts right away. The Science of Wildfire portion has a sound button that must be clicked to listen to the audio track.
2. Familiarize yourself with the Fire Triangle and Fire Behavior Triangle. See the Teacher Resource Links section for the Living With Fire website.

OBJECTIVES

The student will be able to:

1. Define wildfire.
2. Understand the Science of Wildfire.
3. Identify on a map of West Virginia where they think are most likely to experience wildfires.

ESTIMATED TIME

One to two 50-minute class periods.

MATERIALS NEEDED

Teacher

Overhead projector, Overhead pens
Computer and computer projection device
Internet connection
Transparencies 1 - 5: Wildfire, Definition of Wildfire, West Virginia wildfire map Fire Triangle, and Fire Behavior Triangle
Lesson 1a - Fire Ecology-Science of Wildfire PowerPoint slide show on Disk4 Teacher DVD
OPTIONAL: Biomes of North East poster, (available on the Internet)

Student

Firewise Student Guide 1 - Sections 1,2,3,4 (one copy per student)

VOCABULARY:

Must know: wildfire, Fire Triangle, Fire Behavior Triangle, topography

Could know: Geographic Information System (GIS)

ACTIVITY

1. Begin Lesson 1 by viewing the Fire Ecology narrated PowerPoint slide show.
2. After the slide show, place Transparency 1, Wildfire on the overhead projector. Ask students to silently create their own mental picture of wildfire. What does it look like? What does it sound like? What does it smell like? After a few moments, discuss their mental pictures.

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Lesson 1: What Is Wildfire? (Continued)

3. Now, ask students to define wildfire. Record their suggestions. After students have suggested several definitions, place Transparency 2, Firewise Definition of Wildfire, on the overhead. Compare and contrast student definitions with the Firewise definition. Ask students to explain which of the student definitions are accurate and why.
4. Pass out Firewise Student Guide 1. Read and discuss the Student Learning Goals, and provide students with a preview of the Firewise Communities: Reducing the Risk of Wildfire unit.
5. Have students turn to Section 1, What Is Wildfire, and record the accurate definitions of wildfire from the opening discussion.
6. Direct student's attention to Section 2 of the Student Guide, West Virginia Maps. On Map 1, ask students to predict the areas of West Virginia that experience the most wildfires, and to indicate those areas on the map by shading or symbolizing. Direct students to title their map, "Wildfire Location Predictions", or something similar.
7. When students have finished, ask them to "pair and share", turning to a classmate close to them to compare and contrast their maps. While students are exchanging ideas, place Transparency 3, West Virginia Map, on the overhead projector. After students have had a few minutes to discuss their maps with each other, ask a student volunteer to come to the overhead and share their prediction with the class on the overhead transparency. Have the student use an overhead pen to shade or symbolize the areas of the state that they believe experience the most wildfires.
8. When the student has finished and returned to his/her seat, poll the class. How many agree with the student? How many disagree? Why? Explain that the class will now look at two diagrams that may assist them in making a prediction of wildfire prone areas in West Virginia.
9. Direct student's attention to Section 3 of the Student Guide, The Science of Wildfire.
10. Place Transparency 4, Fire Triangle, on the overhead projector. Have students sketch and label the sides of the Fire Triangle in their Student Guide. Discuss each side of the triangle.
 - What is a fire's source of oxygen?
 - What are a fire's potential sources of heat?
 - What are a fire's potential sources of fuel?

Have students list these potential sources in their Student Guide.

11. Now place Transparency 5, Fire Behavior Triangle, on the overhead projector. Have students sketch and label the sides of the Fire Behavior Triangle in their Student Guide. Discuss each side of the triangle.
 - How can topography affect the occurrence and spread of wildfire?
 - How can weather affect the occurrence and spread of wildfire?
 - Which types of fuels feed a wildfire?
12. Redirect student's attention to Section 2 of the Student Guide, West Virginia Maps, and their Wildfire Location Predictions map. Which areas of West Virginia did they predict would experience the most wildfires? Does the new information about the Fire Triangle and the Fire Behavior Triangle change their predictions? If so, how? Discuss. Inform students that they will now have an opportunity to check their predictions.
13. Turn on the computer and computer projection device and navigate to the Wildfire Information Center web page at http://www.wvforestry.com/wildfire_danger_map.cfm

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Lesson 1: What Is Wildfire? (Continued)

14. Examine this page briefly and then click on the link to the Current Wildfire Locations map. You will see a map of Current Fire Locations. Under Select Map, click on the radio button for “Year-to-Date” to view all fires reported for the current calendar year. Note the date, summary figures and legend to the right and map tools to the left. (correct information from your state)
15. Compare and contrast the current fire information with student predictions. Discuss the idea that this data is for the year-to-date, that it may be early or late in the fire season, and that this year may be a typical or atypical year for West Virginia wildfire. Inform students that this web page is powered by computer software called a Geographic Information System (GIS).
16. Redirect student’s attention to Section 2 of the Student Guide, West Virginia Maps. On Map 2, ask students to indicate the areas of West Virginia that have experienced the most wildfires this year, based on what they have learned from the West Virginia Forestry website. Students should title their map, “Year-to-Date Wildfire Locations”, or something similar.
17. In conclusion, direct student’s attention to Section 4 of the Student Guide, Asking Geographic Questions about West Virginia Wildfire. Discuss the three basic questions of the geographer: Where is it? Why is it there? What difference does it make? Ask students to answer the three basic questions based on the day’s activity. (Students may feel most comfortable answering Questions 1 and 2. Lesson 2 will focus on understanding more about Question 3.)

CONCLUSION

Answer any questions related to the day’s topics.

ASSESSMENT

Informal - Firewise Student Guide 1 - Sections 1, 2, 3, 4

EXTENSION IDEAS

1. Display a variety of map layers from the AtlasGDS software. Discuss how map data about such things as topography, weather, fuels, and population can help us predict wildfire locations.
2. Students can further explore high and low wildfire risk areas in the United States and share their findings. See the Teacher Resource Links section for websites.

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Lesson 2: Interpreting Wildfire Information

LESSON OVERVIEW

In this lesson students identify the causes and effects of wildfire by examining and interpreting wildfire data, by brainstorming, by reading news stories about wildfires and by searching the Internet for recent articles on wildfires nationally and in West Virginia.

TEACHER NOTES

1. For the most recent wildfire data, see the Teacher Resource Links section for the websites of the National Interagency Fire Center.
2. An Answer Key for this lesson is found in the Answer Keys section.
3. Helpful background materials from the Firewise Teacher Training are found on Disk 4 Teacher DVD in the Resources folder.

