

Economics

Senior High

Grade 11

Teacher Guide

Standards-Based



Papua New Guinea

Department of Education

**'FREE ISSUE
NOT FOR SALE'**

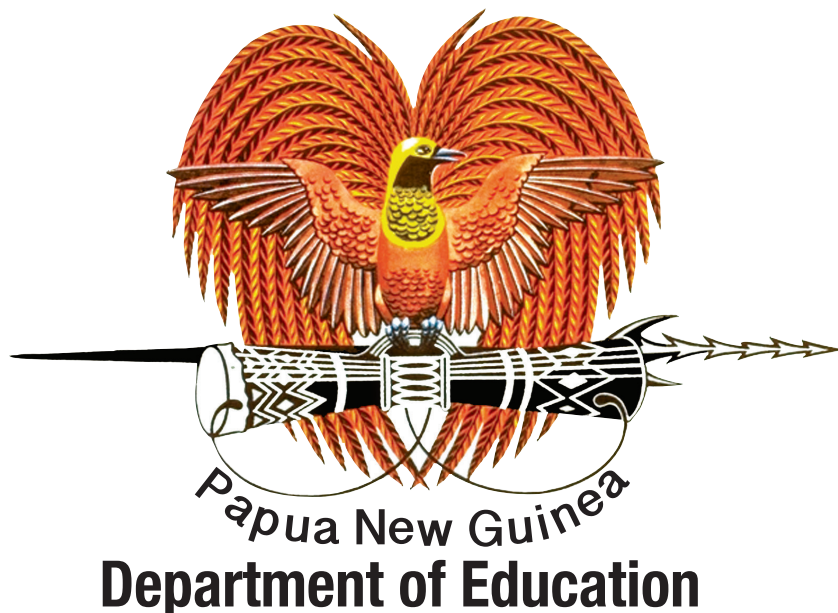
Economics

Senior High

Grade 11

Teacher Guide

Standards-Based



Issued free to schools by the Department of Education

Published in 2020 by the Department of Education, Papua New Guinea

© Copyright 2020 Department of Education, Papua New Guinea

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted by any form or by any means electronic, mechanical, photocopying, recording or otherwise without the prior written permission of the publisher.

Graphic Design & Layout by Vitus Witnes Kanua

ISBN: 978-9980-905-98-7

Contents

Acknowledgements.....	iv
Acronyms.....	v
Secretary’s Message.....	vi
Introduction.....	1
Structure of the Teacher Guide.....	2
Purpose of the Teacher Guide.....	3
How to use the Teacher Guide.....	5
Syllabus and Teacher Guide Alignment.....	10
Learning and Performance Standards.....	12
Core Curriculum.....	16
Science, Technology, Engineering, Arts, and Mathematics.....	17
Curriculum Intergration.....	32
Essential Knowledge, Skills, Values and Attitudes.....	36
Teaching and Learning Strategies.....	38
Units and Topics.....	39
Unit 1: Factors of Production and Consumption.....	41
Unit 2: Methods of Production and Distribution.....	51
Unit 3: Regulation of Production, Distribution and Consumption.....	66
Unit 4: Satisfying Needs and Wants.....	76
Unit 5: Economic Ideologies.....	89
Standards-Based Lesson Planning.....	99
Assessment, Monitoring, and Reporting.....	103
Glossary.....	119
References.....	121
Appendices.....	122

Acknowledgements

Grade 11 Social Science (Economics) Teacher Guide was developed by the Curriculum Development Division of the Department of Education. It was coordinated by Lily Pup Mali with assistance from the Subject Curriculum Group (SCG) members.

Secondary School teachers in NCD and Central Province and the UPNG lecturers are acknowledged for their contributions to this teacher guide.

Curriculum Panel (CP), Subject Advisory Committee (SAC) and Board of Studies (BOS) members are acknowledged for consideration and endorsement of the teacher guide.

Acronyms

AAL	Assessment AS Learning
AFL	Assessment FOR Learning
AOL	Assessment OF Learning
BOS	Board Of Studies
CDD	Curriculum Development Division
CP	Curriculum Panel
DA	Diagnostic Assessment
IHD	Integral Human Development
GoPNG	Government of Papua New Guinea
KSVA	Knowledge Skills Values and Attitudes
MTDG	Medium Term Development Goals
NDoE	National Department of Education
OBC	Outcomes-Based Curriculum
OBE	Outcomes-Based Education
PNG	Papua New Guinea
SAC	Subject Advisory Committee
SBC	Standards-Based Curriculum
SBE	Standards-Based Education
SCG	Subject Curriculum Group
STEAM	Science, Technology, Engineering, Arts and Mathematics

Secretary's Message

The ultimate aim of Standards-Based Education (SBE) in Papua New Guinea is to prepare students for careers, higher education, and citizenship. SBE will therefore focus on providing students with careers, higher education, and citizenship preparedness knowledge, skills, values and attitudes that they can use to work, study and live in the 21st century.

Standards-Based Curriculum (SBC) in PNG is closely aligned to and is key to achieving this aim and its related operational goals. The curriculum is underpinned by four key pillars:

- morals, values and attitudes;
- cognitive, reasoning, decision-making, problem-solving, high level and 21st century skills;
- Science, Technology, Engineering, Arts and Mathematics (STEAM),
- core curriculum.

Social Science is a significant curriculum framework for teaching children and enabling them to progressively develop proficiency on fundamental ideas of Geography, History, Political Science Economics and Environment. This curriculum addresses Social Science skills and processes of geography, civic and cultural literacy, historical and economical literacy and global awareness.

Thus, students will be able to make informed decisions and will be equipped with problem-solving and management knowledge, skills, values and attitudes in Social Science. This enables them to function effectively in the work and higher education environments as productive and useful citizens of a culturally diverse and democratic society in an interdependent world.

Social Science teachers are expected to effectively plan, teach, and assess these knowledge, skills, values, and attitudes. This teacher guide describes what teachers are expected to know and do to enable all their students to effectively learn and demonstrate the expected levels of proficiency in all the grade level Social Science knowledge, skills, values and attitudes, and attain the national content standards.

I commend and approve this Social Science Teacher Guide for Grade 11 to be used in all High Schools throughout Papua New Guinea.



.....
UKE W. KOMBRA, PhD.
Secretary for Education

Introduction

Social Science aims to develop and instill in students the ability to gauge views from all spectrums of life and be able to analyse and make proper judgments and statements to resonate and promote peace and harmony for all people. As individuals, they must be aware of issues of paramount importance affecting their daily lives such as their social groupings and institutions, governance and the natural world surrounding them. Thus, they are able to create and foster great cohesion within their locality which should have an impact on the world and over to sustain and maintain life.

The study of Social Science enhances students' understanding of inter-disciplinary concepts and issues in relation to geography, history, politics, economics and environment within PNG and globally.

Social Science aims to provide a meaningful pedagogical framework for teaching and learning essential and in demand knowledge, skills, values, and attitudes that are required for the preparation of students for careers, higher education and citizenship in the 21st century.

Students should be prepared to gather and understand information, analyse issues critically, learn independently or collaboratively, organize and communicate information, draw and justify conclusions, create new knowledge, and act ethically.

Students' employability will be enhanced through the study and application of STEAM principles. STEAM is an integral component of the core curriculum. All students are expected to study STEAM and use STEAM related skills to solve problems relating to both the natural and the physical environments. The aim of STEAM education is to create a STEAM literate society. It is envisioned that the study of STEAM will motivate students to pursue and take up academic programs and careers in STEAM related fields. STEAM has been embedded in the Social Science curriculum. Equal opportunities should be provided for all students to learn, apply and master STEAM principles and skills.

Social Science is to be timetabled for 240 minutes per week in grade 11.

Structure of the Teacher Guide

This teacher guide comprises of three main sections that provide essential information that all teachers should know and do to effectively implement the Social Science - Economics curriculum.

1. General Information

- Purpose of the teacher guide
- How to use the teacher guide
- Syllabus and teacher guide alignment
- Learning and performance standards
- Core Curriculum
- STEAM
- Curriculum Integration
- Essential KSVAs

2. Teaching and Learning

- Teaching and Learning Strategies
- Units and Topics
- Standards-Based Lesson Planning

3. Assessment

- Performance Assessment
- Performance Standards

The above components are linked and closely aligned. They should be connected to ensure that the intended learning outcomes and the expected quality of education standards are achieved. The close alignment of planning, instruction and assessment is critical to the attainment of learning standards.

Purpose of the Teacher Guide

This teacher guide describes what all teachers should know and do. The overarching purpose is to help teachers to effectively plan, teach, assess, evaluate, report and monitor students' learning and mastery of national and grade-level expectations. That is, the essential knowledge, skills, values and attitudes (KSVAs) described in the content standards and grade-level benchmarks, and their achievement of the national and grade-level proficiency standards.

Thus, the teacher is expected to:

- understand the significance of aligning all the elements of Standards-Based Curriculum (SBC) as the basis for achieving the expected level of education quality;
- effectively align all the components of SBC when planning, teaching, and assessing students' learning and levels of proficiency;
- effectively translate and align the Social Science syllabi and teacher guide to plan, teach and assess different Social Science units and topics, and the KSVAs described in the grade-level benchmarks;
- understand the Social Science national content standards, grade-level benchmarks, and evidence outcomes;
- effectively make sense of the content (KSVAs) described in the Social Science national content standards and the essential components of the content described in the grade-level benchmarks;
- effectively guide students to progressively learn and demonstrate proficiency on a range of Social Science knowledge, skills, processes, concepts, ideas, principles, practices, values and attitudes;
- confidently interpret, translate and use Social Science content standards and benchmarks to determine the learning objectives and performance standards, and plan appropriately to enable all students to achieve these standards;
- embed the core curriculum in their Social Science lesson planning, instruction, and assessment to permit all students to learn and master the core KSVAs required of all students;
- provide opportunities for all students to understand how STEAM has and continues to shape the social, political, economic, cultural, and the environment contexts and the consequences, and use STEAM principles, skills, processes, ideas and concepts to inquire into and solve problems relating to both the natural and physical (man-made) worlds as well as problems created by STEAM;
- integrate cognitive skills (critical, creative, reasoning, decision-making, and problem-solving skills), high level thinking skills (analysis, synthesis

and evaluation skills), values (personal, social, work, health, peace, relationship, sustaining values), and attitudes in lesson planning, instruction and assessment;

- meaningfully connect what students learn in Social Science with what is learnt in other subjects to add value and enhance students' learning so that they can integrate what they learn and develop in-depth vertical and horizontal understanding of subject content;
- formulate effective SBC lesson plans using learning objectives identified for each of the topics;
- employ SBC assessment approaches to develop performance assessments to assess students' proficiency on a content standard or a component of the content standard described in the grade-level benchmark;
- effectively score and evaluate students' performance in relation to a core set of learning standards or criteria, and make sense of the data to ascertain students' status of progress towards meeting grade-level and nationally expected proficiency standards, and use evidence from the assessment of students' performance to develop effective evidence-based intervention strategies to help students' who are making inadequate or slow progress towards meeting the grade-level and national expectations to improve their learning and performance.

How to use the Teacher Guide

Teacher Guide provides essential information about what the teacher needs to know and do to effectively plan, teach and assess students learning and proficiency on learning and performance standards. The different components of the teacher guide are closely aligned with SBC principles and practice, and all the other components of PNG SBC. It should be read in conjunction with the syllabus in order to understand what is expected of teachers and students to achieve the envisaged quality of education outcomes.

The first thing teachers should do is to read and understand each of the sections of the teacher guide to help them understand the key SBC concepts and ideas, alignment of PNG SBC components, alignment of the syllabus and teacher guide, setting of content standards and grade-level benchmarks, core curriculum, STEAM, curriculum integration, essential knowledge, skills, values and attitudes, strands, units and topics, learning objectives, SBC lesson planning, and SBC assessment. A thorough understanding of these components will help teachers meet the teacher expectations for implementing the SBC curriculum, and therefore the effective implementation of Grade 11 Social Science Curriculum. Based on this understanding, teachers should be able to effectively use the teacher guide to do the following:

Determine Learning Objectives and Lesson Topics

Topics and learning objectives have been identified and described in the Teacher Guide. Lesson objectives are derived from topics that are extracted from the grade-level benchmarks. Lesson topics are deduced from the learning objectives. Teachers should familiarise themselves with this process as it is essential for lesson planning, instruction and assessment. However, depending on the context and students' learning abilities, teachers would be required to determine additional learning objectives and lesson topics. Teachers should use the examples provided in this teacher guide to formulate additional learning objectives and lesson topics to meet the educational or learning needs of their students.

Identify and Teach Grade Appropriate Content

Grade appropriate content has been identified and scoped and sequenced using appropriate content organisation principles. The content is sequenced using the spiraling sequence principles. This sequencing of content will enable students to progressively learn the essential knowledge, skills, values and attitudes as they progress further into their schooling. What students learn in previous grades is reinforced and deepens in scope with an increase in the level of complexity and difficulty in the content and learning activities. It is important to understand how the content is organised so that grade appropriate content and learning activities can be selected, if not already embedded in the benchmarks and learning objectives, to not only help students learn and master the content, but ensure that what is taught is rigorous, challenging, and comparable.

Integrate the Core Curriculum in Lesson Planning, Instruction and Assessment

Teachers should use this teacher guide to help them integrate the core curriculum – values, cognitive and high-level skills, 21st century skills, STEAM principles and skills, and reading, writing, and communication skills in their lesson planning, instruction and assessment. All students in all subjects are required to learn and master these skills progressively through the education system.

Integrate Cognitive, High Level, and 21st Century Skills in Lesson Planning, Instruction and Assessment

Teachers should integrate the cognitive, high level and 21st century skills in their annual teaching programs, and give prominence to these skills in their lesson preparation, teaching and learning activities, performance assessment, and performance standards for measuring students' proficiency on these skills. Social Science addresses the skills and processes of geography, civic and cultural literacy, historical and economical literacy and global awareness. Thus, students will be able to make informed decisions, problem-solving and management knowledge, skills, values and attitudes in Social Science. This enables them to function effectively in the work and higher education environments as productive and useful citizens of a culturally diverse and democratic society in an interdependent world.

In addition, it envisages all students attaining expected proficiency levels in these skills and will be ready to pursue careers and higher education academic programs that demand these skills, and use them in their everyday life after they leave school at the end of Grade 12. Teachers should use the teacher guide to help them to effectively embed these skills, particularly in their lesson planning and in the teaching and learning activities as well as in the assessment of students' application of the skills.

Integrate Social Science Values and Attitudes in Lesson Planning, Instruction and Assessment

In Social Science, students are expected to learn, promote and use work, relationship, peace, health, social, personal, family, community, national and global values in the work and study environments as well as in their conduct as community, national and global citizens. Teachers should draw from the information and suggestions provided in the syllabus and teacher guide to integrate values and attitudes in their lesson planning, instruction, and assessment. They should report on students' progression towards internalizing different values and attitudes and provide additional support to students who are yet to reach the internalization stage to make positive progress towards this level.

Integrate Science, Technology, Engineering, Arts and Mathematics (STEAM) Principles and Skills in Lesson Planning, Instruction and Assessment

Teachers should draw from both the syllabus and teacher guide in order to help them integrate STEAM principles and skills, and methodologies in their lesson planning, instruction and assessment. STEAM teaching and learning happens both inside and outside of the classroom. Effective STEAM teaching and learning requires both the teacher and the student to participate as core investigators and learners, and to work in partnership and collaboration with

relevant stakeholders to achieve maximum results. Teachers should use the syllabus, teacher guides and other resources to guide them to plan and implement this and other innovative and creative approaches to STEAM teaching and learning to make STEAM principles and skills learning fun and enjoyable and, at the same time, attain the intended quality of learning outcomes.

Identify and Use Grade and Context Appropriate, Innovative, Differentiated and Creative Teaching and Learning Methodologies

SBC is an eclectic curriculum model. It is an amalgamation of strengths of different curriculum types, including behavioural objectives, outcomes, and competency. Its emphasis is on students attaining clearly defined, measurable, observable and attainable learning standards, i.e., the expected level of education quality. Proficiency (competency) standards are expressed as performance standards/criteria and evidence outcomes, that is, what all students are expected to know (content) and do (application of content in real life or related situations) to indicate that they are meeting, have met or exceeded the learning standards. The selection of grade and contextually appropriate teaching and learning methodologies is critical to enabling all students to achieve the expected standard or quality of education. Teaching and learning methodologies must be aligned to the content, learning objective, and performance standard in order for the teacher to effectively teach and guide students towards meeting the performance standard for the lesson. They should be equitable and socially inclusive, differential, student-centred, and lifelong. They should enable STEAM principles and skills to be effectively taught and learned by students. Teachers should use the teacher guide to help them make informed decisions when selecting the types of teaching and learning methodologies to use in their teaching of the subject content, including STEAM principles and skills.

