

## LESSON PLAN - CHECK YOUR HOME INSIDE AND OUT

### Learning Outcomes

- Students will become aware of the level of risk of wildfire in their area
- Students will learn what happens when wildfire occurs near homes and cottages
- Students will learn concepts related to wildfire and protection of homes

### Lesson Application Examples

- **Grade 3** Related Ontario Curriculum Expectations
  - **Language 3e3, 3e5, 3e7, 3e50, 3e56, 3e53, 3e54, 3e56, 3e57**
  - **Drama 3a44, 3a54**
  - **Social Studies 3z31, 3z32**
- **Grade 4** Related Ontario Curriculum Expectations
  - **English 4e60, 4e56**
  - **Science 4s1, 4s3**
  - **Drama 4a52**
- **Grade 5** Related Ontario Curriculum Expectations
  - **English 5e1, 5e2, 5e5, 5e18, 5e45, 5e47, 5e48, 5e49, 5e53**
  - **Science 5s57, 5s59, 5s60, 5s62, 5s66, 5s68, 5s69, 5s71**
  - **Drama 5a46, 5a49, 5a51, 5a52, 5a59, 5a60**

### Activity Information

#### Activity

1. Brainstorm with students a list of ways humans live in and use the forests
  - Note: Could supplement or follow activities related to animals/habitat, needs of living things etc.
2. After you have a list of how humans depend on the forest, (camping, cottages, permanent home) have the students list what might happen if there were a wildfire. Encourage them to discuss, not only the effect on forests (good and bad) but also how fire endangers life and property.
3. Discuss wildfire
  - Have they ever seen or heard about wildfires
  - How do fires start? (people, lightning)
  - Does your community have areas that could be threatened by wildfire i.e. edge of town
    - Discuss how a fire might move through the community
    - Show a picture of a home that is not “FireSmart”
    - Point out features that might make this house susceptible to wildfire
    - Ask what the home owner could do to make it less at risk
    - Discuss things that can be done inside the home to prevent fire and to keep residents safe, i.e. smoke alarms and escape plans



4. Have students discuss how they can teach other about the risks to homes and property in the wildland/urban interface. For example poetry, songs, posters, skits.
5. Divide students into groups of 4 to 5 and have each group discuss what they could do to reduce the chance of a home being burned in a wildfire. Have them select one of the techniques listed above and give them enough time to prepare a poem, poster, skit etc.
6. Once students have prepared their product, have them present it to the class.

### **Evaluation**

- After all groups have presented, have students generate a list of all the things that can be done to make a home more “FireSmart” – can be made into “checklist” for extension activity
- Have students draw a picture of a FireSmart house and yard
- See attached Rubrics

### **Extension**

- Send students home with a FireSmart checklist (sample attached) to complete on their own home with their parents
- Have students evaluate a home’s “wildfire preparedness”
- Have students prepare a presentation to give to other classes during Wildfire Prevention Week

### **Additional Resources**

- FireSmart Homeowners manual (available from MNR or local fire department)
- 50 things you can do (attached)
- Ministry of Natural Resources - Fire Management Website <http://affm.mnr.gov.on.ca/>
- Other Websites
  - [www.partnersinprotection.ab.ca](http://www.partnersinprotection.ab.ca)
  - [www.FireWise.org](http://www.FireWise.org)
  - <http://www.nps.gov/fire/fire/fireprogram.html>



## Rubrics

These rubrics were developed by two Ontario grade 3 and 4 teachers for your use and adaptation.

### Grade 4 Rubric - Check Your Home Inside and Out

Criteria	Level 1	Level 2	Level 3	Level 4
<b>4e60 ENGLISH</b> Can create media works	Poster message unclear	Can create poster with limited assistance	Creates media works independently	Creates complex media works independently
<b>4e56 ENGLISH</b> Contribute and work constructively in groups	Has difficulty contributing and working constructively in groups	Can contribute and work constructively in groups with assistance	Contributes and works constructively in groups	Works constructively and confidently in groups
<b>4s 1 SCIENCE</b> Demonstrate an understanding of the concepts of habitat and community	With assistance, identifies the factors that could affect habitats and communities of plants and animals	With limited assistance, identifies the factors that could affect habitats and communities of plants and animals	Identifies the factors that could affect habitats and communities of plants and animals	Shows understanding of all or almost all the factors that could affect habitats and communities of plants and animals
<b>4s 3 SCIENCE</b> Describe ways in which humans can change habitats and the effects of these changes on the plants and animals within the habitats	Describes ways in which humans can change habitats and the affects of these changes with little clarity	Describes ways in which humans can change habitats and the affects of these changes with some minor misconceptions	Describes with clarity and precision, ways in which humans can change habitats and the effects of these changes with nearly complete explanations	Describes with clarity and precision, ways in which humans can change habitats and the affects of these changes
<b>4a52 DRAMA</b> Identify and apply solutions to problems presented through drama and make appropriate decisions in groups	Provides analysis that shows limited understanding when solving problems presented through drama when working in small groups	Provides partial analysis when solving problems presented through drama when working in small groups	Provides complete analysis and gives sufficient evidence to support options when solving problems presented through drama	Provides complete analysis and gives well considered evidence to support options when solving problems presented through drama

