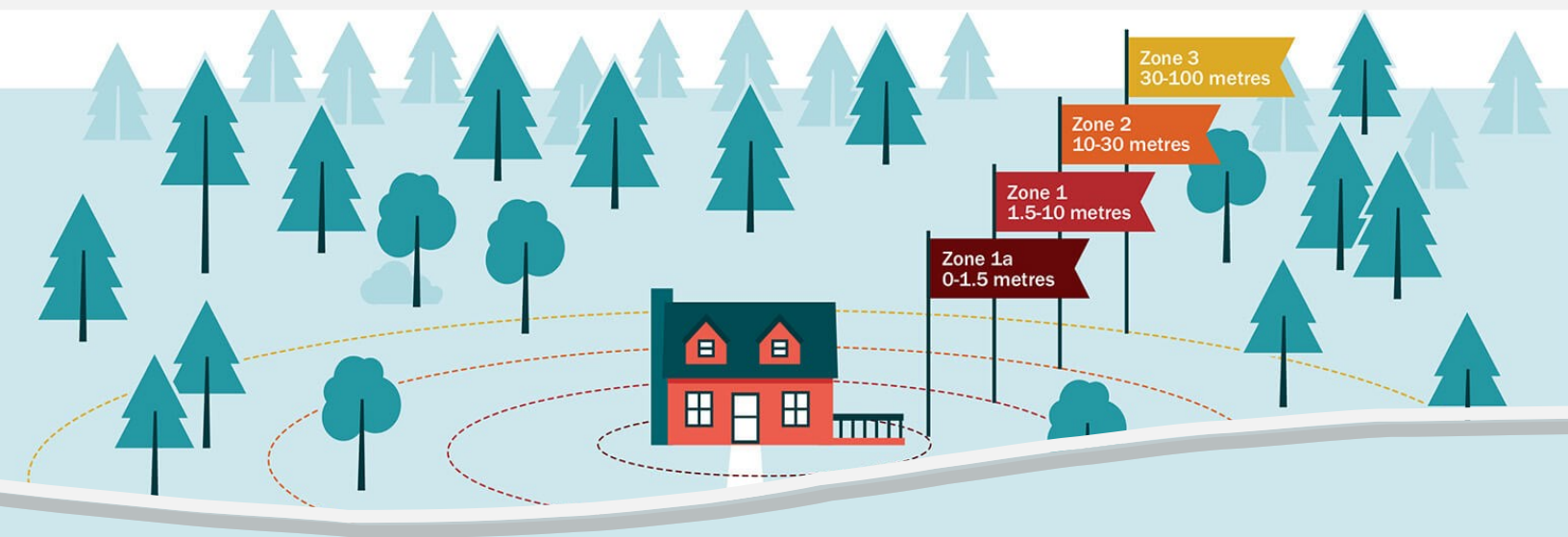


# **Education Box**

## **Resource Manual**



**BRITISH COLUMBIA**  
**FireSmart**

# FireSmart™ BC Education package

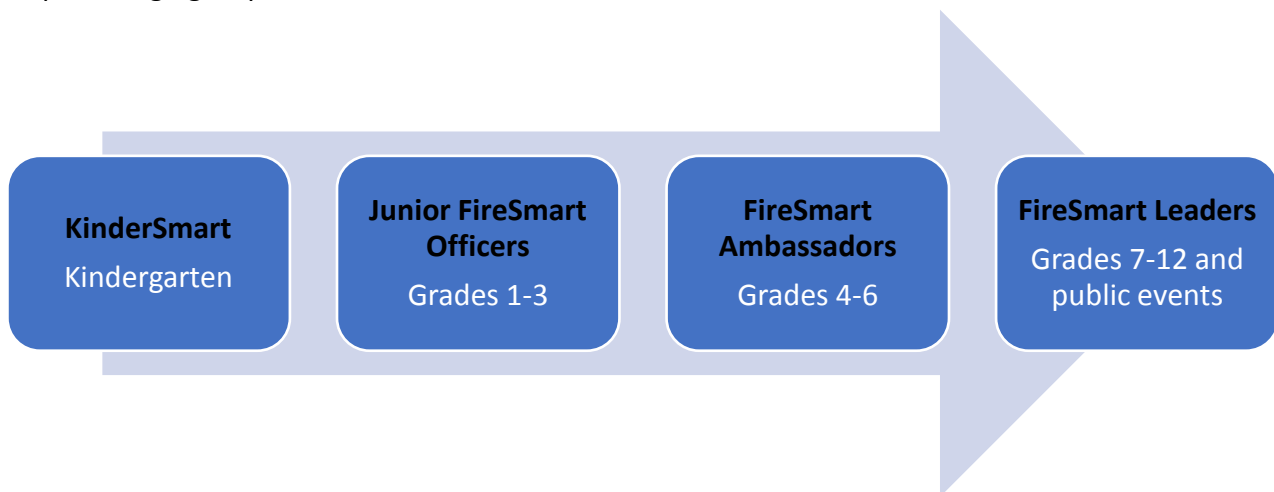
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## Introduction

The FireSmart BC Education package is designed to be an all-in-one teaching resource for Grades K-12 and for use at public events. This document outlines what is provided in the education kit (“hard copy” pieces in a tote and “soft copy” pieces on a USB drive) and suggests how to effectively use those items.

The goal of the FireSmart BC Education package is to give BC Wildfire Service staff, educators and other members of the FireSmart community the tools they need to present a unified FireSmart message throughout British Columbia. By reaching out to school-aged children and their parents, we can help them become familiar with FireSmart concepts and (more broadly) help the public understand the seven FireSmart disciplines.

The FireSmart BC Educational package is broken into four components, with each one aimed at a specific age group:



The materials for each age group includes an easily followed lesson plan and detailed instructions for carrying out the learning activities. (Activity details are listed on the next page.)

Thank you for supporting the FireSmart program. Together, we can build a FireSmart BC.

**Looking for more information? Visit [www.FireSmartBC.ca](http://www.FireSmartBC.ca)**

## Contents of the FireSmart BC Education package:

### Kindergarten: *KinderSmart*

1. **Firefighter Duckies:** Book to settle young children and create an atmosphere of learning.
2. **FireSmart Magnetic Board and Magnets:** Magnetic board to introduce FireSmart concepts and campfire safety.
3. **FireSmart House Relay:** Kids can take turns “FireSmarting” a wooden playhouse.
4. **FireSmart Memory Game:** A matching game, using FireSmart-themed cards.

### Grades 1-3: *Junior FireSmart Officers*

1. **FireSmart Materials:** Children learn about different building materials and how fire-resistant they are.
2. **Forest Builder:** On 11”x17” mats showing untreated and treated forests, students use dominoes to explore how thinning out trees can affect a wildfire’s spread.
3. **FireSmart House Builder:** Students can “build” a FireSmart house and create a FireSmart property, using the magnetic FireSmart board.
4. **FireSmart Home Assessment:** Using FireSmart principles, students assess two different houses to determine which is more FireSmart and then learn about FireSmart activities that are easy to do.
5. **Campfire Safety:** Kids explore FireSmart campfire safety using the interactive magnetic board.

### Grades 4-6: *FireSmart Ambassadors*

1. **FireSmart Introduction Video:** This video introduces students to FireSmart priority zones and FireSmart principles.
2. **Thinning the Forest Game:** This interactive game illustrates how people can reduce wildfire risks by thinning out trees.
3. **FireSmart Magnetic Board and Magnets:** This magnetic board introduces FireSmart concepts and campfire safety.
4. **FireSmart Property Game:** Students will play an interactive game using pictures of houses to reinforce how basic FireSmart activities can affect wildfire resiliency.
5. **Campfire Safety:** Kids can explore FireSmart campfire safety using the interactive magnetic board.

