# Program Information

## Lesson:

### *Employability Skills: Information Use*

## Training:

## Premises Cabling

## Time frame:

### 60 minutes

# Instruction Section

## Learning Objectives:

# Organize and categorize various industry standards and codes related to premises cabling.

# Demonstrate an understanding of how standards apply to different aspects of work.

# Develop skills to analyze and utilize technical information from relevant standards to solve practical problems in the field.

## Assessment Tools/Methods:

# Assess understanding through active participation in class discussions and responses to targeted questions during the lesson.

## Learner Prior Knowledge:

# Basic Understanding of Premises Cabling: Familiarity with the fundamental concepts of premises cabling, including types of cables (e.g., copper, fiber optic), connectors, and typical cabling infrastructure.

# Awareness of Industry Standards: Basic awareness of the existence of industry standards and codes, such as TIA/EIA, NEC, and OSHA, though not necessarily detailed knowledge of each.

# General Technical Skills: Basic technical skills, including reading technical diagrams, interpreting simple specifications, and understanding basic electrical and networking concepts.

# Basic Problem-Solving Skills: Ability to approach technical problems logically and apply critical thinking to troubleshoot issues.

# Communication Skills: Basic written and verbal communication skills to document findings and discuss technical information.

## Instructional Activities:

# Begin by asking participants to think of times when information use has played a role in their work.

# Activity 1: Understanding Information Use in Premises Cabling

# With the whole group, create a definition for information use.

# Include points such as organizing, using, analyzing, and communicating information in the definition.

# Discuss how these skills are relevant to the work of a premises cabling technician.

# Activity 2: Organizing Information

# Provide an overview discussion to the group on how to categorize and organize technical information, codes, and standards.

# Explain the importance of organizing standards for easy reference and compliance.

# Distribute the Mixed List of Standards Handout to the participants.

# Explain that participants will categorize the list into predefined groups (e.g., Installation Standards, Safety Codes, Networking Standards).

# After categorizing, discuss with the participants why each standard fits into its category.

# Emphasize the importance of understanding these standards and how they apply to their work as premises cabling technicians.

# Activity 3: Using Information

# Discuss how to apply organized information in practical scenarios.

# Provide the following example of interpreting a standard to select appropriate materials and methods.

# Scenario Description: You are a beginning premises cabling technician tasked with setting up the network for a small office. The office will house various departments (general workspace, IT support room, and conference room), and each requires a reliable data connection. You need to ensure the cabling complies with industry standards, specifically TIA/EIA-568, while also considering cost-effectiveness and ease of installation.

# Explain to participants, that based on the given scenario and TIA/EIA-568 standards, they should choose the correct types of cables for each area of the office.

# They should prepare a brief report outlining the cable selections and reasons behind their choices.

# Activity 4: Analyzing and Communicating Information

# Discuss methods that participants use to analyze information when diagnosing problems.

# Present the group with the Case Study Handout.

# Allow the participants to work in small groups to identify potential causes and solutions to the issues presented in the case study.

# After completing the activity, they should share and discuss their findings with the group.

# Take time to discuss the importance of clear communication in documenting and reporting findings.

# Discuss which communication techniques are most effective and why those techniques are more effective than others.

# Activity 5: Applying Skills in the Field

# Ask participants to describe a typical day for a premises cabling technician, highlighting the use of organizing, using, analyzing, and communicating information.

# Discuss the importance of these skills in ensuring successful project execution and maintenance.

# Provide participants an opportunity to clarify doubts and discuss insights

## Resources:

# Whiteboard and markers

# Mixed List of Standards Handout

# Instructor Key for Mixed List of Standards

# Case Study Handout

# Reflection Section

# Reflect on the importance of analyzing information and adhering to standards in troubleshooting and problem-solving. How do you think the application of information use will impact your effectiveness and efficiency as a technician?

