BA SANGAM COLLEGE

YEAR 11

APPLIED TECHNOLOGY

WORKSHEET 1

Subject: Applied Technology		**Year/Level:** 11
Week: 1- 2	**Lesson** 1	**Date:**
Topic: Basic Home Improvement (Basic Electrical Tool)		

LESSON PREPARATION:

- Prepared lesson notes
- prepared follow up work

PREVIOUS LEARNING/PRIOR ASSOCIATED LEARNING:

Students have certain ideas on some of the common tools used for electrical wiring as some of the tools are just the repetition of the tools that were covered from the year10 content.

LEARNING OBJECTIVES:
At the end of the lesson, students should be able to:

Cognitive Domain:
1) Name the different types of tools used in electrical process.

Psychomotor Domain:
1) Apply the tools in real life situation.

Affective Domain:
1) Appreciate the application of the tools when using it.

TEACHING RESOURCES (MATERIAL AND VISUAL AIDS)

- Lesson notes

FOLLOW UP WORK:

- Students Activity

LESSON NOTES:

Basic Electrical Tools

Wire Strippers:
Wire strippers are used to cut the insulation off of the wire. They are equipped with different sized cutting teeth for various sized wires. They also have a cut-off portion in order to c ut the wire.

Side Cutter Diagonal Pliers:
These cutting pliers sometimes called side snips, are used to cut wire. They are specially designed with a cutting edge that goes down to the tip of the pliers. The advantage being that you can get into tight areas to trim wires. There are some that are equipped with live wire detection capabilities

Linesman Pliers:
These pliers are the do-it-all pliers. They cut, twist wires together, and grip wires for pulling. They have a squared off end that is great for twisting wires together, a centre cutting blade for cutting wire, and a g rip area between the handles to pull wire

Screwdriver:
A screwdriver is a tool, manual or powered, for turning (driving or removing) screws. A typical simple screwdriver has a handle and a shaft, and a tip that the user inserts into the screw head to turn it. The shaft is usually made of tough steel to resist bending or twisting.

Digital multimeters:
Digital multimeters can solve most electrical problems - at the hands of a qualified electrical test profession. In fact, with a good wiring diagram and a good meter, a trained electrical professional can find the cause of almost any problem. There are two basic types of multimeters, digital and analogue. Analogue multimeters have a needle and DMs have an LCD or a LED display. With today's demand for accuracy in testing electrical systems, it makes more sense to have a digital multimeter but an analogue multimeter still has its uses

STUDENTS ACTIVITY:

1. Name the tools given below with its uses:

a. 

Name: _____

Uses: _____

b. 

Name: _____

Uses: _____

c. 

Name: _____

Uses: _____

d. 

Name: _____

Uses: _____

Reference:

Year 11 Applied Technology Textbook, MEHA.

INDUSTRIAL ARTS DEPARTMENT LESSON PLAN

Subject: Applied Technology		**Year/Level:** 11
Week: 2	**Lesson** 2	**Date:**
Topic: Basic Home Improvement (Safety in Electricity)		

LESSON PREPARATION:

- Prepared lesson notes
- prepared follow up work

PREVIOUS LEARNING/PRIOR ASSOCIATED LEARNING:

Students have a well foundation on the key word safety because they have covered some of the major safety concept from year 9 up until year 10 where they learn personal safety, workshop safety, hand tool safety and other safety with hazardous.

LEARNING OBJECTIVES:
At the end of the lesson, students should be able to:

Cognitive Domain:

1) Know the safety in electricity.

Psychomotor Domain:

1) Identify hazard and safety signs and symbol for electricity.

Affective Domain:

1) Demonstrate hands-on skills in electrical theory and appreciate application of electrical theory.

TEACHING RESOURCES (MATERIAL AND VISUAL AIDS)

- Lesson notes

FOLLOW UP WORK:

- Students Activity

LESSON NOTES:

Safety in Electricity:

Basic Electrical Safety is important, but by no means the end of the road when it comes to adequate protection against electrical hazards. This article on basic electrical safety will by no means make you sufficiently prepared for tasks involving work with or around electricity. Rather, this basic electrical safety discussion will give you a foundation on which to build your knowledge to best protect against the dangers of electrical hazards.

