How to Prepare for Wildfire Season: Alpha Prototype Design Document

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IDT 530

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Scope of Project

This module will teach residents in California how to prepare themselves and their property for wildfires in the community. The target audience is residents of California living in suburban and rural areas. It will focus on educating residents with little wildfire prevention experience or knowledge. The primary elements of this lesson will include wildfire hazards, property protection, and evacuation planning. The module will be an interactive e-learning lesson created in Articulate Storyline that will take 10-15 minutes to finish. The project will require five instructional designers, which will take about six weeks to complete.

The goals for this project are as follows: First, the learner should be able to identify wildfire hazards on their property. Increasing awareness of wildfire hazards is expected to reduce the number of fires annually in California. Second, the learner will implement strategies to make their property more wildfire-resistant. Increasing wildfire resistance is anticipated to minimize property damage by fires by a significant margin statewide. Lastly, the learner will develop a comprehensive wildfire emergency evacuation plan. Teaching residents about a thorough evacuation plan will reduce injuries and fatalities from fire-related incidents.

Learner Analysis/Description

The target audience is California residents, spanning young adults (18+) to seniors, with an even gender distribution. Given California's cultural diversity, content must be culturally sensitive and inclusive. Educational backgrounds vary, indicating different levels of knowledge about wildfires and emergency preparedness. Some may have prior experience with community safety programs, while others are new to the topic.

Learning preferences will be diverse, with some favoring visual and auditory methods like videos and interactive modules, and others preferring reading/writing formats such as

detailed guides and checklists. Flexible, online learning environments that accommodate individual schedules are preferred. Generally, the audience has robust digital literacy and access to technology, though some may need basic guidance on using the e-learning platform. Language proficiency is crucial, with English as the primary language but a significant need for Spanish bilingual resources. Special accommodations should ensure accessibility for all learners, including those with disabilities. Attitudes towards learning about wildfire preparedness are proactive and positive, driven by the high stakes of wildfire risks in the state.

Description of Learning Theory and Pedagogy/Andragogy

This instructional product employs constructivist learning theory, which recognizes that learners build their own understanding through experiences and reflection. Emphasizing real-world application and problem-solving, it aligns well with wildfire risk reduction and emergency preparedness. Learners engage in activities like identifying hazards and creating evacuation plans, applying their knowledge in meaningful contexts. This fosters critical thinking and decision-making skills essential for emergencies. Interactive quizzes, simulations, and drag-and-drop activities ensure active involvement, leading to deeper understanding and retention.

From an andragogical perspective, the product caters to the needs of adult learners in California. Andragogy, the practice of teaching adults, leverages their prior experiences and knowledge to enhance new learning. This product respects adult learners' autonomy by offering flexible, self-paced modules accessible at their convenience. Interactive activities and additional resources address diverse backgrounds and learning paces, ensuring effective learning for all residents. Practical, hands-on tasks, like creating a personalized fire emergency plan, are directly relevant to learners' lives, boosting motivation and engagement by emphasizing the immediate

applicability and importance of the skills taught.

Learning Objectives

The primary goal of this course is to provide California residents with the proper knowledge and skills to prepare themselves before and during wildfire season. By the end of the courses, learners will be able to do the following:

1. Identify common wildfire hazards, wildfire prevention strategies, and evacuation strategies.

2. Apply wildfire prevention strategies to make their homes and properties more fire-resistant.

3. Assess what to do in a wildfire emergency situation.

4. Create an evacuation plan, which includes specific evacuation points within the home, a specified meeting point, and a list of emergency contacts in the event of an evacuation.

Forms of Assessment

1. **Quizzes:** Informal assessments with multiple-choice, true/false, drag-and-drop, and short answer questions to assess residents' content understanding of wildfire hazards, prevention strategies, and emergency plan strategies. The goal of these quizzes is to evaluate knowledge of common fire hazards and prevention strategies. There will be one quiz after each section.
2. **Scenario-Based Simulations:** Learners will interact with photos to identify fire-related safety materials and dangers and then must make decisions in a simulated fire emergency, such as identifying escape routes and calling emergency services. The purpose of these interactive images is to assess the ability to implement fire-readiness strategies.
3. **Emergency Plan:** Residents create a fire emergency plan for their household, including evacuation routes, meeting points, and emergency contacts. The purpose is to assess learners' ability to apply knowledge learned in the course, and their ability to develop a fire emergency plan.

