# Program Information

## Lesson:

### *Employability Skills: Critical Thinking*

## Training:

## Premises Cabling

## Time frame:

### 60 minutes

# Instruction Section

## Learning Objectives:

# Identify and articulate key critical thinking skills necessary for premises cabling technicians, including analyzing, reasoning, problem-solving, planning, organizing, and decision-making.

# Collaboratively analyze a real-life case study to identify problems and propose solutions using critical thinking skills, demonstrating their ability to apply these skills in a practical context.

# Develop and present a structured plan to solve a cabling issue, showcasing their capability to organize, plan, and make sound decisions under realistic work conditions.

## Assessment Tools/Methods:

# Evaluate participants’ engagement in discussions and group activities.

# Assess the practicality and thoroughness of the solutions presented during group presentations.

# Provide feedback on the application of critical thinking skills in the scenarios discussed.

## Learner Prior Knowledge:

# Basic Understanding of Premises Cabling: Familiarity with the fundamental concepts of premises cabling, including types of cables (e.g., fiber optic, coaxial, twisted pair), basic installation practices, and common tools and equipment used.

# General Technical Knowledge: Basic technical knowledge related to network infrastructure, such as understanding network topologies, common networking terms, and basic troubleshooting steps.

# Workplace Safety: Awareness of workplace safety standards and procedures relevant to cabling installation and maintenance.

## Instructional Activities:

# Begin by briefly discussing the importance of critical thinking in the role of a premises cabling technician.

# Conduct a quick icebreaker where participants share a challenging situation they have faced in training or previous jobs and how they dealt with it.

# Activity 1: Understanding Critical Thinking Skills

# With the whole group, define critical thinking skills and discuss their relevance to premises cabling.

# Ask participants to give examples of situations where they think these skills would be important in their future roles.

# Pass out the Overview of Critical Thinking Skills Handout to participants.

# Explain that the handout outlines the critical thinking skills necessary for premises cabling technicians and provides practical examples of their application.

# Discuss the six critical thinking skills listed on the handout with the group, highlighting the definition and applications of each skill.

# Ask participants to think about real-world examples to illustrate how these skills are applied in typical scenarios faced by premises cabling technicians.

# Activity 2: Problem Solving

# Divide the participants into small groups, explaining that the groups will analyze a case study to identify what went wrong and suggest alternative approaches using critical thinking skills.

# Encourage participants to refer to the Critical Thinking Skills Handout to identify and apply the critical thinking skills necessary to analyze the case study.

# Present the following beginner-level scenario.

# Case Study: A small office cabling project faced issues because the initial survey missed identifying an existing cabling infrastructure, leading to conflicts during installation.

# Give the participants time to consider the issue in scenario, then hold a discussion around the following questions.

# What were the main issues in this scenario?

# How could better planning and organizing have prevented these issues?

# What decision-making process should have been implemented?

# Activity 3: Problem Solving and Conclusion

# Introduce a problem scenario where a client's small office network is experiencing intermittent connectivity issues due to a suspected cabling problem.

# Have small groups work on devising a step-by-step plan to diagnose and resolve the issue, emphasizing reasoning, planning, and decision-making using the Problem-Solving Scenario Worksheet.

# Have each group present their solution to the scenario, explaining how and why they problem solved as they did.

# Discuss the different approaches and highlight the critical thinking skills applied.

# Encourage participants to reflect on what they have learned and how they can apply these skills in their future work. To conclude the lesson, have each participant share the one critical thinking skill they found most valuable during the problem-solving activities and how they envision applying it in future cabling projects.

##  Resources:

# Whiteboard and markers

# Overview of Critical Thinking Skills Handout

# Problem Solving Scenario Worksheet

# Reflection Section

# How did the handout assist you in the group activities? Which critical thinking skill did you find the most useful and why? How will you apply this skill in your work and personal life?

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

**Overview of Critical Thinking Skills Handout**

Critical thinking is essential for premises cabling technicians to effectively analyze situations, solve problems, and make informed decisions. This handout provides an overview of key critical thinking skills and how they apply to your role.