### Grades 7-12: *FireSmart Leaders*

1. **FireSmart Introduction Video:** This video introduces students to FireSmart priority zones and FireSmart principles.
2. **Fire Triangle:** Students will learn about the three things that a fire needs to start and keep burning.
3. **FireSmart Magnetic Board and Magnets:** This magnetic board introduces FireSmart concepts and campfire safety.
4. **Forest Fire Model:** Students will use FireSmart principles to “FireSmart” a community, using matchsticks that represent trees. After deciding on their FireSmart strategy, students will light the matches to observe the outcome.
5. **Campfire Safety:** Kids can explore FireSmart campfire safety using the interactive magnetic board.

# **FireSmart BC Education package: activities list**

## **KINDERGARTEN (KinderSmart):**

### **1. FIRESMART INTERACTIVE MAGNETIC BOARD**

- Go through the magnetic board materials. Let students come up and move the magnets as they fix things around the house (cleaning leaves from eavestroughs, mowing the lawn, moving firewood away from the house, etc.).

### **2. FIRESMART HOUSE RELAY**

- In this relay activity, students will practise “FireSmarting” a house. Split the class into groups, which will race to make the house more FireSmart. One person from each team will run and remove one item from the house to make it safer (e.g. remove leaves from the house’s gutters and place them in a matching bucket).

### **3. FIRESMART MEMORY GAME**

- This memory game using FireSmart-themed cards. Students can play in pairs or groups of four, depending on class size and the amount of time available.

## **GRADES 1-3 (Junior FireSmart Officers):**

### **1. TAKING A LOOK AT “FIRESMART” MATERIALS**

- Students learn about different building materials and how fire-resistant they are. This activity will give students a better understanding of how these materials react to fire and reinforce FireSmart concepts.

### **2. FOREST BUILDER**

- Forest Builder explores how a wildfire spreads through a forest. The goal is for students to understand that wildfire spreads faster in forests where more fuel is available.

### **3. FIRESMART HOME BUILDER**

- Students will build a FireSmart home using the magnetic board.

### **4. FIRESMART HOME ASSESSMENT**

- Students will explore how the completion of simple yard maintenance tasks can make a home safer in the event of a wildfire. Students will complete home and property assessments of two houses (House A and House B) using the Junior FireSmart Officer assessment sheet.

### **5. CAMPFIRE SAFETY**

- Review the FireSmart Campfire Safety interactive magnetic board with the students. Then let them come up and move the magnets to fix things (place a water bucket nearby, move the tent away from the campfire, don’t start the campfire in windy conditions, etc.).

## GRADES 4-6 (FireSmart Ambassadors)

### 1. SHOW STUDENTS THE FIRESMART VIDEO

- *"FireSmart means keeping our homes and our communities safe from wildfire. People often live in or near forests, and wildfires are natural and common occurrences there. Wildfires are important for the health of our forests. For example, the heat of a fire helps pine cones open, releasing the seeds within them to grow new pine trees. But since people often live in or near forests, we need to take steps to protect our homes from wildfire."* <https://www.youtube.com/watch?v=k0ClodnHp2c>
- After showing the video, play a game that illustrates the importance of pruning, thinning or removing trees to help stop wildfires spreading to houses.

### 2. PLAY "THINNING THE FOREST" GAME

- Students will learn the importance of thinning trees as a FireSmart activity. Students are divided into teams and each team works on one section of forest.

### 3. FIRESMART INTERACTIVE MAGNETIC BOARD

- Students will be asked questions about the images they see on the interactive magnetic board. They can then talk about ways to make the house more FireSmart.

### 4. PLAY "HOME/PROPERTY ASSESSMENT" GAME

- This fun and interactive game reinforces basic FireSmart activities related to home and property management, as students complete a Home and Property FireSmart Assessment. Students form a line, with each of them holding an image of a house. The instructor will then ask questions such as: "Is your house made of wood?" Students will answer by either taking a step back or taking a step forward (i.e. either walking away from the risk or closer to it).

### 5. CAMPFIRE SAFETY – INTERACTIVE MAGNETIC BOARD

- Review the FireSmart Campfire Safety board and ask students whether they think the campfire shown on the board is safe. Students then make changes on the magnetic board to make the campfire safer.

## GRADES 7-12 (FireSmart Leaders)

### 1. SHOW STUDENTS THE FIRESMART VIDEO

- *"FireSmart means keeping our homes and our communities safe from wildfire. People often live in or near forests, and wildfires are natural and common occurrences there. Wildfires are important for the health of our forests. For example, the heat of a fire helps pine cones open, releasing the seeds within them to grow new pine trees. But since people often live in or near forests, we need to take steps to protect our homes from wildfire."* <https://www.youtube.com/watch?v=k0ClodnHp2c>

### 2. FIRE TRIANGLE

- Students will learn that a fire needs three things to start and keep burning (fuel, oxygen and a source of heat). "We call this the fire triangle. If you don't have all three things, a fire will not start."
- Then ask the students: "Can we control the amount of oxygen in the air?"

*"We can't control how much oxygen is in the air, so when we talk about FireSmart, we mainly focus on ignition sources and flammable materials near our homes and communities."*

- Ask students to provide examples of fuels and ignition sources.

### **3. FIRESMART INTERACTIVE MAGNETIC BOARD**

- Divide the class into groups of four or five students and give each group a whiteboard.
- Using the interactive magnetic board as a starting point, ask students to come up with ways to make the house more FireSmart and list them on their whiteboards.

### **4. FOREST FIRE MODEL DEMONSTRATION AND BUILDING OF FOREST FIRE MODELS**

- After watching a Forest Fire Model Demonstration, students will make their own two-sided models.
- Using the concepts they've already learned to make homes and properties more FireSmart, one side of the model will show an untreated forest and the other side will show a treated forest.

### **5. CAMPFIRE SAFETY MAGNETIC BOARD**

- Activities and discussions based on the campfire safety magnetic board will vary (depending on the grade), but students can make changes on the board to make the campfire safer.

## **PUBLIC EVENTS:**

1. FireSmart house interactive magnetic board
2. Campfire safety magnetic board
3. Taking a look at FireSmart materials
4. FireSmart Home Assessment
5. Forest Builder
6. Fire Triangle
7. FireSmart video

# FireSmart

## Leader

(Grade 7-12)



## **FireSmart Leaders (Grades 7-12)**

### **Lesson Plan**

#### **Pre-classroom preparation:**

- Set up the FireSmart interactive magnetic board to show a house with many unsafe fire characteristics, such as:
  - wooden siding
  - wooden roof
  - a propane tank close to house (within the 10-metre line)
  - firewood close to house (within the 10-metre line)
  - coniferous trees close to house (within the 10-metre line)
  - leaves in eavestrough
  - leaves under deck
  - coniferous trees close to campfire
  - coniferous trees close to burn barrel

Leave the lawnmower, sprinkler, water pump to the side, so they can be added later as improvements.

- Prepare forest model materials and make lots of large and small tree toppers.
- Make a demonstration forest model to represent a natural forest, with only large tree toppers (see the “How to Build a Forest Fire Model” document.)