OBJECTIVES

The student will be able to:

1. Interpret a West Virginia wildfire map on the Internet.
2. Interpret West Virginia and U.S. wildfire data.
3. Identify and explain West Virginia wildfire locations.
4. Identify causes and effects of wildfire.
5. Utilize primary source materials.

ESTIMATED TIME

One 50-minute class period plus homework time.

MATERIALS NEEDED

Teacher

Blackboard, overhead projector, or easel

Student

Firewise Student Guide 1 - Sections 5, 6, 7 (one copy per student)
West Virginia Wildfire News Stories handout (one copy per student)
Highlighter pen

VOCABULARY:

Should know: West Virginia Interagency Fire Center, National Interagency Fire Center, incendiary, arson

ACTIVITY

1. Begin Lesson 2 by reviewing the previous day's learning.
2. Direct student's attention to Section 5 of the Student Guide, Interpreting Wildfire Data. Explain that the wildfire data will provide more detailed information on the prevalence and causes of West Virginia and U.S. wildfires. Point out to students that this data is for the year 2000, and was collected by the West Virginia Division of Forestry and the National Interagency Fire Center.
3. Introduce or review the meanings of the words incendiary and arson.

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Lesson 2: Interpreting Wildfire Information (Continued)

4. Working independently or with a partner, have students examine the data and respond to the questions found in the Student Guide. When students have finished, discuss their responses.
5. After concluding the data discussion, ask students to brainstorm what the effects of wildfire may be. Record suggestions. Have students record the brainstorming suggestions in Section 6 of the Student Guide, Brainstorming: Effects of Wildfire. When the class has compiled an extensive list, ask the students to categorize the responses into physical effects and human effects, and to decide whether they consider these effects positive or negative. Discuss.
6. Pass out the West Virginia Wildfire News Stories handout. Inform students that these primary source materials will provide insights into the causes and effects of West Virginia wildfire and will be helpful in a future assignment to create a Wildfire Cause and Effect Concept Map. Direct student's attention to Section 7 of the Student Guide, West Virginia Wildfire News Stories, and explain that this is where they will be recording causes and effects of wildfire that they encounter in the news stories.
7. Read the first news story and have students highlight causes and effects of wildfire. Direct students to record the causes and effects, and add any new effects encountered to the brainstorming list in Section 6.
8. Assign the remaining West Virginia Wildfire News Stories and Section 7 of the Student Guide to be completed as homework.

CONCLUSION

Answer any questions related to the day's topics.

ASSESSMENT

Informal - Firewise Student Guide 1 - Sections 5, 6, 7

EXTENSION IDEAS

1. Students can further explore wildfire data and share their findings. See the Teacher Resource Links section for websites.
2. Students can locate additional news stories about wildfire and share their findings.

Lesson 3: Creating a Wildfire Cause and Effect Concept Map

LESSON OVERVIEW

In this lesson, students consider causes and effects of wildfire and learn how to create a concept map. In addition, students are introduced to Firewise and the Firewise Community Assessment process.

TEACHER NOTES

BEFORE BEGINNING THE ACTIVITY

1. If students are unfamiliar with concept maps, locate and present sample concept maps. See the Teacher Resource Links section for background information.
2. Determine assessment details for the Wildfire Cause and Effect Concept Map. For a sample rubric, see the Sample Assessment Rubrics section.
3. Be prepared to suggest wildfire resources to students who would like to do additional research to add more information to their concept maps. See the Teacher Resource Links section for suggested websites.

OBJECTIVES

The student will be able to:

1. Understand the physical and human effects of wildfire.
2. Create a concept map that synthesizes and illustrates the causes and effects of wildfire.

ESTIMATED TIME

One 50-minute class period plus homework time.

MATERIALS NEEDED

Teacher

Overhead projector
Transparencies 6 and 7: What Is Firewise? and Firewise Community Assessment Process

Student

For Lesson: Firewise Student Guide 1 - Section 8 (one copy per student)
For Concept Map: Firewise Student Guide 1, index cards or Post-It notes, large paper, poster board or concept mapping software such as Inspiration (<http://www.inspiration.com/>), markers or colored pencils

VOCABULARY:

Must know: concept map, Firewise

Should know: Wildland Urban Interface (WUI), Firewise Community Assessment

ACTIVITY

Begin Lesson 3 by reviewing the previous day's learning.

Discuss the West Virginia Wildfire News Stories, Section 7 of the Student Guide, and the effects of wildfire added to Section 6 of the Student Guide.

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Lesson 3: Creating a Wildfire Cause and Effect Concept Map (Continued)

Explain to students that as an assessment of their ability to summarize and synthesize the causes and effects of wildfire, they will be creating a concept map. Display sample concept map(s).

Direct student's attention to Section 8 of the Student Guide, Wildfire Cause and Effect Concept Map. Review assessment details.

After introducing the Concept Map assignment, place Transparency 6, What Is Firewise? on the overhead projector. Discuss. Inform students that they will be conducting a Firewise Community Assessment of their community. Place Transparency 7, Firewise Community Assessment Process, on the overhead projector. Discuss. Inform students that the next day's lesson will focus on understanding Firewise and the Firewise Community Assessment process in more depth.

CONCLUSION

Answer any questions related to the day's topics.

ASSESSMENT

Formal - Wildfire Cause and Effect Concept Map

Lesson 4: Introduction to Firewise West Virginia

LESSON OVERVIEW

In this lesson, students are introduced to Firewise terminology and assessment techniques, home fire risk factors, and steps communities can take to reduce home fire risk through a PowerPoint presentation and outlining activity.

TEACHER NOTES

An Answer Key for this lesson is found in the Answer Key section.

OBJECTIVES

The student will be able to:

1. Define Firewise terminology.
2. Identify home fire risk factors.
3. Understand assessment techniques used to determine Firewise property.
4. Identify steps communities can take to reduce home fire risk.

ESTIMATED TIME

One 50-minute class period.

MATERIALS NEEDED

Teacher

- Overhead projector
- Transparencies 6 and 7: What Is Firewise? and Firewise Community Assessment Project Overview
- Computer and computer projection device
- Lesson 4 – Intro_Firewise_WV PowerPoint presentation (Disk 4 Teacher DVD)

Student

- Firewise Student Guide 1 - Section 9 (one copy per student)

VOCABULARY:

Must know: Firewise, Firewise Community Assessment, Wildland/Urban Interface (WUI), home ignition zone, fire risk factors, Access, Site, Structure, Fire Use Practices, Firewise Community Plan

Should know: defensible space, Geographic Information Systems (GIS), fire ladder fuels, flammables, soffit, spark arrestor

Could know: Density Surface Model (DSM), composting

ACTIVITY

1. Begin Lesson 4 by reviewing the previous day's learning, including the Wildfire Cause and Effect Concept Map assignment. Answer any student questions related to the assignment.
2. Place Transparency 6, What Is Firewise? and later Transparency 7, Firewise Community Assessment Project Overview, on the overhead projector. Review and discuss.
3. Direct student's attention to Section 9 of the Student Guide, Lesson 4 - Introduction to Firewise West Virginia PowerPoint Presentation. Prepare to show the PowerPoint presentation.
4. Review: Lesson 4 - Introduction to Firewise WV – Instructor Notes Hand-out on DISK4 Teacher DVD.

