



**LAGOS STATE GOVERNMENT
MINISTRY OF EDUCATION**

**UNIFIED SCHEMES OF WORK
SENIOR SECONDARY SCHOOLS**

BUILDING CONSTRUCTION

SSI FIRST TERM

BUILDING CONSTRUCTION

General objectives

- ✓ *Acquire knowledge and skills for the building construction trade and related professions.*
- ✓ *Appreciate the use of local materials for building construction.*
- ✓ *Develop respect for the abilities of the craftsmen in the building industry.*
- ✓ *Develop the capacity for providing solutions for constructional problems.*
- ✓ *Use safety precautions and safe practices in the building industry*
- ✓ *Appreciate the need for maintenance of buildings*
- ✓ *Develop the sense of morality and trustworthiness in the use of materials and other input resources supplied for projects*

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	TEACHING RESOURCES
1.	Introduction to building construction	By the end of the lesson students should be able to: Define Building as a discipline State the purpose of a building Describe types of buildings Distinguish between types of buildings	Students brainstorm on the meaning of "building" Students in small groups discuss the purpose of a building With the Use of models/charts students compare types of building.	-- Critical thinking& Problem solving - Communication& Collaboration -Leadership & personal development	AUDIO-VISUAL RESOURCES Real building pictures, charts, video clip films, poster etc. https://en.m.wikipedia.org/wiki/building-construction
2.	Safety precautions - Purpose - Safety Regulations - Hazard in Construction site/ Workshop - First Aid - Personal Protective Equipment (PPE) - Personal Safety Habit	By the end of the lesson students should be able to: 1. state the safety conditions to be observed at the worksite 2. explain the need for observing health and welfare regulations at worksite 3. demonstrate care and maintenance of tools and equipment 4. use equipment at construction sites	With the use of charts students discuss safety conditions to be observed at worksite i. Students as a class discuss the need for observing health and welfare regulations at worksite ii. Students in small groups demonstrate care and maintenance of tools and equipment, iii. Students in pairs demonstrate the use of safety equipment at construction site practice	-- Critical thinking& Problem solving - Communication& Collaboration -Leadership & personal development	AUDIO-VISUAL RESOURCES Real safety equipment, video clips films, safety charts, etc. www.safetymangement.eku.edu
3.	Hand Tools	By the end of the lesson students	i. Students as a class identify	-Critical thinking& Problem solving	AUDIO-VISUAL RESOURCES

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	TEACHING RESOURCES
	<p>Identification of tools and uses</p> <ul style="list-style-type: none"> - Block laying tools - Carpentry and Joinery hand tools - Numbering hand tools - Maintenance of tools 	<p>should be able to:</p> <ol style="list-style-type: none"> i. Identify the basic hand tools, equipment and machine ii. State the functions of basic hand tools, equipment and machine. 	<p>tools/equipment and their uses</p> <ol style="list-style-type: none"> ii. Students in small groups sketch and label basic hand tools, equipment and machines. 	<ul style="list-style-type: none"> - Communication & Collaboration - Leadership & personal development 	<p>Read basic hand tools, and equipment, posters, video clips, drawings.</p> <p>https://en.m.wikipedia.org/wiki/hand-tools</p>
4-5	<p>Construction team</p> <ul style="list-style-type: none"> Client team Contractor's team Statutory personnel 	<p>By the end of the lesson students should be able to:</p> <ol style="list-style-type: none"> 1. Outline and identify the parties in each construction team 2. Describe the duties and relationship of the various teams that make the construction team. 3. Distinguish between the roles and relationships between the members of each team 	<p>Students are grouped in 3 each group representing the construction teams.</p> <p>Students in pairs produce pictorial diagrams on the hierarchy in the construction team</p>	<ul style="list-style-type: none"> - Critical thinking & Problem solving - Communication & Collaboration - Leadership & personal development 	<p>AUDIO-VISUAL RESOURCES</p> <p>Relationship charts, films, photographs charts and drawing, contract document.</p> <p>www.designingbuildings.co.uk</p>
6.	<p>Working Drawings:</p> <ul style="list-style-type: none"> Types of working drawing - Elevation - plans - sections Functions of Grid lines Types of plan Site plan Block plan Foundation plan Ground floor plan 	<p>By the end of the lesson students should be able to:</p> <ol style="list-style-type: none"> 1. Differentiate between working drawing and construction drawing 2. Explain the purposes of items involved in working drawings 3. Explain the functions of grid line on a site plan 4. Sketch a block plan of a proposed building <p>Convert design data construction</p>	<ol style="list-style-type: none"> i. Students as a class brainstorm on the significant difference between working and construction drawings ii. Students in pairs discuss the functions of gridlines on a site plan. iii. Students as an individual sketch a block plan of a proposed building. iv. Students in small groups examine and use an AutoCAD to construct a 2-d 	<ul style="list-style-type: none"> - Critical thinking & Problem solving - Communication & Collaboration - Leadership & personal development 	<p>AUDIO-VISUAL RESOURCES</p> <p>Video clips, Production drawings, building plans, Building drawings instrument.</p> <p>www.designingbuildings.co.uk</p>

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WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	TEACHING RESOURCES
		information and clearly communicate that information in layman's term	drawing		
7.	MID-TERM BREAK				
8.	Freehand sketching and Pictorial view - Details of a building - Building Terms	By the end of the lesson students should be able to: 1. do freehand sketching of a bungalow 2. Identify building parts and their terms.	i. Students as a class make freehand Sketch of a bungalow building elevation. ii. Students in small groups identify building parts.	- Critical thinking & Problem solving - Communication & Collaboration - Leadership & personal development	AUDIO-VISUAL RESOURCES Video clips, building plans posters and building drawing instruments. https://classhall.com/freehand-sketching
9.	Site layout and organization Basic processes Locations Problems caused by poor site layout Purpose of site layout Items in site layout	By the end of the lesson students should be able to: 1. Identify and describe the basic site planning process and principles 2. Explain the purpose of the site layout 3. Sketch a simple layout of a site	i. Students as a class discuss site layout using; sample site layout plans and site visits respectively ii. Students in small groups identify and describe the basic site planning process and principles. iii. Students in pairs Use charts to discuss items in site layout iv. Students as class visit sites to see site layouts	- Critical thinking & Problem solving - Communication & Collaboration - Leadership & personal development	AUDIO-VISUAL RESOURCES Drawing/charts; Site layout drawing, video clips, picture posters, physical observation at the excursion site. https://en.m.wikipedia.org/site-layout
10.	Preliminary Operations Learning activities preceding actual building construction: Site acquisition Provision of access road Site clearance Site offices and storage facilities Provision of site services Site investigation	By the end of the lesson students should be able to: Explain the term "PRELIMINARY OPERATIONS" as used in Building construction Identify the key features to be addressed in a quality building process Recognize the risk and opportunities surrounding preliminaries	Students as a class research more on areas where preliminary operations are used and discuss their similarities and differences as used in building construction Students as a class go on a trip to new sites to observe preliminary works. PROJECT: Students to produce a preliminary report after visitation to	- Critical thinking & Problem solving - Communication & Collaboration - Leadership & personal development	AUDIO-VISUAL RESOURCES Charts/ Drawing, Video clips, Site layout etc. www.designingbuildings.co.uk