#### **Materials:**

- FireSmart interactive magnetic board and magnets
- picture of the “fire triangle” (see Appendix A)
- small whiteboards (1 whiteboard per 4-5 students)
- small whiteboard markers (1 marker per 4-5 students)
- demonstration untreated fire model, prepared in advance (See “How to Build a Forest Fire Model” document.)
- fire model Plasticine-lined pans (1 pan per 4-5 students)
- fire model planning sheets (1 sheet per 4-5 students)
- 5 pairs of scissors
- lighter
- green, red and blue Sharpie pens
- craft matchsticks
- large tree toppers
- small (pruned) tree toppers
- Monopoly houses



**Timeline for programming (total time is about 60 minutes)**

- A. Introduction
- B. Fire triangle
- C. FireSmart interactive magnetic board
- D. Demonstration forest fire model
- E. Forest fire model building
- F. Conclusion

**A. INTRODUCTION**

*“Today we’re going to talk about FireSmart. Does anyone know what FireSmart means?”*

*“FireSmart means keeping our homes and our communities safe from wildfire. Fire is a natural occurrence and plays a very important role in the health of our forests. For example, fire helps to open pine cones, releasing the seeds inside them to grow new pine trees. But if we live in or near the forest, we want to find ways to reduce wildfire risks around our homes.”*

Play this video: <https://www.youtube.com/watch?v=k0ClodnHp2c>

**B. FIRE TRIANGLE**

*“Fire needs three things to start burning and keep burning. What are those three things?”*

- **fuel:** Fires need something to burn (e.g. wood or houses).
- **oxygen** – All fires need oxygen. If you take oxygen away, the fire will eventually go out.
- **ignition source** – To start burning, a fire needs some sort of initial spark (e.g. matches, flint and steel, lightning).

Hold up the fire triangle picture.

*“We call this the fire triangle. If one of these three things are not present, a fire will not start or continue to burn.”*

*“We can’t control how much oxygen is in the air. So, when we talk about FireSmart, we focus on controlling ignition sources and fuels near our homes and communities.”*

*“What are some examples of ignition sources that could start a wildfire in the forest?”*

- lightning (lightning is the only natural cause of wildfires. All other wildfire is caused by humans or human-made objects.)
- campfires (or not properly putting out a campfire)
- backyard or industrial burning

- matches
- cigarettes
- sparks produced by trains
- off-road vehicles or quads (Vehicle mufflers can get very hot and could ignite materials such as dry grass.)
- trees falling on a power line
- fireworks

### **C. FIRESMART INTERACTIVE MAGNETIC BOARD**

Ask the teacher to divide the class into groups of 4-5 students and give each group a small whiteboard and dry erase marker.

*“In your groups, I would like you to come up with as many different things as possible that you could change to make this house more FireSmart, which means it’s safer from wildfire risks. Write a list on your whiteboards.”*

Give the students a few minutes to come up with some ideas for improving the house. When they’re done, discuss the ideas as a group.

*“How many different things did your group come up with?”*

Rotate between the groups, asking them to tell you one of their suggested changes at a time. Move the magnets on the board as the students suggest ideas. If they missed any possible improvements, point them out at the end. Then collect their whiteboards and markers.

#### D. DEMONSTRATION FOREST FIRE MODEL

*“Now that we’ve discussed how to FireSmart our homes and properties, let’s discuss how we can help keep our communities safe from wildfire.”*

Take out a forest model. Walk around the class, showing the model to the students as you describe it. Your model should look something like this:



*“Here I have a model of a natural forest. There are lots of coniferous trees (also know as evergreen trees) that are growing close together and have branches that are close to the ground. We call these **ladder fuels** because fire can easily spread from the surface fuels on the ground (grasses, logs, etc.) to the branches and to the top of the trees (see Appendix A). On one side of our model we have a little community.*

*“We are now going to burn this model to get an idea of what happens when a wildfire occurs in a forest. Then you are going to make a plan to help protect this community from wildfires.”*

If you’re making your presentation indoors, take the students outside to burn the fire model. Ensure that the students keep a safe distance away from the model as it burns, since the wind may carry the flames outside of the pan. Usually, the fire will spread rapidly through the model forest and into the community. After the model has burned and the flames are out, return to where you started the presentation and have the students sit down in groups of 4-5 students.

## E. FOREST FIRE MODEL BUILDING

*“Now you get to make a plan to help save your community from wildfire. The team that does the best job protecting their community will get a prize. Each group will get a sheet of paper to plan out how you can help protect your community. There are a few rules that describe what you can do.”*

Hold up the planning sheet to point things out as you describe the rules.

*“Here is a map of a forest. Each of these starbursts represents a coniferous tree. The leaves represent deciduous trees, which will not have a paper tree topper because they do not act as ladder fuels. On one side of this sheet, there is a natural forest. You are not allowed to change anything about the natural forest, since it provides important habitat for animals.”*

*“But you do have some options to make changes to the treated side of your forest.”*

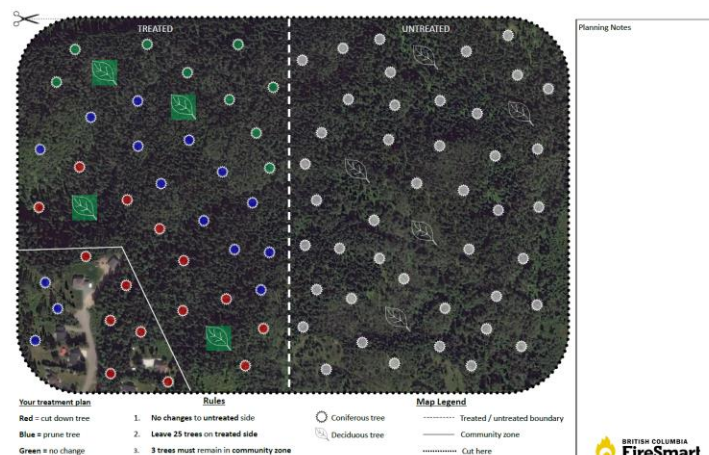
*“If you would like to cut down a tree, you can mark it with the **red** marker.”*

*“If you would like to prune a tree, you can mark it with the **blue** marker. Pruning means that you cut off some of the bottom branches of the tree, so it has a smaller top. Removing a tree’s ladder fuels makes it harder for a fire to ignite the tree.”*

*“If you’d like to leave a tree just the way it is, mark it with the **green** marker.”*

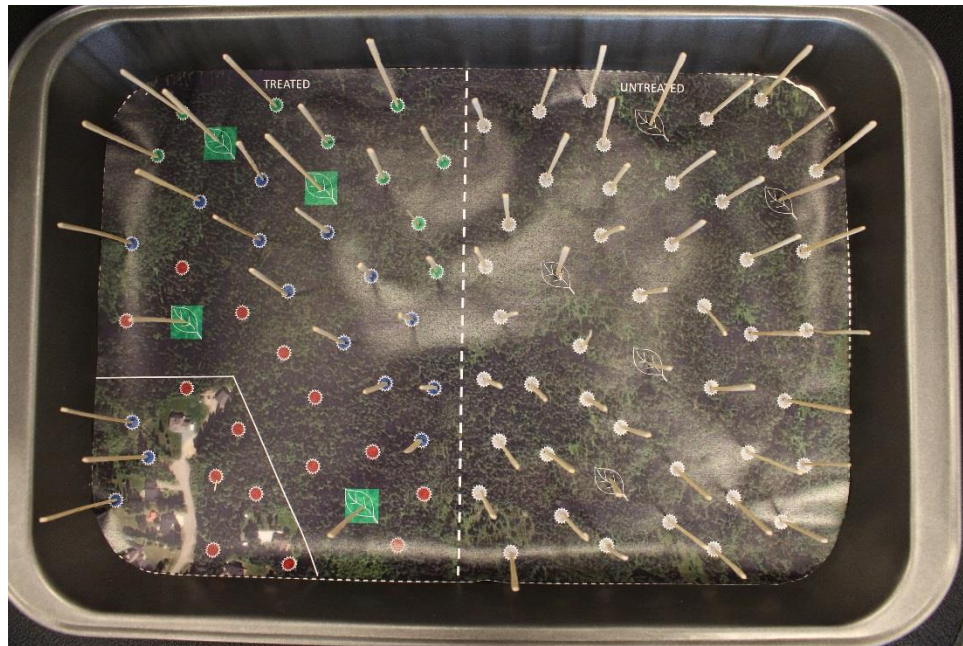
*“You need to keep **at least 25 trees** on the treated side of the model. **At least three** of those must be within the community. Deciduous trees and pruned trees count as part of your 25 trees. Once you’ve finished your plan, raise your hand and I’ll come and check it over. Then each group will build a forest model. We will burn them all to see who did the best job of protecting their town.”*