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Lesson 4: Introduction to Firewise West Virginia (Continued)

5. Inform students that they will be utilizing this information in future classes to conduct the Firewise Community Assessment, to prepare a Letter to Homeowners explaining the Firewise Community Assessment and to create a Community Report.
6. Direct students to fill in the outline as they watch. Show Lesson 4 – Intro_Firewise_WV PowerPoint presentation.
7. After the presentation is completed, allow students a few minutes to finish the outline. Discuss student responses.

CONCLUSION

1. Answer any questions related to the day's topics.
2. If appropriate, remind students of the due date for their Wildfire Cause and Effect Concept Maps.

ASSESSMENT

Informal - Firewise Student Guide 1 - Section 9

EXTENSION IDEAS

Students can explore the National Firewise and Firewise West Virginia websites and share their findings. See the Teacher Resource Links section for websites.

Lesson 5: Using Census Data to Explore West Virginia Population Growth and Change

LESSON OVERVIEW

In this lesson, students analyze West Virginia demographic data available on the Internet and consider why and how demographic trends relate to the Firewise program.

TEACHER NOTES

BEFORE BEGINNING THE ACTIVITY

1. Depending on computer availability, student may work individually or in pairs.
2. This lesson assumes that students are familiar with graduated color (choropleth) maps and population pyramids.
3. Supplementary demographic images are found on Disk 4 Teacher DVD in the Resources folder.
4. Determine assessment details for the "West Virginia's Population Demographics and Firewise" paragraphs. For a sample rubric, see the Sample Assessment Rubrics section.
5. An Answer Key for this lesson is found in the Answer Key section.

OBJECTIVES

The student will be able to:

1. Explore West Virginia demographic data available on the U.S. Census Bureau website.
2. Interpret graduated color (choropleth maps).
3. Explore West Virginia population projection data on the U.S. Census Bureau website.
4. Review 2005 population estimates data for counties in West Virginia.
5. Learn how to calculate population change.
6. Identify areas of West Virginia that have gained and lost population since 2000.
7. Explain why the Firewise program is interested in analyzing demographic data and how it is applicable to Firewise issues.

ESTIMATED TIME

One to two 50-minute class periods.

MATERIALS NEEDED

Student

Student computers (one per student or per pair of students)
Internet connection (if you do not have an Internet Connection use the Demographic hand outs provided on DISK 4 Teacher DVD)
Firewise Student Guide 1 - Section 10 (one copy per student)
Demographic handouts on DISK 4, found under curriculum folder 4-Handouts. Additional Demographic Images are found in the Resources folder.

VOCABULARY:

Must know: demographic data, graduated color or choropleth map

Could know: population projection

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Lesson 5: Using Census Data to Explore West Virginia Population Growth and Change (Continued)

ACTIVITY

1. Begin Lesson 5 by reviewing the previous day's learning.
2. Engage students in a discussion about West Virginia population growth and change.
 - Who collects population data and how often?
 - What is the geographic term for population data?
 - How can population data be illustrated?
 - How can you calculate population change for select counties in West Virginia?
 - Is West Virginia's population increasing or decreasing?
 - Are certain parts of the state increasing more or faster than others? If so, which ones? Why?
 - Are certain parts of the state decreasing more or faster than others? If so, which ones? Why?
 - How does population growth and change relate to Firewise?
3. Inform students that the Internet activity will help them answer these questions by utilizing U.S. Census Bureau website.
4. Direct students to Section 10 of the Student Guide, Using Census Data to Explore West Virginia Population Growth and Change. Review assessment details. Have students complete the activity, paragraphs and optional activities if desired. Circulate to provide assistance.
5. Distribute the U.S. Census Demographic hand outs. Discuss different ways of ranking counties: Alphabetically, by most people per county, or by percent of Population change.
6. When students have finished, debrief the activity. Discuss their experiences using U.S. Census data and their responses. Collect paragraphs.

CONCLUSION

Answer any questions related to the day's topics.

ASSESSMENT

Informal - Firewise Student Guide 1 - Section 10

Formal - "West Virginia's Population Demographics and Firewise" paragraphs

EXTENSION IDEAS

Students can further explore the Datanet website, make connections to Firewise, and share their findings.

Lesson 6: Introduction to GIS and AtlasGDS

LESSON OVERVIEW

In this lesson, students are introduced to GIS and AtlasGDS software by examining West Virginia Land and Forest Cover data Layers and identifying Wildfire Hazard Zones for their community.

TEACHER NOTES

BEFORE BEGINNING THE ACTIVITY

1. Access AtlasGDS software from Firewise Flash Drives or Load AtlasGDS to the student computers. If you are using the Firewise Flash Drives you must follow the procedure outlined at the beginning of the Student Lesson 6: If you are have AtlasGDS loaded on your school PCs Load the software by clicking on the AtlasGDS icon on the Desktop.
2. Check the flash drives that came with the Firewise Lab Kit. If necessary, set up student folders on the flash drives for students to store their data in. (To do this, navigate to the flash drive. Pull down the File menu and select New and Folder. Rename the folder with student or student pair numbers.)
3. Depending on computer availability, students may work individually or in pairs.
4. In this activity, students will explore the examining West Virginia Land and Forest Cover, Demographic data layers and print maps that focus on the students' community. If you will have multiple groups of students completing the activity using the same computers, they will need to create individualized names for their maps and files. It is suggested that you provide each student with a unique number, and that they use this number as the prefix for all layer and file names. For example, Student 1's maps would be titled:

1 Land Cover (Your Community)
5. For additional background information on raster and vector data models and the Universal Transverse Mercator (UTM) coordinate system, see the Teacher Resource Links section. Also, helpful background materials from the Firewise Teacher Training are found on the Disk 4 Teacher DVD.
6. Supplementary lessons on Raster and Vector Data Models and the Universal Transverse Mercator (UTM) coordinate system are found in the Middle School Supplement section.
7. This lesson assumes that students are familiar with the Cartographic Map Elements. If not, see the Teacher Resource Links section and glossary for background information.
8. Determine Wildfire Hazard Zones using Land and Forest Cover data. For a sample rubric, see the Sample Assessment Rubrics section.