Plan Standards-Based Lessons

SBC lesson planning is quite difficult to do. However, this will be easier with more practice and experience over time. Effective SBC lesson plans must meet the required standards or criteria so that the learning objectives and performance standards are closely aligned to attain the expected learning outcomes. Teachers should use the guidelines and standards for SBC lesson planning and examples of SBC lesson plans provided in the teacher guide to plan their lessons. When planning lessons, it is important for teachers to ensure that all SBC lesson planning standards or criteria are met. If standards are not met, instruction will not lead to the attainment of intended performance and proficiency standards. Therefore, students will not attain the national content standards and grade-level benchmarks.

Use Standards-Based Assessment

Standards-Based Assessment has a number of components. These components are intertwined and serve to measure evaluate, report, and monitor students' achievement of the national and grade-level expectations, i.e., the essential knowledge, skills, values and attitudes they are expected to master and demonstrate proficiency on. Teachers should use the information and examples on standards-based assessment to plan, assess, record, evaluate, report and monitor students' performance in relation to the learning

standards.

Make Informed Judgments About Students' Learning and Progress Towards Meeting Learning Standards

Teachers should use the teacher guide to effectively evaluate students' performance and use the evidence to help students to continuously improve their learning as well as their classroom practice.

It is important that teachers evaluate the performance of students in relation to the performance standards and progressively the grade-level benchmarks and content standards to make informed judgments and decisions about the quality of their work and their progress towards meeting the content standards or components of the standards. Evaluation should not focus on only one aspect of students' performance. It should aim to provide a complete picture of each student's performance. The context, inputs, processes, including teaching and learning processes, and the outcomes should be evaluated to make an informed judgment about each student's performance. Teachers should identify the causal factors for poor performance, gaps in students learning, gaps in teaching, teaching and learning resource constraints, and general attitude towards learning. Evidence-based decisions can then be made regarding the interventions for closing the gaps to allow students to make the required progress towards meeting grade-level and national expectations.

Prepare Students' Performance Reports

Reporting of students' performance and progress towards the attainment of learning standards is an essential part of SBC assessment. Results of students' performance should be communicated to particularly the students and their parents to keep them informed of students' academic achievements and learning challenges as well as what needs to be done to ensure the students' make positive progress towards meeting the proficiency standards and achieving the desired level of education quality. Teachers should use the information on the reporting of students' assessment results and the templates provided to report the results of students' learning.

Monitor Students' Progress Towards Meeting the National Content Standards and Grade-Level Benchmarks

Monitoring of students' progress towards the attainment of learning standards is an essential component of standards-based assessment. It is an evidence-based process that involves the use of data from students' performance assessments to make informed judgments about students' learning and proficiency on the learning standards or their components, identify gaps in students' learning and the causal factors, set clear learning improvement targets, and develop effective evidence-based strategies (including preplanning and re-teaching of topics), set clear timeframes, and identify measures for measuring students' progress towards achieving the learning targets.

Teachers should use the teacher guide to help them use data from students' performance assessments to identify individual students' learning weaknesses and develop interventions, in collaboration with each student and his/her parents or guardians, to address the weaknesses and monitor their progress

towards meeting the agreed learning goals.

Develop Additional Benchmarks

Teachers can develop additional benchmarks using the examples in the teacher guide to meet the learning needs of their students and local communities. However, these benchmarks will not be nationally assessed as these are not comparable. They are not allowed to set their own content standards or manipulate the existing ones. The setting of national content standards is done at the national level to ensure that required learning standards are standardised, maintained and monitored to sustain the required level of education quality.

Avoid Standardisation

The teaching and learning strategies by means of lesson plans, lesson objectives and assessment should not be standardised when implementing the Social Science curriculum. SBC does not mean that the content, lesson objectives, teaching and learning strategies, and assessment are standardised. This is a misconception and any attempt to standardise the components of curriculum without due consideration of the teaching and learning contexts, children's backgrounds and experiences, and different abilities and learning styles of children will be counterproductive. It will hinder students from achieving the expected proficiency standards and hence, high academic standards and the desired level of education quality. That is, they should not be applied across all contexts and with all students, without considering the educational needs and the characteristics of each context. Teachers must use innovative, creative, culturally relevant, and differentiated teaching and learning approaches to teach the curriculum and enable their students to achieve the national content standards and grade-level benchmarks. And enable all students to experience success in learning the curriculum and achieve high academic standards.

The teaching and learning and assessment strategies provided in this teacher guide are not fixed and can be changed. Teachers should use the information and examples provided in the teacher guide to guide them to develop, select, and use grade, context, and learner appropriate content, learning objectives, teaching and learning strategies, and performance assessment and standards. SBC is evidence-based hence decisions about the content, learning outcomes, teaching and learning strategies, students' performance, and learning interventions should be based on evidence. Teaching and learning should be continuously improved and effectively targeted using evidence from students' assessment and other sources.

Syllabus and Teacher Guide Alignment

A teacher guide is a framework that describes how to translate the content standards and benchmarks (learning standards) outlined in the syllabus into units and topics, learning objectives, lesson plans, teaching and learning strategies, performance assessment, and measures for measuring students' performance (performance standards). It expands the content overview and describes how this content identified in the content standards and their components (essential KSVAs) can be translated into meaningful and evidence-based teaching topics and learning objectives for lesson planning, instruction and assessment. It also describes and provides examples of how to evaluate and report on students' attainment of the learning standards, and use evidence from the assessment of students' performance to develop evidence-based interventions to assist students who are making slow progress towards meeting the expected proficiency levels to improve their performance.

Grade 11 Social Science comprises of the Syllabus and Teacher Guide. These two documents are closely aligned, complimentary and mutually beneficial.

They are the essential focal points for teaching and learning the essential Social Science knowledge, skills, values and attitudes.

Syllabus and teacher guide alignment	
Syllabus Outlines the ultimate aim and goals, and what to teach and why teach it	Teacher Guide Describes how to plan, teach, and assess students' performance
<ul style="list-style-type: none"> - Overarching and SBC principles - Content overview - Core curriculum - Essential knowledge, skills, values and attitudes - Strands and units - Evidence outcomes - Content standards and grade-level benchmarks - Overview of assessment, evaluation, and reporting 	<ul style="list-style-type: none"> - Determine topics for lesson planning, instruction and assessment - Formulate learning objectives - Plan SBC lesson plans - Select teaching and learning strategies - Implement SBC assessment and evaluation - Implement SBC reporting and monitoring

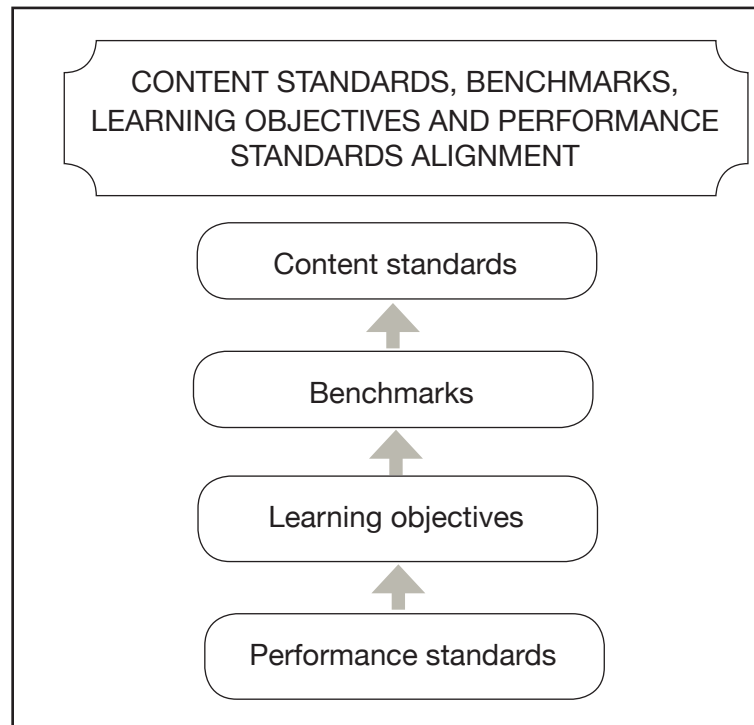
The syllabus outlines the ultimate aim and goals of SBE and SBC, what is to be taught and why it should be learned by students, the underlying principles and articulates the learning and proficiency standards that all students are expected to attain. On the other hand, the teacher guide expands on what is outlined in the syllabus by describing the approaches or the how of planning, teaching, learning, and assessing the content so that the intended learning outcomes are achieved.

This teacher guide should be used in conjunction with the syllabus. Teachers should use these documents when planning, teaching and assessing Grade 11 Social Science content.

Teachers will extract information from the syllabus (e.g., content standards and grade-level benchmarks) for lesson planning, instruction and is for measuring students' attainment of a content standard as well as progress to the next grade of schooling.

Learning and performance standards alignment

Content standards, benchmarks, learning objectives, and performance standards are very closely linked and aligned. There is a close linear relationship between these standards. Students' performance on a significant aspect of a benchmark (KSVA) is measured against a set of performance standards or criteria to determine their level of proficiency using performance assessment. Using the evidence from the performance assessment, individual student's proficiency on the aspect of the benchmark assessed and progression towards meeting the benchmark and hence the content standard are then determined.



Effective alignment of these learning standards and all the other components of PNG SBE and SBC (ultimate aim and goals, overarching, SBC and subject-based principles, core curriculum, STEAM, and cognitive, high level, and 21st century skills) is not only critical but is also key to the achievement of high academic standards by all students and the intended level of education quality. It is essential that teachers know and can do standards alignment when planning, teaching, and assessing students' performance so that they can effectively guide their students towards meeting the grade-level benchmarks (grade expectations) and subsequently the content standards (national expectations).

Learning and Performance Standards

Standards-Based Education (SBE) and Standards-Based Curriculum (SBC) are underpinned by the notion of quality. Standards define the expected level of education quality that all students should achieve at a particular point in their schooling. Students' progression and achievement of education standard(s) are measured using performance standards or criteria to determine their demonstration or performance on significant aspects of the standards and therefore their levels of proficiency or competency. When they are judged to have attained proficiency on a content standard or benchmark or components of these standards, they are then deemed to have met the standard(s). That is, achieved the intend level of education quality.

Content standards, benchmarks, and learning objectives are called learning standards while performance and proficiency standards (evidence outcomes) can be categorised as performance standards. These standards are used to measure students' performance, proficiency, progression and achievement of the desired level of education quality. Teachers are expected to understand and use these standards for lesson planning, instruction and assessment.

Content standards

Content standards are evidence-based, rigorous and comparable regionally and globally. They have been formulated to target critical social, economic, political, cultural, environmental, and employable skills gaps identified from a situational analysis. They were developed using examples and experiences from other countries and best practice, and contextualized to PNG contexts.

Content standards describe what (content - knowledge, skills, values, and attitudes) all students are expected to know and do (how well students must learn and apply what is set out in the content standards) at each grade-level before proceeding to the next grade. These standards are set at the national level and thus cannot be edited or changed by anyone except the National Subject-Based Standards Councils. Content Standards:

- are evidence-based;
- are rigorous and comparable to regional and global standards;
- are set at the national level;
- state or describe the expected levels of quality or achievement;
- are clear, measurable and attainable;
- are linked to and aligned with the ultimate aim and goals of SBE and SBC and overarching and SBC principles;
- delineate what matters, provide clear expectations of what students should progressively learn and achieve in school, and guide lesson planning, instruction, assessment;
- comprise knowledge, skills, values, and attitudes that are the basis for quality education;
- provide teachers a clear basis for planning, teaching, and assessing lessons;

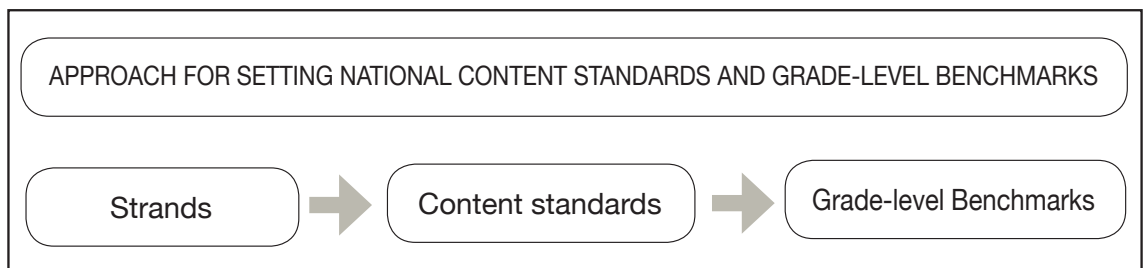
- provide provinces, districts, and schools with a clear focus on how to develop and organise their instruction and assessment programs as well as the content that they will include in their curriculum.

Benchmarks

Benchmarks are derived from the content standards and benchmarked at the grade-level. Benchmarks are specific statements of what students should know (i.e., essential knowledge, skills, values or attitudes) at a specific grade-level or school level. They provide the basis for measuring students' attainment of a content standard as well as progress to the next grade of schooling.

Grade-level benchmarks:

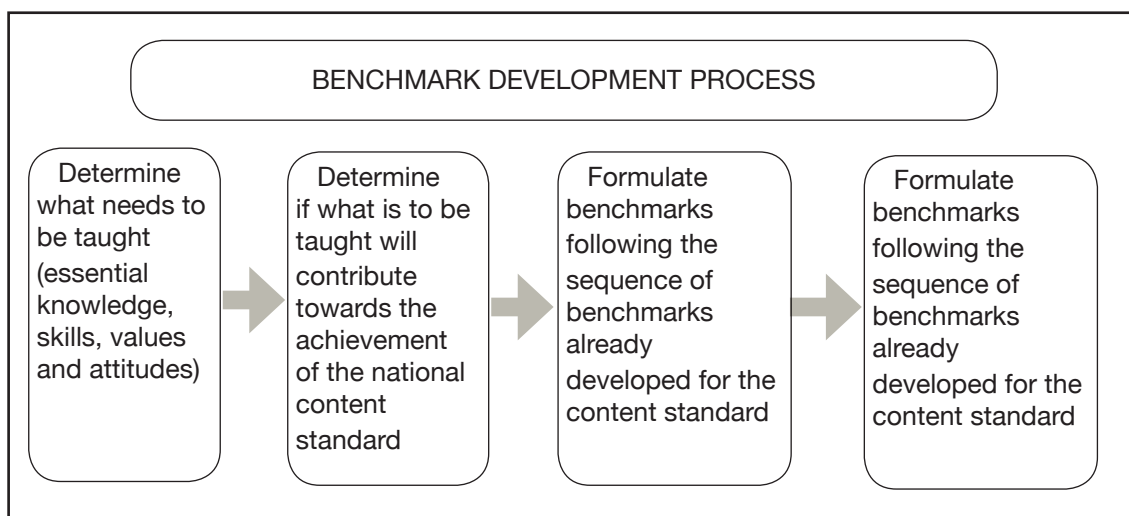
- are evidenced-based;
- are rigorous and comparable to regional and global standards;
- are set at the grade level;
- are linked to the national content standards;
- are clear, measurable, observable and attainable;
- articulate grade level expectations of what students are able to demonstrate to indicate that they are making progress towards attaining the national content standards;
- provide teachers a clear basis for planning, teaching, and assessing lessons;
- state clearly what students should do with what they have learned at the end of each school-level;
- enable students' progress towards the attainment of national content standards to be measured, and
- enable PNG students' performance to be compared with the performance of PNG students with students in other countries.



Development of additional benchmarks

Teachers should develop additional benchmarks to meet the learning needs of their students. They should engage their students to learn about local, provincial, national and global issues that have not been catered for in the grade-level benchmarks but are important and can enhance students' understanding and application of the content. However, it is important to note that these benchmarks will not be nationally examined as they are not comparable. Only the benchmarks developed at the national level will be tested. This does not mean that teachers should not develop additional

benchmarks. An innovative, reflect, creative and reflexive teacher will continuously reflect on his/her classroom practice and use evidence to provide challenging, relevant, and enjoyable learning opportunities for his/her students to build on the national expectations for students. Teachers should follow the following process when developing additional grade-level benchmarks.



Learning objectives

Learning or instructional objectives are precise statements of educational intent. They are formulated using a significant aspect or a topic derived from the benchmark, and is aligned with the educational goals, content standards, benchmarks, and performance standards. Learning objectives are stated in outcomes language that describes the products or behaviours that will be provided by students. They are stated in terms of measurable and observable student behaviour.

For example, students will be able to identify all the main towns of PNG using a map.

