

# WISE Pathways

Women in Sustainable Employment

Building awareness of careers in construction, energy & utilities, public safety, and manufacturing for women.



# Agenda

- Introduction
- Mechanical Reasoning
- Spatial Reasoning
- EEI Pre-employment Testing
- Action Planning



# Introduction

## Learning Objectives:

- Define mechanical and spatial reasoning
- Recognize how these reasoning skills are used on the job
- Identify the knowledge and skill sets required for EEI pre-employment testing

# Mechanical Reasoning

A woman in a white lab coat and safety glasses is working in a laboratory. She is holding a test tube in her right hand and a pipette in her left hand. The background is a blurred laboratory setting with various pieces of equipment. The image is overlaid with a semi-transparent blue filter.



# Mechanical Reasoning

- Mechanical reasoning tests measure your knowledge of straightforward mechanical and physical concepts.
- They do not measure your underlying mechanical aptitude.
- You may have learned about these concepts in early science classes.

# Mechanical Reasoning Ability Tests



- Your score will depend significantly on your knowledge of:
  - Levers
  - Pulleys
  - Gears
  - Springs
  - Simple Electrical Circuits
  - Tools
  - Shop Arithmetic

# Mechanical Reasoning Questions

- You may be asked some questions about tools and how they are used.
- You should also expect some shop arithmetic questions.
  - Questions like the type of reasoning and math needed to estimate materials costs.

# Mechanical Reasoning Questions

- Questions are likely industry-specific.
  - Aviation
  - Carpentry
  - Machine shop
- Scenario is incidental
  - Practice questions need not be specific to the industry you are applying for.
  - The substance of the questions is important.





# Mechanical Reasoning Test

- Complete the assessment
- Solving difficult problems
  - Techniques
  - Hints
- Further Study



# Spatial Reasoning

# Spatial Reasoning



- Spatial reasoning ability involves visualizing and manipulating shapes or patterns
  - Two-dimensional
  - Three-dimensional
- A high level of spatial reasoning ability is essential in the construction and energy industries
- The ability to visualize transformations in shapes and patterns can be improve

# Spatial Reasoning Questions

- Spatial reasoning ability questions cover:
  - Shape matching
  - Shape rotation
  - Combining Shapes
  - Views in 3-dimensions
  - Manipulation of other solid shapes in 2 and 3 dimensions
- Some questions use maps and plans to assess the ability to give or follow directions based on a map or construction plan



# Spatial Reasoning Test

- Complete the assessment
- Solving difficult problems
  - Techniques
  - Hints
- Further Study

# Mechanical & Spatial Reasoning



- Tests may be used in job screening
- Some employers may want to see prior scores
- Consult with your mentor, coach, or facilitator to study your scores and seek more preparation if needed

A scientist in a white lab coat and safety goggles is working in a laboratory. She is holding a test tube in her right hand and a pipette in her left hand. The background is a blurred laboratory setting with various pieces of equipment. The text "EEI Pre-employment Testing" is overlaid on the image in a bold, black font.


# EEI Pre-employment Testing



# Construction and Skilled Trades (CAST)

- Battery of aptitude tests designed and validated to aid in the selection of candidates across a wide variety of construction and skilled trades occupations.
- Two hours in length