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	TEACHING RESOURCES
	<p><i>Levelling</i> <i>Site and soil survey</i> <i>Planning</i> <i>Detailed designing</i> <i>Cost estimation</i></p>	<p>Prepare and interpret preliminary reports in tender documents</p>	<p>sites</p>		
11.	<p>Setting out - <i>Tools and Equipment for Setting out</i> - <i>Methods of setting out: using 3, 4, 5 method</i> Using the <i>builder's square method</i> - <i>steps in setting out using both methods</i> - <i>Building line and boundary line</i></p>	<p>By the end of the lesson students should be able to:</p> <p>Describe tools and equipment used for setting-out</p> <p>Describe the precaution to be taken before setting-out operations</p> <p>Differentiate between a building line and a boundary line</p> <p>Demonstrate the procedure for erecting profiles using both setting out methods</p>	<p>Students in small groups identify tools and equipment used for setting out.</p> <p>Students as a class visit new sites to see the use and types of setting out tools or equipment</p> <p>Students in small groups discuss the difference between a building line and a boundary line</p> <p>Students in pairs demonstrate the setting out of simple building using tapes and pegs to mark corners of a building in setting out 3:4:5 method and builder's square</p>	<p>- Critical thinking & Problem solving - Communication & Collaboration - Leadership & personal development</p>	<p>AUDIO-VISUAL RESOURCES</p> <p>Tapes, pegs, lines, and pins, builder square and profile board.</p> <p>www.a4architect.com</p>
12.	<p>Revision/ Project</p>	<p>By the end of the lesson students should be able to:</p> <p>Do a project on production of model of two bedroom flat with cardboard and other durable materials</p> <p>Scales- 1:20</p>			
13.	<p>Examination</p>				



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SSI SECOND TERM

WKS	TOPIC	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	TEACHING RESOURCES
1	WELCOME TEXT/ REVISION OF 1 ST TERM WORK				
2-4	Excavation and earth work <i>Purpose of excavation</i> <i>Types of excavation</i> <i>equipment</i> <i>Use of excavation equipment</i> <i>Types of excavation</i> <i>Support two sides of trenches</i> <i>Safety methods in trench works</i> <i>Causes of collapse of trench sides</i>	By the end of the lesson students should be able to: State the purpose of excavation Identify the types of equipment for excavation State uses of the types of excavation equipment Describe the types of excavation Demonstrate the procedure for supporting the sides of trenches Sketch a typical timber supports to trenches in various types of soil Demonstrate the methods of ensuring safety when digging a trench	Students in small groups discuss the purpose of excavation Students in pairs identify the excavation equipment and the uses of the different types of excavation equipment Students in small groups demonstrate and practice the procedure for supporting trench sides <i>students as a class go to site to observe and report how a trench is supported</i> Students in pairs use sketch as a guide to show typical supports to the sides of a trench excavation for various types of soil Students as a class demonstrate the methods of ensuring safety when digging a trench and discuss the causes of collapse of trench sides	- Critical thinking & Problem solving - Communication & Collaboration - Leadership & personal development	AUDIO-VISUAL RESOURCES Video clips, production drawings, building Excavation tools and equipment e.g. banning rod, charts, video clip, soil sample plans https://en.m.wikipedia.org/wiki/excavation
5	FOUNDATIONS ✓ <i>Definition</i> ✓ <i>Functions of</i>	By the end of the lesson students should be able to: Identify types of	Students as a class use models to illustrate types of foundations	- Critical thinking & Problem solving - Communication & Collaboration - Leadership &	AUDIO-VISUAL RESOURCES Model, sketches and diagram if

BUILDING CONSTRUCTION

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	<p>foundation</p> <ul style="list-style-type: none"> ✓ Types ✓ Factors influencing choice of foundation ✓ Factors determining the bearing capacity of sub soil 	<p>foundation</p> <p>State the functions of the foundation</p> <p>Describe the sizes of types of foundation</p> <p>Explain the factors which affect the bearing capacity of a subsoil</p>	<p>FIELD TRIP: students as a class go out and observe different types of foundation</p> <p>Students in pairs discuss the functions of foundation</p> <p>Students in small groups use diagrams/pictures to discuss the sizes of foundations and factors which affect the bearing capacity of subsoil</p>	<p>personal development</p>	<p>foundation, video clips, charts it www.designingbuilding.co.uk/building_foundation</p>
6	<p>SUB STRUCTURE WALLS</p> <p>Types of wall at substructure level</p> <p>Materials for types of walls</p> <p>Functions of substructure walls</p> <p>Bonding for walls</p> <p>Erection of walls</p> <p>Description of types of mortar for walls</p>	<p>By the end of the lesson students should be able to:</p> <p>Describe types of substructure wall</p> <p>Describe materials for types of wall</p> <p>Explain the functions of substructure walls</p> <p>Explain types of bonding for walls</p> <p>Demonstrate ways of erecting walls in different bonds</p> <p>Describe types of mortar for walls</p>	<p>Students as a class use models to discuss types of substructure wall</p> <p>Students in pairs discuss the types of bonding and the principles involved using sketches</p> <p>Students in small groups erect walls in different bonds</p> <p>Students in pairs discuss types of mortar for walls</p>	<p>- Critical thinking & Problem solving</p> <p>- Communication & Collaboration</p> <p>- Leadership & personal development</p>	<p>AUDIO-VISUAL RESOURCES</p> <p>Chart, video clips, pictures, bricks, block</p> <p>https://en.m.wikipedia.org/wiki/walls</p>
7	MID TERM	BREAK			
8	<p>Damage to substructure work</p> <p>Defects in substructure work</p> <p>Protection against damage to substructure work</p>	<p>By the end of the lesson students should be able to:</p> <p>Describe some of the defects in substructure work</p> <p>Demonstrate the methods of protection against damages to substructure work</p>	<p>Students as a class demonstrate methods of protection against damages to substructure work</p> <p>Students in small groups describe some of the defects in substructure work.</p>	<p>- Critical thinking & Problem solving</p> <p>- Communication & Collaboration</p> <p>- Leadership & personal development</p>	<p>AUDIO-VISUAL RESOURCES</p> <p>Chart, video clips posters</p> <p>Real object.</p> <p>https://en.m.wikipedia.org/wiki/substructure-work</p>
9	<p>DAMP Proof Materials (DPM)</p> <ul style="list-style-type: none"> ✓ Definition ✓ Types – 	<p>Explain the term “damp-proofing”</p> <p>Describe materials used for damp proofing</p>	<p>Students as a class brainstorm on the meaning of damp proofing</p>	<p>- Critical thinking & Problem solving</p> <p>- Communication & Collaboration</p> <p>- Leadership &</p>	<p>AUDIO-VISUAL RESOURCES</p> <p>Chart, video clips posters</p>