Performance standards

Performance Standards are concrete statements of how well students must learn what is set out in the content standards, often called the “**be able to do**” of “**what students should know and be able to do.**” Performance standards are the indicators of quality that specify how competent a student’s demonstration or performance must be. They are explicit definitions of what students **must do to demonstrate proficiency or competency at a specific level on the content standards.**

Performance standards:

- measure students’ performance and proficiency (**using performance indicators**) in the use of a specific knowledge, skill, value, or attitude in real life or related situations
- provide the basis (**performance indicators**) for evaluating, reporting and monitoring students’ level of proficiency in use of a specific knowledge, skills, value, or attitude

- are used to plan for individual instruction to help students not yet meeting expectations (**desired level of mastery and proficiency**) to make adequate progress towards the full attainment of benchmarks and content standards
- are used as the basis for measuring students' progress towards meeting grade-level benchmarks and content standards.

Proficiency standards

Proficiency standards describe what all students in a particular grade or school level can do at the end of a strand, or unit. These standards are sometimes called evidence outcomes because they indicate if students can actually apply or use what they have learnt in real life or similar situations. They are also categorized as benchmarks because that is what all students are expected to do before exiting a grade or are deemed ready for the next grade.

Core Curriculum

A core set of common learnings (knowledge, skills, values, and attitudes) are integrated into the content standards and grade-level benchmarks for all subjects. This is to equip all students with the most essential and in-demand knowledge, skills, and dispositions they will need to be successful in modern/postmodern work places, higher-education programs and to be productive, responsible, considerate, and harmonious citizens. Common set of learnings are spirally sequenced from Preparatory - Grade 12 to deepen the scope and increase the level of difficulty in the learning activities so that what is learned is reinforced at different grade levels.

The core curriculum includes:

- cognitive (thinking) skills (refer to the syllabus for a list of these skills);
- reasoning, decision-making and problem-solving skills
- high level thinking skills (analysis, synthesis and evaluation skills);
- 21st century skills (refer to illustrative list in *Appendix 2*);
- reading, writing and communication skills (literacy skills);
- STEAM principles and skills;
- essential values and attitudes (Core personal and social values, and sustaining values), and
- spiritual values and virtues.

The essential knowledge, skills, values and attitudes comprising the core curriculum are interwoven and provide an essential and holistic framework for preparing all students for careers, higher education and citizenship.

All teachers are expected to include the core learnings in their lesson planning, teaching, and assessment of students in all their lessons. They are expected to foster, promote and model the essential values and attitudes as well as the spiritual values and virtues in their conduct, practice, appearance, and their relationships and in their professional and personal lives. In addition, teachers are expected to mentor, mould and shape each student to evolve and possess the qualities envisioned by society.

Core values and attitudes must not be taught in the classroom only; they must also be demonstrated by students in real life or related situations inside and outside of the classroom, at home, and in everyday life. Likewise, they must be promoted, fostered and modeled by the school community and its stakeholders, especially parents. A whole school approach to values and attitudes teaching, promoting and modeling is critical to students and the whole school community internalising the core values and attitudes and making them habitual in their work and school place, and in everyday life. Be it work values, relationship values, peace values, health values, personal and social values, or religious values, teachers should give equal prominence to all common learnings in their lesson planning, teaching, assessment, and learning interventions. Common learnings must be at the heart of all teaching and extracurricular programs and activities.

Science, Technology, Engineering, Arts and Mathematics

STEAM education is an integrated, multidisciplinary approach to learning that uses science, technology, engineering, arts and mathematics as the basis for inquiring about how STEAM has and continues to change and impact the social, political, economic, cultural and environmental contexts and identifying and solving authentic (real life) natural and physical environmental problems by integrating STEAM-based principles, cognitive, high level and 21st century skills and processes, and values and attitudes.

Social Science is focused on both goals of STEAM rather than just the goal of problem-solving. This is to ensure that all students are provided opportunities to learn, integrate, and demonstrate proficiency on all essential STEAM principles, processes, skills, values and attitudes to prepare them for careers, higher education and citizenship.

Objectives

Students will be able to:

- examine and use evidence to draw conclusions about how STEAM has and continues to change the social, political, economic, cultural and environmental contexts.
- investigate and draw conclusions on the impact of STEAM solutions to problems on the social, political, economic, cultural and environmental contexts.
- identify and solve problems using STEAM principles, skills, concepts, ideas and process.
- identify, analyse and select the best solution to address a problem.
- build prototypes or models of solutions to problems.
- replicate a problem solution by building models and explaining how the problem was or could be solved.
- test and reflect on the best solution chosen to solve a problem.
- collaborate with others on a problem and provide a report on the process of problem-solving used to solve the problem.
- use skills and processes learnt from lessons to work on and complete STEAM projects.
- demonstrate STEAM principles, skills, processes, concepts and ideas through simulation and modelling.
- explain the significance of values and attitudes in problem-solving.

Content overview

STEAM is a multidisciplinary and integrated approach to understanding how science, technology, engineering, arts and mathematics shape and are shaped by our material, intellectual, cultural, economic, social, political and environmental contexts. And for teaching students the essential and in-demand cognitive, high level and 21st century skills, values and attitudes, and empower them to effectively use these skills and predispositions to identify and solve problems relating to the natural and physical environments as well as the impact of STEAM-based solutions on human existence and livelihoods, and on the social, political, economic, cultural, and environmental systems.

STEAM disciplines have and continue to shape the way we perceive knowledge and reality, think and act, our values, attitudes, and behaviours, and the way we relate to each other and the environment. Most of the things we enjoy and consume are developed using STEAM principles, skills, process, concepts and ideas. Things humans used and enjoyed in the past and at present are developed by scientists, technologists, engineers, artists and mathematicians to address particular human needs and wants. Overtime, more needs were identified and more products were developed to meet the ever changing and evolving human needs. What is produced and used is continuously reflected upon, evaluated, redesigned, and improved to make it more advanced, multipurpose, fit for purpose, and targeted towards not only improving the prevailing social, political, economic, cultural and environmental conditions but also to effectively respond to the evolving and changing dynamics of human needs and wants. And, at the same time, solutions to human problems and needs are being investigated and designed to address problems that are yet to be addressed and concurred. This is an evolving and ongoing problem-solving process that integrates cognitive, high level, and 21st century skills, and appropriate values and attitudes.

STEAM is a significant framework and focal point for teaching and guiding students to learn, master and use a broad range of skills and processes required to meet the skills demands of PNG and the 21st century. The skills that students will learn will reflect the demands that will be placed upon them in a complex, competitive, knowledge-based, information-age, technology-driven economy and society. These skills include cognitive (critical, synthetic, creative, reasoning, decision-making, and problem-solving) skills, high level (analysis, synthesis and evaluation) skills and 21st century skills. Knowledge-based information and technology driven economies require knowledgeable workers and not technicians. Knowledge workers are lifelong learners, are problem solvers, innovators, creators, critical and creative thinkers, reflective practitioners, researchers (knowledge producers rather than knowledge consumers), solutions seekers, outcomes oriented, evidence-based decision makers, and enablers of improved and better outcomes for all.

STEAM focuses on the skills and processes of problem-solving. These skills and processes are at the heart of the STEAM movement and approach to not only problem-solving and providing evidence-based solutions but also the development and use of other essential cognitive, high level and 21st century skills. These skills are intertwined and used simultaneously to gain a broader understanding of the problems to enable creative, innovative, contextually

relevant, and best solutions to be developed and implemented to solve the problems and attain the desired outcomes. It is assumed that by teaching students STEAM-based problem-solving skills and providing learning opportunities inside and outside the classroom, more students will be motivated to pursue careers and academic programs in STEAM related fields thus, closing the skills gaps and providing a pool of cadre of workers required by technology, engineering, science, and mathematics-oriented industries.

Although, STEAM focuses on the development and application of skills in authentic (real life) contexts, for example the use of problem-solving skills to identify and solve problems relating to the natural and physical worlds, it does not take into account the significant influence values and attitudes have on the entire process of problem-solving. Values and attitudes are intertwined with knowledge and skills. Knowledge, skills, values and attitudes are inseparable. Decisions about skills and processes of skills development and application are influenced by values and attitudes (mindset) that people hold. In the same light, the use of STEAM principles, processes and skills to solve problems in order to achieve the outcomes envisaged by society are influenced by values and the mindset of those who have identified and investigated the problem as well as those who are affected by the problem and will benefit from the outcome.

STEAM problem-solving methods and approaches

Problem-solving involves the use of problem-solving methods and processes to identify and define a problem, gather information to understand its causes, draw conclusions, and use the evidence to design and implement solutions to address it.

Even though there are many different problem-solving methods and approaches, they share some of the steps of problem-solving, for example:

1. identifying the problem;
2. understanding the problem by collecting data;
3. analysing and interpret the data;
4. drawing conclusions;
5. using data to consider possible solutions;
6. selecting the best solution;
7. testing the effectiveness of the solution by trialling and evaluating it, and
8. reviewing and improve the solution.

STEAM problem-solving processes go from simple and technical to advance and knowledge-based processes. However, regardless of the type of process used, students should be provided opportunities to learn the essential principles and processes of problem-solving and, more significantly, to design and create a product that addresses a real problem and meets a human need.

The following are some of the STEAM problem-solving processes.

Engineering and technology problem-solving methods and approaches

Engineering and technology problem-solving methods are used to identify and solve problems relating to the physical world using the design process. The following are some of the methods and approaches used to solve engineering and technology related problems.

Parts substitution

It is the most basic of the problem-solving methods. It simply requires the parts to be substituted until the problem is solved.

Diagnostics

After identifying a problem, the technician would run tests to pinpoint the fault. The test results would be used either as a guide for further testing or for replacement of a part, which also need to be tested. This process continues until the solution is found and the device is operating properly.

Troubleshooting

Troubleshooting is a form of problem-solving, often applied to repair failed products or processes.

Reverse engineering

Reverse engineering is the process of discovering the technological principles underlying the design of a device by taking the device apart, or carefully tracing its workings or its circuitry. It is useful when students are attempting to build something for which they have no formal drawings or schematics.

Divide and conquer

Divide and conquer is the technique of breaking down a problem into sub-problems, then breaking the sub-problems down even further until each of them is simple enough to be solved. Divide and conquer may be applied to all groups of students to tackle sub-problems of a larger problem, or when a problem is so large that its solution cannot be visualised without breaking it down into smaller components.

Extreme cases

Considering “extreme cases” – envisioning the problem in a greatly exaggerated or greatly simplified form, or testing using extreme condition – can often help to pinpoint a problem. An example of the extreme-case method is purposely inputting an extremely high number to test a computer program.

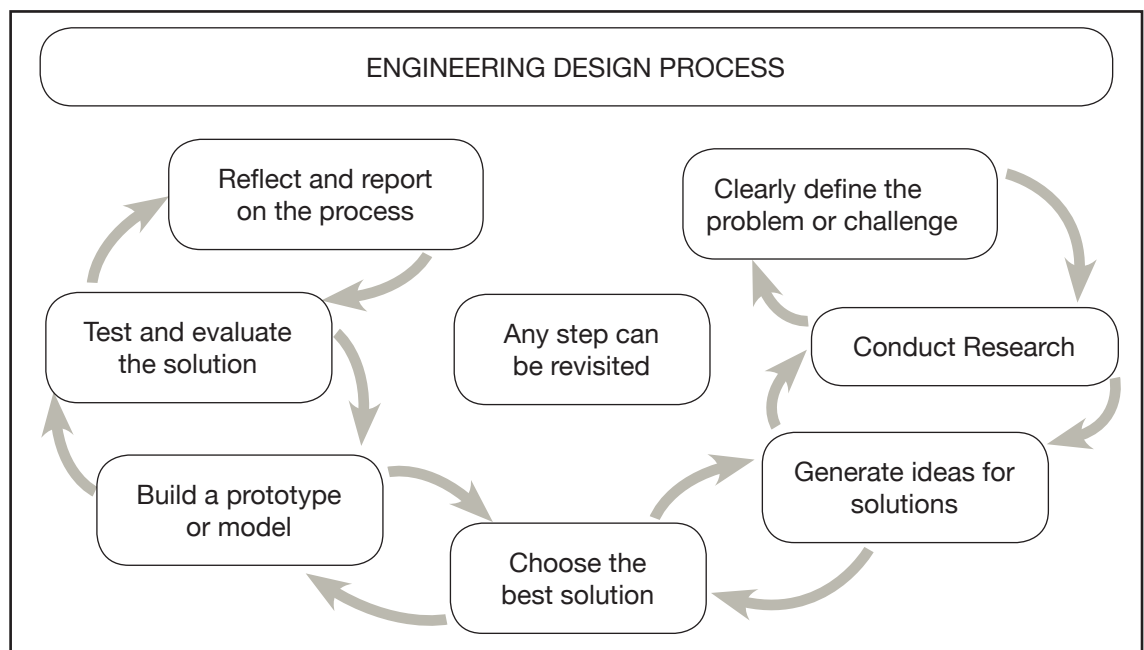
Trial and error

The trial and error method involves trying different approaches until a solution is found. It is often used as a last resort when other methods have been exhausted.

Engineering design process

Technological fields use the engineering design process to identify and define the problem or challenge, investigate the problem, collect and analyse data, and use the data to formulate potential solutions to the problem, analyse each of the solutions in terms of its strengths and weaknesses, and choose the best solution to solve the problem. It is an open-ended problem-solving process that involves the full planning and development of products or services to meet identified needs. It involves a sequence of steps such as the following:

1. Analysing the context and background, and clearly defining the problem.
2. Conducting research to determine design criteria, financial or other constraints, and availability of materials.
3. Generating ideas for potential solutions, using processes such as brainstorming and sketching.
4. Choosing the best solution.
5. Building a prototype or model.
6. Testing and evaluate the solution.
7. Repeating steps as necessary to modify the design or correct faults.
8. Reflecting and report on the process.



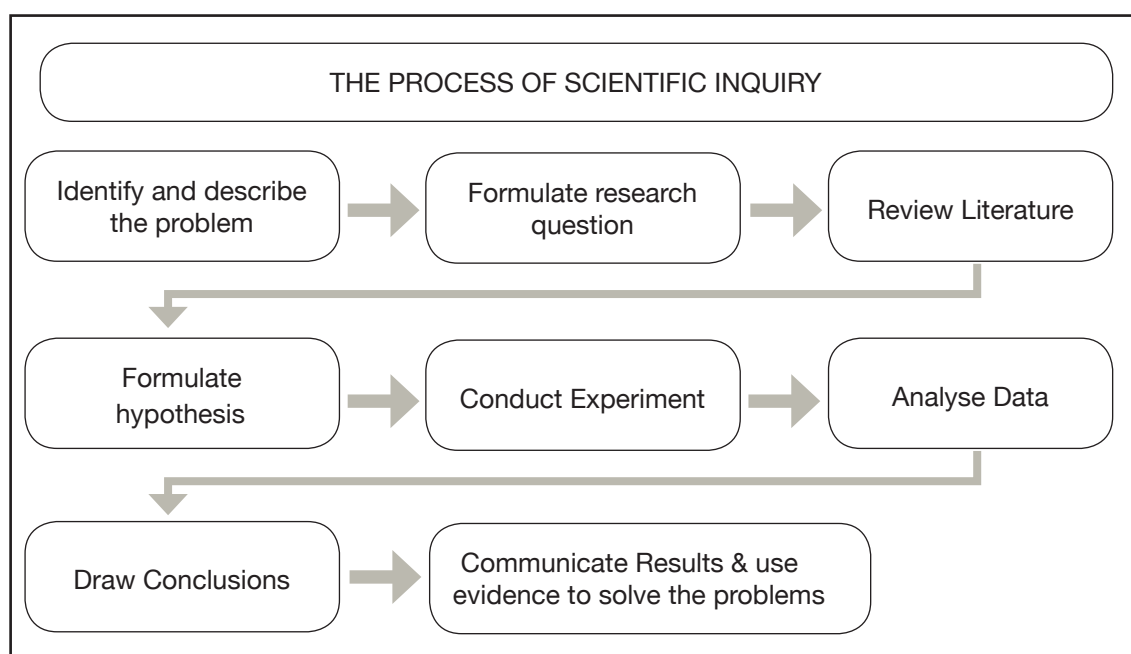
The scientific method and approach to problem-solving

Science uses predominantly the quantitative-scientific inquiry process to investigate, understand, and make informed decisions about problems relating to the natural world. The steps in the process vary, depending on the purpose of the inquiry and the types of questions asked.

There are six basic science process skills:

1. Observation
2. Communication
3. Classification
4. Measurement
5. Inference
6. Prediction

These processes are at the heart of the scientific inquiry and problem-solving process.