Some safety requirements:

- Never use electrical tools on damp ground or around water
- Keep a safe distance from pad mounted transformers
- Do not overload electrical outlets with too many electrical plugs. Buy one surge protector with many outlets instead of ‗daisy-chaining' power splitters
- Wear rubber gloves and rubber boots when working near electrical components.
- Inspect tools and appliances for wear and damage prior to use
- Use electrical tape for power cord management, do not use staples
- Always use the correct size fuse, never use a fuse with a larger amperage allowance than the original
- When working near power lines, use ladders made of wood instead of metal
- If you have a bad feeling about some work concerning electricity, stay away!
- Know where breakers and electrical boxes are in case of an emergency
- Label circuit breakers clearly
- Do not use electrical outlets or cords with exposed wiring
- Do not touch a person or electrical apparatus in the event of an electrical accident. Always disconnect the current first.
- Do not clean tools with flammable or toxic solvents.

STUDENTS ACTIVITY:

1. List down ten safety requirements that need to be taken into account when someone is using electricity.

Reference:

Year 11 Applied Technology Textbook, MEHA.

INDUSTRIAL ARTS DEPARTMENT LESSON PLAN

Subject: Applied Technology		**Year/Level:** 11
Week: 2	**Lesson** 3	**Date:**

Topic: Basic Home Improvement (Tiling)

LESSON PREPARATION:

- Prepared lesson notes
- prepared follow up work

PREVIOUS LEARNING/PRIOR ASSOCIATED LEARNING:

Students have understood that tiles come from ceramic materials as they learn it from their year 9 and year 10 content. They also have learn the properties of ceramic materials as brittleness (can easily broke down into pieces)

LEARNING OBJECTIVES:
At the end of the lesson, students should be able to:

Cognitive Domain:

1) Name the different types of tiles.

Psychomotor Domain:

1) Identify their uses and its effect or appearance when it is applied.

Affective Domain:

1) Appreciate the effects of the tiles during the application.

TEACHING RESOURCES (MATERIAL AND VISUAL AIDS)

- Lesson notes

FOLLOW UP WORK:

- Students Activity

LESSON NOTES:

Tiling:

Tile is one of the most favourite design materials for both kitchen renovation and for bathroom renovation. It has been used since Roman times, and even though excellent manmade materials have become popular in recent years, tile is still valued for its beauty and cost-saving potential. All tiles can be classed into three different types: ceramic, quarry, and stone.

1. Ceramic Tiles:

When we talk about tile being cost effective, we are talking about ceramic tile. While not all ceramic tile is cheap, it is possible to find bargain ceramic tile which still can add to the beauty of your home.

Ceramic tile starts with clay—shale, gypsum, and sand—and is worked into a material called bisque. The bisque is shaped into tiles and is fired in a kiln up to 2500° F. The higher the temperature, the stronger the tile will be.

2. Quarry Tiles:

In the past, quarry tile came from quarries. Just like you see in old photographs of Vermont quarries, the tile was cut away, ground, and polished. But now manufactures use the extrusion method for making a vitreous clay tile that is almost as hard as natural stone.

Quarry tile has a rough surface, which means that it is perfect for flooring because it provides a good grip. But it also means that quarry tile is not good for kitchen countertops because it is very porous. However, even though quarry tile can be sealed to make it less porous, it is still not appropriate for food preparation surfaces.

3: Stone:

In recent years, granite has become the big winner in the kitchen design sweepstakes. It should be noted, though, that granite looks great but it does have its problems. Granite easily cracks , and like quarry tile it is porous, so it must be sealed and polished on a regular basis. Not only that, granite and marble are easily scratched and are not always resistant to high temperatures such as those from hot kitchen pots.

Still, the variegated colouring and texture of natural stone cannot be duplicated by ceramic tile. It is endlessly fascinating and provides unique design accents for out from a design perspective.

STUDENTS ACTIVITY:

1. All tiles can be classed into three different types. Name these three types of tiles.

a. _____

b. _____

c. _____

2. Ceramic Tiles are simply flat slabs of materials which can be used in a range of applications. Name five range of application in which ceramic tiles can be used for.

a. _____

b. _____

c. _____

d. _____

e. _____

3. Why are there so many people like to use ceramic tiles to make flooring?

_____
_____

4. A bathroom floor in a domestic house needs to be tiled

i. Name the appropriate tile for the bathroom floor.

_____

ii. Give the reason for the choice of tile made in (i) above.

_____
_____

5. Why are quarry tiles mostly used for flooring and not for countertops?

_____
_____
_____
_____