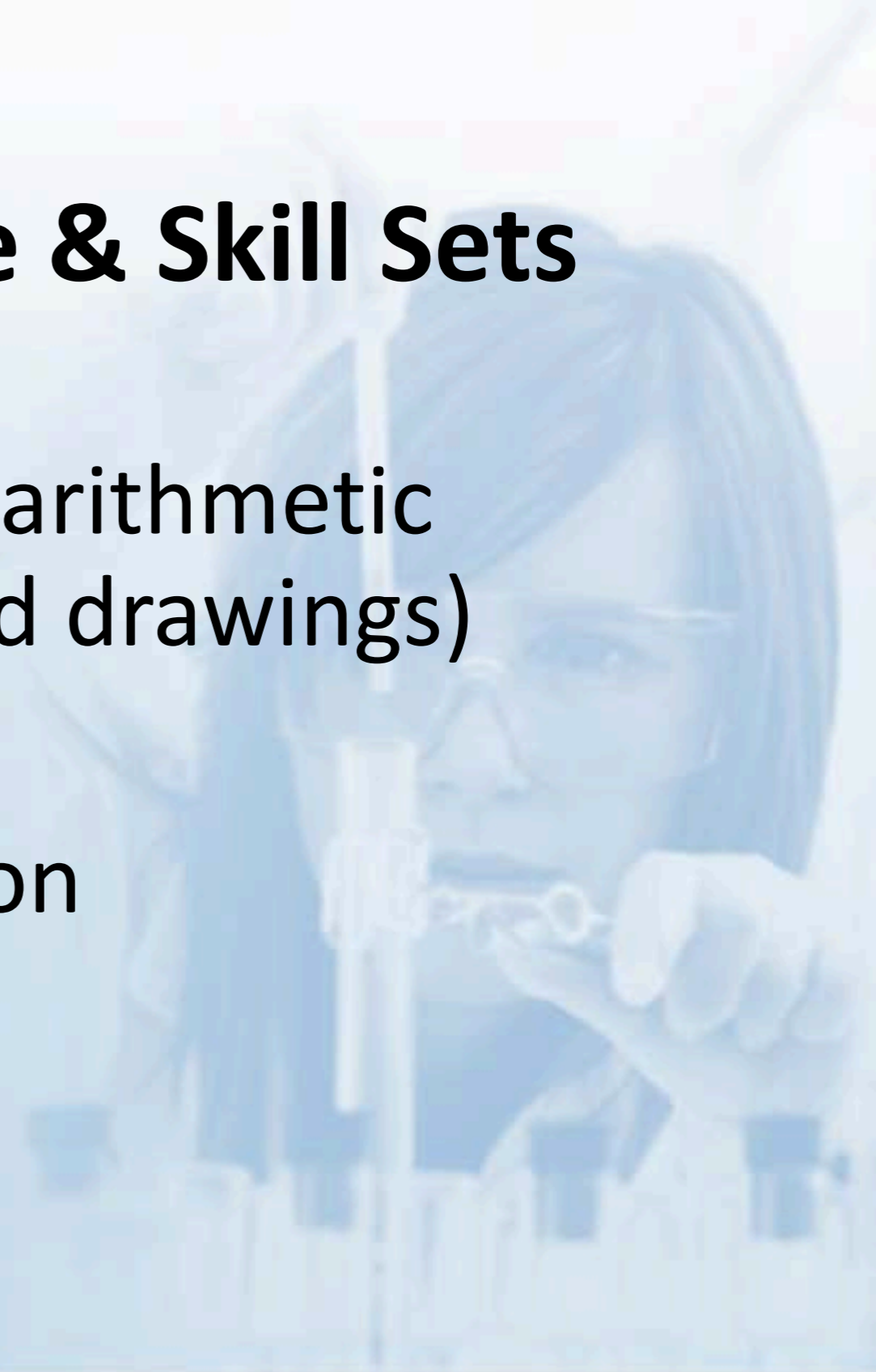


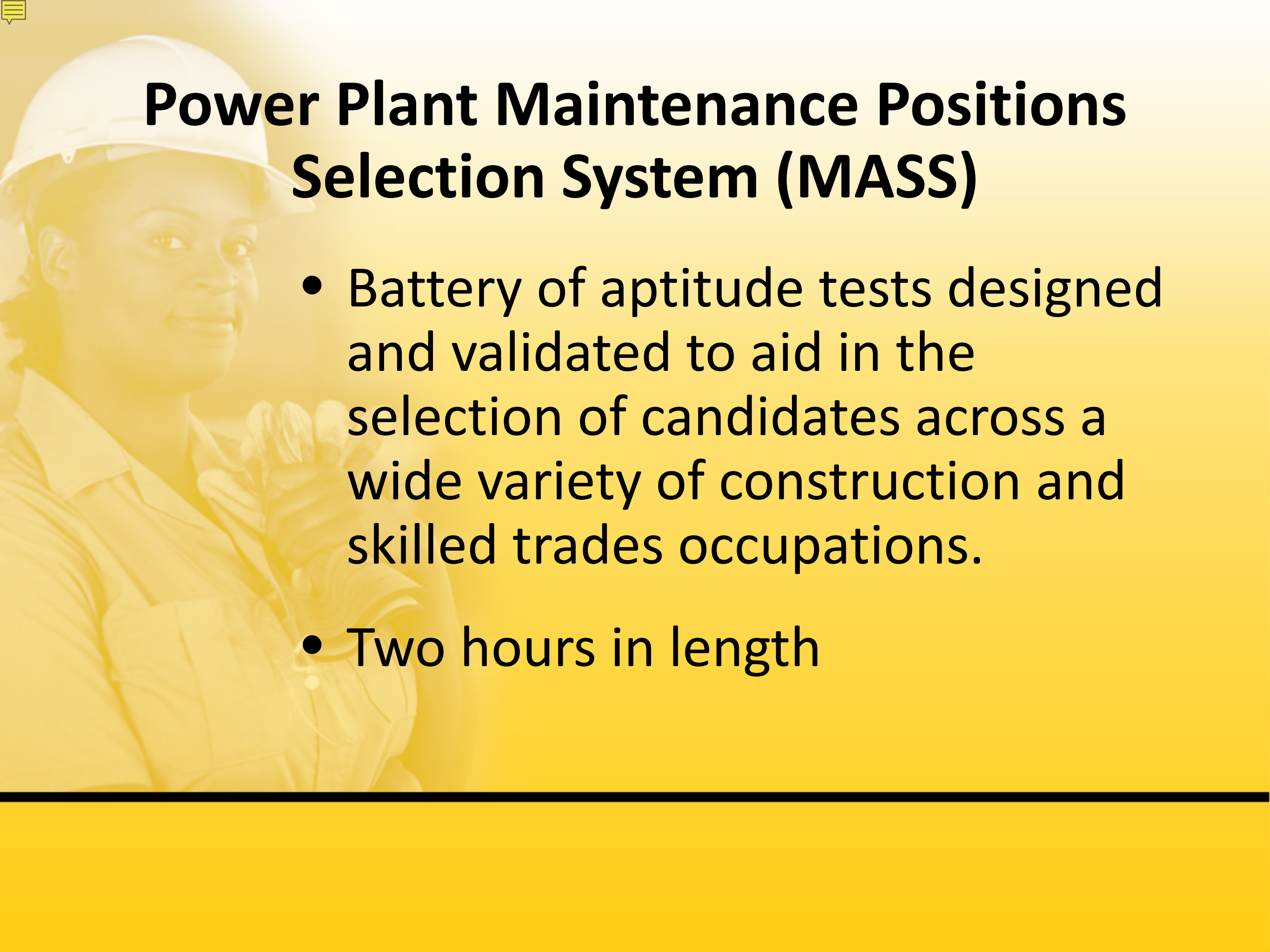
# CAST Test: Job Categories

- Transmission and Distribution
- Facilities and Repair
- Other Facilities (e.g., Carpenter)
- Electrical Repair
- Machining and Vehicle Repair
- Meter Service and Repair