The steps above should be taught and demonstrated by students separately and jointly before they implement the inquiry process. Students should be guided through every step of the process so that they can explain it and its importance, and use the steps and the whole process proficiently to identify, investigate and solve problems. A brief explanation and examples of each step are provided below to help teachers plan and teach each step. Students should be provided with opportunities to practice and reflect on each step until they demonstrate the expected level of proficiency before moving on to the next one.

Step 1: Identify and describe the problem

Problems are identified mainly from observations and the use of the five senses – smell, sight, sound, touch and taste. Students should be guided and provided opportunities to identify natural and physical environment problems using their five senses and describe what the problem is and its likely causes.

Example - Observation

- i. When I turn on a flashlight using the on/off switch, light comes out of one end.

Step 2: Formulate research question

After the problem is identified and described, the question to be answered is then formulated. This question will guide the scientist in conducting research and experiments.

Example - Question

- i. What makes light comes out of a flash light when I turn it on?

Step 3: Review literature

It is more likely that the research problem and question have already been investigated and reported by someone. Therefore, after asking the question, the scientist spends some time reading and reviewing papers and books on past research and discussions to learn more about the problem and the question asked to prepare him/her for his own research. Conducting literature review helps the scientist to better understand his/her research problem, refine the research question and decide on the experiment/research approach before the experiment is conducted,

Example - Literature review

- i. The scientist may look at the flashlight's instruction manual for tips or conduct online search on how flashlights work using the manufacturer's or relevant websites. The scientist may even analyse information and past experiments or discoveries regarding the relationship between energy and light.

Step 4: Formulate hypothesis

With a question in mind, the researcher decides on what he/she wants to test (The question may have changed as a result of the literature review). The research will clearly state what he/she wants to find out by carrying out the experiment. He/She will make an educated guess that could answer the question or explain the problem. This statement is called a hypothesis. A hypothesis guides the experiment and must be testable.

Example – Hypothesis

- i. The batteries inside a flashlight give it energy to produce light when the flashlight is turned on.

Step 5: Conduct experiment

This step involves the design and conduct of experiment to test the hypothesis. Remember, a hypothesis is only an educated guess (a possible explanation), so it cannot be considered valid until an experiment verifies that it is valid.

Example - Experimental procedure

- i. Remove the batteries from the flashlight, and try to turn it on using the on/off switch.

Result: The flashlight does not produce light

- ii. Re-insert the batteries into the flashlight, and try to turn it on using the on/off switch.

Result: The flashlight does produce light.

- iii. Write down these results

In general, it is important to design an experiment to measure only one thing at a time. This way, the researcher knows that his/her results are directly related to the one thing he/she changed. If the experiment is not designed carefully, results may be confusing and will not tell the researcher anything about his/her hypothesis.

Researchers collect data while carrying out their experiments. Data are pieces of information collected before, during, or after an experiment. To collect data, researchers read the measuring instruments carefully. Researchers record their data in notebooks, journals, or on a computer.

Step 6: Analyse data

Once the experiment is completed, the data is then analysed to determine the results. In addition, performing the experiment multiple times can be helpful in determining the credibility of the data.

Example - Analysis

- i. Record the results of the experiment in a table.
- ii. Review the results that have been written down.

Step 7: Draw conclusions

If the hypothesis was testable and the experiment provided clear data, the scientist can make a statement telling whether or not the hypothesis was correct. This statement is known as a conclusion. Conclusions must always be backed up by data. Therefore, scientists rely heavily on data so they can make an accurate conclusion.

If the data support the hypothesis, then the hypothesis is considered correct or valid. However, if the data do not support the hypothesis, the hypothesis is considered incorrect or invalid.

Example - Valid hypothesis

- i. The flashlight did not produce light without batteries. The flashlight did produce light when batteries were inserted. Therefore, the hypothesis that batteries give the flashlight energy to produce light is valid, given that no changes are made to the flashlight during the experiment.

Example - Invalid hypothesis

- ii. The flashlight did not produce light when the batteries were inserted. Therefore, the hypothesis that batteries give the flashlight energy to produce light is invalid. In this case, the hypothesis would have to be modified to say something like, "The batteries inside a flashlight give it energy to produce light when the batteries are in the correct order and when the flashlight is turned on." Then, another experiment would be conducted to test the new hypothesis.

An invalid hypothesis is not a bad thing! Scientists learn something from both valid and invalid hypotheses. If a hypothesis is invalid, it must be rejected or modified. This gives scientists an opportunity to look at the initial observation in a new way. They may start over with a new hypothesis and conduct a new experiment. Doing so is simply the process of scientific inquiry and learning.

Step 8: Communicate findings

Scientists generally tell others what they have learned. Communication is a very important component of scientific progress and problem-solving. It gives other people a chance to learn more and improve their own thinking and experiments. Many scientists' greatest breakthroughs would not have been possible without published communication or results from previous experimentation.

Every experiment yields new findings and conclusions. By documenting both the successes and failures of scientific inquiry in journals, speeches, or other documents, scientists are contributing information that will serve as a basis for future research and for solving problems relating to both the natural and physical worlds. Therefore, communication of investigative findings is an important step in future scientific discovery and in solving social, political, economic, cultural, and environmental problems.

Example - Communication of findings

- i. Write your findings in a report or an article and share it with others, or present your findings to a group of people. Your work may guide someone else's research on creating alternative energy sources to generate light, additional uses for battery power, etc.

Artistic design

Science uses predominantly the quantitative-scientific inquiry process to investigate, understand, and make informed decisions about problems. The steps in the process vary, depending on the purpose of the inquiry and the types of questions asked. There are six basic science process skills:

The equipping and enabling of students to become proficient in a broad range of STEAM skills, processes and predispositions can also lead to the attainment of many other societal goals, including national and global development goals and aspirations. These goals include:

- sustainability goals;
- peace related goals;
- work related goals;
- academic goals;
- relationship goals;
- health goals;
- adoption and internalisation of values and attitudes accepted by society, and
- improved social, political, economic outcomes.

Even though the original purpose and the drive of STEAM was to develop a pathway to engage students in learning about, experiencing, and applying STEAM skills in real life situations to motivate and hopefully get them to pursue careers in STEAM related fields and undertake STEAM related higher education programs to meet the demand for STEAM workers, STEAM education can also be used to teach and engage students to study more broadly the impact of STEAM on the social, economic, political, intellectual, cultural and environmental contexts. This line of inquiry is more enriching, exciting, empowering and transformative.

STEAM-based lesson planning

Effective STEAM lesson planning is key to the achievement of expected STEAM outcomes. STEAM skills can be planned and taught using separate STEAM-based lesson plans or integrated into the standards-based lesson plans. To effectively do this, teachers should know how to write effective standards and STEAM-based lesson plans.

Developing STEAM-based lesson plans

Teachers should integrate STEAM content and teaching, learning and assessment strategies into their standards-based lesson plans.

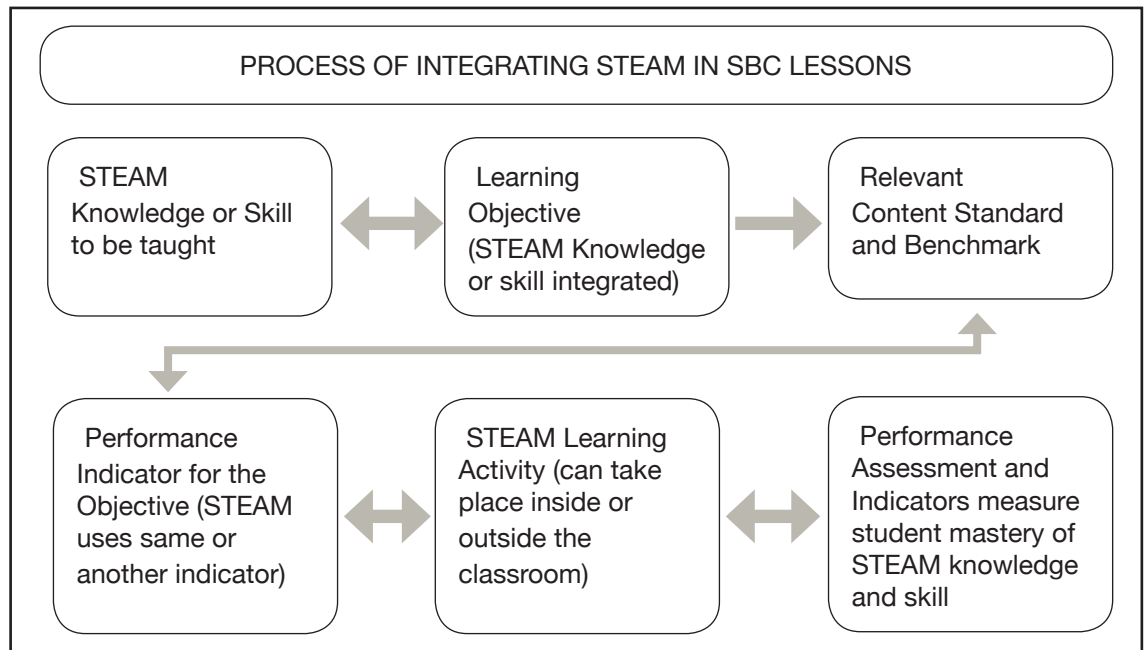
Integration of STEAM problem-solving skills into standards-based lesson plans

Knowing how to integrate STEAM problem-solving skills, principles, values and attitudes as well as STEAM teaching, learning, and assessment strategies into the standards-based lesson plans is essential for achieving the desired STEAM learning outcomes. When integrating STEAM problem-solving skills into the standards-based lesson plans, teachers should ensure that these skills are not only effectively aligned to the learning objective and performance standards, they must also be effectively taught and assessed.

STEAM principles and problem-solving skills are integrated into the content standards and grade-level benchmarks. A list of these skills, including 21st century skills, is provided in the Social Science Grades 11 & 12 Syllabus. Teachers should ensure that these skills are integrated in their standards-based lesson plans, taught and assessed to determine students' level of proficiency on each skill or specific components of the skill. Teachers should use the following process as guide to integrate STEAM principles and problem-solving skills into the standards-based lesson plans.

Teachers are expected to integrate the essential STEAM principles, processes, skills, values and attitudes described in the grade 11 benchmarks when formulating their standards-based lesson plans. Opportunities should be provided inside and outside of the classroom for students to learn, explore, model and apply what they learn in real life or related situations. These learning experiences will enable students to develop a deeper understanding of STEAM principles, processes, skills, values and attitudes and appreciate their application in real life to solve problems.

Process for integrating STEAM principles and problem-solving skills into standards-based lessons



Teachers should follow the steps given below when integrating STEAM problem-solving principles and skills into their standards-based lesson plans.

- Step 1:** Identify the STEAM knowledge or skill to be taught (From the table of KSVAs for each content standard and benchmark). This could already be captured in the learning objective stated in the standards-based lesson plan.
- Step 2:** Develop and include a performance standard or indicator for measuring student mastery of the STEAM knowledge or skill (e.g. level of acceptable competency or proficiency) if this is different from the one already stated in the lesson plan.
- Step 3:** Develop student learning activity (An activity that will provide students the opportunity to apply the STEAM knowledge or skill specified by the learning objective and appropriate statement of the standards). Activity can take place inside or outside of the classroom, and during or after school hours.
- Step 4:** Develop and use performance descriptors (standards or indicators) to analyse students' STEAM related behaviours and products (results or outcomes), which provide evidence that the student has acquired and mastered the knowledge or skill of the learning objective specified by the indicator(s) of the standard(s).

STEAM teaching strategies

STEAM education takes place in both formal and informal classroom settings. It takes place during and after school hours. It is a continuous process of inquiry, data collection, data analysis, making decisions about interventions, and implementing and monitoring interventions for improvements.

There are a variety of STEAM teaching strategies. However, teaching strategies selected must enable teachers to guide students to use the engineering and artistic design processes to identify and solve natural and physical environmental problems by designing prototypes and testing and refining them to effectively mitigate the problems identified. The following are some of the strategies that could be used to utilise the STEAM approach to solve problems and coming up with technological solutions.

1. Inquiry-Based Learning
2. Problem-Based Learning
3. Project-Based Learning
4. Collaborative Learning

Collaborative learning involves individuals from different STEAM disciplines and expertise in a variety of STEAM problem-solving approaches working together and sharing their expertise and experiences to inquire into and solve a problem.

Teachers should plan to provide students opportunities to work in collaboration and partnership with experts and practitioners engaged in STEAM related careers or disciplines to learn first-hand about how STEAM related skills, processes, concepts, and ideas are applied in real life to solve problems created by the natural and physical environments. Collaborative learning experiences can be provided after school or during school holidays to enable students to work with STEAM experts and practitioners to conduct inquiry and solve problems by developing creative, innovative and sustainable solutions. Providing real life experiences and lessons, e.g., by involving students to actually solve a scientific, technological, engineering, or mathematical, or Arts problem, would probably spark their interest in a STEAM career path.

Developing STEAM partnerships with external stakeholders e.g., higher education institutions, private sector, research and development institutions, and volunteer and community development organizations can enhance students' learning and application of STEAM problem-solving principles and skills.

1. Participatory Learning
2. Group-Based Learning
3. Task Oriented Learning
4. Action Learning
5. Experiential Learning
6. Modeling
7. Simulation

STEAM learning strategies

Teachers should include in their lesson plans STEAM learning activities. These activities should be aligned to principle or a skill planned for students to learn and demonstrate proficiency at the end of the lesson to expose students to STEAM and giving them opportunities to explore STEAM-related concepts, they will develop a passion for it and, hopefully, pursue a job in a STEAM field. Providing real life experiences and lessons, e.g., by involving students to actually solve a scientific, technological, engineering, or mathematical, or arts problem, would probably spark their interest in a STEAM career path. This is the theory behind STEAM education.

STEAM-based assessment

STEAM-based assessment is closely linked to standards-based assessment where assessment is used to assess students' level of competency or proficiency of a specific knowledge, skill, value, or attitude taught using a set of performance standards (indicators or descriptors). The link also includes the main components such as the purpose, the assessment principles and assessment strategies and tools.

In STEAM-based assessment, assessments are designed for what students should know and be able to do. In STEAM learning students are assessed in a variety of ways including portfolios, project/problem-based assessments, backwards design, authentic assessments, or other student-centered approaches.

When planning and designing the assessment, teachers should consider the authenticity of the assessment by designing an assessment that relates to a real world task or discipline specific attributes (such as simulation, role play, placement assessment, live projects, debates) which should make the activity meaningful to the students, and therefore be motivating as well as developing employability skills and discipline specific attributes.

Effective STEAM-based assessment strategies

The following sections describe six assessment tools and strategies shown to impact teaching and learning as well as help teachers foster a 21st century learning environment in their classrooms:

1. Rubrics
2. Performance-Based Assessments (PBAs)
3. Portfolios
4. Student self-assessment
5. Peer-assessment
6. Student Response Systems (SRS).

Although the list does not include all innovative assessment strategies, it includes what we think are the most common strategies, and ones that may be particularly relevant to the educational context of developing countries in this 21st century. Many of the assessment strategies currently in use fit under one or more of the categories discussed. Furthermore, it is important to note that these strategies also connect in a variety of ways.

1. Rubrics

Rubrics are both a tool to measure students' knowledge and ability as well as an assessment strategy. A rubric allows teachers to measure certain skills and abilities not measurable by standardized testing systems that assess discrete knowledge at a fixed moment in time. Rubrics are also frequently used as part of other assessment strategies (portfolios, performances, projects, peer-review and self-assessment). They will be discussed in those sections as well.

2. Performance-Based Assessments

Performance-Based Assessments (PBA), also known as project-based or authentic assessments, are generally used as a summative evaluation strategy to capture not only what students know about a topic, but if they have the skills to apply that knowledge in a “real-world” situation. By asking them to create an end product, PBA pushes students to synthesize their knowledge and apply their skills to a potentially unfamiliar set of circumstances that is likely to occur beyond the confines of a controlled classroom setting.

The implementation of performance-based assessment strategies can also impact other instructional strategies in the classroom.

3. Portfolio Assessment

Portfolios are a collection of student work gathered over time that is primarily used as a summative evaluation method. The most salient characteristic of the portfolio assessment is that rather than being a snapshot of a student's knowledge at one point in time (like a single standardized test), it highlights student effort, development, and achievement over a period of time; portfolios measure a student's ability to apply knowledge rather than simply regurgitate. They are considered both student-centered and authentic assessments of learning.

4. Self-assessment

While the previous assessment tools and strategies listed in this report generally function as summative approaches, self-assessment is generally viewed as a formative strategy, rather than one used to determine a student's final grade. Its main purpose is for students to identify their own strengths and weaknesses and to work to make improvements to meet specific criteria. Self-assessment occurs when students judge their own work to improve performance as they identify discrepancies between current and desired performance. In this way, self-assessment aligns well with standards-based education because it provides clear targets and specific criteria against which students or teachers can measure learning.