February 2004



**Grade 3 Rubric – Check Your Home Inside and Out**

<b>Criteria</b>	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Level 4</b>
<b>3e5 LANGUAGE</b> Produce pieces of writing using a variety of forms (e.g. simple research reports, letters, stories, poems)	Can complete pieces of writing incompletely	Can produce pieces of writing in a mechanical and sequential way	Can produce pieces of writing appropriately and logically	Can produce pieces of writing appropriately and in complex and logical ways
<b>3e56 LANGUAGE</b> Create a variety of simple media works	Poster message unclear	Can create a poster with limited assistance	Creates media works independently	Creates complex media works independently
<b>3a54 DRAMA</b> Defend a point of view through speaking and writing in role (e.g. as townsfolk, plead with the mayor to save their town);	Performs and creates only in limited and incomplete ways	Performs and creates in incomplete ways	Performs and creates in complete ways	Performs and creates in well developed ways
<b>3z31 SOCIAL STUDIES</b> Identify distinguishing features of urban and rural communities	Shows understanding of a few of the distinguishing features of urban and rural communities	Shows understanding of some of the distinguishing features of urban and rural communities	Shows understanding of most of the distinguishing features of urban and rural communities	Shows understanding of most or all most all of the distinguishing features of urban and rural communities
<b>3z32 SOCIAL STUDIES</b> Describe some possible relationships between communities and natural environments	Describes some relationships between communities and natural environments with limited clarity	Describes some relationships between communities and natural environments	Describes some relationships between communities and natural environments with some clarity and precision	Describes some relationships between communities and natural environments with clarity and precision

February 2004



## **Background Information – Wildland/Urban Interface**

The wildland/urban interface refers to the geographical areas where urban type structures - mainly residences - are built in close proximity to the flammable fuels naturally found in wildland areas, including forests, prairies, hillsides and valleys. Many cottage subdivisions and small towns across Ontario exhibit the same characteristics of interface areas.

As urban areas expand into wildland areas and as an increasing number of vacation homes are built near wildland recreation areas, the conflicts associated with wildland fire become more commonplace. Just as wildland fires threaten people and their property, human-caused fires threaten wildlands. Thus students, parents and their communities benefit by knowing the risks and protection strategies related to home development in wildlands.

Every year, fire impacts residences and cottages. A dream home built in an idealistic wildland setting can be razed by fire in minutes. Likewise, the exemplary scenery that attracted homeowners to the setting can be altered, often because of the inadvertent action of the homeowner.

### **The Issues**

Why are wildfires a risk? The increased risk of fire occurrence in wildland/urban interface is an issue in Ontario because:

- Wildfires are part of the natural ecosystem and will continue to ignite and threaten homes, cottages and businesses in wildland areas.
- Wildfires in urban areas continue to cause particular suppression and public safety problems for fire protection agencies.
- Lack of good vegetative management predisposes many communities to wildfires.

Unless homeowners and local governments take specific preventive measures, homes will continue to be lost and people's lives will continue to be in danger

### **You Can Help**

Although people can never fully protect their homes and adjacent wildlands against wildfires, you can take steps to reduce the risk. For example:

- Remove combustible vegetation from the vicinity of any structure.
- Thin out continuous tree and brush cover and remove dead limbs, fallen trees, leaves, twigs and evergreen tree cones within 10 metres of the structure to create a " safety zone of low fuel density all around the home".
- Likewise, prune tree branches to 3 metres above the ground and remove leaves and twigs from beneath trees, in the yard, on roofs, patios and landscaped shrubs.
- Limit the number and density of landscaped vegetation and do not use highly flammable landscaping near structures. Maintain a greenbelt or no-combustible zone around the home; avoid using bark or wood chip mulch in the safety zone.
- Stack firewood uphill at least 5 metres from a house. Fire risks increase when wooden



decks, patios and woodpiles are placed close to structures or when flammable materials are stored near structures.