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	TEACHING RESOURCES
	Asphalt, Bitumen, Polyethylene floor, water repellent cement ✓ Function D.P.C	Explain the purpose for using damp proofing in buildings	Students in small groups discuss materials for damp proofing	personal development	Real object. https://en.m.wikipedia.org/wiki/damp-proof-materials
10	GROUND FLOOR ✓ Functions ✓ Types solid, timber and ✓ Suspended ground floor ✓ Materials ✓ Composition ✓ and construction	By the end of the lesson students should be able to: I. State the function of ground floor II. List types of ground floor III. Give functional requirement of ground floor IV. Sketch structure of a ground floor	Students in small groups produce detailed drawings of a ground floor in first and third angle orthographic projections.	- Critical thinking & Problem solving - Communication & Collaboration - Leadership & personal development	AUDIO-VISUAL RESOURCES Charts, video clips, sketches, construction sites etc. https://en.m.wikipedia.org/wiki/ground-floor
11	FLOOR FINISHING ✓ Floor finishes ✓ Spreading ✓ Tiling ✓ Granolithic ✓ Mosaic work tiles ✓ Wood block tiles ✓ Terrazzo tile ✓ PVC tiles	By the end of the lesson students should be able to: I. List materials for floor finishes II. Select suitable material for finishing a given floor III. Prepare floor to receive a finishing IV. Mix floor finishing materials to required ratio V. Lay floor finishing	I. Students as a class explain the procedure of finishing a floor-mixing, laying and curing of floor finishing II. Students in pairs identify materials for floor finishing III. Students in small groups prepare mixes for cement, sand, screed and terrazzo, Adhesive on PVC tile IV. Students as a class visit building site and observe the procedure of finishing a floor	- Critical thinking & Problem solving - Communication & Collaboration - Leadership & personal development	AUDIO-VISUAL RESOURCES Real sample of flooring materials – (cement, sand, granite chipping, ebonite stripe), tool and equipment- (shovel, head pan, spiral level) https://en.m.wikipedia.org/wiki/floor-finishing
12	REVISION	REVISION			
13	EXAMINATION	EXAMINATION			



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SSI THIRD TERM

WKS	TOPIC	LESSON OBJECTIVE	ACTIVITIES	Embedded Core Skills	TEACHING RESOURCES
1	WELCOME TEST/ REVISION OF LAST TER, WOKRK				
2-5	BUILDING/WORKING MATERIALS <i>Identification of building materials</i> <i>Block/brick materials</i> <i>Mix ratio</i> <i>Sizes of blocks/bricks</i> <i>Manufacture of blocks/bricks</i> <i>Difference between bricks and blocks</i> <i>Advantages and disadvantages of making blocks/bricks</i> <i>Fundamental properties of blocks/bricks</i> <i>Types of binding material</i> <i>Properties of cement</i> <i>Fundamental properties of blocks/bricks</i> <i>Binding materials</i> <i>Properties of cement</i>	By the end of the lesson students should be able to: Identify building materials Select the materials for making blocks/bricks State the mix ratios for types of blocks/bricks State the recommended sizes of blocks/bricks Describe manufacture of blocks/bricks Distinguish between blocks and bricks Compare the manufacture of concrete blocks by hand and by machine methods Explain the fundamental properties of blocks/bricks Identify binding materials Explain types of binding material Explain the manufacture and properties of cement	Students as a class observe displayed building materials and discuss the materials for making different types of blocks/bricks Students in small groups discuss the mix ratios for types of blocks/bricks Students in pairs discuss the recommended sizes of blocks/bricks and the processes for manufacturing blocks/bricks Students in pairs discuss the physical differences between blocks and bricks as displayed Students in small groups discuss the advantages and disadvantages of making blocks/bricks using manual and machine methods Students as a class discuss the manufacture of cement	- Critical thinking & Problem solving - Communication & Collaboration - Leadership & personal development	AUDIO-VISUAL RESOURCES Video clips, projectors. and films, charts https://en.m.wikipedia.org/wiki/building-materials
6	MOULDING MACHINES <i>-manual</i> <i>-mechanical</i> <i>-steps in the production of concrete bricks and</i>	By the end of the lesson students should be able to: I. Identify different types of moulding machines II. differentiate between manual	I. Students in small groups explain different types of moulding machines. II. Students as a class visita block manufacturing industry	- Critical thinking & Problem solving - Communication & Collaboration - Leadership & personal development	AUDIO-VISUAL RESOURCES Video clips, charts, illustration, mechanical moulder manual moulder,

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	TEACHING RESOURCES
	block 34	and mechanical types of moulding machines III. Use the various steps in the production of concrete bricks and blocks.	III. Students in small groups use the various steps in the production of bricks and block		Material- cement and aggregates https://en.m.wikipedia.org/wiki/moulding-machines
7	MID-TERM BREAK				
8	FLOOR -definition -types a) solid reinforced concrete floor b) suspended or timber floor - supporting beam and columns functions - material and construction	By the end of the lesson students should be able to: I. define concrete upper floor II. Identify various types of floor. III. Compare solid reinforced concrete floor and suspended timber floor IV. state the function of supporting beam and columns V. Describes materials used in constructing timber floor.	Students as a class brainstorm on the meaning of floor Students in small groups use charts and models to discuss types of floors	- Critical thinking & Problem solving - Communication & Collaboration - Leadership & personal development	AUDIO-VISUAL RESOURCES Charts, video clips, Picture https://en.m.wikipedia.org/wiki/types-of-floor
9	WALLS - Definition of wall - Types of wall external and internal wall (load bearing and non-load bearing) - Functions of walls	By the end of the lesson students should be able to: Explain the terms "walls" in super structure Recognize load and non-load bearing walls Explain the functions of types of walls	Students as a class discuss the term walls in building construction Students use charts to discuss types of walls	- Critical thinking & Problem solving - Communication & Collaboration - Leadership & personal development	AUDIO-VISUAL RESOURCES Brick, block, cement mortar, sand, water video clips, charts etc. https://en.m.wikipedia.org/wiki/walls
10	CEILING - Purpose of ceiling - Sound and thermal Insulation - part of a ceiling sheet, noggins, strut and bitters	By the end of the lesson students should be able to: i. explain the purpose of ceiling ii. prepare ceiling parts iii. Select appropriate material used for ceiling	Students in small groups discuss the term "ceiling" Students in pairs discuss methods of constructing ceiling and give detailed illustration of ceiling construction Students as a	- Critical thinking & Problem solving - Communication & Collaboration - Leadership & personal development	AUDIO-VISUAL RESOURCES Video clip, pictures charts etc. https://en.m.wikipedia.org/wiki/ceiling

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	TEACHING RESOURCES
	<ul style="list-style-type: none"> - <i>material for ceilings</i> - <i>procedure for construction of ceiling</i> - <i>safety requirement.</i> 	iv. State safety requirement for construction of ceiling	<i>class go to site to observe ceiling construction</i>		
11	PRACTICAL PROJECT	By the end of the lesson students should be able to: <ul style="list-style-type: none"> i. Batch the proportional of material required. ii. Mix the appropriate ratio of the constituent iii. Mould the sizes of block and bricks according to specification iv. Cure the brick and block v. Stack the material after 14 or 21 days as required 	i. Students in small groups mix the material through and stack Cure the brick/block until they are ready for use. ii. Students in pairs mould the sizes of block and bricks according to specification	- Critical thinking & Problem solving - Communication & Collaboration - Leadership & personal development	AUDIO-VISUAL RESOURCES Video clips, picture, tools real object and chalk board practice
12	REVISION	REVISION			
13	EXAMINATION	EXAMINATION			

ACHIEVEMENT STANDARDS FOR SSS1, SESSION

At the end of the session, the students:

- ✓ Are able to identify the various types of buildings and their purposes
- ✓ Know the safety conditions to be observed at the worksite
- ✓ Know the functions of basic hand tools, equipment and machines
- ✓ Understand the difference between working drawing and construction drawing
- ✓ Are able to identify and describe the basic site planning process and principle
- ✓ Know the various types of excavation
- ✓ Know the factors which affect the bearing capacity of subsoil
- ✓ Are able to describe materials used for damp proofing
- ✓ Understand the differences between manual and mechanical types of moulding machine



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SS2 FIRST TERM

WEEK	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	TEACHING RESOURCES
1	WELCOME	TEST /REVISION OF SS1 WORK	Revision of ss1 work		AUDIO-VISUAL RESOURCES Welcome test
2	<i>Drawing and materials</i> <i>-DEFINITION</i> <i>A. principle of drainage principle relating to : uses of materials formation of drain means of inspection and clearing laying of pipes in straight lines air and water tightness use of traps and water seals branches of drains ventilation of drains installation of rain water pipes ,sink, lavatory basins and bath waste Connection of water closet Drains passing under a building</i> <i>B. materials</i> <i>-types, properties and manufacture of drainage materials</i> <i>1. cast iron pipes and fittings</i> <i>2. Asbestos, cement, pipes and</i>	By the end of the lesson students should be able to: Define, identify and mention basic principles of drainage Identify and explain types of drainage materials. Explain the process of laying drainage in a domestic building	Students as a class brainstorm on the definition of drainage Students in pairs list materials for drainage Students in small groups explain principles of drainage	- Critical thinking & Problem solving - Communication & Collaboration -Leadership & personal development	AUDIO-VISUAL RESOURCES Charts, video clips, drainage materials, drainage fitting https://en.m.wikipedia.org/wiki/drains

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	TEACHING RESOURCES
	<i>fitting Plastic pipes and fittings earthenware pipes and pipes</i>				
3	DRAINAGE SYSTEMS AND ITS GENERAL TERMS <i>System of drainage separate system and Combine system terms used drainage work Sub soils drain, surface water, drain saver, sewage, sewerage, Easy bends, gulley traps, wastewater, waste appliances, waste pipe, soil pipe rain, water pipe, ventilation pipe, inspection chamber, drain chute, roding eye, flinching, bending.</i>	By the end of the lesson students should be able to: Define terms commonly used in drainage works	Students as a class identify various materials used in drainage systems Students in pairs define terms commonly used in drainage works	- Critical thinking & Problem solving - Communication & Collaboration - Leadership & personal development	AUDIO-VISUAL RESOURCES Video clips, chart, real object https://en.m.wikipedia.org/wiki/drainage-system
4	PLUMBING <i>- Definition - Fitting a) Types of fittings in plumbing and sanitary works e.g. Soil fitting, wastewater fittings. b) Common joints in pipe work, Galvanised joint, Copper</i>	By the end of the lesson students should be able to: i. Define plumbing ii. Identify various types of fittings in plumbing and sanitary work ii. Explain various tools and equipment used in plumbing.	i. Identify the various types of fitting in plumbing. ii. State the quality of a good drainage iii. State the purpose of tools and equipment used in plumbing	- Critical thinking & Problem solving - Communication & Collaboration - Leadership & personal development	AUDIO-VISUAL RESOURCES Pipes with accessories, gum, charts, pictures, diagrams Plumbing fittings e.g. elbow, tee, socket, union, adaptor https://en.m.wikipedia.org/wiki/plumbing

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	<p><i>Mild Steel, Stainless, Plastic joint</i></p> <p>c) <i>Tools and equipment:- Wrench, Hacksaw, Stick and dye, diesel etc..</i></p> <p>d) <i>Materials for joining pipe works: Heat, Gum fitting, Compression, etc..</i></p> <p>e) <i>Use of machining for Benching: Threading - Joining</i></p>				
5.	<p>Electrical installation work</p> <p>Various kinds of symbols</p> <ul style="list-style-type: none"> - One way switch - Two or three way switch - Pendant switch - Switch socket outlet - Immersion heater - Meter and cooker control 	<p>By the end of the lesson students should be able to:</p> <ul style="list-style-type: none"> i. Identify various symbols used in electrical installation ii. Explain common terms used in electrical installation works. iii. Describe methods of oneway switch, two or three way switches 	<ul style="list-style-type: none"> i. Students as a class identify electrical symbols ii. Students in pairs define common terms in electrical installation iii. Students in small groups identify types of materials in electrical work 	<ul style="list-style-type: none"> - Critical thinking & Problem solving - Communication & Collaboration - Leadership & personal development 	<p>AUDIO-VISUAL RESOURCES</p> <p>Charts, video clips, sample of electrical fittings and materials.</p> <p>https://en.m.wikipedia.org/wiki/electrical-installation</p>
6.	<p>Electrical installation terms and materials:</p> <ul style="list-style-type: none"> - Ampere, ohms, voltage - Resistance fuse - Parallel and series connection - Resistivity <p>Materials:</p> <ul style="list-style-type: none"> - Metals - Plastics - Rubber - Asbestos 	<p>By the end of the lesson students should be able to:</p> <ul style="list-style-type: none"> i. Identify various types of materials in electrical installation ii. Explains common terms used in electrical installation 	<ul style="list-style-type: none"> i. Students as a class identify materials used in electrical installation ii. Students in small groups explain Common terms in electrical installation e.g. ampere, ohms, voltage 	<ul style="list-style-type: none"> - Critical thinking & Problem solving - Communication & Collaboration - Leadership & personal development 	<p>AUDIO-VISUAL RESOURCES</p> <p>Charts, video clips, sample of electrical materials. E.g. metals, plastics, etc.</p> <p>https://en.m.wikipedia.org/wiki/electrical-installation</p>

BUILDING CONSTRUCTION

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	TEACHING RESOURCES
7.	Mid-Term Break				
8.	Foundations - Concrete foundation - Site test of materials aggregate - Cement and water	By the end of the lesson students should be able to: i. Identify various test on concrete mixes ii. Explain different concrete operation.	i. Students in small groups differentiate between reinforced and non-reinforced concrete foundation ii. Students as a class Visit construction sites	- Critical thinking& Problem solving - Communication& Collaboration -Leadership & personal development	AUDIO-VISUAL RESOURCES Posters, charts, video clips, drawing, construction sites. https://en.m.wikipedia.org/wiki/foundations
9.	Elementary test on - Concrete mixes - Concrete operation	By the end of the lesson students should be able to: i. Identify various test on concrete mixes ii. Explain different concrete operation.	i. Students as a class observe different types of test of concrete mixes ii. Students in small groups use different concrete operation	- Critical thinking& Problem solving - Communication& Collaboration -Leadership & personal development	AUDIO-VISUAL RESOURCES Charts, video clips, real object. https://en.m.wikipedia.org/wiki/concrete-operations
10	Types of concrete - Reinforcement of concrete - Mass concrete	By the end of the lesson students should be able to: i. Identify different types of concrete ii. Explain different between reinforced concrete and mass concrete	i. Students as a class explain different types of concrete ii. Students in small groups state the differences between reinforced concrete and mass concrete	- Critical thinking& Problem solving - Communication& Collaboration -Leadership & personal development	AUDIO-VISUAL RESOURCES Video clips, charts, pictures https://en.m.wikipedia.org/wiki/reinforced-concrete
11.	Practical projects A. Mix Ratio - Concrete cubes - Floor slabs B. Formwork for beams and columns - Laying of blocks with concrete pillars at equal intervals	By the end of the lesson students should be able to: i. Define mix ratio ii. Describe the process of concrete cubes production and floor slabs iii. use formwork for beams and columns	i. Students in pairs prepare a mix ratio ii Students in small groups State the process of concrete cubes production iii. Students as a class prepare formwork for beams and columns	- Critical thinking& Problem solving - Communication& Collaboration -Leadership & personal development	AUDIO-VISUAL RESOURCES Video clips, charts, picture, shovel, concrete cubes, etc.
12.	Revision	Revision			Revision
13.					