OBJECTIVES

The student will be able to:

1. Become familiar with the basic terminology and functions of AtlasGDS.
2. Print Land Cover and Forest Cover maps utilizing AtlasGDS.

ESTIMATED TIME

One 50-minute class period.

MATERIALS NEEDED

Teacher

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Lesson 6: Introduction to GIS and AtlasGDS (continued)

Overhead projector

Transparency 8: What is AtlasGDS?

Lesson 6: Introduction to GIS and AtlasGDS (Continued)

AtlasGDS software (available at Firewise Teacher Training or from West Virginia Division of Forestry Firewise Program)

Student

Student computers (one per student or per pair of students)

AtlasGDS software is loaded on each PC or is provided on a Flash Drive

Color printer (comes with Firewise Laptop Lab)

Firewise Student Guide 2 - Section 1 (one copy per student)

VOCABULARY:

Must know: AtlasGDS, Geographic Information System (GIS), raster, vector, Wildfire Hazard Zone, Study Area, Layer, scale, latitude, longitude, TODALSS, UTM coordinates

Should know: metadata, Reclass, Buffer, Background File

Could know: Speed button, Pedigree File, Color File

ACTIVITY

1. Begin Lesson 6 by reviewing the previous day's learning.
2. Next, place Transparency 8 - What is AtlasGDS? on the overhead projector. Discuss what AtlasGDS is and the difference between raster and vector data models. Inform students that today they will have an opportunity to familiarize themselves with the AtlasGDS program, and that this is the GIS program they will be using to conduct their Firewise Community Assessment.
3. Engage students in a discussion to define a Wildfire Hazard Zone. What is a Wildfire Hazard Zone?
4. Discuss the Wildfire Hazard Zone map students will be submitting and review assessment details.
5. Pass out Firewise Student Guide 2 and direct student's attention to Section 1, Introduction to AtlasGDS. Have students begin the activity. Circulate to provide assistance.
6. When students have finished, debrief the activity. Discuss student experiences using AtlasGDS and collect maps.

CONCLUSION

Answer any questions related to the day's topics.

ASSESSMENT

Informal - Firewise Student Guide 2 - Section 1

Formal - Wildfire Hazard Zone map

EXTENSION IDEAS

1. Students can further explore AtlasGDS to become more comfortable with the terminology and functions.
2. Students can further explore Fire Maps and Imagery and share their findings. See the Teacher Resource Links section for websites.

Firewise Communities: Reducing the Risk of Wildfire

Lesson 7: Conducting a Level 1 Firewise Community Assessment with AtlasGDS

LESSON OVERVIEW

In this lesson students utilize AtlasGDS to create and print a map of community fire risk “hot spots” and identify potential Firewise fieldwork areas.

TEACHER NOTES

BEFORE BEGINNING THE ACTIVITY

1. Plan ahead. When a specific fieldwork area is identified, contact the local Fire Chief to request that he/she inform neighborhood homeowners and law enforcement authorities that students will be conducting a Level 2 Assessment in the community.
2. This lesson assumes that students are familiar with the Public Land Survey System (PLSS), Universal Transverse Mercator (UTM) Coordinate System and digitized aerial photography (DOQs). If not, see the Teacher Resource Links section for background information. Also, helpful background materials from the Firewise Teacher Training are found on the Disk 4 Teacher DVD.
3. Background information on the Public Land Survey System (PLSS) and Universal Transverse Mercator (UTM) Coordinate System are in the Resources folder on Disk 4 Teacher DVD.
4. Locate a community map (Internet map site, overhead transparency, wall map, or handout).
5. Invite the Fire Chief and city staff to visit the classroom to observe or assist while students are conducting the Level 1 Firewise Community Assessment.
6. Make sure that the students connect the Firewise Flash Drives correctly and access AtlasGDS software from the flash drives. If you are have AtlasGDS loaded on your school PCs Load the software by clicking on the AtlasGDS icon on the Desktop.
7. Check the flash drives that came with the Firewise Lab Kit. If necessary, set up student folders on the flash drives for students to store their data in. (To do this, navigate to the flash drive. Pull down the File menu and select New and Folder. Rename the folder with student or student pair numbers.)
8. Depending on computer availability, students can work individually or in pairs.
9. In this activity, students will be creating three new AtlasGDS layers. If you will have multiple groups of students completing the activity using the same computers, they will need to create individualized names for their layers and files. It is suggested that you provide each student with a unique number, and that they use this number as the prefix for all layer and file names. For example, Student 1’s layers would be titled:

1FRA, Fire Risk Homes by Photo, Your Community Name
1FRA, Fire Risk Homes by Photo, Your Community Name, Reclass
1DSM, 1
10. Assign specific areas to students or pairs of students. Keep track of who is assessing which section as the activity proceeds to avoid duplication. One way to do this is to create and print a simple table:

Street name	Student(s) Assessing	Completed (Yes/No)
1		

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Lesson 7: Conducting a Level 1 Firewise Community Assessment with AtlasGDS (Continued)

11. Determine assessment details for label files and map(s). For example, you may want to assess the accuracy of student label files by checking a random sample from each student or pair of students. For a sample map rubric, see the Sample Assessment Rubrics section.
12. Choose a student to be the compiler of the L1_Sample.dbf files. This student should be very comfortable with file management and file and folder navigation.

DURING THE ACTIVITY

As students are working, capture digital photos and “screen shot” images for later use in the Community Report.

AFTER THE ACTIVITY

Forward the label file to your Firewise Community Specialist.

OBJECTIVES

The student is able to:

1. Understand the key steps in a Level 1 Firewise Community Assessment.
2. Predict community wildfire risk areas.
3. Interpret aerial photos.
4. Assign fire risk ratings to homes.
5. Use AtlasGDS to analyze a community for high fire risk homes.
6. Create and print a Concentration of High Risk Homes by Photo map.
7. Identify potential Firewise fieldwork areas.

ESTIMATED TIME

Two to three 50-minute class periods.