- Be aware that roofs and walls made of untreated flammable materials such as wood shanks and shingles pose a significant fire threat. Wind-carried embers or the intense heat from a nearby fire can ignite such fuel sources. Fire does not need to "burn over" a structure for it to catch fire.
- Clean roof and eaves troughs. Remove pine needles and leaves to eliminate fuel sources.
- Choose home location wisely. Building structures on slopes increases the chances that those homes will be destroyed by wildfire. When upland slopes are selected for home sites, downhill or lower elevation areas should be clear of excess fuel, to add an additional element of protection. If a home is on the crest of a steep hill, thin the fuel sources at least 30 metres below the crest.
- Mow tall grass and keep it to a maximum height of two inches within the home safety zone. Avoid tall grass around driveways areas susceptible to ignition by automobile exhaust systems.
- Inspect and clean chimneys regularly. Equip chimneys for wood burning heating units with spark arresters.
- Avoid all outdoor burning to decrease the likelihood of fire ignition near a home structure.
- Prevent mishaps with outdoor cooking grills by carefully maintaining the grill and using caution during grill use.
- Equip home with smoke alarms. Keep them in good working order.



### FireSmart Home & Site Hazard Assessment

Look at your own home and work through the following checklist. Assign the indicated number of points for each assessment area. The fewer points you get, the more prepared your property is to successfully survive a wildfire. If a question does not apply to your home, score 0

Important Factors	Characteristics of Material	Point Rating	Your Score
What kind of roofing material do you have?	If you have asphalt, metal, tile, ULC rated shakes	0	
	If you have a wood roof	30	
How clean is your roof?	No needles or leaves covering roof	0	
	A scattering of needles and leaves	2	
	Clogged gutters and extensive leaf litter	3	
What is the exterior of your home built out of?	Stucco, metal siding, brick	0	
	Logs or heavy timbers	1	
	Wood, vinyl siding or wood shakes	6	
Have you screened in your balcony, deck or porch?	All decks, balconies and porches are screened or covered in with fire resistant material	0	
	All decks, balconies and porches are screened or sheathed with material that burns	2	
	Decks, balconies and porches are not screened or covered	6	
Where is your woodpile located?	More than 10 metres from any building	0	
	Between 3 and 10 metres from any building	3	
	Less than 3 metres from any building	6	
Is your home set back from the edge of a slope?	Building is located on the bottom or lower half of a hill.	0	
	Building located on the mid to upper half or edge of a hill	6	
What type of forest surrounds your home, and how far away is it?	Deciduous trees (poplar, birch) within 10-30 metres of buildings	0	
	Mixed wood (poplar, birch and spruce or pine) within 10 metres of buildings	30	
	Mixed wood 10 - 30 metres from buildings	3	
	Conifers (spruce, pine or fir) within 10 metres of buildings	30	
	Conifers (spruce, pine or fir) Within 10 - 30 metres of buildings • Spread apart • Continuous	10 30	
What kind of vegetation grows in the zone around your buildings?	Well watered lawn or non- combustible landscaping material	0	
	Uncut wild grass or shrubs • Within 10 metres of buildings • Within 10 - 30 metres of buildings	30 3	
	Dead and down woody material Within 10 metres of building • Separated • Continuous	30 30	
	Dead and down woody material Within 10 - 30 metres of buildings • Scattered • Abundant	3 30	
	Are there brushes and low tree branches in the surrounding forest?	None within 10 - 30 metres Scattered • Within 10 metres of buildings • Within 10 - 30 metres of buildings Abundant • Within 10 metres of buildings • Within 10 - 30 metres of buildings	
The Wildfire Hazard Level for you home is:		Total Score	

**Low <21 points    Moderate 21-29 points    High 30-35 points    Extreme >35 points**



## Other FireSmart Considerations

Important Factors	Yes	No
Do you have adequate insurance on your home and property?		
Do you have the necessary fire suppression equipment (shovels, rakes, buckets, hoses, etc.) easily accessible?		
Are your burn barrels screened and at least 10 metres from combustibles and buildings?		
Are overhead power lines clear of vegetation and at least a tree's height away from nearest forest?		
Are propane tanks clear of vegetation and at least 10 metres from dwellings and other buildings?		
Are emergency fire services within a 10 minute response time from your home?		
Is your chimney safe? Is your chimney clean? Does it have proper clearances and stack heights with proper screens and spark arresters?		
Do you have good emergency access to your property?		
Does your home and other buildings have a clear defensible zone of at least 10 metres on all sides of the structures?		
Do you have an adequate municipal or on site water supply in case of fire?		
Does your family have an emergency fire plan?		