Project Management Chart/Timeline

Deadlines	Items
6/10/2024-6/16/2024	Work on planning and design document.
6/14/2024	Soft deadline for design document.
6/16/2024	Submit planning and design document.
6/17/2024-6/30/2024	Work on alpha prototype.
6/28/2024	Soft deadline for alpha prototype.
6/30/2024	Submit alpha Prototype.
7/1/2024-7/7/2024	Work on alpha evaluation.
7/5/2024	Soft deadline for alpha evaluation.
7/7/2024	Submit alpha evaluation.
7/8/2024-7/14/2024	Work on gold prototype.
7/12/2024	Soft deadline for gold prototype.
7/14/2024	Submit gold prototype.

Team Assignments and Responsibilities

Task	Ivan	Mark	Jennifer	Damian	Joseph
Planning & Design Document					
Scope of Project			X		X
Learner Analysis & Description				X	
Description of Andragogy				X	
Learning Objectives	X		X	X	
Forms of Assessment			X	X	
Project Management /Chart timeline					X
Team Assignments/Responsibilities	X				
Usability Testing Procedures	X			X	
Style manual		X	X		
Flowchart		X			
Storyboards		X			
Support and Supplementary Materials	X	X	X	X	X
Content of Prototype					
Brainstorming Content Ideas	X		X		
Text Preparation	X		X		
Content Gathering	X		X		
Supportive Material Preparation	X		X		
Design of Prototype					

Task	Ivan	Mark	Jennifer	Damian	Joseph
Prototype Preparation & Completion		X		X	X
Brainstorming Design Ideas		X		X	X
Graphics Identification & Creation		X		X	X
Assessment Creation		X		X	X
Testing, Revision, Submission of Prototype					
Alpha Tester	X	X	X	X	X
Revisions from Alpha Test		X		X	X
Submit Alpha Prototype				X	
Gold Tester	X	X	X	X	X
Revisions for Gold Prototype		X		X	X
Submit Gold Prototype				X	

Usability Testing Procedures/Alpha Evaluation Procedures

The goal for the usability testing of the Wildfire Preparedness Module is to evaluate its effectiveness, accuracy, efficiency, and functionality. Effectiveness will be determined by how well the module meets set educational objectives and how easily the content is understood. Accuracy will be measured by ensuring the information is up-to-date, correct, and error-free. For efficiency, we will assess the pace of the module and amount of redundancy, and for functionality, we will evaluate the module's user-friendliness and technical issues.