MATERIALS NEEDED

Teacher

Community map (Internet map site, overhead transparency, wall map, or handout)
Overhead projector
Transparency 7: Firewise Community Assessment Process
Computer and computer projection device
Level 1_WV Firewise Assessment PowerPoint presentation (Disk 4 Teacher DVD)
AtlasGDS software on WV Firewise Flash Drive or from WVDOF Firewise Program)
Student Flash Drives (come with WV Firewise Lab KIT)
Digital camera (optional)

Student

Student computers (one per student or one per pair of students)
AtlasGDS software
PC with Internet connection to access Aerial Photography
Color printer (comes with Firewise Laptop Lab)
Firewise Student Guide 2 - Section 2 (one copy per student)

VOCABULARY:

Must know: Level 1 Assessment, Universal Transverse Mercator (UTM) System, Web Mapping Service (WMS) SAMP 03 air photos, Digital Orthophoto Quadrangle (DOQ), DBF Editor, Label File, dbf File, Color File, Legend File, Reclass, Density Surface Model (DSM)

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Lesson 7: Conducting a Level 1 Firewise Community Assessment with AtlasGDS (Continued)

ACTIVITY

1. Begin Lesson 7 by reviewing the previous day's learning.
2. Place Transparency 7, Firewise Community Assessment Process, on the overhead projector. Review progress made and what remains to be accomplished.
3. Direct student's attention to the community map. Which areas of the community would they predict to be at the highest risk of wildfire, and why? Discuss.
4. Inform students that today they will use AtlasGDS to identify areas of the community that may be at the highest risk for wildfire and to make recommendations for Firewise fieldwork. The maps they create will become part of a Community Report, and will help the community and West Virginia Division of Forestry Firewise Program make decisions regarding the Firewise Community Plan for wildfire risk mitigation. A PowerPoint presentation will introduce them to basic procedures.
5. Show the Level 1 Firewise Assessment PowerPoint presentation.
6. Discuss the map(s) and recommendations students will be submitting and review assessment criteria.
7. Make sure that all PCs have access to the internet.
8. Direct student's attention to Section 2 of the Student Guide, Conducting a Level 1 Firewise Community Assessment with AtlasGDS. Provide students with necessary information about the map data, have a reference map of the project area, (Map should have street names or sub-divisions) Have students begin the activity. Circulate to provide assistance.
9. When students have completed the activity, direct them to save their label files to the appropriate folder on a flash drive.
10. Debrief. Discuss student experiences using AtlasGDS, the maps created, and the recommended Firewise fieldwork areas. Compare and contrast results with predictions. Inform students that final fieldwork area decisions will be made in collaboration with the West Virginia Division of Forestry Firewise Program.
11. Collect, flash drives and printed maps.

CONCLUSION

Answer any questions related to the day's topics.

ASSESSMENT

Informal - Recommendations for Firewise fieldwork areas (Firewise Student Guide 2 - Section 2)

Formal - Label file saved to flash drive, Concentration of High Risk Homes by Photo map
(Optional: Fire Risk Ratings by Photo map, Wildfire Hazard Zones map)

EXTENSION IDEAS

Students can further explore Fire Maps and Imagery and share their findings. See the Teacher Resource Links section for websites.

Lesson 8: Preparing for the Level 2 Firewise Community Assessment

LESSON OVERVIEW

In this lesson, students are introduced to Level 2 Firewise Community Assessment techniques through a PowerPoint presentation and Field Guide activity. Students prepare to communicate Firewise objectives and procedures with homeowners by writing a Dear Homeowner Letter.

TEACHER NOTES

BEFORE BEGINNING THE ACTIVITY

1. Prepare your own Level 2 Firewise Community Assessment Field Trip Information handout for students and parents. Include a permission slip and relevant field trip information (student expectations, date, time, location, food and beverage arrangements, etc.)
2. Student will need to measure distances as part of the Level 2 Assessment. This can be done with measuring tapes, or using the pacing technique. If not familiar with the pacing technique, see the Teacher Resource Links section for background information.
3. Determine editing, assessment and selection details for the Dear Homeowner Letter. For a sample rubric, see the Sample Assessment Rubrics section. Letters can be prepared at school or at home, and should be printed on school letterhead. Include a Firewise West Virginia logo.
4. If necessary to save time, the Dear Homeowner Letter can be prepared by the instructor or designated students. A sample can be found under resources on the Disk 4 Teacher DVD. A guide to working with your community PDF file is also provided.
5. An Answer Key for this lesson is found in the Answer Key section.

AFTER THE ACTIVITY

Photocopy the Dear Homeowner letters for use in the Level 2 Assessment. You will need one letter per house to be assessed.

OBJECTIVES

The student will be able to:

1. Understand the key steps in a Level 2 Firewise Community Assessment.
2. Identify the characteristics of a fire-prone home.
3. Write a Dear Homeowner letter explaining Firewise objectives and procedures.

ESTIMATED TIME

One to two 50-minute class periods, plus homework time.

MATERIALS NEEDED

Teacher

- Overhead projector
- Transparencies 7 & 9: Firewise Community Assessment Process and Level 2 Firewise Community Assessment
- Level 2 Firewise Community Assessment Field Trip Information handout (prepared by teacher)
- Garmin GPS 72 Receiver or equivalent (comes with Firewise Laptop Lab)
- Firewise Evaluator's Guide (available from WVDOF Firewise)
- Level 2 Woodland Home Wildfire Hazard Assessment Field Guide

Firewise Communities: Reducing the Risk of Wildfire

Lesson 8: Preparing for the Level 2 Firewise Community Assessment (Continued)

Teacher (Continued)

- Sample Residential Hazard Assessment form handout
- Computer and computer projection device
- Lesson 8 - Level 2_WV Firewise Assessment PowerPoint Presentations (Disk 4 Teacher DVD audio and silent versions)
- School letterhead stationery
- Firewise West Virginia logo (Firewise WV Teacher DVD 4)

Student

- Level 2 Firewise Community Assessment Field Trip Information handout (one copy per student)
- Level 2 Woodland Home Wildfire Hazard Assessment Field Guide- Student Edition handout (one copy per student)
- Sample Residential Hazard Assessment form handout (one copy per student)
- Firewise Student Guide 2 - Section 3
- Firewise Student Guides 1 and 2
- Computers (one per student or one per pair of students)
- School letterhead stationery (approximately two pieces per student)

VOCABULARY:

Must know: GPS waypoint, UTM coordinates, access road, cul-de-sac, defensible space, evergreen tree, hardwood tree, ladder fuels, tree crown, slope, soffit, attic vent, open foundation, vinyl siding, unskirted deck

ACTIVITY

1. Begin Lesson 8 by placing Transparency 7, Firewise Community Assessment Process, on the overhead projector. Review the Level 1 Firewise Community Assessment and student recommendations for Firewise fieldwork areas.
2. Pass out the Level 2 Firewise Community Assessment Field Trip Information handout that you have prepared. Discuss.
3. Place Transparency 9, Level 2 Firewise Community Assessment, on the overhead projector. Discuss the key steps and display the tools that will be used in the Level 2 Assessment such as a GPS receiver and the Firewise Evaluator's Guide.
4. Inform students that they will now be receiving more detailed training to prepare them to conduct the Level 2 Assessment. Pass out the Field Guide and sample Residential Home Hazard Assessment form (Handouts pp. 79-83). Direct students to fill in the Field Guide and refer to the sample form as they watch, listen and discuss the Level 2 Firewise Assessment PowerPoint presentation. Inform students that they should bring the Field Guide with them on the Level 2 Assessment field trip.
5. Show the Lesson 8 - Level 2_WV Firewise Assessment PowerPoint presentation. Pause during the presentation to address questions. (there is an audio and a silent version)
6. After the presentation is completed, allow students a few minutes to finish the Field Guide. Discuss student responses. Remind students to keep the Field Guide in a safe place because they will be using it as a reference on the field trip.
7. A key item needed for the Level 2 Assessment is a Dear Homeowner Letter that describes Firewise objectives and procedures. Direct student's attention to Section 3 of the Student Guide, Writing a Dear Homeowner Letter. Introduce the Dear Homeowner letter assignment. Review assessment details. Pass out school letterhead stationery.

