

LESSON ONE

FIREFIGHTER I

Portable Extinguishers

DOMAIN: COGNITIVE / PSYCHOMOTOR

LEVEL OF LEARNING: KNOWLEDGE / APPLICATION

MATERIALS

Copy of NFPA 1001 Standard; IFSTA Essentials 5th edition or Jones and Bartlett Fundamentals of Fire Fighter Skills 2nd Edition or Delmar Firefighter's Handbook 3rd Edition; NFPA 10; IFSTA tape: 'Portable Extinguishers'; portable fire extinguishers; materials for Class A and B fires.

NFPA 1001 JPR, 2008 edition

5.3.16 Extinguish incipient Class A, Class B, and Class C fires

Junior Member Statement:

Junior Member training activities should be supervised by qualified instructors to assure that the cognitive and psychomotor skills are completed in a safe and non-evasive manner. While it is critical that instructors be constantly aware of the capabilities of all students both mentally and physically to complete certain tasks safely and successfully, the instructor should take every opportunity to discuss with departmental leaders and students the maturity and job awareness each participant has for the hazards associated with fire and rescue training.

TERMINAL OBJECTIVE

The Firefighter I candidate shall correctly identify in writing the classifications of fire as they relate to the use of fire extinguishers, and shall define the fire extinguisher rating systems and identify the appropriate extinguisher and application procedures. The Firefighter I candidate shall also correctly demonstrate extinguishing Class A and B fires by using appropriate portable fire extinguishers.

ENABLING OBJECTIVES

1. The Firefighter I candidate, when given a fire scenario, shall correctly identify each of the five classes of fire and the appropriate type of fire extinguisher to use on each class.
2. The Firefighter I candidate shall correctly identify, verbally and in writing, the ratings of any given portable fire extinguisher.
3. The Firefighter I candidate shall correctly identify, verbally and in writing, the different types of fire extinguishers and the agents used in each.
4. The Firefighter I candidate shall visually, verbally, and by physical demonstration correctly inspect portable fire extinguishers and determine proper working order and placement.
5. The Firefighter I candidate shall correctly list in writing the proper maintenance requirements and hydrostatic testing procedures for portable fire extinguishers.
6. The Firefighter I candidate shall correctly identify in writing the steps for selecting the appropriate portable fire extinguisher, and demonstrate the use of extinguishers on Class A and B fires.

LESSON ONE

FIREFIGHTER I

Portable Extinguishers

MOTIVATION

Portable fire extinguishers can provide the firefighter with another tool for fire fighting. Of all the equipment used by firefighters, the portable fire extinguisher is probably the least understood. It is important that firefighters have a working knowledge of portable fire extinguishers, especially since they are perhaps the most readily available firefighting tools at the firefighter's disposal. We live in a world regulated by codes and standards, therefore, in almost any commercial or industrial building, and a large percentage of residential structures there are portable extinguishers. The firefighter must understand how fire extinguishers work, not only to perform better at fires, but to better educate the public as to how portable fire extinguishers play a part in fire prevention. The extinguisher is an excellent tool for combating small, incipient stage fires. With the speed that a firefighter can use an extinguisher, it is much easier and faster than using an attack line. However, only extensive training will prepare the firefighter in the appropriate use of fire extinguishers.

PRESENTATION

ENABLING OBJECTIVE #1

The Firefighter I candidate, when given a fire scenario, shall correctly identify each of the five classes of fire and the appropriate type of fire extinguisher to use on each class.

1. Briefly explain to the class why it is important for the firefighter to have a working knowledge of the five classes of fire and how it applies to learning portable fire extinguishers.
2. List and discuss the five classes of fire.

3. Using portable fire extinguishers, explain the types of extinguishers to be used on each class of fire.

Reference:

Delmar Handbook 3rd edition, pages 215-223

J&B Fundamentals 2nd edition, pages 182-185

IFSTA Essentials 5th edition, pages 234, 236-244

APPLICATION

Set up a table in the classroom with a representative example of the portable extinguishers used by the respective jurisdiction. Using four index cards, describe scenarios of Class A, B, C, D or K fires. Have the candidates approach the table and draw a card. Using the portable fire extinguishers, have the candidates select the proper extinguisher for the class of fire indicated on the card.

PRESENTATION

ENABLING OBJECTIVE #2

The Firefighter I candidate shall correctly identify, verbally and in writing, the ratings of any given portable fire extinguisher.

1. Using portable fire extinguishers, explain the ratings and sizes of each type of extinguisher.
2. Explain how ratings of fire extinguishers are determined.
3. Lead candidates in a discussion on the standard marking system on portable fire extinguishers.

Reference:

Delmar Handbook 3rd edition, pages 223-224

J&B Fundamentals 2nd edition, pages 183-185

IFSTA Essentials 5th edition, pages 246-248

APPLICATION

Have each of the candidates list the various ratings and sizes of the portable fire extinguishers sitting on the table from the first application. List the answers noted by the

candidates and discuss the proper markings for each extinguisher.

PRESENTATION

ENABLING OBJECTIVE #3

The Firefighter I candidate shall correctly identify, verbally and in writing, the different types of fire extinguishers and the agents used in each.

1. Discuss the different types of extinguishers and the agents used in each one.
2. Explain the NFPA requirements on protection from freezing.
3. Discuss the difference between dry chemical and dry powder agents, and the classes of fire for which each agent is used.

Reference:

Reference: NFPA 10.