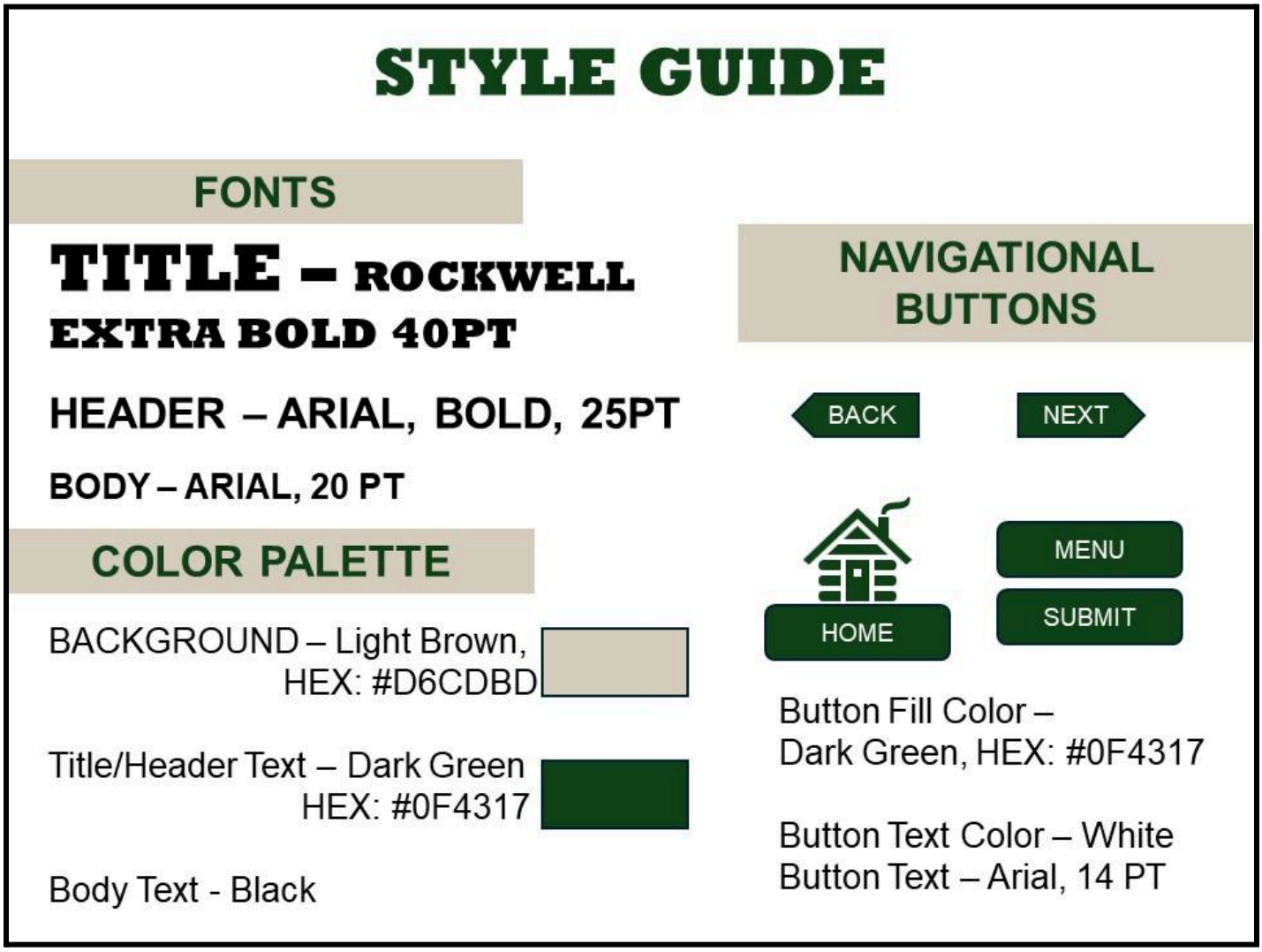
Testing procedures will be divided into four phases: planning, testing, analysis, and reporting. Beginning with the planning phase, we will discuss goals and what portions of the module will be tested. In the alpha testing phase, our classmates will be our test participants. Using a survey, classmates selected will evaluate the module's functionality, content accuracy, efficiency, and functionality, and will provide feedback for improvement. The table below contains samples of survey questions. The data gathered from testing will be used to analyze areas that require improvement. The findings will be placed together into a detailed report for our team, to make any future improvements or enhancements to the module.