1. Hand out the **planning sheets and markers**. This activity works best if you give them one thing to do at a time (when they are ready), so keep the rest of the materials to the side and hand them out as needed. Circulate amongst the groups, since the students will likely have questions as they begin planning. Their completed planning sheets should look something like this (a larger example is on the USB):





2. Once a group finishes its plan, make sure that the students have left at least 25 trees. Give them a pair of **scissors** to cut around the outside edge of their forest plan. Then give them a **Plasticine-lined forest model pan** so they can lay the paper plan flat in the bottom of the pan. (If they are concerned about the paper burning, tell them that the paper represents grass. If the paper is flat in the pan, it doesn't burn too easily, but occasionally there is a grass fire.)
3. When the students have correctly placed their paper plans in the pan, bring them **craft matchsticks** (tree trunks) and show them how to place them in the pan. Tell them to put a matchstick wherever they have a tree on the plan (i.e. all spaces on the untreated side, and all spaces that are coloured green or blue on the treated side). The matchsticks will stay in place best if you hold down the paper with one hand while you insert the matchstick with the other hand.



4. Once the groups have placed all their tree trunks, bring around the **paper tree toppers**. Give each group some large tree toppers and some small (pruned) tree toppers. They will require more large toppers than small toppers. Tell the students that: leaves (deciduous trees) do not get a topper; large toppers go on the untreated side as well as any trees marked green on the treated side; and the small tree toppers go on trees marked blue on the treated side.

5. Once a group has finished assembling the trees, check the model to make sure that the students did not miss any trees. Have them return any extra matchsticks and tree toppers to the appropriate bins. Then give each group four **monopoly houses** to put in their community. Completed models should look something like this (depending on each group's plan):



6. Once all groups have finished building their forest models, take the models outside to burn them. Ensure that students stand a safe distance away from the burning models and that the models are spaced out, so one group's model will not set another group's model on fire. Burn one model at a time, asking each group to describe the plan they made before you burn its model.



7. Once all models have been burned, decide which model performed the best and give prizes to the group that made it.

Deciding which model is best is a qualitative judgement and so the result will be different for each presentation, but there are general guidelines for choosing the best model. Priorities that can be used for ranking the models (from most important to least important) include:

1. protecting the community (no burned/melted houses, the fire remains outside the community area)
2. maximum distance between the community and the fire (maximum unburned paper remaining)
3. maximum number of trees still standing

## **F. CONCLUSION**

Discuss the different methods used in the forest models and their effectiveness (e.g. fire breaks). If there were interesting burn patterns (e.g. a few trees that were unscarred in an otherwise burned forest) or environmental factors that played a role (e.g. wind), discuss them with the students.

*“As you saw in your models, controlling the amount of fuel in the forest around our communities — through tree pruning and forest thinning — can have a major impact on the spread of a wildfire. You did a great job trying to protect your communities from wildfire!”*

## **G. CLEAN-UP:**

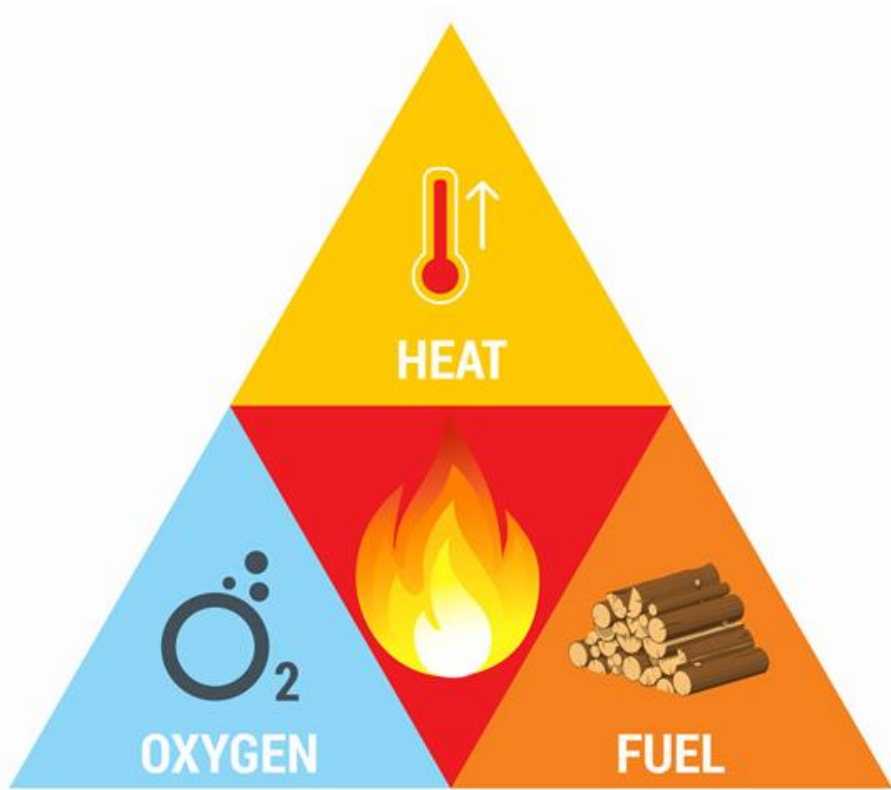
After the lesson is completed, the burned pans will need to be cleaned. The best way to clean these pans is as follows:

1. Salvage any unburned houses, matchsticks and tree toppers from the pans and store them for later use.
2. Shake out as much burned material as you can into a garbage bin, after first ensuring that these materials are fully extinguished and cool to the touch.
3. Pick out each tree stump (piece of matchstick) from the Plasticine in the pans. The matchsticks may be hard to see after they've burned, so gently move your hand across the surface of the Plasticine to feel for the tree stumps. There should be 70-90 tree stumps in each model pan.
4. Rinse the pan with water in a sink.
5. Check for any matchsticks that you might have missed since they may be more visible after you rinse the pan.

6. Dry the outside of the pan with a paper towel and then lay a couple of paper towels in the pan (on top of the Plasticine) to soak up the rest of the water.
7. Stack each pan in the opposite direction of the one below it, so air can circulate between all the pans while they dry.
8. Leave the pans to dry for several hours and then remove the paper towels. The pans can now be stacked together for storage.



