SCIENCE

UNIT CODE: CON/CU/CAJ/CC/03/5/A

Relationship to Occupational Standards

This unit addresses the unit of competency: Apply Science

Duration of Unit: 40 Hours

Unit Description

This unit describes the competence in applying science. It involves applying units and measurements, applying force, work, energy and power, applying friction, applying light and sound, applying Linear motion, applying general chemistry, applying primary and secondary cells, applying thermal properties of matter and applying pressure in fluids

Summary of Learning Outcomes

1 Apply units and measurements
2 Apply Force, work, energy and power
3 Apply Friction
4 Apply Light and sound
5 Apply Linear motion
6 Apply General chemistry
7 Apply primary and secondary cells
8 Apply thermal properties of matter
9 Apply pressure in fluids

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1 Apply units and measurements	• Selection of units of measurement • Conversion of units from one form to another	• Written tests • Oral • Practical tests
2 Apply Force, work, energy and power	• Definition of force, work, energy and power • Application of force, work, energy and power	• Written tests • Oral • Practical tests

3 Apply Friction	• Definition of friction • Causes of friction • Advantages and disadvantages of friction • Application of friction in construction	• Written tests • Oral • Practical tests
4 Apply Light and sound	• Sources of lights and sound • Laws of reflection and refraction • Characteristics of images formed by plane curved mirrors • Colours and mixing colours • Solving simple problems involving location of images formed by curved mirrors • Velocity of sound in air • Propagation of sound in a given medium properties of sound	• Written tests • Oral • Practical tests
5 Apply Linear motion	• Definition of distance, displacement, speed and velocity and acceleration • Plotting and sketching motion graphs • Interpretation of motion graphs • Solving simple problems involving bodies in linear motion	• Written tests • Oral • Practical tests
6 Apply General chemistry	• Knowledge of experimental techniques • Recognize the structure of atoms • Strength of chemical bonds	• Written tests • Oral • Practical tests

7 Apply primary and secondary cells	• Difference between primary and secondary cells • Construction of primary and secondary cells • Principles and operation of primary and secondary cells • Advantages of primary and secondary cells • Uses of primary and secondary cells	• Written tests • Oral • Practical tests
8 Apply thermal properties of matter	• Sources of heat • Effects of heat on matter • Change of matter as heat varies • methods of heat transfer • Water heating	• Written tests • Oral • Practical tests
9 Apply pressure in fluids and liquids	• Definition of air pressure • Experiments on air pressure • Units of measurements of pressure • Application of air pressure in relation to objects in everyday life • Definition of density • Variations of pressure • Laws of floatation • Solving simple problems involving liquids of different densities	• Written tests • Oral • Practical tests

Suggested Methods of Instruction

- Demonstration by trainer
- Practical work by trainee
- Demonstration videos
- Trainee group discussions

Recommended Resources

- Laboratory testing equipment
- Laboratory apparatus
- Hand tools
- Machine tools
- Construction materials
- Stationery
- Oils
- Cells
- Pins
- Candles
- Acids and bases
- Steel rods
- Iron fillings
- Safety boots
- Goggles
- Gas masks25
- Helmets
- Gloves
- Dust coats
- First aid kit
- Ear muffs
- Dust masks
- Overalls