Firewise Communities: Reducing the Risk of Wildfire

Lesson 8: Preparing for the Level 2 Firewise Community Assessment (Continued)

CONCLUSION

1. Answer any questions related to the day's topics.
2. Remind students to return field trip permission slips.

ASSESSMENT

Informal - Level 2 Woodland Home Wildfire Hazard Assessment Field Guide- Student Edition

Formal - Dear Homeowner Letter

Lesson 9: Getting to Know the Garmin GPS 72 Receiver

LESSON OVERVIEW

In this lesson, students are introduced to Global Positioning Systems (GPS) and the Garmin GPS 72 GPS receiver through a hands-on GPS activity.

TEACHER NOTES

BEFORE BEGINNING THE ACTIVITY

1. If you will NOT be using the Garmin GPS 72 Receivers available from the West Virginia Division of Forestry Firewise Program, substitute your own introductory activity using the GPS units you have chosen for your fieldwork.
2. Helpful background materials from the Firewise Teacher Training are found on the Disk 4 Teacher DVD.
3. For additional information about the Garmin GPS 72 Receivers, see the “GPS 72 Quick Start Guide” which accompanied the Garmin GPS 72 Receivers.
4. Prior to using the Garmin GPS 72 Receivers in the field, read “Preparing the Garmin GPS 72 Receivers for Firewise Fieldwork” (follows this lesson).

AFTER THE ACTIVITY

1. Delete any saved waypoints from the GPS Receivers. See “Preparing the Garmin GPS 72 Receivers for Firewise Fieldwork” for instructions on how to do this.

OBJECTIVES

The student will be able to:

1. Define Global Positioning System (GPS).
2. Explore the basic functions of a handheld Global Positioning Systems (GPS) Receiver.

ESTIMATED TIME

One 50-minute class period.

MATERIALS NEEDED

Teacher

Preparing the Garmin GPS 72 Receivers for Firewise Fieldwork (follows this lesson)
Transparency 10 - What Is GPS?

Student

Firewise Student Guide 2 - Sections 4 and 5 (one copy per student)
Garmin GPS 72 Receivers or equivalent (come with Firewise Laptop Lab, minimum one per pair of students)

VOCABULARY:

Must know: GPS or Global Positioning System, GPS receiver, latitude, longitude, waypoint, UTM coordinates

ACTIVITY

1. Begin Lesson 9 by reviewing the previous day's learning.

Firewise Communities: Reducing the Risk of Wildfire

Lesson 9: Getting to Know the Garmin GPS 72 (Continued)

2. Display a Garmin GPS 72 Receiver and pass it around the classroom. Ask if any students own or have used a GPS receiver and if so, invite those students to describe their experiences. Explain to students that they will be using the Garmin GPS 72 Receivers in their upcoming Firewise fieldwork, and will need to be familiar with a few of the basic functions.
3. Direct student's attention to Section 4 of the Student Guide, What Is GPS? Read and discuss the GPS information together as a class. If desired, use Transparency 10 - What Is GPS?
4. Pass out a Garmin GPS 72 Receiver to each student or pair of students.
5. Have students turn to Section 5 of the Student Guide, Getting to Know the Garmin GPS 72 Receiver. Have students begin the activity. Circulate to provide assistance. If working in pairs, each individual student should have the opportunity to explore the basic functions of the GPS receiver.
6. Debrief the activity. Discuss student experiences using the Garmin GPS 72 Receivers. Collect the GPS Receivers.

CONCLUSION

Answer any questions related to the day's topics.

ASSESSMENT

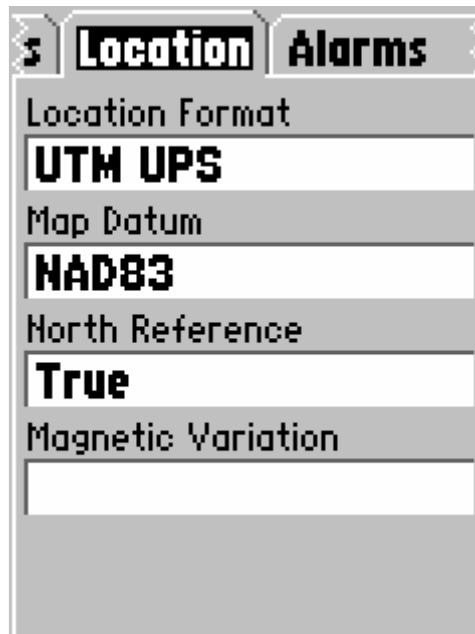
Informal - Observation of Getting to Know the Garmin GPS 72 Receiver activity

EXTENSIONS

For additional GPS activities, see the Teacher Resource Links section for websites.

Preparing the Garmin GPS 72 Receivers for Firewise Fieldwork

1. **TO TURN ON:** Press and hold the POWER key. (Looks like a light bulb.) Press PAGE to agree with the warning.
2. If you are indoors, you will eventually receive a message which says, "Poor Satellite Reception". To use the Garmin GPS 72 indoors, select "Start Simulator" by pressing ENTER.
3. **BATTERIES:** The GPS 72 operates on two "AA" batteries. When "Batteries Low" is displayed on the screen, you have less than 10 minutes of battery life left. To check battery life, press the MENU key twice to see the Main Menu. Check the battery icon in the POWER field in the lower right hand corner of the screen. A full battery will be completely darkened. To replace the batteries, remove the battery cover on the back of the unit by turning the D-ring ¼ turn counterclockwise and pulling the cover loose.
4. **CLEARING THE GPS 72 UNIT:** You will want to start your fieldwork with an "empty" waypoint list. Each unit should be empty when you receive it, but if for some reason waypoints have been saved, you can clear them by following this procedure:
 - Press the MENU key twice to see the Main Menu.
 - Use the ROCKER key to highlight Points. ENTER.
 - Use the ROCKER key to highlight Waypoints. ENTER.
 - Press the MENU key. Use the ROCKER key to highlight Delete All. ENTER.
 - "Do you really want to delete all waypoints?" Yes.
5. **UNITS SETTING:** Each unit has been pre-set to record waypoints in UTM coordinates (Universal Transverse Mercator). If for some reason this setting has been altered, you can reset it by following this procedure:
 - Press the MENU key twice to see the Main Menu.
 - Use the ROCKER key to highlight Setup. ENTER.
 - Use the ROCKER key to scroll to the right and highlight the Location tab.
 - Use the ROCKER key to highlight the Location Format field. ENTER.
 - Use the ROCKER key to scroll through the list of Location Formats until you find UTM UPS. Highlight UTM UPS. ENTER.



