

## WISE Pathways

- Women in Sustainable Employment

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

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### Agenda

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

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### 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

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### Mechanical Reasoning

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### 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 concept s in early science classes.

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### Mechanical Reasoning Ability Tests

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

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### 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.

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### 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.

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### Mechanical Reasoning Test

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

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### Spatial Reasoning

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### 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 improved

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### 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

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**Spatial Reasoning Test**

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

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**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

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**EEi Pre-employment Testing**

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**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

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**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

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**CAST Test: Knowledge & Skill Sets**

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

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**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

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

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