

NHFA FIREFIGHTER I COURSE GUIDE, UNIT 5: FIRE BEHAVIOR

CHAP	SKILL DRILL	SKILL #	STAND. EVOL. #
5	Fire Behavior – Ignition	5-1	
5	Fire Behavior – Growth	5-2	
5	Fire Behavior – Fully Developed	5-3	
5	Fire Behavior – Decay	5-4	
5	Fire Behavior – Reading Smoke	5-5	



**NH FIRE ACADEMY FIREFIGHTER I
UNIT 5, BLOCK 1 (4 HR)**

CLASS NAME: FIRE BEHAVIOR

NUMBER OF INSTRUCTORS: 7

EQUIPMENT NEEDED	<ul style="list-style-type: none"> • OSB Doll house • Pallets (10) • 4x8 sheets of OSB (6) • Propane torch • 1 ¾" hose lines (2) • Engine • Water supply
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FACILITY NEEDED	Flashover/Fire Behavior prop
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SKILL DRILL REFERENCE	5-1	5-2	5-3	5-4	5-5				
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GENERAL INSTRUCTION	<p>The course coordinator shall divide the students in half. Half of the students will attend a morning session and the other half will attend an afternoon session. Alternative would be two evening sessions.</p> <p>For each session the lead instructor shall divide the students into groups of 6 or 7.</p>
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**NH FIRE ACADEMY FIREFIGHTER I
UNIT 5, BLOCK 1 (4 HR)**

EVOLUTION	DESCRIPTION
Doll House	<p>All students shall observe and participate in the Doll House S.E. while the prop preheats</p> <p>The Instructor shall ignite a room in the doll house and lead a group discussion on fire behavior, flow paths, and reading smoke.</p> <p>Students shall participate in an open discussion and observe fire behavior, flow paths, and reading smoke. Skill Drill 5-1, 5-2, 5-3, 5-4, 5-5</p>
Fire Behavior	<p>The Instructor shall demonstrate and discuss the different stages of fire, describe how vertical and horizontal ventilation effects fire, and how proper and improper water streams effect fire and the environment within. The instructor shall demonstrate rollover and flashover.</p> <p>Students shall sit and observe different stages of fire, as well as how vertical and horizontal ventilation effects fire, and how proper and improper water streams effect fire and the environment within. Students will see through demonstration the difference between flashover and rollover. Skill Drill 5-1, 5-2, 5-3, 5-4</p>

FIRE ENGINEERING'S HANDBOOK FOR FIREFIGHTER I & II
Instructor Curriculum Skill Evaluation Sheet

SKILL SHEET 5-1	Fire Behavior – Ignition		
OBJECTIVE:	NFPA 1001, 4.3.11, 4.3.12	FEH Chapter: 5	
CANDIDATE NAME/NUMBER:		No.:	
TEST DATE/TIME			
EQUIPMENT REQUIRED: [Add local requirements if needed]	<ul style="list-style-type: none"> PPE SCBA Thermal Image Camera 		
EVALUATOR INSTRUCTIONS			
CANDIDATE INSTRUCTIONS: <i>NOTE: The evaluator will read the following exactly as it is written to the candidate</i>	The student will identify the different stages of fire development		
CRITERIA:	NOTE: Based on material from the Skill Drill Instructor Guides [ADDITIONAL LINES FOR AHJ TO ADD OTHER MATERIAL]		
Critical?		Pass	Fail
	The student has identified the stage of fire development		
	Describe the different parts of the fire triangle and fire tetrahedron		
	Describe the different modes of heat transfer		
EVALUATOR COMMENTS: [ANY COMMENTS PRO OR CON REGARDING WHAT THE STUDENT ACCOMPLISHED]			
EVALUATOR SIGNATURE:			
STUDENT SIGNATURE:			

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SKILL SHEET 5-2	Fire Behavior – Growth		
OBJECTIVE:	NFPA 1001, 4.3.11, 4.3.12	FEH Chapter: 5	
CANDIDATE NAME/NUMBER:		No.:	
TEST DATE/TIME			
EQUIPMENT REQUIRED: [Add local requirements if needed]	<ul style="list-style-type: none"> PPE SCBA Thermal Image Camera 		
EVALUATOR INSTRUCTIONS			
CANDIDATE INSTRUCTIONS: <i>NOTE: The evaluator will read the following exactly as it is written to the candidate</i>	The student will identify the different stages of fire development		
CRITERIA:	NOTE: Based on material from the Skill Drill Instructor Guides [ADDITIONAL LINES FOR AHJ TO ADD OTHER MATERIAL]		
Critical?		Pass	Fail
	The student has identified the stage of fire development		
	Describe the different parts of the fire triangle and fire tetrahedron		
	Describe the different modes of heat transfer		
	Explain thermal layering and its dangers		
	Describe rollover and its dangers		
EVALUATOR COMMENTS: [ANY COMMENTS PRO OR CON REGARDING WHAT THE STUDENT ACCOMPLISHED]			
EVALUATOR SIGNATURE:			
STUDENT SIGNATURE:			