Delmar Handbook 3rd edition, pages 217-223

J&B Fundamentals 2nd edition, pages 187-191, 192-197

IFSTA Essentials 5th edition, pages 236-244

APPLICATION

Using the various portable fire extinguishers common to the respective jurisdiction, have each candidate list in writing the type of extinguisher and the agent used in each. Have each candidate verbally describe the difference between dry chemical and dry powder agents. Upon completion of the activity, list responses.

PRESENTATION

ENABLING OBJECTIVE #4

The Firefighter I candidate shall visually, verbally, and by physical demonstration, correctly inspect portable fire extinguishers and determine proper working order and placement.

1. Lead the class in a discussion on the importance of regularly scheduled inspections of portable fire extinguishers. Discuss the inspection of fire department extinguishers as well as privately owned extinguishers.
 - a) Serviceability.
 - b) Accessibility.
 - c) Operational capability.
2. Discuss three important factors that determine the value of a fire extinguisher.
3. Lead the class in a discussion on the types of damage that can occur to fire extinguishers and the steps taken when a fire extinguisher is damaged.
 - a) Leakage.
 - b) Corrosion.
 - c) Damaged shells or cylinders.
 - d) Leaking hoses.
 - e) Leaking gaskets.
 - f) Nozzle damage.
 - g) Loose labels.
4. Lead candidates in a discussion on the proper location and distribution of fire extinguishers in buildings.
5. Lead the class in a discussion of items to look for when inspecting fire extinguishers.
6. Briefly discuss the types of fire extinguishers that are obsolete.

Reference:

Reference: NFPA 10.

Delmar Handbook 3rd edition, pages 227-229

J&B Fundamentals 2nd edition, pages 197-198, 207-208

IFSTA Essentials 5th edition, pages 252-254

APPLICATION

The instructor should acquire a building and schedule an inspection of the fire extinguishers located within the building. Divide the class into groups of 3 or 4 and assign each group a section of the building to inspect. During the inspection have each group list any defects found. Remind candidates to note whether extinguishers are properly

spaced and mounted. After the groups have completed their section, rotate group sections until each group has covered each section. Upon completion of the inspection, return to the classroom and have the groups report their findings. List items.

NOTE: The instructor should make arrangements prior to class to have a building available for inspection.

PRESENTATION

ENABLING OBJECTIVE #5

The Firefighter I candidate shall correctly list in writing the proper maintenance requirements and hydrostatic testing procedures for portable fire extinguishers.

1. Lead the class in a discussion on the importance of a maintenance and hydrostatic testing program for portable fire extinguishers.
2. Discuss the three basic parts of a fire extinguisher that should be checked during maintenance.
3. Discuss who is responsible for maintaining records on maintenance and hydrostatic testing of fire extinguishers.
4. Discuss the information that should be included on maintenance records.
5. Point out that fire extinguishers should be inspected once a year and should be marked to indicate that the inspection has taken place.
6. Emphasize the fact that only qualified persons should perform maintenance on fire extinguishers.
7. Lead the class in a discussion on the importance of hydrostatic testing of portable fire extinguishers.
8. Make candidates aware of the different types of hydrostatic tests that are utilized on each type of portable fire extinguisher.

9. Discuss the hydrostatic test interval of portable fire extinguishers.
10. Using portable fire extinguishers lead the class in a discussion of the types of hydrostatic information that must be recorded on the extinguisher.
11. Make candidates aware of the type of records that are to be kept on extinguishers that have been hydrostatic tested, and who is responsible for maintaining those records.

Reference:

NFPA 10.

Delmar Handbook 3rd edition, pages 227-229

J&B Fundamentals 2nd edition, pages 207-208

IFSTA Essentials 5th edition, pages 252-253

APPLICATION

Ask each candidate to list in writing the three basic parts that should be checked during maintenance and the frequency extinguishers are to be checked. Using portable fire extinguishers, have each candidate list in writing the intervals at which the extinguisher should be hydrostatic tested.

PRESENTATION

ENABLING OBJECTIVE #6

The Firefighter I candidate shall correctly identify in writing the steps for selecting the appropriate portable fire extinguisher and demonstrate the use of extinguishers on Class A and B fires.

1. Lead the class in a discussion on the proper steps in selecting the correct extinguishers to use on the different classes of fire.
2. Discuss and demonstrate the proper operation of each type of extinguisher common to the respective jurisdiction. Have each candidate practice using each extinguisher.

Reference:

Delmar Handbook 3rd edition, pages 224-227
J&B Fundamentals 2nd edition, pages 197-207
IFSTA Essentials 5th edition, pages 248-252

APPLICATION

Have the candidates list in writing the factors for selecting the proper fire extinguisher. Set up a Class A fire situation in a safe area utilizing straw and pallets. Then set up a combustible liquid fire situation utilizing a pan. Have enough material on hand to allow each candidate an opportunity to extinguish both types of fire. Select a safety officer and have each candidate don full turnout equipment. Using the Class A materials, ignite a fire and have each candidate select the proper fire extinguisher and extinguish the burning material. After each candidate has correctly extinguished the Class A fire, repeat the evolution on a Class B fire. Be sure to keep the size of the fires within the capability of the fire extinguisher to be used.

SUMMARY

Review the five classes of fire.

Review the type of portable fire extinguisher to be used on each class of fire.

Summarize the ratings and sizes of each type of extinguisher and how the ratings are determined.

Review the marking systems used on extinguishers.

Review the agents used in portable fire extinguishers.

Review the three factors that determine the value of fire extinguisher.

Discuss the distribution of fire extinguishers and other items to look for during inspections.

Review hydrostatic testing of portable fire extinguishers.

Re-emphasize the importance of selecting the proper fire extinguisher for the proper class of fire.

Summarize the operational methods for each fire extinguisher.