# CAST Test: Knowledge & Skill Sets

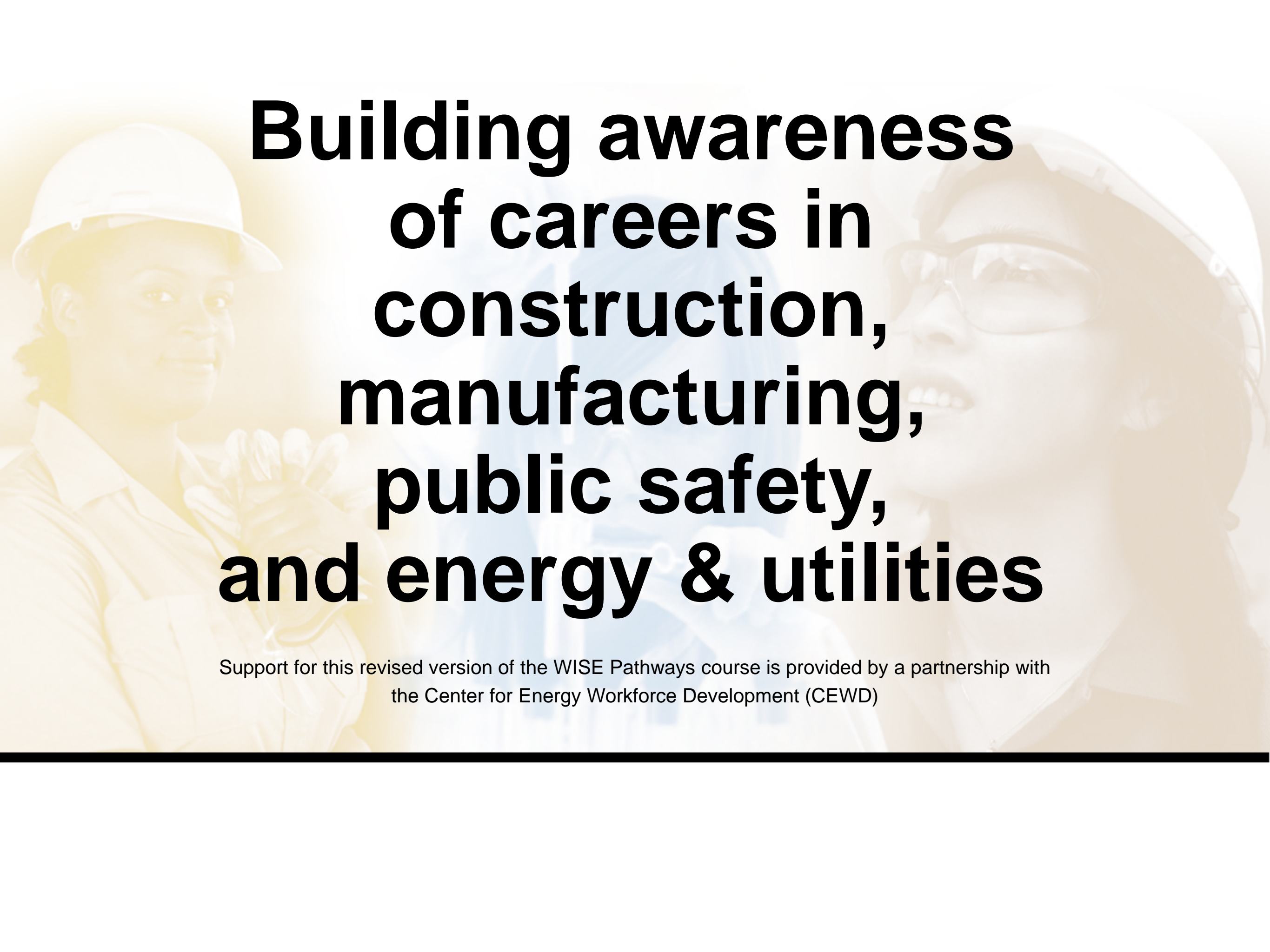
- Graphic Arithmetic (solve arithmetic problems using graphs and drawings)
- Mechanical Concepts
- Reading for Comprehension
- Mathematical Usage





# Power Plant Maintenance Positions Selection System (MASS)

- Battery of aptitude tests designed and validated to aid in the selection of candidates across a wide variety of construction and skilled trades occupations.
- Two hours in length



# **Building awareness of careers in construction, manufacturing, public safety, and energy & utilities**

Support for this revised version of the WISE Pathways course is provided by a partnership with the Center for Energy Workforce Development (CEWD)

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