**Key Critical Thinking Skills**

1. **Analyzing**
	* **Definition**: Breaking down complex information into smaller parts to understand it better.
	* **Application**: Identifying the root cause of a cabling issue by examining test results and equipment performance.
2. **Reasoning**
	* **Definition**: Thinking logically to form conclusions and make decisions.
	* **Application**: Determining the best approach for a cabling installation based on the requirements and constraints of the project.
3. **Solving Problems**
	* **Definition**: Identifying solutions to overcome obstacles or issues.
	* **Application**: Developing a troubleshooting plan to address connectivity problems in a network.
4. **Planning**
	* **Definition**: Organizing tasks and resources to achieve a goal.
	* **Application**: Creating a detailed plan for a cabling project, including timelines, materials needed, and task assignments.
5. **Organizing**
	* **Definition**: Structuring resources and activities efficiently.
	* **Application**: Coordinating the installation process to ensure all team members work effectively and the project stays on track.
6. **Making Sound Decisions**
	* **Definition**: Choosing the best course of action based on available information.
	* **Application**: Selecting the most appropriate cabling materials and methods for a specific installation scenario.

**Tips for Developing Critical Thinking Skills**

* **Ask Questions**: Always seek to understand the 'why' and 'how' behind a problem or task.
* **Gather Information**: Use all available resources to inform your decisions, including manuals, expert advice, and testing equipment.
* **Think Ahead**: Anticipate potential problems and plan for contingencies.
* **Reflect on Experiences**: After completing a task or project, take time to review what went well and what could be improved.
* **Collaborate with Others**: Engage with your team members to share insights and develop better solutions collectively.

**Conclusion**

Applying critical thinking skills in your role as a premises cabling technician will enhance your ability to tackle challenges effectively, improve project outcomes, and advance your career. Use this handout as a reference to continually develop and refine these essential skills.

**Problem-Solving Scenario Worksheet**

**Instructions:**

Use this worksheet to develop a structured plan to solve the given cabling problem scenario. Refer to Handout 1 for guidance on applying critical thinking skills. Fill out each section with your group and be prepared to present your plan.

**Group Members:**

**Date:**

**Problem Scenario:** A client reports intermittent connectivity issues in a small office. Initial tests indicate potential problems in the cabling infrastructure installed by a beginner technician.

**Step-by-Step Problem-Solving Plan**

1. **Initial Assessment**
	* **Describe the problem**: What are the symptoms reported by the client?
2. **Basic Diagnostic Tests**
	* **List the initial tests you will perform to diagnose the issue**:
		+ Visual inspection of cables and connections:
		+ Using a cable tester to check for continuity:
		+ Checking network equipment (e.g., routers, switches) connections:
3. **Analysis of Test Results**
	* **Summarize the findings from the tests**:
		+ What issues were identified (e.g., damaged cables, loose connections)?
		+ Any patterns or specific locations where problems were found?
4. **Identifying Possible Causes**
	* **List potential causes of the problem based on your findings**:
		+ Cause 1 (e.g., physical damage to cables):
		+ Cause 2 (e.g., improper terminations):
		+ Cause 3 (e.g., interference from other devices):
5. **Developing Solutions**
	* **Propose simple solutions for each identified cause**:
		+ Solution for Cause 1 (e.g., replace damaged cables):
		+ Solution for Cause 2 (e.g., re-terminate the cables properly):
		+ Solution for Cause 3 (e.g., move cables away from interfering devices):
6. **Planning the Implementation**
	* **Step-by-step action plan**:
		+ Step 1 (e.g., gather necessary tools and materials):
		+ Step 2 (e.g., replace or repair identified problem areas):
		+ Step 3 (e.g., test the network after repairs):
7. **Organizing and Assigning Tasks**
	* **Task assignments**:
		+ Task 1 (e.g., visual inspection): Assigned to:
		+ Task 2 (e.g., using a cable tester): Assigned to:
		+ Task 3 (e.g., re-terminating cables): Assigned to:
8. **Making Decisions**
	* **Final decision on the best solution**:
		+ Based on the analysis and proposed solutions, what is the best course of action?
		+ Justify your choice (e.g., quickest, most cost-effective, least disruptive):
9. **Implementation and Monitoring**
	* **Implementation plan**:
		+ Detailed steps to execute the chosen solution:
	* **Monitoring and evaluation**:
		+ How will you monitor the effectiveness of the solution?
		+ What signs will indicate the problem is resolved (e.g., stable connectivity, no reported issues)?