Self-assessment is used to promote self-regulation, to help students reflect on their progress and to inform revisions and improvements on a project or paper. In order for self-assessment to be truly effective four conditions must be in place: the self-assessment criteria is negotiated between teachers and students, students are taught how to apply the criteria, students receive feedback on their self-assessments and teachers help students use assessment data to develop an action plan.

5. Peer assessment

Peer assessment, much like self-assessment, is a formative assessment strategy that gives students a key role in evaluating learning. Peer assessment approaches can vary greatly but, essentially, it is a process for learners to consider and give feedback to other learners about the quality or value of their work. Peer assessments can be used for a variety of products like papers, presentations, projects, or other skilled behaviours. Peer assessment is understood as more than only a grading procedure and is also envisioned as teaching strategy since engaging in the process develops both the assessor and assessee's skills and knowledge.

The primary goal for using peer assessment is to provide feedback to learners. This strategy may be particularly relevant in classrooms with many students per teacher since student time will be more plentiful than teacher time. Although any single student's feedback may not be rich or in-depth as teacher's feedback, the research suggests that peer assessment can improve learning.

6. Student Response System

Student response system(SRS), also known as classroom response system (CRS) or audience response system (ARS) is a general term that refers to a variety of technology-based formative assessment tools that can be used to gather student-level data instantly in the classroom through the combination of hardware, (voice recorders, PC, internet connection, projector and screen) and software.

Teachers can ask students a wide range of questions (both closed and open ended), where students can respond quickly and anonymously, and the teacher can display the data immediately on graphs. The use of technology also includes a use of video which examines how a range of strategies can be used to assess students' understanding.

The value of SRS comes from teachers analyzing information quickly and then devising real-time instructional solutions to maximize student learning. This includes a suggested approach to help teachers and trainers assess learning.

Curriculum Integration

What is Curriculum Integration?

Curriculum integration is making connections in learning across the curriculum. The ultimate aim of curriculum integration is to act as a bridge to increase students' achievement and engage in relevant curriculum (*Susan M. Drake and Rebecca C. Burns 2008*).

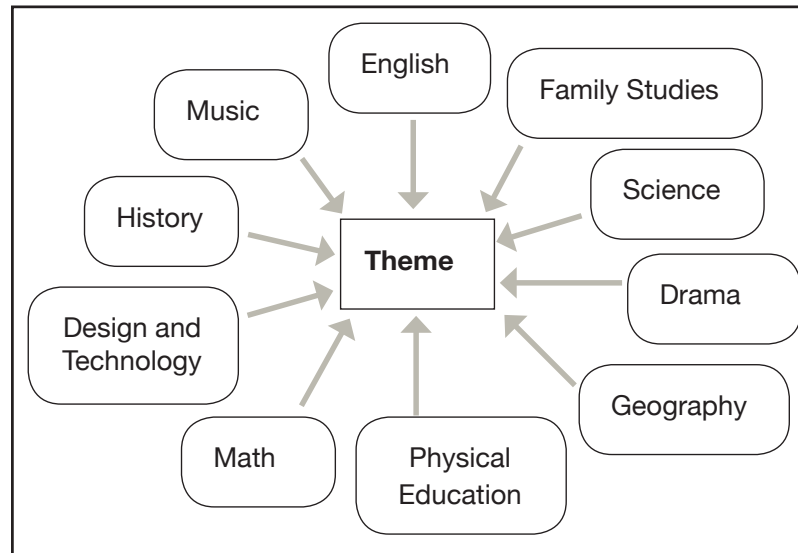
Teachers must develop intriguing curriculum by going beyond the traditional teaching of content based or fragmented teaching to one who is knowledge based and who should be perceived as a 21st century innovative educator. Curriculum integration is a holistic approach to learning thus curriculum integration in PNG SBC will have to equip students with the essential knowledge, skills, values and attitudes that are deemed 21st century.

There are three approaches that PNG SBC will engage to foster conducive learning for all its children whereby they all can demonstrate proficiency at any point of exit. Adapting these approaches will have an immense impact on the lives of these children thus they can be able to see themselves as catalyst of change for a competitive PNG. Not only that but they will be comparable to the world standards and as global citizens.

Engaging these three approaches in our curriculum will surely sharpen the knowledge and ability of each child who will foresee themselves as assets through their achievements and thus contribute meaningfully to their country. They themselves are the agents of change. Integrated learning will bear forth a generation of knowledge based populace who can solve problems and make proper decisions based on evidence. Thus, PNG can achieve its goals like the Medium Term Development Goals (MTDG) and aims such as the Vision 2050 for a happy, healthy and wealthy society whereby, all its citizens should have access to and fair distribution to income, shelter, health, education and general goods and services thus improving the general standard of living for PNG in the long run.

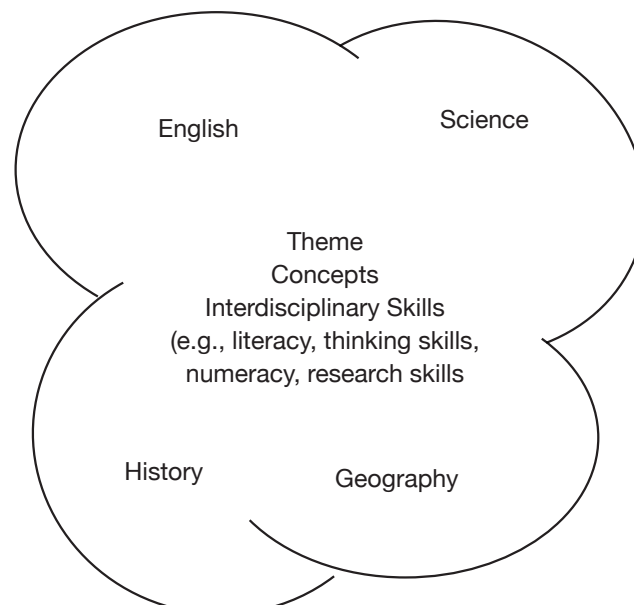
1. Multidisciplinary approach

In this approach, learning involves a theme or concept that will be taught right across all subject areas of study by students. That is, content of a particular theme will be taught right across all subjects as shown in the diagram below. For instance, if the theme is global warming, subject areas create lessons or assessment as per their subjects around this theme. Social Science will address this issue and Science and all other subject will do likewise.



2. Interdisciplinary approach

This approach addresses learning similarly to the multidisciplinary approach of integrated learning whereby learning takes place within the subject area. However, it is termed interdisciplinary in that the core curriculum of learning is interwoven into each subject under study by the students. For instance; in Social Science geography strand, students write essay on internal migration however, apart from addressing the issues of this topic, they are to apply the skill of writing text types in their essay, such as; argumentative, informative, explanatory, descriptive, expository and narrative essay. They must be able to capture the mechanics of English skills such as grammar, punctuation and so forth.



Though these skills are studied under English, they are considered as core skills that cut across all subjects. For example; if Science students were to write about human development in biology, then the application of writing skills has to be captured by the students in their writing. It is not seen as an English skill but a standard essential skill all students must know and do regardless.

Therefore, essential knowledge, skills, values and attitudes comprising the core curriculum are interwoven and provide an essential and holistic framework for preparing all students for careers, higher education and citizenship in this learning.

3. Intra-disciplinary approach

This approach involves teachers integrating sub disciplines within a subject area. For instance, within the subject Social Science, the strands (disciplines) of geography, environment, history and political science will all be captured studying a particular content for Social Science. For example, under global warming, students will study the geographical aspects of global warming, environmental aspect of global warming and likewise for history, political science and economics. Thus, children are well aware of the issues surrounding global warming and can address it confidently at each level of learning.

4. Trans-disciplinary approach

In this approach, learning goes beyond the subject area of study. Learning is organized around students' questions and concerns. That is, where there is a need for change to improve lives, students develop their own curriculum to effect this need.

The trans-disciplinary approach addresses real-life situations thus giving the opportunity to students to attain real life skills. This learning approach is more to do with Project-Based Learning which is also referred to as problem-based learning or place-based learning.

The three steps to planning project based curriculum (*Chard 1998*).

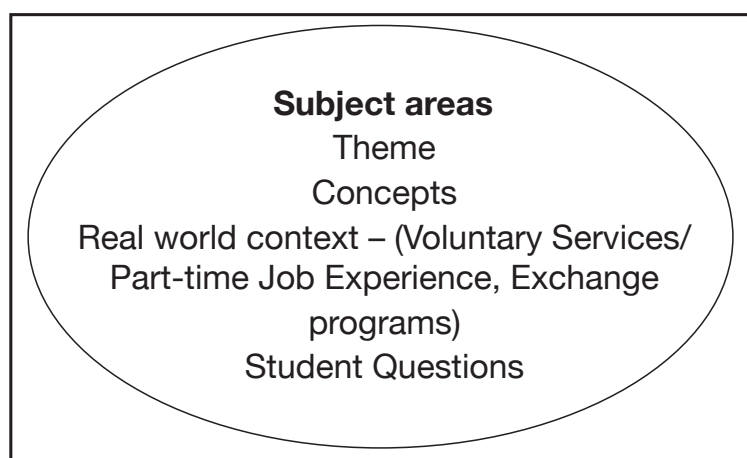
1. Teachers and students select a topic of study based on student interests, curriculum standards, and local resources
2. The teacher finds out what the students already know and helps them generate questions to explore. The teacher also provides resources for students and opportunities to work in the field
3. Students share their work with others in a culminating activity. Students display the results of their exploration and review and evaluate the project.

For instance; students may come up with slogans for school programs such as 'Our culture – clean city for a healthier PNG'. The main aim could be to curb betel nut chewing in public areas especially around bus stops and local markets. Here, students draw up their own instructions and criteria for assessment which is; they have to clean the nearest bus stop or local market once a week throughout the year. They also design and create posters to educate the general public as their program continues. They can also involve the town council and media to assist them especially to carry out awareness.

Studies (*Susan M. Drake and Rebecca C. Burns 2008*). have proven that Project based-programs have led to the following:

- Students go far beyond the minimum effort
- Make connections among different subject areas to answer open-ended questions
- Retain what they have learnt
- Apply learning to real-life problems
- Have fewer discipline problems
- Lower absenteeism (*Curtis, 2002*)

These integrated learning approaches will demand for teaches to be proactive in order to improve students learning and achievements. In order for PNG Standards-Based Curriculum to serve its purpose fully, these three approaches must be engaged for better learning for the children of Papua New Guinea now and in the future.



Essential Knowledge, Skills, Values, and Attitudes

Students' level of proficiency and progression towards the attainment of content standards will depend on their mastery and application of essential knowledge, skills, values, and attitudes in real life or related situations.

Social Science has 5 broad areas (strands) which contain essential knowledge captured in the national content standards and benchmarks. Knowledge is 'what students must know and understand' in Social Science. The fundamental concepts in Social Science are outlined below.

Geography

- The examination, description, and explanation of the earth - its variability from place to place, how places and features change over time, and the processes responsible for these variations and changes.
- Human geography (population, migration,)

History

- Historical roots and how past events have shaped Papua New Guinea and the world.
- Reconstructing and interpreting historical events

Political Science

- Political ideologies and systems (power, authority, governance and functions of different political systems)

Economics

- The concept of scarcity (limited resources & unlimited needs & wants)
- Satisfying needs and wants
- Decision making

Environment

- Physical systems and processes of the environment
- Relationship between people and the environment
- Impact of the exploitation of the natural environment
- Good stewards of the environment

Social Science requires 'inquiry-based learning'. The inquiry-based learning 'is an approach that emphasises the role of the student in the learning process, rather than the teacher telling the students what they need to know. It encourages the students to explore a topic, ask questions and share ideas. Therefore, the skills outlined here are essential for 'inquiry-based learning'.

Research Skills

- Access information
- Organise information
- Evaluate sources
- Use information
- Align solution with task
- Cite all sources accurately

Collaborating Skills

Working effectively with peers, listen and share ideas and compromise to create good products

- Show independent initiative
- Assume shared responsibility
- Assist others in their roles
- Contribute ideas
- Keep an open mind
- Apply strategies
- Take a variety of roles
- Tolerate different view points

Critical Thinking

Create products that demonstrate abilities to justify arguments, asking questions, analyse complex systems, evaluate evidence, draw conclusions, reflect on learning and explain how to solve problems

Creative and Innovative Skills

- Think creatively
- Generate ideas
- Work creatively with others
- Implement innovations

Communicating Skills

- Ability to listen, read, write, present, comprehend, share and express ideas and thoughts between different audiences and use multiple forms of media

Thinking is problem-solving. Critical thinking is motivated by a problem. Teachers are advised to raise the level of higher thinking skills for the students.

The 'inquiry-based learning' is a process where students are engaged in;

1. Identify the problem
2. Develop an action plan
3. Research/gather/collect data
4. Analyse/organise data and form conclusions
5. Report the results/presentation

Moreover, Social Science is driven by values. These values and attitudes must be emphasised and reinforced in the teaching and learning process.

Values & Attitudes
<ul style="list-style-type: none"> • Curiosity • Initiative • Adaptability • Leadership • Collaboration & teamwork • Participation • Passion for exploring & learning • Appreciation of the awesomeness of nature, events, people etc • Being patriotic and responsible • Show consideration • Respect the environment and people • Embrace diversity • Maintain positive values

Teaching and Learning Strategies

Social Science emphasises and embraces the use of cognitive, reasoning, decision-making, problem-solving and higher-level thinking skills to teach to enhance students' understanding of inter-disciplinary concepts and issues in relation to environment, geography, history, politics and economic within PNG and globally. It aims to provide a meaningful pedagogical framework for teaching and learning essential and in-demand knowledge, skills, values, and attitudes that are required for the preparation of students for careers, higher education and citizenship in the 21st century.

Students must be prepared to gather and understand information, analyse issues critically, learn independently or collaboratively, organize and communicate information, draw and justify conclusions, create new knowledge, and act ethically.

These teaching and learning strategies will help teachers to;

- familiarize themselves with different methods of teaching in the classroom
- develop an understanding of the role of a teacher for application of various methods in the classroom

Successful teachers always keep in view that teaching must “be dynamic, challenging and in accordance with the learner’s comprehension. He/she does not depend on any single method for making his/her teaching interesting, inspirational and effective”.

Please find a list of the different teaching and learning strategies in Appendix 3.

These strategies;

- make learning more engaging
- make learning more effective
- make learning fun
- encourage higher motivational level
- improve attention spans
- develop higher order thinking and reflective skills
- improve communication skills
- develop the spirit of teamwork/collaboration
- develop leadership skills and qualities
- encourage discovery learning

Therefore, teachers are encouraged to utilise the suggested strategies as well as others.

Units and Topics

This section of the teacher guide contains the Social Science – Economics content to be taught in grade 11. It consists of;

- units
- topic

Economics in grade 11 has five (5) units and they are;

1. Factors of Production and Consumption
2. Methods of Production and Distribution
3. Regulation of Production, Distribution and Consumption
4. Satisfying Needs and Wants
5. Economic Ideologies

The table below outlines the units and topics of Economics in grade 11 to be taught in an academic year. This will guide teachers to plan and teach the Economics strand in grade 11.