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Instructor Curriculum Skill Evaluation Sheet

SKILL SHEET 5-3	Fire Behavior – Fully Developed		
OBJECTIVE:	NFPA 1001, 4.3.11, 4.3.12	FEH Chapter: 5	
CANDIDATE NAME/NUMBER:		No.:	
TEST DATE/TIME			
EQUIPMENT REQUIRED: [Add local requirements if needed]	<ul style="list-style-type: none"> PPE SCBA Thermal Image Camera 		
EVALUATOR INSTRUCTIONS			
CANDIDATE INSTRUCTIONS: <i>NOTE: The evaluator will read the following exactly as it is written to the candidate</i>	The student will identify the different stages of fire development		
CRITERIA:	NOTE: Based on material from the Skill Drill Instructor Guides [ADDITIONAL LINES FOR AHJ TO ADD OTHER MATERIAL]		
Critical?		Pass	Fail
	The student has identified the stage of fire development		
	Describe Flashover and the warning signs		
	Explain how to prevent flashover		
EVALUATOR COMMENTS: [ANY COMMENTS PRO OR CON REGARDING WHAT THE STUDENT ACCOMPLISHED]			
EVALUATOR SIGNATURE:			
STUDENT SIGNATURE:			

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Instructor Curriculum Skill Evaluation Sheet

SKILL SHEET 5-4	Fire Behavior – Decay		
OBJECTIVE:	NFPA 1001, 4.3.11, 4.3.12	FEH Chapter: 5	
CANDIDATE NAME/NUMBER:		No.:	
TEST DATE/TIME			
EQUIPMENT REQUIRED: [Add local requirements if needed]	<ul style="list-style-type: none"> PPE SCBA Thermal Image Camera 		
EVALUATOR INSTRUCTIONS			
CANDIDATE INSTRUCTIONS: <i>NOTE: The evaluator will read the following exactly as it is written to the candidate</i>	The student will identify the different stages of fire development		
CRITERIA:	NOTE: Based on material from the Skill Drill Instructor Guides [ADDITIONAL LINES FOR AHJ TO ADD OTHER MATERIAL]		
Critical?		Pass	Fail
	The student has identified the stage of fire development		
	Describe Backdraft and the warning signs		
	Explain how to prevent Backdraft		
EVALUATOR COMMENTS: [ANY COMMENTS PRO OR CON REGARDING WHAT THE STUDENT ACCOMPLISHED]			
EVALUATOR SIGNATURE:			
STUDENT SIGNATURE:			

FIRE ENGINEERING'S HANDBOOK FOR FIREFIGHTER I & II
Instructor Curriculum Skill Evaluation Sheet

SKILL SHEET 5-5		Fire Behavior – Reading Smoke	
OBJECTIVE:		NFPA 1001, 4.3.11, 4.3.12	FEH Chapter: 5
CANDIDATE NAME/NUMBER:			No.:
TEST DATE/TIME			
EQUIPMENT REQUIRED: [Add local requirements if needed]		<ul style="list-style-type: none"> • PPE • SCBA • Thermal Image Camera 	
EVALUATOR INSTRUCTIONS			
CANDIDATE INSTRUCTIONS: <i>NOTE: The evaluator will read the following exactly as it is written to the candidate</i>		The student should describe the Three Step process to reading smoke	
CRITERIA:		NOTE: Based on material from the Skill Drill Instructor Guides [ADDITIONAL LINES FOR AHJ TO ADD OTHER MATERIAL]	
Critical?		Pass	Fail
	Identify several fire gases released by burning material		
	Explain the key attributes of smoke (volume, velocity, density, and color)		
	Describe what influences the key attributes		
	Explain the rate of change		
EVALUATOR COMMENTS: [ANY COMMENTS PRO OR CON REGARDING WHAT THE STUDENT ACCOMPLISHED]			
EVALUATOR SIGNATURE:			
STUDENT SIGNATURE:			