## 50 Things You Can Do To Protect Your Home from Wildfire...

### No Cost, Just A Little Time

1. Perform a FireSmart assessment of your home and see what you need to do to reduce your risk.
2. Move your firewood pile out of your home's defensible space.
3. Clean your roof and gutters of leaves and pine needles (best done in October).
4. Clear the view of your house number so it can be easily seen from the street.
5. Put a hose (at least 30 metres long) on a rack and attach it to an outside faucet.
6. Trim all tree branches if they overhang your house.
7. Trim all tree branches from within 6 metres of all chimneys.
8. Remove trees closer than 3 metres along the driveway.
9. Prune branches overhanging the driveway to have 4 metres overhead clearance.
10. Maintain a green lawn for 3 metres around your home.
11. If new homes are still being built in your area, talk to the developer and local zoning officials about building standards.
12. Plan and discuss an escape plan with your family. Develop and practice a fire escape plan. Include your pets.
13. Get involved with your community's disaster mitigation plans.
14. Check your fire extinguishers. Are they still charged? Are they easy to get to in an emergency? Does everyone in the family know where they are and how to use them?
15. Clear deadwood and dense flammable vegetation from your home's defensible space.
16. Remove conifer shrubs from your home's defensible space especially if your home is in a high-risk area.
17. Review your homeowner's insurance policy for adequate coverage. Consult your insurance agent about costs of rebuilding and repairs in your area.
18. Talk to you children about not starting fires or playing with matches.
19. If you have a burn barrel (incinerator) that you use for burning trash, STOP!
20. Compost leaves in the fall, do not burn them.
21. Do not burn your brush piles or grass in the spring. Chip or shred and use as mulch or take it to the dump.
22. Always have a shovel on hand and hook up the garden hose BEFORE you start a fire.
23. Never burn if the smoke and flames are blowing towards your home (or your neighbour's home).
24. Be a FireSmart advocate.



## 50 Things You Can Do To Protect Your Home from Wildfire...

### Minimal cost actions (\$10 - \$25 and a little time)

25. Install highly visible house numbers (at least 10cm tall) on your home.
26. Install big, highly visible house numbers (at least 10 cm tall) at the entrance of the driveway onto the street. Use non-flammable materials and posts.
27. Install metal screens on attic, foundation and other openings on your home to prevent accumulation of leaves and needles.
28. Hold a neighbourhood meeting to talk about fire safety. Invite your local fire chief. Have coffee and donuts for neighbours.
29. Install a fire extinguisher in the kitchen and the garage.
30. Install a metal shield between your home and an attached wood fence.
31. Replace conifer and evergreen shrubs with low-flammable plants in your home's defensible space.
32. Thin and prune conifer trees for 10 to 30 metres around your home.
33. Purchase and use a weather alert radio. Many types of emergencies are announced through this service.
34. Replace vinyl gutters and downspouts with non-flammable, metal gutters and downspouts.
35. Install a spark arrestor or heavy wire screen with mesh opening less than 5 mm on wood burning fireplaces and chimneys.

### Moderate cost actions (\$50 - \$250 and a little more work)

36. Build a gravel turn around area near your house big enough to allow a fire truck to turn around.
37. Join your neighbours in having an additional access road into your neighbourhood. Share the costs.
38. Treat flammable materials like wood roofs, decks, and siding with fire retardant material.
39. Modify driveway gates to accommodate fire trucks. They should be at least 3 metres wide and set back at least 10 metres from the road. If locked, use a key box approved by your local fire department or a chain loop with a lock that can be cut in an emergency.
40. Enclose decks to prevent accumulation of leaves, needles, and debris. Include a metal screen with a 5 mm mesh opening to prevent sparks from getting under the deck.

### High cost actions (more than \$500)

41. Replace your roof with fire-resistant materials such as Class A shingles.
42. Install a roof irrigation system to protect your home's roof.
43. Install an independent water supply for a sprinkler system with a non-electric (e.g. gas) powered pump capable of running unattended for 24 hours.
44. Replace wood or vinyl siding with non-flammable material.
45. Replace single-pane glass windows and plastic skylights with tempered, double-pane glass.
46. Box in eaves, fascias, and soffits with aluminum or steel materials with metal screens to prevent entry of sparks.
47. Improve driveway culverts and bridges to accommodate the weight of a fire truck.
48. Relocate propane tanks inside the defensible space but at least 3 metres from the house. Have non-flammable ground cover such as gravel around them for 3 metres.
49. Have electric service lines to your house placed underground.
50. Improve your driveway by straightening sharp curves and filling in sharp dips that would hinder a fire truck.

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