Alpha Prototype Survey Questions

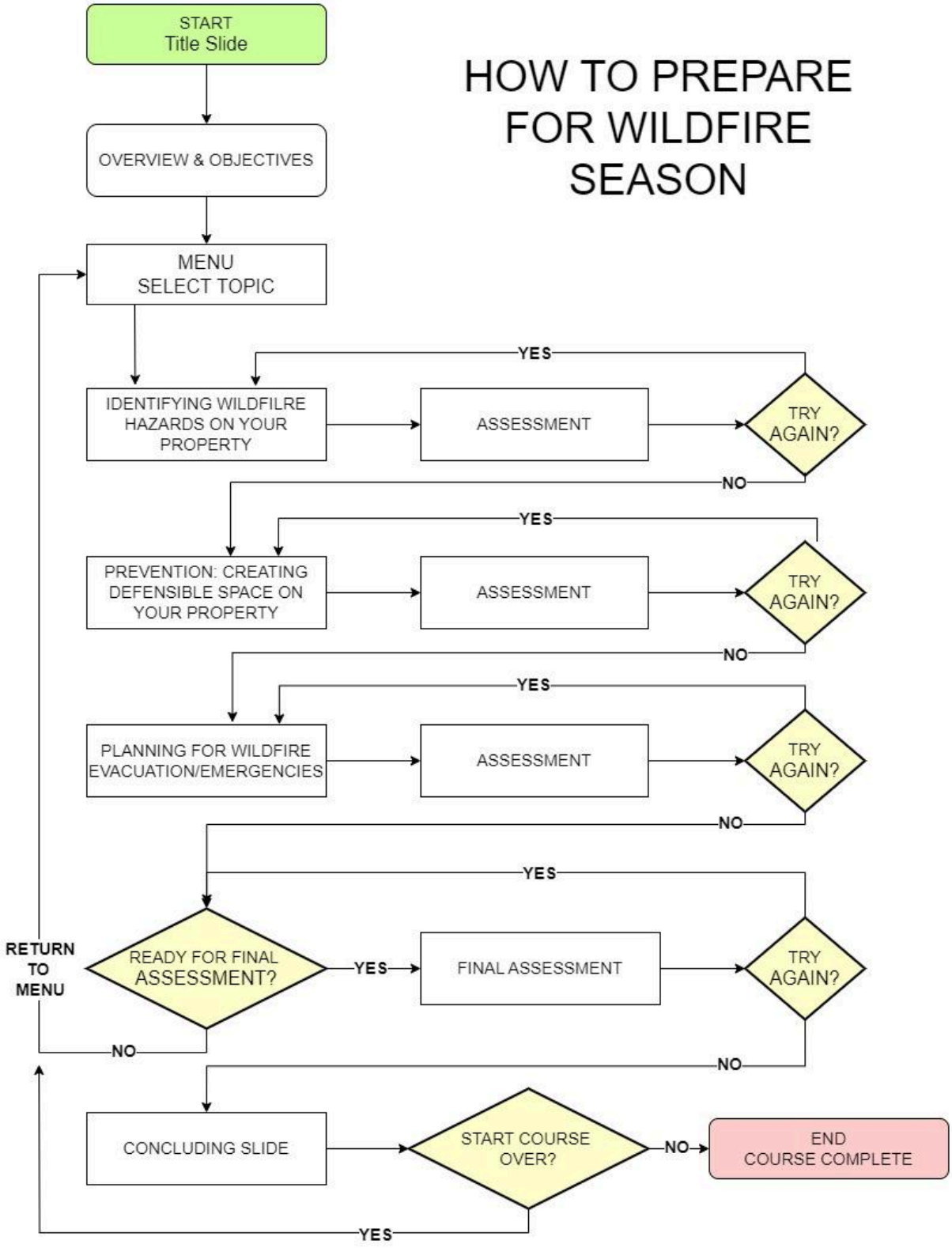
Criteria	Responses			
Effectiveness				
Did the course help you achieve the learning objectives?	**Not At All**	**Slightly**	**Moderately**	**Extremely**
How confident do you feel in your understanding of the subject matter after completing the course?	**Not at all Confident**	**Somewhat Confident**	**Moderately**	**Very Confident**
Did the course effectively convey concepts or processes? If not, explain why.				
Accuracy				
Do you have any prior knowledge of wildfire preparedness? If so, how accurate did you find the information presented in the course?	**Very Inaccurate**	**Inaccurate**	**Neutral or N/A**	**Accurate**
Were there any instances of misinformation or spelling/ grammatical errors in the course? If so, please specify.				
Efficiency				
Did you find the course time-efficient in delivering the necessary information?	**YES**		**NO**	
Were there any unnecessary or redundant sections?	**YES**		**NO**	
How would you rate the overall pacing?	**Too slow**	**Just Right**	**Too Fast**	
Please suggest any improvement to enhance the efficiency/pacing of the course.				
Functionality				
How user-friendly was the interface?	**Too slow**	**Just Right**	**Too Fast**	
Did you encounter any technical issues, such as broken links or difficulty navigating?	**YES**		**NO**	
Please describe any technical issues and how they impacted your learning experience.				

Survey adapted from ChatGPT

Style Manual



Flowchart


START
Title Slide
HOW TO PREPARE FOR WILDFIRE SEASON
OVERVIEW & OBJECTIVES
MENU
SELECT TOPIC
IDENTIFYING WILDFILRE HAZARDS ON YOUR PROPERTY
ASSESSMENT
TRY AGAIN?
YES
NO
PREVENTION: CREATING DEFENSIBLE SPACE ON YOUR PROPERTY
ASSESSMENT
TRY AGAIN?
YES
NO
PLANNING FOR WILDFIRE EVACUATION/EMERGENCIES
ASSESSMENT
TRY AGAIN?
YES
NO
READY FOR FINAL ASSESSMENT?
YES
FINAL ASSESSMENT
TRY AGAIN?
YES
NO
RETURN TO MENU
NO
CONCLUDING SLIDE
START COURSE OVER?
NO
END
COURSE COMPLETE
YES

Storyboard

Slide 1

Slide 2

Slide 3

OBJECTIVES

By completing this course, you will have proper knowledge and skills to be more prepared before and during wildfire season.