6. Turn off the GPS 72 by holding down the POWER key.

Lesson 10: Practice with the Garmin GPS 72 Receiver - “Geocaching” on Campus

LESSON OVERVIEW

In this lesson, students gain experience in using handheld GPS receivers by participating in a Global Positioning System (GPS) “treasure hunt” on the school campus.

TEACHER NOTES

This lesson assumes that students have completed Lesson 9: Getting to Know the Garmin GPS 72 Receiver.

ONE OR MORE DAYS AHEAD OF THE GEOCACHING DAY:

1. Familiarize yourself with the Geocaching website at <http://www.geocaching.com>.
2. Use the class list to divide students into small groups, based upon having one GPS receiver per group. Name these groups as Group #1, Group #2, etc., depending on how many student groups you have.
3. Prepare one Ziploc bag for each group by placing wrapped candy or other treats (one per student) in each bag. You may also want to include a note, joke or inspirational geographical quote!
4. Label the bags with a permanent marker as Group #1, Group #2, etc., once again depending on how many student groups you have.
5. Prepare a Data Sheet for yourself, including a column for Group #s and a column for UTM Coordinates.

Example UTM Zone 17:

Group #	UTM Coordinates
1	17S 0750190 4887472

Example UTM Zone 18:

Group #	UTM Coordinates
1	18S 0255190 4887472

6. Hide the Ziploc bags on campus, keeping track of the Group # on each bag, and the UTM coordinates of each bag location on the Data Sheet. This will be your Key. You may want to recruit a student volunteer or two to do this, and they can then become student helpers on the day of the lesson. It is a good idea to collect the waypoints a couple of times to get the most accurate readings you can. Collect once, walk away, then return and collect again. Provide ample space between bags.
7. Create an index card for each group including the Group # and the UTM coordinates of their “cache”.
8. Verify that the GPS receivers are set to record waypoints in UTM format. See “Preparing the Garmin GPS 72 Receivers for Firewise Fieldwork” (Lesson 9) for instructions on how to do this.
9. Instruct students to wear or bring appropriate outdoor clothing for the geocaching day.

Firewise Communities: Reducing the Risk of Wildfire

Lesson 10: Practice with the Garmin GPS 72 Receiver - “Geocaching” on Campus (Continued)

AFTER THE ACTIVITY

Delete any saved waypoints from the GPS Receivers. See “Preparing the Garmin GPS 72 Receivers for Firewise Fieldwork” (Lesson 9) for instructions on how to do this.

OBJECTIVES

The student will be able to:

1. Understand the concept of “geocaching”.
2. Use a hand-held Global Positioning System (GPS) receiver to create and locate a GPS waypoint and geocache.

ESTIMATED TIME

One 50-minute class period.

MATERIALS NEEDED

Teacher

- Ziploc bags - one per student group
- Index Cards - one per student group
- Wrapped candy or other treats - one piece per student
- Permanent marker
- Data Sheet
- Garmin GPS 72 Receiver or equivalent (comes with Firewise Laptop Lab)
- Computer and computer projection device
- Internet connection
- Appropriate outdoor clothing

Student

- Index cards (prepared by instructor)
- Garmin GPS 72 Receiver or equivalent (come with Firewise Laptop Lab, one per student group)
- Creating a Waypoint and Finding It with the Garmin GPS 72 Receiver handout
- Appropriate outdoor clothing

VOCABULARY:

Must know: GPS or Global Positioning System, GPS receiver, latitude, longitude, waypoint, UTM coordinates, geocaching

ACTIVITY

1. Begin Lesson 10 by reviewing the previous day’s learning.
2. Turn on the computer and computer projection device. Navigate to <http://www.geocaching.com>. Examine the website and explore links, introducing students to the site and the concept of geocaching.
3. Inform students that they will be participating in an informal geocaching activity today.
4. Divide students into appropriate groups.
5. Hand out a Garmin GPS 72 Receiver and the appropriate index card to each student group.

Firewise Communities: Reducing the Risk of Wildfire

Lesson 10: Practice with the Garmin GPS 72 Receiver - “Geocaching” on Campus (Continued)

6. Hand out the Creating a Waypoint and Finding It with the Garmin GPS 72 Receiver handout. Have students begin the **IN THE CLASSROOM** portion of the activity. Circulate to provide assistance.
7. When students have completed the **IN THE CLASSROOM** portion, collect the index cards.
8. Instruct the student groups to gather their outdoor clothing, Garmin GPS 72 Receivers and handout.
9. Accompany the student groups outside. Designate a meeting place and time. Have students complete the **OUTSIDE** portion of Creating a Waypoint and Finding It with the Garmin GPS 72 Receiver.
10. Provide assistance as student groups navigate to their geocaches.
11. Re-assemble the class at the designated meeting place and time and return to the classroom.
12. Debrief the activity. Discuss student experiences using the Garmin GPS 72 Receivers and locating the geocaches. Collect the Garmin GPS 72 Receivers.

CONCLUSION

Answer any questions related to the day's topics.

ASSESSMENT

Informal - Creation and location of GPS waypoints and geocaches

EXTENSION IDEAS

For additional GPS activities, see the Teacher Resource Links section for websites.

Lesson 11: Conducting a Level 2 Firewise Community Assessment

LESSON OVERVIEW

In this lesson students visit a community fire risk “hot spot” neighborhood to collect GPS waypoints, complete Woodland Home Wildfire Hazard Assessment forms, calculate Home Hazard Ratings, and communicate Firewise information to homeowners.