**LAGOS STATE GOVERNMENT
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**UNIFIED SCHEMES OF WORK
SENIOR SECONDARY SCHOOLS**

BUILDING CONSTRUCTION

SS2 SECOND TERM

WKS	TOPIC	LESSON OBJECTIVES	ACTIVITIES	EMBEDDED CORE SKILLS	TEACHING RESOURCES
1	WELCOM TEST	REVISION OF LAST TERM WORK			
2	WALL Methods of walls construction Protection of wall surface against weather degradation Comparison of load and non-load bearing walls Materials for loads and non-load bearing wall Free standing wall Preventive methods	<p>By the end of the lesson students should be able to:</p> <p>Describe methods of wall construction of each type of wall</p> <p>Demonstrate the methods of protecting wall surface against weather erosion and physical damage</p> <p>Compare the differences between load bearing and non-load bearing walls</p> <p>Describe the materials for load and non-load bearing walls</p> <p>Explain the methods used to prevent free standing wall from moisture penetration</p>	<p>Students in small groups discuss the methods of protecting wall surface against weather degradation and physical damage</p> <p>Students as a class Use charts to compare load bearing and non-load bearing walls</p> <p>Students in pair use real materials to discuss materials for wall construction</p> <p>Students in small groups discuss the methods of preventing moisture penetration in free standing wall</p>	<ul style="list-style-type: none"> - Critical thinking & Problem solving - Communication & Collaboration - Leadership & personal development 	<p>AUDIO-VISUAL RESOURCES</p> <p>Video clips, Charts, Picture, Visit to site.</p> <p>https://en.m.wikipedia.org/wiki/walls</p>
3	DOOR AND DOOR FRAMES Types of door frame Door types Functions of door Selection of door types Construction of doors Methods of fixing door frames Use of breeze block, 150mm nail,	<p>By the end of the lesson students should be able to:</p> <p>Describe types of door frame</p> <p>Describe types of door</p> <p>Explain the functions of doors</p> <p>Demonstrate the methods of constructing doors</p> <p>Describe the methods of fixing door frames into wall openings</p> <p>Demonstrate the</p>	<p>Students discuss types of door frames and doors with the aid of sketches</p> <p>Students as a class discuss the functions of doors</p> <p>Students in pairs select doors and state their particular uses</p> <p>Students in small groups demonstrate the construction of types of doors and</p>	<ul style="list-style-type: none"> - Critical thinking & Problem solving - Communication & Collaboration - Leadership & personal development 	<p>AUDIO-VISUAL RESOURCES</p> <p>Charts, Pictures, Posters, Video Clips, Physical, Observation.</p> <p>https://en.m.wikipedia.org/wiki/doors</p>

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	TEACHING RESOURCES
	wood plug Use of ironmongery	methods of fixing doors to door frames	<p>sketch details in constructing doors</p> <p>Students in pairs illustrate methods of fixing door frames into wall openings</p> <p>Students as a class visit a site to see how doors are fixed</p> <p>Students in small groups illustrate and demonstrate the methods of fixing door frames</p>		
4	<p>WINDOWS AND WINDOWS FRAME</p> <p>Window types</p> <p>Window and window frames parts</p> <p>Functions of windows</p> <p>Windows and frames construction</p> <p>Moisture prevention.</p>	<p>By the end of the lesson students should be able to:</p> <p>Identify and describe types of windows and their frames</p> <p>Explain the functions of windows</p> <p>Describe the methods of constructing windows</p> <p>Demonstrate the methods of preventing entry of moisture at joints in windows and window frames</p>	<p>With the aid of charts, students in small groups discuss types of window and their frames</p> <p>Students in pairs illustrate with sketches types and parts of a window</p> <p>Students in small groups illustrate the construction of windows and window frames</p> <p>Students in pairs demonstrate how to prevent moisture from entering the joints</p>	<p>- Critical thinking & Problem solving</p> <p>- Communication & Collaboration</p> <p>- Leadership & personal development</p>	<p>AUDIO-VISUAL RESOURCES</p> <p>Video Clips, Pictures, Posters, Visit to site.</p> <p>https://en.m.wikipedia.org/wiki/windows-and-windows-frames</p>
5	<p>Bridging of openings in walls</p> <p>Arch</p> <p>Description of types of arch</p> <p>Types of lintel</p> <p>Methods of bridging wall</p>	<p>By the end of the lesson students should be able to:</p> <p>Identify and describe types of arches</p> <p>Describe types of lintels</p> <p>Discuss methods of bridging wall</p>	<p>Students in pairs draw different types of arches using geometrical method of drawing</p> <p>Students in small groups discuss the types of arches using sketches and charts</p> <p>Using sketches and models, students as a class discuss the types of lintels</p>	<p>- Critical thinking & Problem solving</p> <p>- Communication & Collaboration</p> <p>- Leadership & personal development</p>	<p>AUDIO-VISUAL RESOURCES</p> <p>Video clips, charts, pictures, granite, sand aggregates.</p> <p>https://en.m.wikipedia.org/wiki/lintel</p>

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	TEACHING RESOURCES
			Students in small groups demonstrate the following: -methods of bridging an opening in walls -Positioning or reinforcement in concrete lintel		
6	Columns and beams in walls Define column and beams Materials for columns and beams Functions of columns and beams Reinforcement to columns and beams	By the end of the lesson students should be able to: State the materials for columns and beams Explain the functions of columns and beams Apply reinforcement steels to columns and beams	Students as a class use models to discuss columns and beams Students in small groups observe real materials for columns and beams Students in pairs demonstrate production of the reinforcement steel for columns and beams	- Critical thinking Problem solving - Communication Collaboration -Leadership and personal development	AUDIO-VISUAL RESOURCES Video, clips, charts, pictures, wood models of various types of roof construction site https://en.m.wikipedia.org/wiki/columns-and-beams
7	MID TERM BREAK	MID TERM BREAK	MID TERM BREAK		MID TERM BREAK
8-10	Roofs: Types of roofs Parts of types of roofs: wall plates, rafter, ridge piece, tie, roofs covering Terms in roof construction ROOF COVERING MATERIALS Safety precautions Roof constructions Measures for preventing uplifts of roofs	By the end of the lesson students should be able to: Recognize types of roofs in building construction Acquire skills in roof construction Determine materials used for roof construction	Students as a class use models, sketches and charts to discuss parts of roofs and their functions Students in small groups discuss the terms in roofs construction Students as a class visit a site to observe construction Students in small groups discuss models of roof covering materials and demonstrate safety measures during fixing and handling of roof materials Students in pairs demonstrate methods of constructing pitch	- Critical thinking & Problem solving - Communication & Collaboration -Leadership & personal development	AUDIO-VISUAL RESOURCES Video clips, charts, pictures etc. https://en.m.wikipedia.org/wiki/roofs