*Note: AI, specifically ChatGPT 3.5, was used to generate scenarios for this contextualized lesson plan.*

**Mixed List of Standards Handout**

### Instructions for Activity

**Categorize**: Ask participants to categorize these standards into appropriate groups. Suggested categories could include:

* + **Installation Standards**
  + **Safety Codes**
  + **Testing Standards**
  + **Pathways and Spaces Standards**
  + **Networking Standards**
  + **Administration Standards**

**Mixed List of Standards:**

1. **TIA/EIA-568** - Commercial Building Telecommunications Cabling Standard
2. **NEC (National Electrical Code)** - Safety standards for electrical wiring and installations
3. **ANSI/TIA-606** - Administration Standard for the Telecommunications Infrastructure of Commercial Buildings
4. **IEEE 802.3** - Standards for Ethernet networking
5. **TIA/EIA-569** - Commercial Building Standard for Telecommunications Pathways and Spaces
6. **BICSI 002** - Data Center Design and Implementation Best Practices
7. **NFPA 70** - National Fire Protection Association's National Electrical Code
8. **ISO/IEC 11801** - International Standard for generic cabling for customer premises
9. **ANSI/TIA-942** - Telecommunications Infrastructure Standard for Data Centers
10. **OSHA (Occupational Safety and Health Administration)** - Safety regulations and standards for workplaces
11. **BICSI 005** - Electronic Safety and Security (ESS) System Design and Implementation Best Practices
12. **ANSI/TIA-1152** - Requirements for Field Test Instruments and Measurements for Balanced Twisted-Pair Cabling
13. **TIA/EIA-598** - Optical Fiber Cable Color Coding
14. **IEEE 802.11** - Standards for Wireless LAN (Wi-Fi) technology
15. **TIA-607** - Grounding and Bonding Requirements for Telecommunications

**Instructor Key for Mixed List of Standards**

**Example of Categorized List**

**Installation Standards**

* TIA/EIA-568
* TIA/EIA-569
* BICSI 002
* ISO/IEC 11801
* ANSI/TIA-942

**Safety Codes**

* NEC (National Electrical Code)
* NFPA 70
* OSHA

**Testing Standards**

* ANSI/TIA-1152

**Pathways and Spaces Standards**

* TIA/EIA-569
* BICSI 002

**Networking Standards**

* IEEE 802.3
* IEEE 802.11

**Administration Standards**

* ANSI/TIA-606

**Grounding and Bonding Requirements**

* TIA-607

**Case Study Handout**

**Instructions for Participants:**

1. **Read the Case Study:**
   * Review the details provided about the office network and the symptoms in the HR department.
2. **Analyze the Information:**
   * Consider the possible causes of the intermittent connectivity issues, using your knowledge of network cabling standards and troubleshooting techniques.
   * Look into potential issues with cabling, connectors, network equipment, or external interference.
3. **Identify Potential Causes:**
   * Document at least two potential causes for the connectivity issues in the HR department.
   * Support your findings with references to relevant standards and best practices.
4. **Propose Solutions:**
   * Suggest solutions for each identified cause, explaining how each solution addresses the problem.
   * Ensure that your solutions comply with TIA/EIA-568 standards and any other relevant codes.

**Case Study:** Troubleshooting Connectivity Issues in an Office Network

**Description:** You are a premises cabling technician who has been called to troubleshoot an issue in a newly installed office network. The office is experiencing intermittent connectivity problems in one of its departments. Your task is to analyze the information, identify the potential cause, and propose a solution based on the analysis.

**Key Details:**

* **Location:** A medium-sized office with multiple departments.
* **Affected Area:** The HR Department.
* **Symptoms:** Intermittent connectivity issues, slow network speeds, and occasional disconnections.
* **Current Setup:**
  + **Cabling:** Cat5e cables installed throughout the office.
  + **Network Equipment:** Standard switches and routers, all recently updated.
  + **Compliance:** Installation was done following TIA/EIA-568 standards.
* **Observations:**
  + The IT department is not experiencing any issues.
  + Physical inspection shows no visible damage to the cables or connections in the HR department.
  + Network logs indicate fluctuations in connection quality.