Units	Topics
Factors of Production and Consumption	Topic 1: Human resources Topic 2: Human resources and productivity Topic 3: Human input into the production process Topic 4: Human resource management theories and its application Topic 5: Role of education and training on the workforce Topic 6: Role of human resources in the development and changes of societies
Methods of Production and Distribution	Topic 1: Economic systems Topic 2: Impact of social and political systems and historical events on economic systems Topic 3: Price mechanism in the capitalist economy Topic 4: Government intervention - Price control mechanism Topic 5: Inflation Topic 6: Effects of inflation in the economy Topic 7: Effects of Inflation
Regulation of Production and Distribution	Topic 1: Economic ideologies Topic 2: Application of political and economic ideologies Topic 3: Advantages and disadvantages of different economic systems Topic 4: Impact of economic ideologies on production, distribution and consumption Topic 5: Impact of economic ideologies on world trade
Satisfying Needs and Wants	Topic 1: Characteristics of international trade Topic 2: Factors determining economic decision making Topic 3: Economic interdependence and change Topic 4: Geographical factors creating economic interdependence Topic 5: Impact of international trade in an economy Topic 6: Factors influencing international trade Topic 7: Trade retaliatory measures

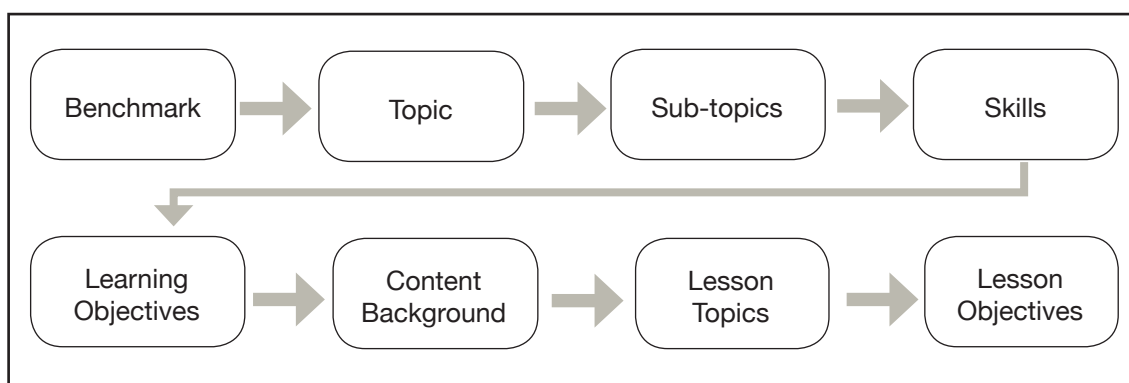
Economic Ideologies	<p>Topic 1: Communist economic system</p> <p>Topic 2: Economic management of the means of production in a communist economy</p> <p>Topic 3: Strengths and weakness (SWOT) of communist economic systems</p> <p>Topic 4: Financial system in a communist regime</p> <p>Topic 5: Provision of goods and services in a communist economic system</p> <p>Topic 6: Behaviours of producers and consumers in communist economies</p> <p>Topic 7: Operations of private enterprises in a communist state</p>
----------------------------	---

How were the topics developed?

The topics given in the table were derived from the benchmarks. That is, National content standards are benchmarked at each grade level, which allows for essential KSAVs to be reinforced and expanded throughout the grades. Benchmarks show grade level expectations of what students are able to do to demonstrate that they are making progress towards attaining the content standard. These grade-level benchmarks were then unpacked to identify the topics. From the topics, teachers should be able to develop sub-topics and learning objectives and of course the lesson topics and lessons objectives to be achieved per lesson.

When we unpack a benchmark, we are identifying what students will know and be able to do when they have mastered the benchmark.

1. Write out the benchmark.
2. Write the verbs (skills/actions) – Higher order thinking skills.
3. Underline or highlight the big idea (content) in the benchmark. The big idea (content) is the topic derived from the benchmark.
4. Develop sub-topics from the big idea (topic).
5. Write learning objectives according to the sub-topics.
6. Derive lesson topics from the learning objectives.



Unit of work

The unit of work outlines the topics, sub-topics and the learning objectives for each of the five (5) units in Economics, derived from the content standard and the benchmarks. It basically presents what the teacher is expected to teach. Teachers are advised to use the learning objectives to create lesson topics and lesson objectives in preparing lessons. Brief content background of each topic is provided to support teacher's lesson preparation.

Unit 1: Factors of Production and Consumption

Content Standard 4.1: Students will be able to analyse and identify different factors that influence and contribute to the production, distribution and consumption of goods and services.

Benchmark 11.4.1.1: Justify the importance of human resources in the production, distribution, and consumption of resources.

Topic 1: Human resources

Sub-topics:

- What is human resource?
- Importance of human resources in the production, distribution and consumption of goods and services.
- Roles of human resources in the production, distribution and consumption of goods and services.

Skills: Evaluation - Justify importance of human resource.

Learning Objectives: By the end of the topic, students will be able to:

- Explain and elaborate human resource.
Identify and explain the importance, and key roles and functions of human resources in production, distribution and consumption of goods and services.
- Explain the important roles of human capital in the production, distribution and consumption process.

Content Background

Human Resources

Human resources are defined as the people employed by a company or the department in a company in charge of hiring, training, taking care of the benefits and keeping records of the employers of an organisation. Human resources can also be seen as the people who make up the workforce of an organization, business sector, or economy. The employees or the workers are sometimes referred to as human capital.

Human resource management deals with issues related to compensation, performance management, organisation development, safety, wellness, benefits, employee motivation, training and others of the employees. HRM plays a strategic role in managing people and the work place culture and environment.

The key functions of human resources management that enhances production and the distribution of resources are;

- **Strategic Human Resource Management:** It is the practice of attracting, developing, rewarding, and retaining employees for the benefits of both the employees and the organisation as a whole [<http://study.com>academy>lesson.>]

- **Workforce Planning and Employment:** (recruitment and selection). Analysing and forecasting on the talent that the companies or organisations need to execute their business strategy, proactively rather than reactively. It is a critical strategy that enables the organisation to identify, develop and sustain the skills it needs to successfully accomplish its strategic intent whilst balancing career and life style goals of its employees.
- **Human Resource Development:** (training & development). Provision of skills necessary for employees to carry out the tasks and responsibilities of the organisation.
- **Total Rewards:** (compensation & benefits). Managing the rewarding systems [including wage, bonuses, compensation, etc.] effectively.
- **Policy Formulation:** Designing of appropriate policy guidelines that will govern the conduct of the workforce as well as the organisation. [Human resources management policies].
- **Employee and Labour Relations:** Negotiating and solving disputes proactively.
- **Risk Management:** Shows work place safety and other risks management areas to both the interest of both the workers and the organisation. It must be well laid out, understood and implemented.

Suggested Resources

1. Donata L, 2018, Identifying Seven Major Functions of Human Resources, knoji.com. California, US. Retrieved from; <https://hiringpayroll.knoji.com/identifying-seven-major-functions-of-human-resources>.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Manohar, 2008, *Fundamentals of Business Management for PNG*, Universal Business Publications, Port Moresby, PNG.
4. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
5. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
6. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106 –144).Addison, Wesley Longman, Melbourne, Australia.
7. Other appropriate economics resources

Benchmark 11.4.1.2: Examine how human resources have been used and how their performance have improved production over time to exploit raw materials, increase production and improved the distribution of resources.

Topic 2: Relationship between human resources (human capital) and productivity

Sub-topics:

- Improving Human resources and enhancing productivity

Skills: Analysis - Examine the relationship between human resources and productivity.

Learning Objectives: By the end of the topic, students will be able to:

- Identify and explain ways to improve the performance of human resource.
- Analyse the impact of improved human resource performance.
- Assess the impact of improved human resource performance on the exploitation of raw materials production and distribution of resources.

Content Background

One of the many ways to improve human resource performance is to have a high performance team. High performance team refers to a group of goal focused individuals with specialised skills and vast experiences who works collaboratively, in an innovate way and consistently produce effective results. The group relentlessly pursue high and excellent performance through shared goals, shared leadership, collaboration, open communication, clear role expectations, group operating rules, early conflict resolutions, and a strong sense of accountability and trust among its members to be able to with ease extract raw materials, increase production and efficiently distribute resources.

Suggested Resources

1. Donata L, 2018, *Identifying Seven Major Functions of Human Resources*, knoji.com. California, US. Retrieved from; <https://hiringpayroll.knoji.com/identifying-seven-major-functions-of-human-resources>.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Manohar, 2008, *Fundamentals of Business Management for PNG*, Universal Business Publications, Port Moresby, PNG.
4. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
5. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
6. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
7. Other appropriate economics resources

Benchmark 11.4.1.3: Critically evaluate and identify the different ways human labour were used in many different societies to, produce goods and services, to satisfy the needs and wants of governments and their people.

Topic 3: Human input into the production process

Sub-topics:

- Labour input into production process in traditional societies (before colonial era)
- Labour input into production process during the colonial era
- Case study: Egypt Government's use of labour in the past (historical)

Skills: Evaluation and analysis - Evaluate and identify the different ways human labour were used.

Learning Objectives: By the end of the topic, students will be able to:

- Discuss how human labour were engaged in the traditional (societies in the past).
- Identify how human labour were engaged during the colonial period. Do case study on different ways human labour were used to produce goods and services to satisfy the needs and wants of governments and their people. For instance; Egypt.

Content Background

A historical perspective of human input studies to how societies organized themselves into groups for the purpose of producing or providing basic goods and services for their own use as well as for commercial purpose. The main aim of the topic is to make a comparative study of human labour used from the traditional times to pre-colonial era to colonial era and to identify the patterns of human labour uses in organizations and production of goods and services.

The best option to approach this section is to select a case study [a local community or society or nation around the world (E.g. Egypt) of early civilization to develop an understanding of the key areas as follows:

- Organisation of people into productive units within a family [Roles and Responsibility]
- Organisation of people into productive units within a clan, tribe and society
- Methods of production, motivation or driving forces applied to achieve production targets and purpose of production.

Suggested Resources

1. Donata L, 2018, *Identifying Seven Major Functions of Human Resources*, knoji.com. California, US. Retrieved from; <https://hiringpayroll.knoji.com/identifying-seven-major-functions-of-human-resources>.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Manohar, 2008, *Fundamentals of Business Management for PNG*, Universal Business Publications, Port Moresby, PNG.
4. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic

Publication, South Perth, Western Australia.

5. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
6. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
7. Other appropriate economics resources

Benchmark 11.4.1.4: Investigate and analyse different human resource theories and evaluate their relevance and applicability to current production and distribution of goods and services.

Topic 4: Human resource management theories and application

Sub-topics:

- Types of human resources management theories.
- Application of human resource theories to production and distribution of goods and services

Skills: Analysis – Investigate and analyse different human resources theories.

Learning Objectives: By the end of the topic, students will be able to:

- Explore the different types of human resources management theories.
- Explain how human resource theories are applied in the production and distribution of goods and services..

Content Background

As studied earlier Human Resource Management (HRM) is the function within an organisation that focuses on recruitment of employees, management of employees, compensation and, performance management of employees (Source: pomanoha @yahoo.com).

HR management theories aims to achieve two primary outcomes;

- i. more efficient and effective job performance and
- ii. increased worker motivation or commitment.

The five (5) theories of human resources management are:

1. Herzberg's Two-Factor Theory

(1). Hygiene factor:

- Company policies
- Quality super vision
- Relations with others
- Amount of pay
- Personal life
- Job quality
- Working condition

(2). Motivation Factor

- Achievement
- Career advancement
- Personal growth
- Job interest
- Recognition of effort
- Responsibility

2. Needs Theory: It is a motivational model that attempts to explain how the needs for achievement, power and affiliation affect the actions of people from a managerial context.

3. Reinforcement Theory: The theory generally suggest that people seek out and remember information that provides cognitive support and for their pre-existing beliefs.

4. Information Processing Theory: It compares the human mind to a computer, suggesting that we too are information processors and that it

possible and desirable to study the internal mental processes that lie between the stimuli (in our environment) and the response we make.

- 5. Expectancy Theory:** Proposes that an individual will decide to behave and act in a certain way because they are motivated to select a specific behaviour over other behaviours due to what they expect the result of that selected behaviour will be...

Suggested Resources

1. Donata L, 2018, *Identifying Seven Major Functions of Human Resources*, knoji.com. California, US. Retrieved from; <https://hiringpayroll.knoji.com/identifying-seven-major-functions-of-human-resources>.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Manohar, 2008, *Fundamentals of Business Management for PNG*, Universal Business Publications, Port Moresby, PNG.
4. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
5. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
6. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
7. Other appropriate economics resources

Benchmark 11.4.1.5: Critically reflect the role of education and training in producing skilled workers required by the industries and are capable of transforming working philosophies and practices, operation and management of industries and businesses and improve the quality of outcomes.

Topic 5: Role of education and training on the workforce

Sub-topics:

- Importance of an educated workforce
- Impact of an educated work force

Skills: Analysis - Reflect the role of education in producing skilled workforce.

Learning Objectives: By the end of the topic, students will be able to:

- Explain and discuss the importance of an educated workforce.
- Analyse and justify the impact of an educated workforce.

Content Background

Having an educated workforce is the engine room for productivity and efficiency for an organisation to function well. Thus, having workforce that is educated and specially trained brings to an organisation several benefits. Key benefit includes;

- Increased efficiency and productivity
- Reduction in cost of production
- Reduction in supervisory problems/issues
- Reduced accidents
- Improved quality of products and services
- Improved motivation and moral among employees
- Encourages a culture of flexibility
- Develop a culture of learning
- Plans for succession

Quality education is achieved through basic education development path and specialised workplace and in house trainings. Organisations are able to up skill their work force through planning and trainings through their HRM division.

Suggested Resources

1. Donata L, 2018, *Identifying Seven Major Functions of Human Resources*, knoji.com. California, US. Retrieved from; <https://hiringpayroll.knoji.com/identifying-seven-major-functions-of-human-resources>.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Manohar, 2008, *Fundamentals of Business Management for PNG*, Universal Business Publications, Port Moresby, PNG.
4. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
5. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
6. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
7. Other appropriate economics resources

Benchmark 11.4.1.6: Evaluate the important role that human resources play in the development and transformation of communities and nations.

Topic 6: Role of human resources in the development and changes of societies

Sub-topic:

- Impacts of the roles of human resources in societal changes (increased productivity)

Skills: Evaluation- Evaluate the important roles of human resources.

Learning Objectives: By the end of the topic, students will be able to:

- Analyse and discuss the vital role human resource plays in contributing to efficiency and, productivity in service delivery.
- Explore the vital role human resources play in contributing to infrastructural development and living standards.

Content Background

Human resource as defined refers to the engagement of humans or as traditionally termed, labour in the production process. It can also be seen as personal efforts used in the production of goods and services. It includes both physical and mental efforts, and natural skills. For example, the work of a road builder, a shop assistant, an artist, a machine operator, or a teacher, are all classified under the package of human resource contributing to many aspects of economic development for the benefit of the government and its people. The following are the aspects of human resource;

- **Production and delivery of goods and services:** It is the efforts of human resource that plan and produce goods and services and make them available to satisfy the varying needs and wants of people in an economy. Well planned and effectively managed human resource enhances efficiency in the production and delivery of goods and services. to satisfy these needs and wants.
 - **Increased Gross Domestic Products (GDP):** GDP measures the final value of goods and services produced in an economy during a period of time. The value of GDP is an important measure or indicator of economic growth. Best HR practices increases productivity which gives rise in GDP value of an economy.
 - **Export earnings is based on productivity:** Increased exports earns from increased productivity. Increased productivity leads to greater output which results in access for exports. Productivity is reliant on the key factor of production which is human resource. Thus having an efficient level of proficiency and productivity in human resources leads to increased level of productions which increases volume of exports.
 - **Improved infrastructure and social development:** This is brought about by humans. The advantages of having the best qualified personnels for specific jobs will lead to achieving greater results in terms of infrastrural and social development.
-

Suggested Resources

1. Donata L, 2018, *Identifying Seven Major Functions of Human Resources*, knoji.com. California, US. Retrieved from; <https://hiringpayroll.knoji.com/identifying-seven-major-functions-of-human-resources>.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Manohar, 2008, *Fundamentals of Business Management for PNG*, Universal Business Publications, Port Moresby, PNG.
4. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
5. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
6. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
7. Other appropriate economics resources

Unit 2: Methods of Production and Distribution

Content Standard 4.2: Students will be able to analyze and explain the methods, processes, and the means of production and the distribution of goods and services.

Benchmark 11.4.2.1: Compare different types of economies (traditional, command, market and mixed economies).

Topic 1: Economic systems

Sub-topics:

- Importance of having an economic system
- Subsistence economic system
- Market or capitalist economic system
- Centrally planned economic system
- Mixed economic system
- Political systems associated with each economic system

Skills: Evaluation - Compare different types of economies.

Learning Objectives: By the end of the topic, students will be able to:

- Examine the importance of having economic systems.
- Discuss the fundamental principles of each of the economic systems.
- Analyse and associate each of the economic systems with type of government system or political ideologies.

Content Background

What is an economic system?

An economic system is the manner in which economic resources are organised to meet the differing needs and wants. All countries face the same economic problem of scarcity of resources to satisfy the unlimited needs and wants. In trying to solve this problem, they all have to answer four production questions sometimes referred to as “the **w** questions”. *What to produce? How to produce? How much to produce? For whom to produce?*

That brings to light the need to have a system of resource allocation to utilise the scarce resource through answering the (4) '**w**' questions to satisfy the varying needs and wants of the people. Different countries have their own systems or methods of answering the '**w**' questions. However based on certain common features, four economic systems have been identified.

- i. **Traditional Subsistence and Barter Economies:** As the name suggests, this is the basic system of economy where production is for own consumption or subsistence. Any surplus production was traded through barter system (exchange of one goods for another goods)
- ii. **Command or Planned Economies:** An economic system where the state owns all factors of production and determines production and distribution

of goods and services. There is little or no private ownership. Production and distribution is done through a state regional planning committee.