BUILDING CONSTRUCTION

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	TEACHING RESOURCES
			and flat roofs Students discuss measures for checking roof uplift during storm		
11	PRACTICAL / PROJECT I Lay tiles and DPC II Fix pipes of various kinds				
12	REVISION	REVISION			REVISION
13	EXAMINATION	EXAMINATION			EXAMINATION



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BUILDING CONSTRUCTION

SS2 THIRD TERM

WKS	TOPIC	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	TEACHING RESOURCES
1	WELCOME TEST/ REVISION OF LAST TERM WORK				
2	FIXING OF ROOF COVER – fixing of roof covering materials and safety during construction. ❖ Protection of roof from wind, rain, lightening ❖ Use of fascia boards, concrete flashing and aluminum wind breakers safety requirement	By the end of the lesson students should be able to: i) Fix roof covering materials ii) Observe safety rules during roof construction iii) Construct fascia board, concrete flashings and aluminium as wind breakers. iv) List safety requirements during roof construction.	i) Students as a class identify fixing roof covering materials ii. Students in pairs Observe safety rules during roof construction	- Critical thinking& Problem solving - Communication& Collaboration -Leadership & personal development	AUDIO-VISUAL RESOURCES Corrugate aluminium sheet woods, nails, charts, video clips, Pictures. https://en.m.wikipedia.org/wiki/roofs
3	CEILINGS A purpose of ceiling ❖ Thermal insulation ❖ Sound insulation B. Properties of ceiling ❖ Strength ❖ Rigidity, aesthetic s (beauty)	By the end of the lesson students should be able to: i) Explain the purposes of ceiling ii) Identify and explain parts of ceiling.	i. Students as a class discuss purposes of ceilings ii Students in small groups State the properties of ceiling	- Critical thinking& Problem solving - Communication& Collaboration -Leadership & personal development	AUDIO-VISUAL RESOURCES Video clips, pictures, chairs, Real objects https://en.m.wikipedia.org/wiki/ceilings
4	PARTS OF A CEILING A Purpose of ceiling ❖Ceiling tiles (sheets) ❖Nogglio ❖Struit ❖Batten B. MATERIAL S FOR CEILING	By the end of the lesson students should be able to: I identify and explain parts of a ceiling II Select appropriate materials used for ceiling	I. Students in small groups identify parts of a ceiling II. Students as a class State and explain materials used for ceiling	- Critical thinking& Problem solving - Communication& Collaboration -Leadership & personal development	AUDIO-VISUAL RESOURCES Ceiled and unceiled houses, video clips, pictures, charts etc. https://en.m.wikipedia.org/wiki/ceilings

BUILDING CONSTRUCTION

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	TEACHING RESOURCES
	<ul style="list-style-type: none"> ❖ Asbestos sheet ❖ Cellotex sheet ❖ Hard Boards ❖ Bamboo ❖ Mats ❖ Grass ❖ Raffia 				
5	<p>PLUMBING METHODS OF INSTALLATION</p> <ul style="list-style-type: none"> ❖ Types of load work used in plumbing ❖ Roofs ❖ Gutters ❖ Eaves ❖ Valleys 	<p>By the end of the lesson students should be able to:</p> <p>I. State types of load work used in plumbing</p> <p>ii. Identify and explain methods of plumbing installation</p>	<p>I. Students as a class demonstrate methods of plumbing installation</p> <p>II. Students in pairs Sketch types of lead work used in plumbing</p>	<p>- Critical thinking & Problem solving</p> <p>- Communication & Collaboration</p> <p>- Leadership & personal development</p>	<p>AUDIO-VISUAL RESOURCES</p> <p>Video clips, Charts, pictures, visits construction sites.</p> <p>https://en.m.wikipedia.org/wiki/plumbing-methods-of-installation</p>
6	<p>METHODS OF INSTALLATION</p> <ul style="list-style-type: none"> ❖ Water closet (WC) ❖ Wash land basin (W.H.B) ❖ Baths and showers ❖ Sinks ❖ Septic tanks ❖ Manhole ❖ Soak away construction ❖ Water reservoirs –types and materials 	<p>By the end of the lesson students should be able to:</p> <p>I. Fix water closet, wash hand basin, Baths and showers and sinks</p> <p>II. Install pipes in septic tank, manhole and soak away construction</p>	<p>I. Students in pairs fix water closet, wash hand basin, etc.</p> <p>II Students in small groups Sketch the systems of drainage pipe work</p> <p>III Students as a class state the purpose of septic tank and soak away</p>	<p>- Critical thinking & Problem solving</p> <p>- Communication & Collaboration</p> <p>- Leadership & personal development</p>	<p>AUDIO-VISUAL RESOURCES</p> <p>Pipes with accessories, charts, Pictures, Video clips</p> <p>https://en.m.wikipedia.org/wiki/plumbing-methods-of-installation</p>
7	<p>MID TERM BREAK</p> <p>MID TERM BREAK</p>				
8	<p>ELECTRICAL INSTALLATION AND ELECTRICAL SYMBOL</p> <ul style="list-style-type: none"> ❖ Types of wiring 	<p>By the end of the lesson students should be able to:</p> <p>I identify and explain types of wiring</p>	<p>i. Students in small groups Identify the electrical wiring materials.</p> <p>ii. Students in pairs List the types of</p>	<p>- Critical thinking & Problem solving</p> <p>- Communication & Collaboration</p> <p>- Leadership & personal development</p>	<p>AUDIO-VISUAL RESOURCES</p> <p>Video clips.</p> <p>Electrical wiring materials, Charis etc.</p>

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	TEACHING RESOURCES
	<ul style="list-style-type: none"> ❖ Steel conduct ❖ P.V.C conduct (Polynol Chloride) ❖ M.I.C.S (Mineral s insulated cooper sheathin g ❖ T.R.S (Tough Rubber Sheathin g Surface) 	<p>Il state the uses of each electrical wiring materials</p>	<p>electrical wiring.</p>		<p>https://en.m.wikiped ia .org/wiki/electrical-installation</p>
9	<p>IEE (Institute of Electrical Engineers)</p> <ul style="list-style-type: none"> ❖ Regulatio ns for electrical equipment of building ❖ Electrical symbols ❖ Installatio ns terms ❖ Types of materials ❖ Reasons for the choice of materials 	<p>By the end of the lesson students should be able to:</p> <p>I. Discuss the Institute of Electrical Engineers (I.E.E)</p> <p>II Identify and sketch electrical symbols</p> <p>III. Identify various types of materials</p> <p>II. State reasons for the choice of materials.</p>	<p>I. Students as a class State the I.E.E regulations.</p> <p>II. Students in pairs Sketch electrical symbols</p> <p>III. Students in small groups explain various types of electrical materials</p> <p>IV. Students in small groups State reasons for the choice of materials.</p>	<p>- Critical thinking& Problem solving</p> <p>- Communication& Collaboration</p> <p>-Leadership & personal development</p>	<p>AUDIO-VISUAL RESOURCES</p> <p>Video clips Charts, Electrical wiring materials I.E.E regulations Etc.</p> <p>https://en.m.wikiped ia .org/wiki/electrical-installations</p>
10	<p>PRACTICAL/ PROJECTS</p> <ul style="list-style-type: none"> - Wall Plastering - Floor Screening 				<p>https://en.m.wikiped ia .org/wiki/walls-and-floors</p>
11	<p>PRACTICAL / PROJECT</p> <ul style="list-style-type: none"> ❖ Surface wiring on the wall ❖ Fix door frames ❖ Fix windows frames 				
12	REVISIONS	REVISIONS			REVISIONS
13	EXAMINATIO NS	EXAMINATIONS			EXAMINATIONS