You will:

- be able to identify common wildfire hazards, wildfire prevention strategies, and evacuation strategies.
- be able to apply wildfire prevention strategies to make your home and property more fire-resistant.
- be able to assess what to do in a wildfire emergency situation.
- be able to create an evacuation plan, including specifying evacuation points, a meeting point, and list of emergency contacts.

BACK NEXT

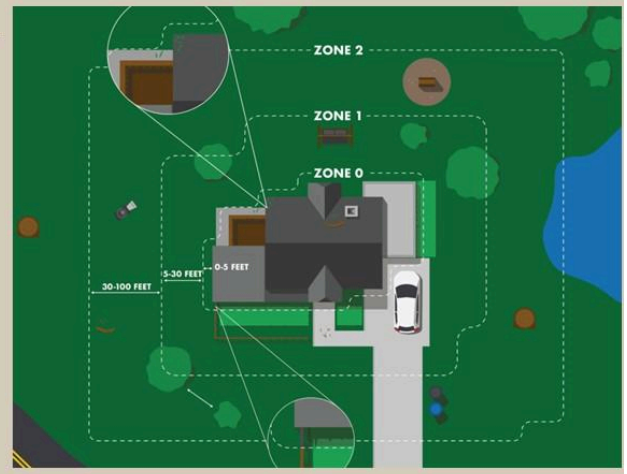
Slide 7a

CREATING DEFENSIBLE SPACE ON YOUR PROPERTY

Preparing the space around your property is a great way to help prevent wildfires.

One of the primary threats to homes are flying debris such as flying ember or small flames.

To help prevent these ignited debris from spreading, you can plan your property using the Home Ignition Zone (HIZ) which is divided into three zones.



Select each zone to find out more

BACK

Source: Cal Fire. (2024, March 25). *Defensible Space*. Ready for Wildfire. https://readyforwildfire.org/prepare-for-wildfire/defensible-space/

NEXT

Slide 7b

Support and Supplementary Materials

Government agencies and non-profit organizations have created worksheets and checklists that help residents prepare for wildfire emergencies; we would like to include some of these additional resources as supplementary materials in our training and/or make similar materials tailored to our course. Here are a few excerpts:

Excerpt 1: *Worksheet: Wildfire preparedness*, from Oregon State University Extension

Worksheet: Wildfire preparedness and home ignition zone assessment

Use this checklist to assess the current condition of your home ignition zone. Use extra paper as necessary.	Yes	No	Not sure	N/A
Personal wildfire preparedness				
Evacuation plan in place that you practice and update regularly				
Neighborhood emergency phone tree in place and shared with local agencies				
72-hour kits for your family and pets or livestock created and periodically checked				
Important personal documents and list of valuables protected in case the home is lost				
Zone 1: chimney to eaves				
Home constructed of materials resistant to combustion				
Roof is of a composition that resists combustion, such as Class A roofing material				
Roof is in good repair, with no gaps or missing shingles				
Roof is free from tree litter and debris				

Excerpt 2: *Family Emergency Plan Worksheet*, from Neighbors Ready!

Be Ready! Family Emergency Plan Worksheet

SECTION A: Communication Plan

Who do I depend on?

_____
_____
_____

Who depends on me?

_____
_____
_____

If I live alone, who will check on me? (Name & Info)

_____
_____

Do any of my important people have special needs?
If so, who is it, and what are their needs?

_____
_____
_____

Is there a neighbor that you need to check on?

_____
_____

SECTION B. Evacuation Plan - Attach local maps

Where will my family meet in an emergency or fire?

1. _____
2. _____

Where can my family stay in my neighborhood, if I need to evacuate my home?

1. _____
2. _____

Where will I go if I need to leave the neighborhood?

1. _____
2. _____

Where will I go if I need to leave the city?

1. _____
2. _____

Where does my family regularly spend time?

- ☐ Work
- ☐ School
- ☐ Church
- ☐ Other: _____
- ☐ _____

References

Cal Fire. (2024, March 25). *Defensible Space*. Cal Fire. https://readyforwildfire.org/prepare-for-wildfire/defensible-space/

Neighbors Ready! (n.d.). *Be ready! Family emergency plan worksheet.* Neighbors Ready! https://www.neighborsready.org/uploads/1/4/2/8/142830157/evac-plan-ws-nr-02-2024.pdf

Oregon State University Extension Service. (2020). *The home ignition zone: Protecting your property from wildfire*. Oregon State University. https://extension.oregonstate.edu/sites/default/files/documents/em9247.pdf