TEACHER NOTES

BEFORE BEGINNING THE ACTIVITY

1. Verify that the local Fire Chief has informed neighborhood homeowners and law enforcement authorities about the Level 2 Assessment.
2. Invite the local Fire Chief and city staff to accompany the class.
3. Arrange field trip transportation, teacher substitute if needed, chaperones, food and beverages for the day.
4. Collect permission slips.
5. Decide how you will handle rescheduling in case of inclement weather.
6. This lesson assumes that you have completed Lesson 8 - Preparing for the Level 2 Firewise Community Assessment and Lesson 9 - Getting to Know the Garmin GPS 72 Receiver.
7. Verify that the GPS receivers are set to record waypoints in UTM format. See “Preparing the Garmin GPS 72 Receivers for Firewise Fieldwork” (Lesson 9) for instructions on how to do this.
8. For additional information about the Garmin GPS 72 Receivers, see the “GPS 72 Quick Start Guide” which accompanied the Garmin GPS 72 Receivers.
9. Determine field trip partners. Plan out partner area assignments on a neighborhood map or aerial photo.
10. Decide on pre and post field trip meeting places and a time schedule for the day.
11. Assemble and organize field trip supplies.
12. Determine which tasks chaperones will be asked to assist with.
13. If desired, determine formal assessment details for the Level 2 Assessment. Options include active participation points, successful collection of GPS waypoints, successful completion of Residential Hazard Assessments, etc.
14. Remind students to bring their Level 2 Firewise Community Assessment Field Guides.

DURING THE ACTIVITY

If possible, as students are working, capture digital photos or videotape for later use in the Community Report.

Firewise Communities: Reducing the Risk of Wildfire

Lesson 11: Conducting a Level 2 Firewise Community Assessment (Continued)

OBJECTIVES

The student will be able to:

1. Collect GPS waypoints.
2. Complete Woodland Home Wildfire Hazard Assessment forms.
3. Calculate Home Hazard Ratings.
4. Communicate verbally with homeowners about Firewise objectives, procedures and recommendations.

ESTIMATED TIME

One half to one school day, depending on the location of the Firewise fieldwork area.

MATERIALS NEEDED

Teacher

Boxes or plastic totes for field trip supplies
Neighborhood map or aerial photo with group assignments
Garmin GPS 72 Receiver or equivalent
Using the Garmin GPS 72 Receiver in the Field - Teacher Edition (follows this lesson)
Clipboard
Extra AA batteries for GPS Receivers
Copies of Equipment Checkout Sheet (follows this lesson)
Digital camera and/or video camera
Cellular phone for emergencies

Student

Level 2 Woodland Home Wildfire Hazard Assessment Form- Student Edition handout
(one copy per student)
Clipboards (one per student pair)
Waterproof pens or pencils (one per student)
Garmin GPS 72 Receivers or equivalent (one per student pair)
Using the Garmin GPS 72 Receiver in the Field - Student Edition handout (one copy per student pair)
File folder with Dear Homeowner Letters (one copy per home) and Firewise literature
(available from West Virginia Division of Forestry Firewise Program)
Firewise Evaluator's Guide (available from West Virginia Firewise Program, one per student pair)

VOCABULARY:

Must know: GPS waypoint, UTM coordinates, access road, cul-de-sac, defensible space, evergreen tree, hardwood tree, ladder fuels, tree crown, slope, soffit, attic vent, open foundation, vinyl siding, unskirted deck

ACTIVITY

1. Assemble students at the designated meeting place and travel to the Firewise fieldwork location.
2. Review the fieldwork objectives and procedures, partner area assignments and time schedule. Let students know how to reach you in case of a question or emergency.
3. Distribute supplies. Record relevant information on Equipment Checkout Sheet. Students can attach their Field Guide, Garmin GPS 72 Receiver instructions and file folders to their clipboards.

Firewise Communities: Reducing the Risk of Wildfire

Lesson 11: Conducting a Level 2 Firewise Community Assessment (Continued)

4. Assemble the group at the first home and conduct a sample assessment. Answer questions.
5. Conduct the Level 2 Firewise Community Assessment of the neighborhood.
6. Circulate, answer questions, and take digital photos or video for use in the Community Report.
7. Reassemble the group at the designated meeting place. Collect and organize all supplies.
8. Return to school.
9. Debrief the Level 2 Firewise Community Assessment activity. Discuss student experiences collecting GPS waypoints, completing Residential Hazard Assessment forms, calculating Home Hazard Ratings, and communicating Firewise information to homeowners. If there is not time on the field trip day, plan to debrief the activity at the next opportunity.

CONCLUSION

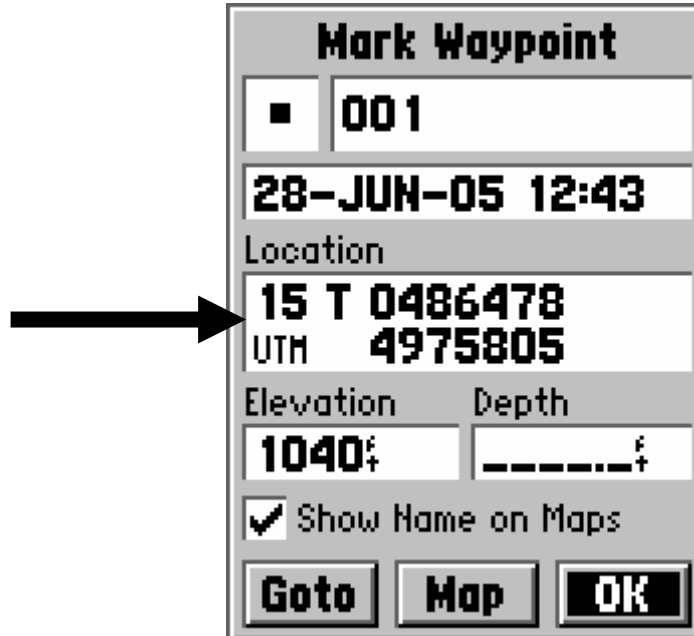
Answer any questions related to the day's topics.

EVALUATION

Formal (OPTIONAL) - Active participation points, successful collection of GPS waypoints, successful completion of Residential Hazard Assessments, etc.

Using the Garmin GPS 72 Receiver in the Field - Teacher Edition

1. **TO TURN ON THE GARMIN GPS 72:** Press and hold the POWER key. (Looks like a light bulb.) Press PAGE to agree with the warning.
2. **DETERMINE A WAYPOINT:** You will see your location (expressed as UTM coordinates) at the bottom of the GPS Information Page.
3. **RECORD A WAYPOINT:** Press and hold the MARK/ENTER key. This is the Mark Waypoint Page. Find the Location field. Record the waypoint number and its location on your Residential Hazard Assessment form.



4. **SAVE A WAYPOINT:** Use the ROCKER key to highlight OK, if necessary. Save the waypoint number and its coordinates by pressing the ENTER key.
5. **VIEW YOUR WAYPOINT LIST:** Press the MENU key twice to see the Main Menu. Use the ROCKER key to highlight Points and press ENTER. With Waypoints highlighted, press ENTER.
6. **TO TURN OFF:** Press and hold the POWER key.