ACHIEVEMENT STANDARDS FOR SSS 2, SESSION

At the end of the session, the students:

- ✓ understand the principle of drainage
- ✓ know the various types of fittings in plumbing and sanitary work
- ✓ are able to identify various types of materials in electrical installation
- ✓ know the difference between reinforced concrete and mass concrete
- ✓ understand the process of concrete cubes production and floor slabs
- ✓ know how to use frame work for beams and columns
- ✓ are able to demonstrate methods of protecting wall surface against weather erosion physical damage
- ✓ understand methods of constructing doors
- ✓ know the methods of constructing windows and window frames
- ✓ are able to describe types of arches and lintels
- ✓ know the method of bridging wall
- ✓ know the safety rules and requirement during roof construction
- ✓ are able to identify and explain methods of plumbing installation
- ✓ are able to recognize and sketch electrical symbols



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BUILDING CONSTRUCTION

SS3 FIRST TERM

WKS	TOPIC	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	TEACHING RESOURCES
1.	The Revision of SS i-ii work	Welcome test	Welcome test		
2-4	<p>Stair cases: Definition of stair Types of stairs Parts of stairs Functional requirements of stair construction Setting out timber stairs Layout of timber stairs Timber stair construction Problems in timber stair construction Concrete stair construction Formwork for concrete stairs Placement of reinforcement bars Fixing of balustrade Functional characteristics of materials for balustrade. Construction of metal stairs</p>	<p>By the end of the lesson students should be able to:</p> <p>Acquire knowledge about stairs.</p> <p>Understand the fundamentals of stair construction.</p>	<p>Students as a class brainstorm on the meaning of the term "stairs"</p> <p>Students as a class go to a two-storey building to observe stairs and their details.</p> <p>Students as an individual discuss parts of stairs and sketch types of stairs with their details.</p> <p>Students in pairs identify the functional requirements of stair construction.</p> <p>Students in small groups demonstrate the procedures for setting out timber stairs.</p> <p>With the use of sketches and models of joint students show the methods of constructing timber stairs.</p> <p>Students in small groups discuss defects of materials used for timber stairs.</p> <p>With the use of model students as a class discuss the steps involved in erecting formwork.</p> <p>Students in pairs demonstrate the methods of making</p>	<p>- Critical thinking & Problem solving - Communication & Collaboration - Leadership & personal development</p>	<p>AUDIO-VISUAL RESOURCES Training materials like wood, nails, bricks, cement, sand and granite, bricklayers laying tools, video clips, charts and drawings</p> <p>https://en.m.wikipedia.org/wiki/types-of-stairs</p>

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	TEACHING RESOURCES
			<p>reinforced concrete stairs.</p> <p>Students as a class embark on a tour to observe stairs reinforcement placing.</p> <p>Students in small groups demonstrate the methods of fixing balustrade in concrete stairs</p> <p>Students in pairs use models to discuss types of metal for stair construction.</p> <p>Students as a class discuss the functional characteristics of balustrade materials with emphasis on the following:</p> <ul style="list-style-type: none"> - rotting effect of moisture on timber - rusting iron/steel due to dampness - concrete cracks, decomposition due to poor mixing, poor design, etc. 		
5.	<p>Wall finishes Plastering i. Tools and requirement ii. Materials for plastering iii. Repairation of the wall iv. Surface v. Plastering process vi. Plastering sequence vii. Properties of plaster viii. Plaster board lathing</p>	<p>By the end of the lesson students should be able to:</p> <ol style="list-style-type: none"> i. Define plastering and properties of mortar ii. Know the reason for the application of plaster on internal surfaces iii. Identify tools and requirements for standard plastering iv. Know how to prepare the background to receive plastering v. Know how to arrange the 	<ol style="list-style-type: none"> i. Students as a class define plastering and the mortar characteristics ii. Students in pairs explain the reason for applying mortar on walls iii. Students in small groups identify the uses of tools for plastering. iv. Students as an individual apply mortar on wall surfaces use tools to finish plastering on wall 	<ul style="list-style-type: none"> - Critical thinking& Problem solving - Communication& Collaboration -Leadership & personal development 	<p>AUDIO-VISUAL RESOURCES</p> <p>Real plastering materials, video clips, charts, diagrams, chalk board practice.</p> <p>https://en.m.wikipedia.org/wiki/wall-plastering</p>

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	TEACHING RESOURCES
		mortars and potter additive to materials			
6.	Drawing installation - Methods of construction - Inspection chambers - Septic tanks and soak away pits.	By the end of the lesson students should be able to: i. Construct drains ii. Lay inspection chamber iii. Construct septic tanks and soak-away pits	i. Students in small groups test for leakage by using water ii. Students in small groups test for leakage and flow by using air/ smoke test	- Critical thinking & Problem solving - Communication & Collaboration - Leadership & personal development	AUDIO-VISUAL RESOURCES Video, still pictures, pipes (6" and 9") Diagrams, video, charts and other materials for laying pipes and preparing inspection chamber https://en.m.wikipedia.org/wiki/inspection-chambers
7					
8-10	Preparing and maintenance of drainage Define drainage Principles of drainage system Factors for selecting a type of drainage scheme Materials for drainage Methods of joining pipes Functions of traps Functions of an inspection chamber Protection against flooding Methods of laying and bedding drains Methods of testing drains Functions of soakaway Construction of materials Construction of septic tanks	By the end of the lesson students should be able to: Explain the principles of Drainage. Explain the types of drainage scheme. Explain the factors to consider in selecting a type of drainage scheme. Describe the materials for a drainage system Explain with the aid of sketches the methods of joining pipes. Describe the functions of traps. Explain the functions of an inspection chamber. Demonstrate the measures for protecting against flooding. Demonstrate the methods of laying and bedding drain pipes. Demonstrate methods of testing drains.	Students in pairs discuss drainage, stating its importance to health and sanitation, discuss the principles of drainage. Students as an individuals discuss the types of drainage using sketches. Students in small groups discuss the factors for selecting a type of drainage scheme and the materials for drainage. Students as a class discuss the methods of joining different types of pipes using sketches. Students in pairs use models of trap to discuss the functions of a trap. Students as a class discuss the functions of an inspection chamber. Students as an	- Critical thinking & Problem solving - Communication & Collaboration - Leadership & personal development	6" and 9" pipes, yarns video, charts, diagram PPK https://en.m.wikipedia.org/wiki/types-of-drainage