- iii. Market or Capitalist Economies:** As opposed to command economy, capitalist economy is based on price mechanism (as postulated by Adam Smith). The invisible hand of the market (forces of demand and supply) determines production, distribution and consumption of goods and services. Private ownership is high with minimal or little government influence on the economy.
- iv. Mixed Economies.** This economic system entails a blend of command and capitalist economies. Private and public ownership is eminent. Some goods and services are provided by the private sector and some via the state. Each of these economic systems also are associated with the types or practice of government system in each of this countries.

Suggested Resources

1. Donata L, 2018, *Identifying Seven Major Functions of Human Resources*, knoji.com. California, US. Retrieved from; <https://hiringpayroll.knoji.com/identifying-seven-major-functions-of-human-resources>.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Manohar, 2008, *Fundamentals of Business Management for PNG*, Universal Business Publications, Port Moresby, PNG.
4. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
5. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
6. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
7. Other appropriate economics resources

Benchmark 11.4.2.2: Analyze how traditional, command, market and mixed economies were/are affected by specific social and political systems and important historical events.

Topic 2: Impact of social and political systems and historical events on economic systems

Sub-topics:

- Social and political influence on each of the economic systems
- Historical events and their influence on each of the economic systems

Skills: Analysis - Analyse social and political systems.

Learning Objectives: By the end of the topic, students will be able to:

- Explore the social and political influence on each of the economic systems.
- Identify and examine historical events and their influence on each of the economic systems.

Content Background

Government influence refers to the intervention of the state [political authority] into the free flow of interactions of demand and supply in an economy.

Common government interventions includes:

- Price control and price support [maximum/minimum price settings]
- Taxation and subsidy
- Price surveillance
- Economic Regulatory Policies (Monetary and Fiscal Policies) of the government

Government's role in the mixed economy (PNG)

PNG has a mixed economy and is based on market economic system, but there is considerable amount of government's involvement by the government through state owned businesses/enterprises (SOEs), state regulations and trade unions in the decision making process. The profit motive and opportunity for private accumulation of wealth provides economic motivation for individuals. Much of the production is the private sector (by individuals and private owned businesses). Some production (particularly, service provisions and economic regulatory measures) is undertaken by the government in the public sector. Thus government involvement is still high. Government is still directly involved in the provision of goods and services. It also controls private sector through taxation, licencing, monetary and fiscal policy mechanism.

Impact of historical events – WWI & WWII on PNG's economy

PNG has experienced two world wars [WWI & WWII] and both of these wars have had some influence on the social and economic systems of PNG. Of the two wars the one that had the greatest impact is WWII. WWI only saw changes in administrative control from the colonial masters (German gave up its New Guinea Territory to British-Australia). However, to understand the economic effects we have to revisit the colonial rules and systems that were in place. The Germans ruled North Eastern part of New Guinea and the British and Australia

ruled the South Eastern part of New Guinea. The Western Part (now Irian Jaya part of Indonesia) was ruled by the Dutch (Netherlands). The Germans ruled their territory through a company then known as German New Guinea Company. It was a huge commercial entity connecting particularly the coastal areas of German New Guinea and the Islands of New Guinea. The company was venturing into copra and cocoa industries through ownership of plantations. These benefits however did not trickle down to the people because they had no idea at all what business is and had to only contribute towards creating wealth for their master (Germans) to some elements of command economy was demonstrated.

The natives in British New Guinea (British Papua) also faced similar style of rule as their fellow natives in German. There were plantations and alluvial mining established by the colonial masters who created wealth for themselves. The natives were used as free labour. The locals that is, the natives never benefited from these activities.

The Germans left after WWI (1914) and the two territories were united and controlled under Australia through to WWII (1942-1945) and the eventual independence in 1975. This is through which the mixed style of economic contributions was developed and to what it is today.

The event that drove the colonial master particularly Australia to develop and prepare the native to face the reality of modern economy is WWII. This was partly because Australia was indebted to the natives for their contribution to winning one of the battle for New Guinea (WWII). Thus after the WWII in 1945 and also from the pressure from the United Nation to prepare the colonies for self-rule, meant that Australia had to prepare the natives both in terms of economic management and political rule and develop a general sense of civilisation and modernisation. This also allowed for the manner of economic and political management style of Australia to be passed on to PNG, which is what it is today- a mixed economic system.

Suggested Resources

1. Donata L, 2018, *Identifying Seven Major Functions of Human Resources*, knoji.com. California, US. Retrieved from; <https://hiringpayroll.knoji.com/identifying-seven-major-functions-of-human-resources>.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Manohar, 2008, *Fundamentals of Business Management for PNG*, Universal Business Publications, Port Moresby, PNG.
4. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
5. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
6. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
7. Other appropriate economics resources

Benchmark 11.4.2.3: Explore the roles of price in the market system as signals and provide their incentives to buyers and sellers.

Topic 3: Price mechanism in the capitalist economy

Sub-topics:

- Price mechanism
- Price as an incentive to production
- Price incentives to consumers and consumption
- Interaction of producer and consumers and price

Skills: Analysis - Explore price mechanism.

Learning Objectives: By the end of the topic, students will be able to:

- Analyse the concept of price mechanism.
- Identify and discuss how price drives production process in a capitalist system.
- Identify and discuss the effect on price on consumer behaviour in capitalist system.
- Analyse and interpret the actions of producers and consumers with respect to price changes in a capitalist system.

Content Background

Price mechanism: A process by which resources are allocated according to the supply and demand for those goods or services, which in turn determines market price and the quantity of these goods that will be produced. Sometimes known as the forces of demand and supply or the invisible hand of the market that determines production, distribution and consumption. The price set by the process of price mechanism is known as *the equilibrium price or market price*. At this price producers and consumers are willing and are able to trade a certain amount or quantity. (equilibrium quantity). Example; At a price of K5/kg, quantity demanded and quantities supplied will be equal to 50kg.

Price system: (sometimes called competitive price mechanism) is the engine that drives the market or capitalist economy. It allocates resources, goods and services on the basis of the free movement of prices. The market economy is held together by the price system. The key is that prices are the signal to both the buyers and sellers. When allowed to move freely, market price will change in response to shortages and surpluses. Price are driven up by shortages and driven down by surpluses. Price here is seen as having the allocative or rationing function. Buyers must be willing to pay the market price to acquire the commodity on sale and sellers must be prepared to accept the market price to sell the commodity.

Interaction of producer and buyer to price: Shortages produces higher prices. At higher prices sellers tend to supply more goods (with the prospect of earning bigger profits) and buyers tend to demand less, thereby eliminating the shortage. Surpluses produce lower prices, but sellers turn to supply less (with the prospect of earning less in profits) and buyers tend to demand more, thereby eliminating surplus.

Of course the shortages and surpluses may only be temporary - otherwise changes to demand and supply conditions may spark them off again. It is important to realise that flexible prices do not act as correcting agents to shortages and surpluses.

Buyer and sellers markets. Buyers markets are characterised by low prices due to large number of goods being offered for sale. Sellers markets are characterised by high prices due to relatively small number of goods offered for sale. Generally, markets do not last either in favour of buyers or seller for too long. Buyers markets will change when some sellers pull out of market due to low price received, it will create a shortage forcing price to rise. Likewise the seller, if more sellers flock into the market in the hope of cashing in on the profits enjoyed by the few existing sellers, it will cause surplus situation thus driving prices down again.

In summary there are also other factors such as substitutes, complementary or consumer's preferences can also change the surpluses and shortage situations. (Source: E.Shade *Fundamentals of Economics*)

Suggested Resources

1. Donata L, 2018, *Identifying Seven Major Functions of Human Resources*, knoji.com. California, US. Retrieved from; <https://hiringpayroll.knoji.com/identifying-seven-major-functions-of-human-resources>.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Manohar, 2008, *Fundamentals of Business Management for PNG*, Universal Business Publications, Port Moresby, PNG.
4. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
5. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
6. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
7. Other appropriate economics resources

Benchmark 11.4.2.4: Identify and examine different ways of controlling the prices of goods and services.

Topic 4: Government intervention - Price control mechanism

Sub-topics:

- Price surveillance
- Price control (maximum price or price ceiling)
- Prices support (minimum price or price floor)
- Monetary and Fiscal policy use to control price

Skills: Analysis – Identify and examine price control mechanism.

Learning Objectives: By the end of the topic, students will be able to:

- Identify the government institution responsible for price surveillance and explain its role in controlling prices.
- List and discuss the tools of price surveillance and their effects on controlling price levels in the economy.
- Examine and analyse price control (maximum price or price ceiling).
- Identify the effects of price control on consumption and production (Demand and supply effects).
- Explore price support (Minimum price or price floor).
- Identify the effects of price support on consumption and production (Demand and supply effects).
- Identify and discuss monetary and fiscal policy options that can be employed to control price.

Content Background

Price surveillance

The responsibility of the Independent Consumer and Competition Commission is to use a number of economic tools to maintain prices at reasonable levels necessary for economic growth. This involves;

- Price justification: This requires firms in certain industries to show a good reason for increasing their prices.
- Price notification: Firms in other areas must inform ICCC of the likely price increase of goods and services they are offering for sale.
- Price Control: Is the percentage mark-up or maximum price that can be charged by traders set by ICCC.

The necessity for price surveillance is mainly from the need to restrain price in the absence of active competition within most markets in PNG. It also is a very important measure which government uses to control inflation.

Price Control

Government makes laws which sets maximum price that can be charged for an item. This price is known as Price Ceiling. The price will be lower than the equilibrium or market price. The effect of this is that supply will fall as demand extends. This gives rise to the situation known as shortage or excess demand.

Note to the teacher: Use graphical illustration in *Economics for Developing Nations Book one (Andrew Mickleburgh)* for full coverage, including solution to the problem of shortage).

Price Support

Government makes laws which sets the minimum price that can be charged for an item. This price is known as Price Floor. The price will be higher than the equilibrium or market price. The effect of this is that supply will rise (extend) as demand contract/or falls giving rise to the situation known as surplus or excess supply.

Note to the teacher: Use graphical illustration in *Economics for Developing Nations Book one (Andrew Mickleburgh)* for full coverage, including solution to the problem of shortage).

Monetary and Fiscal policies can be used to control price levels in the economy. That implies the application of instruments of these two (2) policies respectively to control price levels. For instance the use of taxation (an instrument of fiscal policy) to control or reduce price by reducing goods and services tax (GST). Or increase Interest rates [an instrument of monetary policy] which will reduce borrowing and spending to lower inflation rate.

Suggested Resources

1. Donata L, 2018, *Identifying Seven Major Functions of Human Resources*, knoji.com. California, US. Retrieved from; <https://hiringpayroll.knoji.com/identifying-seven-major-functions-of-human-resources>.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Manohar, 2008, *Fundamentals of Business Management for PNG*, Universal Business Publications, Port Moresby, PNG.
4. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
5. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
6. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
7. Other appropriate economics resources

Benchmark 11.4.2.5: Define and explain the concept of inflation.

Topic 5: Inflation

Sub-topics:

- What is inflation?
- Types of inflation
- Policies to control types of inflation
- Calculating rates of inflation

Skills: Analysis (Identify, explain), synthesis (dramatize, replicate), evaluation (Justify).

Learning Objectives: By the end of the topic, students will be able to:

- Examine the types of inflation.
- Analyse application of appropriate policy to solving the three (3) types of inflation.
- Discuss and analyse concepts of stagflation, hyperinflation, gentle inflation & deflation.
- Identify methods of calculating the rate of inflation.

Content Background

What is inflation?

Inflation refers to the general increase in the price of goods and services over a given period of time. The other terms associated with inflation are;

Stagflation, hyperinflation, gentle inflation, wage-price spiral, Philips Curve, J-Curve. Teacher must ensure students become aware of these terms and be able to explain them.

Causes and types of inflation of inflation

There are three (3) main types or causes of inflation;

1. Cost push Inflation:

It refers to increase in cost of production leading to increase in price of outputs which leads to inflation in the economy.

2. Demand pull inflation: It refers to the increase in aggregate demand [total demand]. Increase in total demand for goods and services forcing the seller to increase prices which leads to an inflation in the economy.

3. Imported inflation: This is brought about by increases in the price of imports. If imports are coming from an economy that has high inflation then the imports will come at a high price as well. This will add to the increase in the rate of inflation in the economy.

Policies to deal with inflation

There are certain policy measures that can be taken to address the inflation in the economy. Each different types of inflation may require specific policies or a policy mix to address them. Thus the type of policy to address inflation depends on the type of inflation. Note: there can be two (2) or all three (3) types

of inflation occurring in the economy at the same time. Common policies to deal with inflation are:

- Wages and incomes policy: This is to freeze wage increases.
- Taxation policy: Reduce tax.
- Subsidy: Subsidising certain industries to lower cost of production.
- Supply side policy-Increase production or supply to lower price increase and inflation.
- Other monetary and fiscal policy instrument used to curb inflation.

Calculating Rates of Inflation

There are three (3) major steps to calculate the rate of inflation.

1. **Construction of a Regimen:** Basket of representations of consumer goods whose price changes is monitored and weighted to obtain Weighted Price [WP]
2. **Consumer Price Index:** [CPI] using the weighted [WP]
3. **Use the CPI value to calculate inflation rate:**

WP = the sum of the individual goods weights on the regimen for each period or year.

Formulas:

WP= The sum of the individual goods weight on the regimen for each period or year.

$$\text{CPI} = \frac{\text{Current period/year WP}}{\text{Base/previous year WP}} \times \frac{100}{1}$$

$$\text{Inflation rate} = \frac{\text{Current year CPI} - \text{Previous year CPI}}{\text{Previous year CPI}} \times \frac{100}{1}$$

Note: Teacher to use the required reference materials listed for further elaboration of the topic.

Suggested Resources

1. Donata L, 2018, *Identifying Seven Major Functions of Human Resources*, knoji.com. California, US. Retrieved from; <https://hiringpayroll.knoji.com/identifying-seven-major-functions-of-human-resources>.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Manohar, 2008, *Fundamentals of Business Management for PNG*, Universal Business Publications, Port Moresby, PNG.
4. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
5. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
6. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
7. Other appropriate economics resources

Benchmark 11.5.2.6: Explain how inflation affects the ability of people and nations to adequately meet their needs and wants.

Topic 6: Effects of inflation in the economy

Sub-topics:

- People who suffer from inflation
- People who gain from inflation
- Trade-off between inflation and unemployment (Philip's curve)
- Effects of inflation on producers and consumers
- Effects of inflation on importers and exporters

Skills: Analysis – Explain the effects of inflation.

Learning Objectives: By the end of the topic, students will be able to:

- Explain how people suffer or gain from inflation.
- Analyse the trade-off between inflation and unemployment (Phillips Curve).
- Analyse and elaborate on the effects of inflation on consumers and producers.
- Analyse and elaborate on the effects of inflation on exporters and importers.

Content Background

Inflation is bad as well good for people in an economy. There are those who suffer during inflation times and also those people who gain or benefit during this period.

People who suffer or are affected by inflation

- People on fixed income: Their value of income falls during inflation times.
- People's wealth: Value of wealth falls during inflation.
- Investments: Rising costs, fall in the value of dividends, rising exchange rates, and so forth affects businesses.
- Creditors: These are people to whom those people who sell goods on credits to. They lose the real value of their goods and money during inflation times.
- Lenders: Those who lend or allow others to borrow from them. They lose the real value of money during inflation.

People who gain or benefit from inflation

- Shopkeepers and stock holders: They sell at high value and gain high profits.
- Property owners: Those whose properties including the government gain because value of their properties rises during inflation.
- Debtors: People who buy goods on credit. They buy when real value of goods is high and pay back when real value is low.
- Borrowers: They borrow when real money value is high and repay when real money value is low.

Note: Teacher to use the required reference materials listed for further information and elaboration on this topic.

Suggested Resources

1. Donata L, 2018, *Identifying Seven Major Functions of Human Resources*, knoji.com. California, US. Retrieved from; <https://hiringpayroll.knoji.com/identifying-seven-major-functions-of-human-resources>.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Manohar, 2008, *Fundamentals of Business Management for PNG*, Universal Business Publications, Port Moresby, PNG.
4. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
5. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
6. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
7. Other appropriate economics resources

Benchmark 11.4.2.7: Analyze the effects of inflation on the cost of production, distribution and consumption of goods and services.

Topic 7: Effects of inflation

Sub-topics:

- Effects of inflation on production and distribution
- Effects of inflation on consumption
- Effects of inflation on exports and imports

Skills: Analysis – Analyse the effects of inflation.