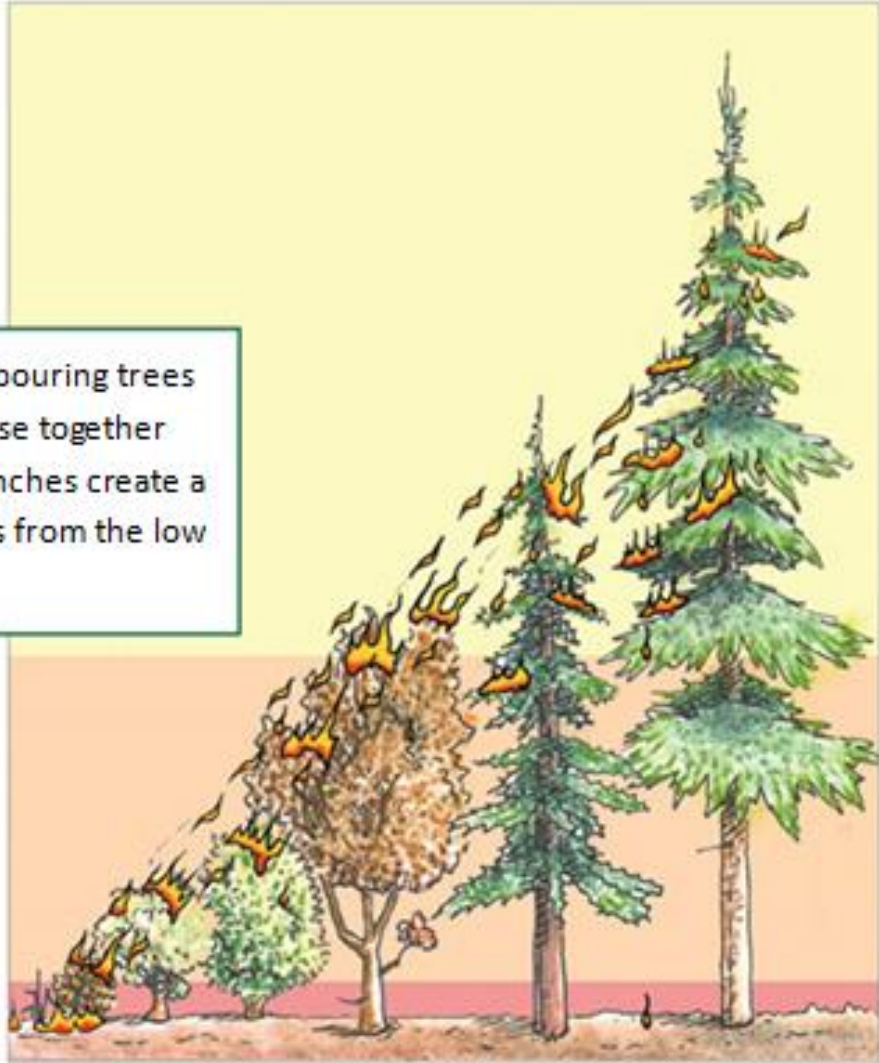
## Appendix A: Extra resources



Fire triangle

**All three components must be present for fire to exist.**

Fire “climbs” neighbouring trees – trees that are close together with many low branches create a ladder that reaches from the low to the high.



Ladder fuels



Fire break



# **Resources**

## **FireSmart**

FireSmartBC.ca

firesmartcanada.ca

## **BC Wildfire Service**

bcwildfire.ca

## **Emergency planning**

getprepared.gc.ca

emergencyinfo.bc.gov.bc.ca



# **FIRESMART LEADER**



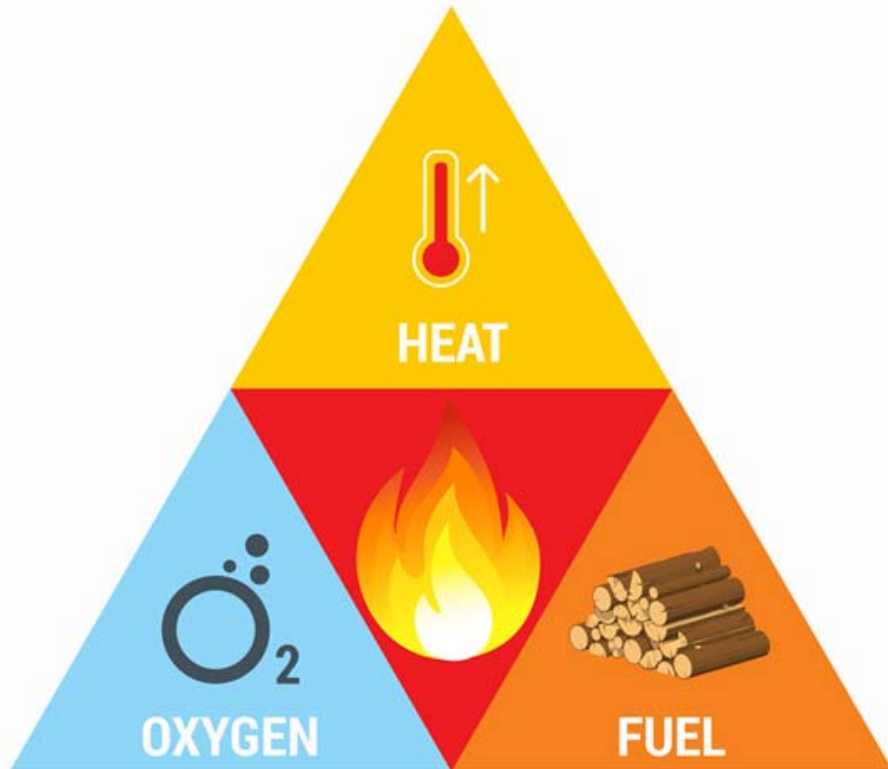
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## Lesson 1: Fire triangle



Three things must be present for a fire to start:

- **oxygen** to sustain combustion
- **heat** to raise temperature to ignition point
- **fuel** or other combustible materials



<https://www.firesmartcanada.ca/>



<http://lsfes.org/>



<http://www.lslbo.org/>



**The BC FireSmart Committee and the BC Wildfire Service would like to extend their thanks to the Lesser Slave Forest Education Society and the Lesser Slave Lake Bird Observatory for their dedication and hard work in creating the original education materials that the BC FireSmart Education Package is based on. Together we can build a Canada that is FireSmart!**

**For more information on their products and initiatives please visit these websites.**

## Activity 1: Wildfire ignition sources

### Key

A	B	C	D	E	F	G	H	I	J	K	L	M
1	2	3	4	5	6	7	8	9	10	11	12	13
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
14	15	16	17	18	19	20	21	22	23	24	25	26

Decipher the secret words:

		G							
12	9	7	8	20	14	9	14	7	

				F					
3	1	13	16	6	9	18	5	19	

	P						R					
15	16	5	14		2	21	18	14	9	14	7	

				H			
13	1	20	3	8	5	19	

									S
3	9	7	1	18	5	20	20	5	19

				N					C		
20	18	1	9	14		20	18	1	3	11	19

Q				
17	21	1	4	19



## Lesson 2: FireSmart interactive magnetic board

### What can be done to FireSmart the house?

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_
10. \_\_\_\_\_

**Now make these changes on the board!**

## Be prepared to “grab and go”

You may not always be able to go home before you have to evacuate an area, or you may have to leave your house on very short notice. Having “grab and go” bags ready at your home, at your workplace, and in your vehicle can save valuable time in an emergency situation.

### Basic “grab and go” bag:

- |  |  |
|--|--|
| <input type="checkbox"/> food and water                        | <input type="checkbox"/> toiletries  |
| <input type="checkbox"/> flashlight and batteries,<br>headlamp | <input type="checkbox"/> cash (in small bills)   |
| <input type="checkbox"/> AM/FM radio                           | <input type="checkbox"/> local map   |
| <input type="checkbox"/> medication(s)                         | <input type="checkbox"/> whistle   |
| <input type="checkbox"/> seasonal clothing                     | <input type="checkbox"/> out-of-area contact card  |
| <input type="checkbox"/> blanket                               | <input type="checkbox"/> important documents<br>(passports, birth<br>certificates, photos) |
| <input type="checkbox"/> pen and notepad                       |  |
| <input type="checkbox"/> cell phone charger                    |  |



## Have an emergency supply kit ready

### Basic emergency supply kit:

- ☐ water (at least two litres of water per person per day); include small bottles that can be carried easily in case of an evacuation order
- ☐ food that won't spoil, such as canned food, energy bars and dried foods (Replace your kit's food and water once per year.)
- ☐ manual can opener
- ☐ crank or battery-powered flashlight, and extra batteries (Replace the batteries once per year.)
- ☐ crank or battery-powered radio, and extra batteries (or a Weatheradio)
- ☐ first aid kit
- ☐ extra keys for your car and house
- ☐ cash in smaller bills (such as \$10 bills) and change for payphones
- ☐ copies of your emergency plan and contact information

Include other items, if applicable, such as prescription medications, infant formula, equipment for people with disabilities, or food, water and medication for a pet or service animal. Personalize your list according to your needs.