BUILDING CONSTRUCTION

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	TEACHING RESOURCES
		<p>Explain the term cesspool</p> <p>Explain the functions of Soakaway.</p> <p>Demonstrate the methods of constructing manholes.</p> <p>Demonstrate the method of constructing septic tank.</p>	<p>individual make sketches and illustrations to demonstrate measures of preventing flooding in drainage.</p> <p>Students in small groups demonstrate the methods of laying and bedding drain pipes with charts and sketches. Students demonstrate the methods of testing drains</p> <p>Students discuss cesspool and soakaway with emphasis on their functions using sketches.</p> <p>Students in pairs demonstrate the methods of constructing manhole using sketches.</p> <p>Students as a class go to site to observe manhole construction and methods of constructing septic tank.</p> <p>With the use of sketches students in pairs discuss the differences between cesspool and septic tanks</p>		
11	<p>Plumbing</p> <ul style="list-style-type: none"> - System of pipe works - One pipe system - Two pipe system Single stale system 	<p>By the end of the lesson students should be able to:</p> <ul style="list-style-type: none"> i. Define plumbing ii. Identify and use materials for domestic plumbing iii. Know the system of pipe works iv. Be able to fix and explain one pipe system, two pipes system and single stale system 	<ul style="list-style-type: none"> i. Students as a class Identify materials that are of good quality and standard for fixing plumbing problems. ii. Students in small groups fix and explain one pipe system, two pipes system and single stale system 	<ul style="list-style-type: none"> - Critical thinking & Problem solving - Communication & Collaboration - Leadership & personal development 	<p>AUDIO-VISUAL RESOURCES</p> <p>Plumbing materials, video chart, diagram and plumbing tools</p> <p>https://en.m.wikipedia.org/wiki/plumbing</p>
		pipe system, two pipes system and single stale system			
12	Revision	Revision			Revision
13	Examination	Examination			Examination



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BUILDING CONSTRUCTION

SS3SECOND TERM

WKS	TOPIC	LESSON OBJECTIVE	ACTIVITY	EMBEDDED CORE SKILLS	TEACHING RESOURCES
1	FENCE AND FENCING - <i>Type of fencing</i> <i>Material of fencing</i> <i>Construction of fence</i>	By the end of the lesson students should be able to: (i). Define and identify fences and its erection process. (ii) list types of fences and boundary wall used in building construction (iii) identify and list materials used for fencing and boundary walls (iv). Set out and construct boundary wall using bricks, block and other durable materials	(i.) Students as a class visit a construction site where boundary wall is being erected and identify the materials used (ii.) Students in small groups discuss the characteristics of the materials used in the construction (iii.) Students as an individual list local types of fencing materials (iv) Students in pairs Construct boundary wall using the available materials. PROJECT ACTIVITIES	- Critical thinking & Problem solving - Communication & Collaboration - Leadership & personal development	AUDIO-VISUAL RESOURCES (i) Bricks block, stones and other unit used or boundary wall, video chart https://en.m.wikipedia.org/wiki/construction-of-fence https://en.m.wikipedia.org/wiki/types-of-fencing
2	ACCESS - <i>Types</i> - <i>Function and material for construction</i> - <i>Construction technique for road in the site</i>	By the end of the lesson students should be able to: (i). Define access in the construction site (ii) list and prepare a temporary access road for building drawing (iii) identify and state construction techniques use for temporary road within and around the site	Students as a class visit a local site where boundary wall is being erected - Students as a class watch video clips/slide of fence being erected - Students in small groups engage in construction of fence and repair existing school fence	- Critical thinking & Problem solving - Communication & Collaboration - Leadership & personal development	AUDIO-VISUAL RESOURCES Video, building plan chart, contract document of an old work. https://en.m.wikipedia.org/wiki/site-accessibility
3	GATES <i>Definition</i> <i>Types of gate</i> <i>Material and classification</i> <i>Production, fixing and maintenance</i>	By the end of the lesson students should be able to: (i). define "Gates" in relation to building construction (ii) identify and list types of gates and classification	Students as a class visit a nearby gate construction site. - Students in small groups participate in fixing the gate to the entrance of a construction site - Students in small groups fix a damage gate	- Critical thinking & Problem solving - Communication & Collaboration - Leadership & personal development	AUDIO-VISUAL RESOURCES Steel, school gate, visit to a nearby construction site. Video clips, picture drawings. https://en.m.wikipedia.org/wiki/types-of-gates

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	TEACHING RESOURCES
		(iii) participate in fixing of steel gates (iv) maintain and repair the existing school gate	-Project Proposal -Project Writing		gate
4-5	FLOOR FINISHES - Definition Types of floor finish - material for floor finishes Laying procedures Advantages and disadvantage s of types of floor finish - Factor necessary for considering when selecting	By the end of the lesson students should be able to: Identify and describe types of floor finishes. Describe the materials for types of floor finishes. Describe the procedures for laying floor finishes. Explain the advantages and disadvantages of types of floor finishes List factor affecting floor finishes. Fix the floor finished according to specification Do the necessary housekeeping after the application of the floor finishes.	Students as a class Use models and sketches to discuss types of floor finishes. Students as a class go to completed buildings to observe types of floor finishes. Students in small groups discuss the materials for types of floor finish and the procedure for laying floor finishes. Students as a class demonstrate methods of laying floor finishes. Students in pairs discuss advantages and disadvantages of types of floor finishes.	- Critical thinking & Problem solving - Communication & Collaboration - Leadership & personal development	AUDIO-VISUAL RESOURCES Tiles, (ceramics or plastic) ileum or woodblock tile cutter, measuring table, lath, spirit level; cement (OPC) while port-land cement, wire brush soft brush, towels of different size. Video, chart, internet, chalk board. https://en.m.wikiped ia .org/wiki/types-of-foors
6	LAND – SCAPPING WORK	By the end of the lesson students should be able to: - Identify and list material for landscaping - interpret plan and other perimeter drawings - select the tools for earthmoving - select other earthmoving equipment - Cut, fill and ram the undulation terrain for landscaping	i. Students as a class identify and list materials for landscaping, Interpret floor plan and other perimeter drawing ii. Students in pairs identify tools and equipment for earthmoving iii. Students in small groups carryout the following activities -cutting, hacking and laying inter locking bricks, - lay kerbs to divide areas	- Critical thinking & Problem solving - Communication & Collaboration - Leadership & personal development	AUDIO-VISUAL RESOURCES - All the tools and equipment required for good housekeeping - earthmoving tools -The floor plan -The site plan -Video chart, posters -calculators https://en.m.wikiped ia .org/wiki/land-scapping-work

BUILDING CONSTRUCTION

WKS	TOPICS	LEARNING OBJECTIVES	LEARNING ACTIVITIES	EMBEDDED CORE SKILLS	TEACHING RESOURCES
		process - level the soil with relevant tools - lay Krebs and interlocking paving concrete according to the drawing. - Transfer trees and shrubs according to the required floor and other beautiful plants. - Treat and maintain the landscape project till maturity - Do proper house keeping	required - debris clearing - tree planting, shrubs implanting and transfer - maintenance of landscaping equipment - visit to site where landscaping process is going on		
7	MOCK EXAMINATION REVISION	REVISION WAEC EXAMINATION	REVISION		REVISION

ACHIEVEMENT STANDARDS FOR SSS3, SESSION

At the end of the session, the students:

- ✓ understand the fundamentals of stairs construction
- ✓ know the reason for the application of plaster on internal surfaces
- ✓ know how to construct drains and inspection chambers
- ✓ know the methods of joining different types of pipes
- ✓ know the factors that must be considered when selecting a type drainage scheme
- ✓ are able to identify and use materials for domestic plumbing
- ✓ understand the erection process of fencing
- ✓ are able to identify materials used for fencing and boundary walls
- ✓ understand the procedures for laying out floor finishes
- ✓ identify materials for landscaping
- ✓ interpret plan and other perimeter drawings