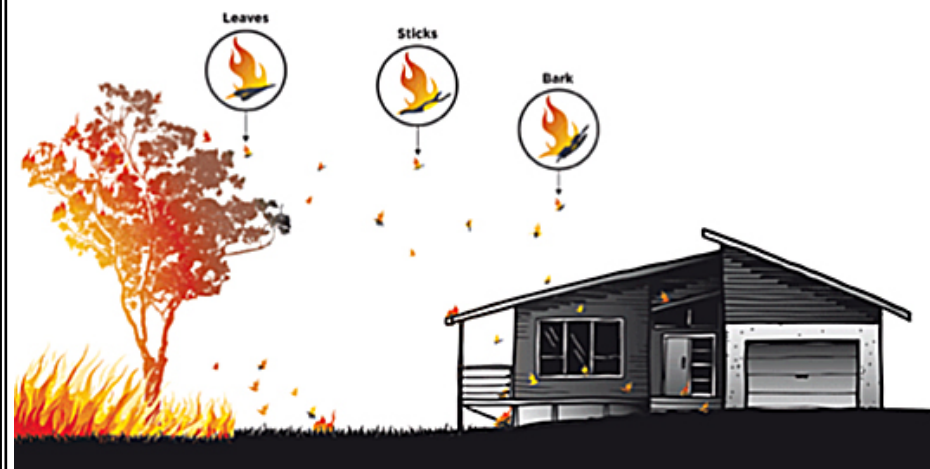
## Lesson 3: the wildland-urban interface

The wildland-urban interface (WUI) is any area where combustible wildland fuels (trees and other vegetation) are found close to homes, farm structures, outbuildings or infrastructure.



As we build houses and cities farther out into the natural landscape of B.C., wildfires become a larger threat to everyone. Making your home FireSmart can help you cope with wildfires near your community.

Houses in the wildland-urban interface are at risk from embers produced by wildfires. Most homes that get destroyed in these areas are not ignited directly by flames, but from embers. Embers are the burning parts of a tree (such as leaves, bark or branches) that are carried ahead of the fire by wind. When embers land on objects that are flammable (such as wooden roofs, woodpiles or coniferous trees) they can ignite these objects and put buildings at risk.







## Lesson 4: Forest builder model

### Why does FireSmart work?

FireSmart reduces fuels in areas facing an increased wildfire risk, including the wildland-urban interface. Remember that more than 50% of the buildings destroyed by wildfire are ignited by embers (which are created from burning trees).

We know that 85-90% of homes without a flammable roof and with 10 metres of clearance from combustible material will survive, based on:

- incidental observations dating back decades
- ignition modelling and fire engineering experiments
- experimental, high-intensity forest fires in the Northwest Territories and Alberta
- Insurance Institute for Business and Home Safety “Fire Dragon” and National Institute of Standards and Technology (USA) test facilities



Houses in Fort McMurray were studied by the Institute for Catastrophic Loss Reduction to determine why some houses survived the 2016 wildfires and others didn't.

About 81% of all surviving homes were rated as FireSmart, and most of those were in the “low” hazard category<sup>1</sup>.

Photo credits: Institute for Catastrophic Loss Reduction

<sup>1</sup>Alan Westhaver: *Why Some Homes Survived: Learning from the Fort McMurray WUI Disaster*

## Know where to go and how to get there

### Pick a meeting spot

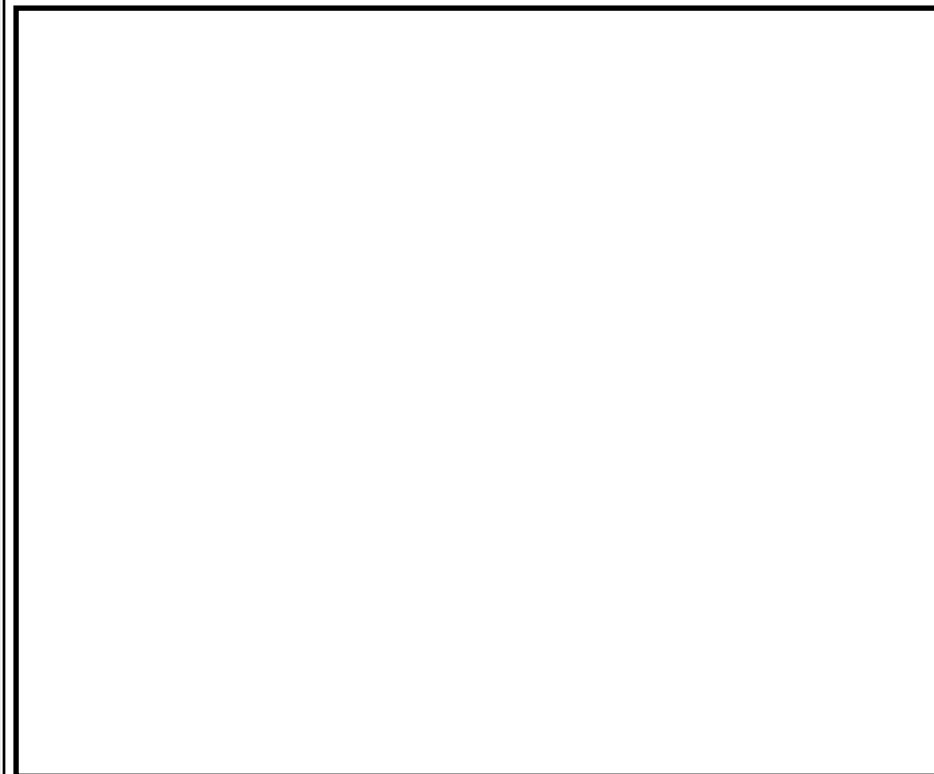
Where will you go if you have to leave your house or neighbourhood? What will you do if your neighbourhood is evacuated and you aren't home? *Pick a meeting spot!*

In your neighbourhood (such as a friend's house or a landmark):

Outside of your neighbourhood (such as a library or school):

### Draw a map

Use a  $\Delta$  to indicate your home. Use a O to indicate your school. Mark your out-of-neighbourhood meeting place with an X and label it.





## Wildfire Readiness Plan

Monday \_\_\_\_\_

Tuesday \_\_\_\_\_

Wednesday \_\_\_\_\_

Thursday \_\_\_\_\_

Friday \_\_\_\_\_

Saturday \_\_\_\_\_

Sunday \_\_\_\_\_

Does **everyone** on the list below know about the readiness plan?

List the contact details of people who need to know about your plan.

Name	Relationship	Contact numbers

Which **people** are likely to be at the house?

**Where** will you go? (Is your planned destination pet-friendly?)

\_\_\_\_\_

**Can** you stay there for several days?

\_\_\_\_\_

**How** will you travel there?

\_\_\_\_\_

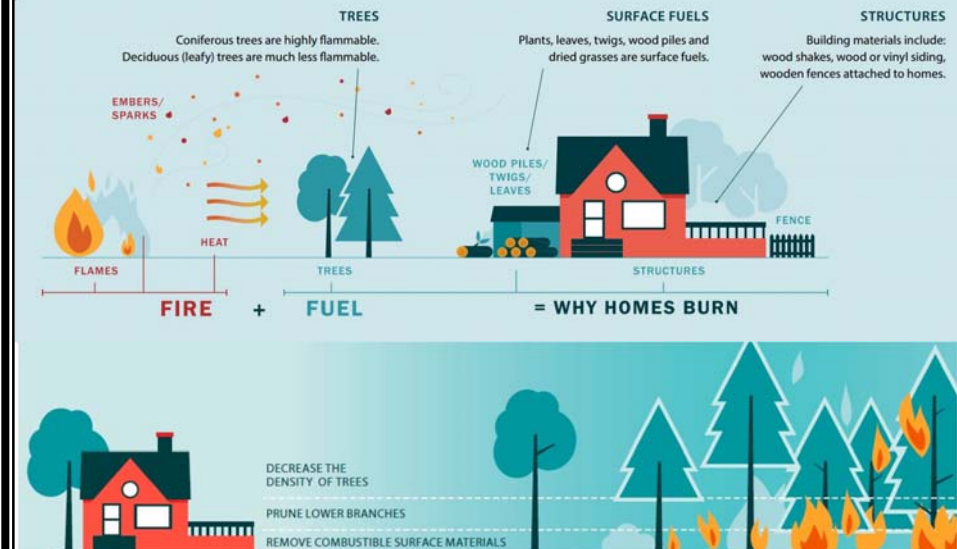
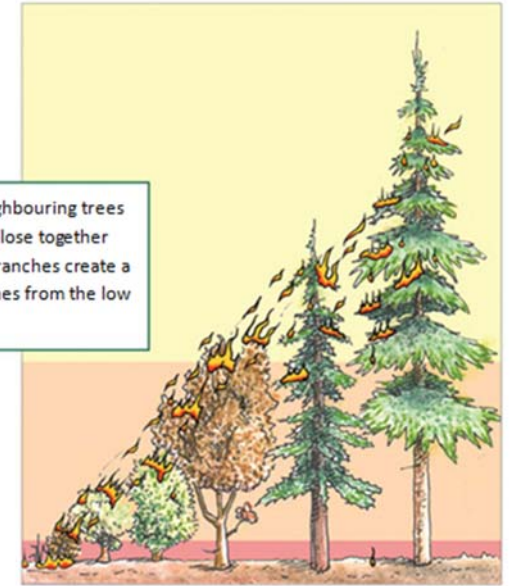
**What** route will you take to get there?

\_\_\_\_\_

## Lesson 4: Forest builder model

The FireSmart activities that you learned about in Lesson 2 can help reduce **ladder fuels**, which include trees that are close together and have branches close to the ground. By reducing ladder fuels within Priority Zones 2 and 3, you can significantly decrease the risk of a wildfire affecting structures.

Fire "climbs" neighbouring trees – trees that are close together with many low branches create a ladder that reaches from the low to the high.



## **FireSmart forest fire model instructions**

Building fire models is an inexpensive and simple way to illustrate the principles of FireSmart treatments in a fun and effective manner.

### **Materials: \***

- metal baking pan (about 9 inches x 13 inches)
- green construction paper (2 sheets)
- 90 craft matchsticks
- lighter
- stapler and staples
- scissors
- paper cutter (if available)
- Plasticine (enough to fill the bottom of the pan)
- plastic Monopoly houses

\*These are the materials needed for one untreated fire model pan. To make more models, increase the amounts of materials accordingly.

## Instructions:

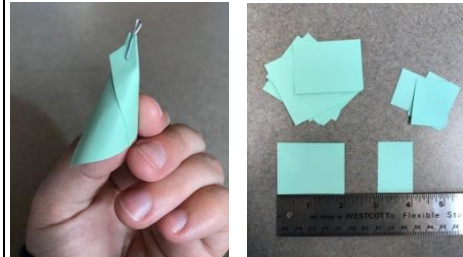
### 1. Base

- a. Line the bottom of the pan with enough Plasticine to ensure matchsticks stay standing when inserted.



### 2. Tree toppers

- a. Use the paper cutter (or scissors) to cut the paper into small rectangles.
  - i. You will need to make more unpruned trees than pruned trees.
  - ii. unpruned trees - 2 x 1½ inch squares (about 50)
  - iii. pruned trees – 1 x 1½ inch squares (about 30); cut the pointed tip from the bottom of the pruned trees
- b. Roll the paper around your thumb as shown.
- c. Staple the top of the cone.
- d. You now have coniferous tree toppers.



### 3. Tree set-up for the untreated model (no FireSmart treatments have been done)

- a. Approximately 90 matchsticks should be used for the untreated forest model.
- b. Insert matchsticks randomly in the Plasticine at the bottom of the pan. They represent tree trunks.
- c. Put the large (unpruned) paper tree toppers on the matchstick trees. Leave a few trees without tree toppers to represent deciduous trees.



Untreated model tree set-up



#### 4. Tree set-up for the treated model (FireSmart treatments have been done)

- a. Approximately 70-80 matchsticks should be used for the treated forest model.
- b. Place the matchsticks randomly around one half of the pan. This will be the “untreated” side. On the other side (the “treated” side), space out the trees more or create a fire break by leaving a space empty (with no matchsticks).
- c. Put the large (unpruned) paper tree toppers on the matchstick trees on the untreated side of the pan. On the treated side, top the trees with the small (pruned) tree toppers. Leave a few trees without paper tree toppers on each side to represent deciduous trees.

#### 5. Finishing the treated model

- a. Add some plastic Monopoly houses to one side of the pan (on the treated side) to represent a community within the forest. The plastic is comparable to vinyl siding on a real house.



Untreated model with tree topper



Completed untreated model

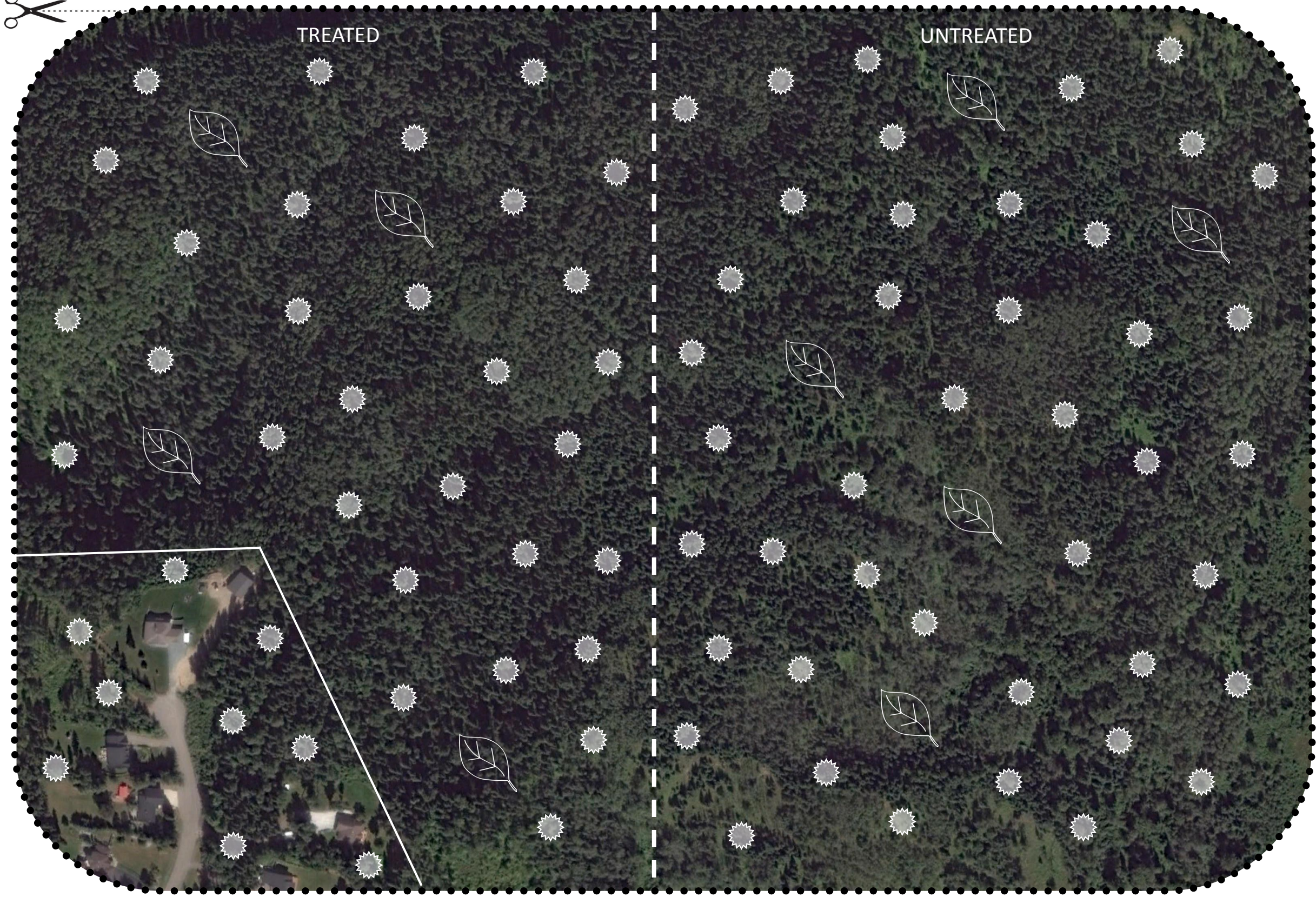
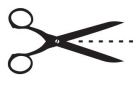


Completed treated model

It's recommended that you make one untreated model and one treated model to effectively display the difference that FireSmart treatments can make in a forest. These models may be used in conjunction with the FireSmart Leader education program to challenge participants to come up with their own FireSmart treatment plans.

Demonstrate the benefit of treating the forest with the two demonstration forests above. If you have time to allow the kids to use the Forest Planner Sheet and try to treat the forest themselves that is highly encouraged. These models are also a great public event tool (provided the event is outside / you have permission to create fire).





Your treatment plan

**Red** = cut down tree  
**Blue** = prune tree  
**Green** = no change

Rules

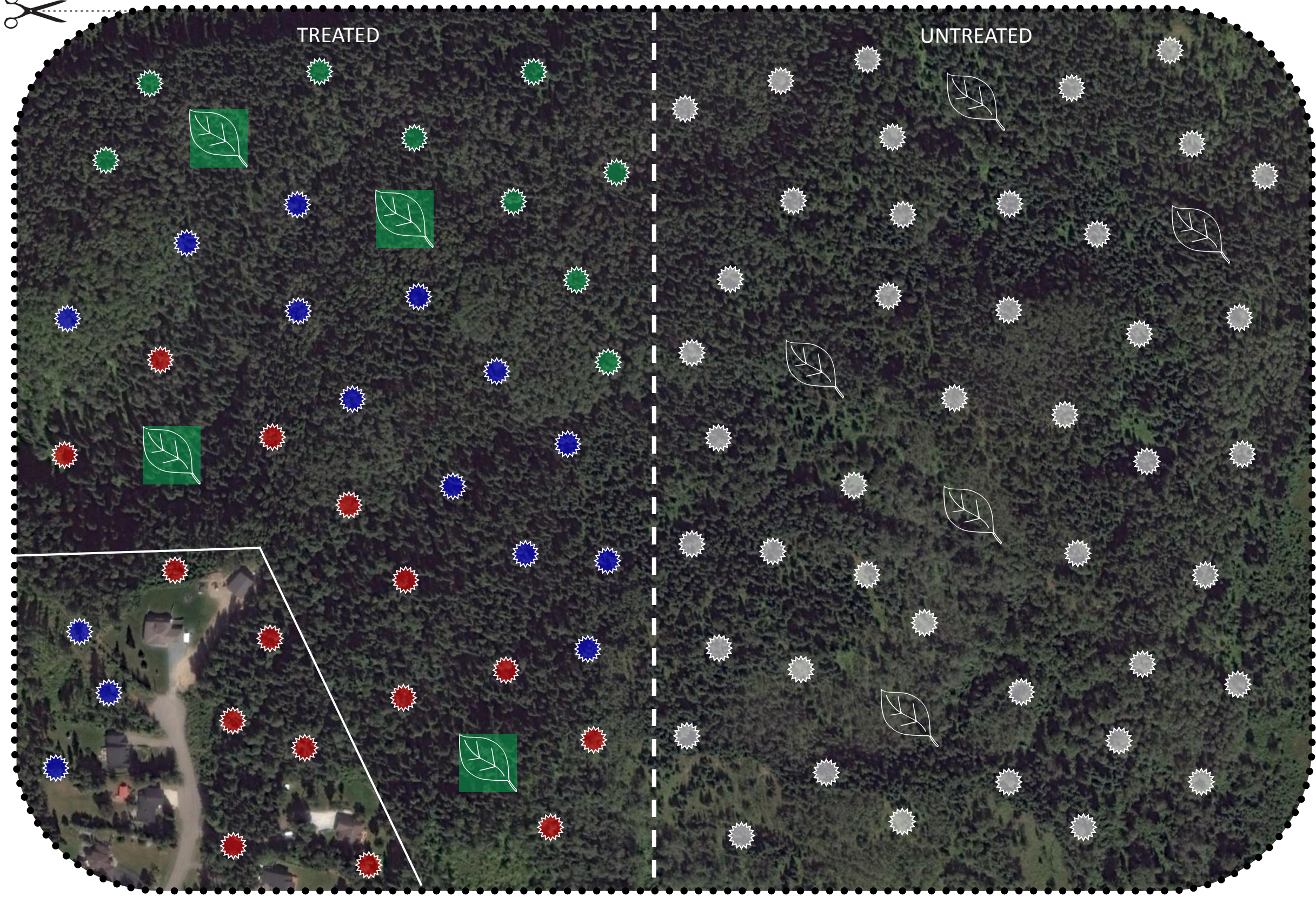
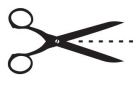
1. **Make no changes to untreated side**
2. **Leave 25 trees on treated side**
3. **3 trees must remain in community zone**

Map Legend

-  Coniferous tree
-  Deciduous tree
- Treated / untreated boundary
- Community zone
- ..... Cut here

Planning Notes





Your treatment plan

**Red** = cut down tree  
**Blue** = prune tree  
**Green** = no change

Rules

1. **No changes to untreated side**
2. **Leave 25 trees on treated side**
3. **3 trees must remain in community zone**

Map Legend

- Coniferous tree
- Deciduous tree
- Treated / untreated boundary
- Community zone
- ..... Cut here

Planning Notes



The BC FireSmart Committee and the BC Wildfire Service would like to extend their thanks to the Lesser Slave Forest Education Society and the Lesser Slave Lake Bird Observatory for their dedication and hard work in creating the original education materials that the BC FireSmart Education Package is based on. Together we can build a Canada that is FireSmart! For more information on their products and initiatives please visit below websites.



<http://lsfes.org/>



<http://www.lslbo.org/>



<https://www.firesmartcanada.ca/>