Learning Objectives: By the end of the topic, students will be able to:

- Investigate the effects of inflation on the cost of production and distribution.
- Analyse and elaborate on the effects of inflation on consumption.
- Assess the effects of inflation on exports and imports.

Content Background

Effect of inflation on production

Producers: Cost of production increases and if they are unable to adjust then they will cease operation.

Production effect: Inflation has a very deep effects on production of wealth in an economy. Mild inflation stimulates production, employment and income. Such stimulation gives rise to the economy towards full employment level. Once the economy is in full employment level, any further increase in money supply creates a situation of hyperinflation. Consequently it disrupts the smooth operation of the economy, and will have few adverse effects on the production such as;

1. Decrease in the value of money. Depreciation in the value of money results in more spending for the same quantum of goods and services. Thus less money would now be available in the hands of the people, which in turn discourages public savings. Consequently, capital accumulation suffers which ultimately affects production in an economy.
2. Decrease in foreign investments. Foreign investors invest funds to mainly earn profits. They generally prefer stable economies to safeguard their investments. Thus the situation of inflation in an economy may finally lead to investors shying away from parking their funds in a country. This in turn leads to decrease in production levels.
3. Decrease in domestic investments. Inflation takes a toll on savings of people in an economy. This invariably reduces the capital accumulation, finally resulting in reduced investment from the domestic front.
4. Business uncertainties. Business uncertainties may arise due to certain conditions. For example, unexpected rising cost, increase in competition from other companies, change in policy by the government, or suppliers going bust. Capital accumulation declines on the count of business

uncertainties. It discourages entrepreneurs and businessmen from taking business risks in production.

5. Diversion of productive resources. It is just natural that businessmen will find those investments lucrative and which generates higher revenue. Inflation does results in diversion of productive resources from essential goods industries to luxury goods industries as consumption of luxury items is more immune to price changes.

Deterioration in the quality of goods. Excess demand creates the need for higher production. When prices of components that contribute in production rises, businessmen find cheaper alternatives. They also neglect the quality of components while selecting alternatives as it is the case of sellers' market. Thus the quality of goods may deteriorate.

6. Hoarding of essential goods. Traders and consumers stock excessive quantity of essential goods in anticipation of potential rise in prices. Traders hold goods to reap higher prices in future. Consumers hold goods out of the fear of spending more for the same goods in future.
7. Loss of confidence. If domestic currency is facing hyperinflation, it offers comparatively low purchasing power to the people then other stable foreign currencies. On the other hand, frequent changes in the value of money is considered to be a risk to business. Therefore investors loose confidence in their home currency and start investing in the foreign currencies.

Effects of inflation on consumption

Consumers. Purchasing power of income/or real income falls that is, they turn to realise that they are unable to purchase the same quantity of goods as they before with the same amount of money. For example, an household was buying 5 packets of 1kg sugar on a fortnightly basis at price of K4 from a K20 budget in 2017. In 2019, the price of 1kg sugar is K6. The income of the household has not changed. The K20 budget for sugar is still K20. The household is now able to buy only 3 packets of sugar. The purchasing power of income has fallen.

Falling purchasing power also has negative effects on other areas that consumers are faced with such as living standards, household savings, aggregate demand, and so forth.

When total consumption falls, it also affects production which leads to contractionary effect on the economy.

Effects of inflation on imports and exports

Importers. Imports become expensive. Less imports. High import cost.

Exporters. Value of local exports rise. Exporters gain if demand for export is inelastic. But loose if demand for the export is elastic. May lose trade due to less purchase of exports. (Source - Retrieved from: www.ikenstore.com)

Suggested Resources

1. Donata L, 2018, *Identifying Seven Major Functions of Human Resources*, knoji.com. California, US. Retrieved from; <https://hiringpayroll.knoji.com/identifying-seven-major-functions-of-human-resources>.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Manohar, 2008, *Fundamentals of Business Management for PNG*, Universal Business Publications, Port Moresby, PNG.
4. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
5. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
6. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
7. Other appropriate economics resources

Unit 3: Regulation of Production, Distribution and Consumption

Content Standard 4.3: Students will be able to identify and analyze how market forces and other mechanisms are used to regulate the production, representation, distribution and consumption of goods and services.

Benchmark 11.4.3.1: Define and differentiate between policies/ideologies of 'conservatism', 'liberalism' and 'free market'.

Topic 1: Economic ideologies

Sub-topics:

- Policies and ideologies of conservatism
- Policies and ideologies of liberalism
- Policies and ideologies of protectionism
- Policies and ideologies of free market

Skills: Analysis - Define and differentiate between different economic ideologies.

Learning Objectives: By the end of the topic, students will be able to:

- Define and distinguish between a policies and an ideology.
- Define and analyse the differences between various economic management ideologies.
- Link PNG economy to an ideology it fits.
- Explore the practices of conservatism and explain how it relates to PNG's economy.
- Investigate the practices of free-market and explain how it relates to PNG's economy.

Content Background

Policies

A policy refers to the principle or rule to guide decisions and achieve rational outcomes. It is a statement of intent, and is implemented as a procedure or protocol. Policies are generally adopted by the Board of or senior governance body within an organization whereas procedures or protocols would be developed and adopted by senior executive officers. Policies can assist in both subjective and objective decision making. Policies to assist in subjective decision making would usually assist senior management with decisions that must consider the relative merits of a number of factors before making decisions and as a result are often hard to objectively test example, work-life balance policy. In contrast policies to assist in objective decision making are usually operational in nature and can be objectively tested example, password policy. The term may apply to government, private sector organizations and groups, and individuals. Presidential executive orders, corporate privacy policies, and parliamentary rules of order are all examples of policy. Policy differs from rules or law. While law can compel or prohibit behaviors, policy

merely guides actions toward those that are most likely to achieve a desired outcome.

The types of economic policies

Policy makers undertake three main **types of economic policy**:

1. Fiscal Policy: Changes in government spending or taxation.
2. Monetary policy: Changes in the money supply to alter the interest rate (usually to influence the rate of inflation).
3. Supply-side Policy: Attempts to increase the productive capacity of the economy.

What is an Ideology?

An ideology is a set of opinions or beliefs of a group or an individual. Very often ideology refers to a set of political and economics beliefs or set of ideas that characterises a culture.

Major ideologies are: Capitalism, Communism, Socialism, Marxism, Liberalism, Conservatism, democracy protectionism, etc.

[Source: <https://www.vocabulary.com>]

Conservatism (Economic Conservatism)

Its feature are;

- Control,
- Regulations,
- Authoritarian over people's money.
- Grab it all.
- High taxes.

Conservatives tend towards economic rather than social liberalism as they tend to view social stability and order as a necessary component of economic liberalism and success.

Conservatives of one generation will often defend things that conservatives of previous generations have fought such as destabilizing due to the perceived threat that the change would bring.

For example, conservatives (mostly Democrats at that time but including Republican nominee Barry Goldwater in 1964) fought the Civil Rights Acts including the Voting Rights Act due to fears of social change that would be disruptive in the 1960's and due to perceived threats to Federalism.

In early 2000, the administration of George W. Bush, who was a Republican conservative, passed a reauthorization of the Voting Rights Act even though it placed restrictions on predominantly Republican states with the only discussion being, "Has the bill been so effective that we no longer need it?" The answer was no. It was reauthorized by conservatives along with liberals (both Republicans and Democrats with the D's now outpacing the R's in support) who now saw it as a part of a stable society.

All of that being said, the terms conservative and liberal are outdated and ineffective because they have been stretched and redefined so many times

that they are like pieces of worn out bubble gum. If an individual has difficulties finding consistency in the use of these terms, welcome to the club.

Protectionism

1. Protectionism is the economic policy of restricting imports from other countries through methods such as tariffs on imported goods, import quotas, and a variety of other government regulations.
2. It pushes for a government that restricts or restrains international trade for the benefit of a single domestic economy. Through these four (4) primary tools; tariffs, subsidies, quotas, and currency manipulation.
3. A protectionism economic policy protects domestic industries against foreign competition through the means of tariffs, subsidies, import quotas, or other restrictions or placed on the imports by foreign competitors.
4. It allows the government of a country to promote domestic market.
[Source: Protectionism – Wikipedia] [<https://en.wikipedia.org › wiki › Protectionism>]

Liberalism

Economic liberalism is system that indicates the best way to achieve economic development of a country through a free market without intervention of the state. It was developed by Adam Smith in a research about nature and causes of wealth of nations. The text nature and causes of the wealth of nations was the main motive for economic liberalism.

Key concepts

- Free interactions between supply and demand balances production and consumption.
- Intervention by the state breaks the natural balance of supply and demand generating efficiency.
- The savings and accumulation of capital is the factor that boosts economic growth.

Free market: An economic model whereby there is less government intervention with individuals and private firms. Firms control most of the production and distribution of goods and services. It's basis works on the following principles.

1. Self-interest: Making economic decision to advance more interest from consumer or producer end.
2. Profit motive: Motivated to;
 - make money
 - get things
 - end up with more than they started with.
3. Competition: It allows people to make the;
 - most money
 - the best deal
 - the best product

4. Voluntary exchange
 - allowed to buy and sell freely
 - can decide on prices without interference from the government
5. Private Property Rights
 - No person shall be deprived of life, liberty, or property without the due process of law; nor shall private property be taken for public uses without just compensation
 - people and businesses allowed to own properties
 - people or government cannot take it away
6. Intellectual Property Rights
 - Patent rights: Temporary protection of an invention to promote competition.
 - Copy rights: Temporary protection of a creative work to promote competition.
7. Trade Marks: Temporary protection of a logo or symbol to promote competition.
8. Contract: Legally binding agreement.

(Source: www.google.com)

Suggested Resources

1. Donata L, 2018, *Identifying Seven Major Functions of Human Resources*, knoji.com. California, US. Retrieved from; <https://hiringpayroll.knoji.com/identifying-seven-major-functions-of-human-resources>.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Manohar, 2008, *Fundamentals of Business Management for PNG*, Universal Business Publications, Port Moresby, PNG.
4. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
5. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
6. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
7. Other appropriate economics resources

Benchmark 11.4.3.2: Identify countries, political systems and leaders that advocate and practice these ideologies in their economic systems and in their trade relationships with other countries.

Topic 2: Application of political and economic ideologies

Sub-topics:

- Prominent world leaders of conservatism, liberalism and free-market
- Type of government in conservatism, liberalism and free-market

Skills: Analysis - identify countries political systems and leaders.

Learning Objectives: By the end of the topic, students will be able to:

- Identify prominent leaders of conservatism and this type of government system.
- Identify prominent leaders of liberalism and this type of government system.
- Identify prominent leaders of free-market and this type of government system.
- Analyse and link their economic practices to this type of government they have.

Content Background

Case Study

Teacher to select two countries with contrasting economic practices and do a comparative study. One representing Capitalist economy and one representing command economy. Key concepts to focus on are:

- Type of government system of the country
- Political ideology of the government system
- Public private partnership in the economy
- Pick out some practices that they have that fits into PNG system

Suggested Resources

1. Donata L, 2018, *Identifying Seven Major Functions of Human Resources*, knoji.com. California, US. Retrieved from; <https://hiringpayroll.knoji.com/identifying-seven-major-functions-of-human-resources>.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Manohar, 2008, *Fundamentals of Business Management for PNG*, Universal Business Publications, Port Moresby, PNG.
4. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
5. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
6. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
7. Other appropriate economics resources

Benchmark 11.4.3.3: Provide arguments for and against this practice and adherence to these ideologies by different countries and political regimes.

Topic 3: Advantages and disadvantages of different economic systems

Sub-topics:

- Capitalism versus command economy
- Liberalism versus conservatism

Skills: Analysis - Debate economic management ideologies.

Learning Objectives: By the end of the topic, students will be able to:

- Research and debate on;
 - capitalism versus command economies and
 - liberalism versus conservatism.

Content Background

Capitalism vs Command economy

Capitalism as noted earlier is based on individualism, whereby emphasis is placed on individual economic pursuit and advancement. It is based on the idea of free market economy where free interaction of demand and supply is the core of this economic system. It is a system where there is little or no government intervention. Most of the ownership of factors of production, distribution and consumption is controlled and actioned by the private sector (private firms and individuals).

Key elements (as noted in defining free market economy) are:

- Self-interest
- Profit motive
- Compensation
- Voluntary exchange
- Private Property Rights
- Intellectual Property Rights
- Contract

Command Economy

Is based on the economic ideology of Communism where there is little or no private ownership. All economic activities is controlled by the government, including what goods and services to be produced and for whom and at what price and quantity. There is central planning of nearly all economic activities. Money is used and price is determined for various goods and services. The use of money and setting of prices are determined by the government and its planning bodies rather than by supply and demand conditions or forces.

Detailed national and regional plans set production targets and resource requirements of each sectors of the economy. Again this is achieved by central planning rather than price signals of the market.

Note: Teachers are to create assessment with reference to the these two types of economy, Liberalism vs Conservatism economies.

Suggested Resources

1. Donata L, 2018, *Identifying Seven Major Functions of Human Resources*, knoji.com. California, US. Retrieved from; <https://hiringpayroll.knoji.com/identifying-seven-major-functions-of-human-resources>.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Manohar, 2008, *Fundamentals of Business Management for PNG*, Universal Business Publications, Port Moresby, PNG.
4. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
5. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
6. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
7. Other appropriate economics resources

Benchmark 11.4.3.4: Use research skills to investigate how conservatism, protectionism, liberalism and free market affect the production, distribution and consumption of goods and services.

Topic 4: Impacts of economic ideologies on production, distribution and consumption

Sub-topics:

- Impact of conservatism on production, distribution and consumption
- Impact of protectionism on production, distribution and consumption
- Impact of free-market on production, distribution and consumption
- Impact of liberalism on production, distribution and consumption

Skills: Analysis - Research on the impacts of economic ideologies on production, distribution and consumption.

Learning Objective: By the end of the topic, students will be able to:

- Research and investigate how the economic ideologies intend to produce, distribute and allow for consumption of goods and services (conservatism, protectionism, liberalism, free market).

Content Background

As opposed to command economy, liberalism promotes or paves way for capitalist or market economy.

Economic liberalism is the support of property rights, rule of law (contracts), capitalism, equity in justice, and free trade. It is the idea that every man should have equal opportunity to economic success and should not be deprived of the fruits of his labor unjustly. (It started out as certain groups of men. This was later extended to all men and women.)

Economic liberalism is the freedom of the individual in the economy to proceed with as little government interference as possible.

Liberal view is based on two key parts.

- i. **Comparative economic model:** A country should specialize in producing goods that it is good at producing at lower opportunity cost.
- ii. **Laissez-faire economic model:** Production is driven by profit motive with very little state interference.

Key focus areas

- Who does the allocation of resources and how?
 - Who does the production and efficiency level?
 - How workers are motivated?
 - Who gets the reward?
 - What is the degree of government involvement in the economy?
-

Suggested Resources

1. Donata L, 2018, *Identifying Seven Major Functions of Human Resources*, knoji.com. California, US. Retrieved from; <https://hiringpayroll.knoji.com/identifying-seven-major-functions-of-human-resources>.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Manohar, 2008, *Fundamentals of Business Management for PNG*, Universal Business Publications, Port Moresby, PNG.
4. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
5. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
6. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
7. Other appropriate economics resources

Benchmark 11.4.3.5: Use research skills to investigate ‘conservationist’, ‘protectionist’, ‘liberalist’ and ‘free market’ policies and ascertain their consequences on national, regional, and world trade and economic systems.

Topic 5: Impacts of economic ideologies on world trade

Sub-topics:

- Impact of conservatism on world trade
- Impact of protectionism on world trade
- Impact of free-market on world trade
- Impact of liberalism on world trade

Skills: Analysis - Research on the impacts of economic ideologies.

Learning Objectives: By the end of the topic, students will be able to:

- Research and investigate how the economic ideologies intend to influence world trade (conservatism, protectionism, liberalism, free market).

Content Background

Economic liberalism is the support of property rights, rule of law (contracts), capitalism, equity in justice, and free trade. It is the idea that every man should have equal opportunity to economic success and should not be deprived of the fruits of his labor unjustly.

Economic liberalism is the freedom of the individual in the economy to proceed with as little government interference as possible. It emphasizes a movement away from the command economy to market economy.

Note: Teacher is to expand on the other economic ideologies impacts on the world trade. Teacher has to use the suggested resources listed.

Suggested Resources

1. Donata L, 2018, *Identifying Seven Major Functions of Human Resources*, knoji.com. California, US. Retrieved from; <https://hiringpayroll.knoji.com/identifying-seven-major-functions-of-human-resources>.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Manohar, 2008, *Fundamentals of Business Management for PNG*, Universal Business Publications, Port Moresby, PNG.
4. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
5. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
6. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
7. Other appropriate economics resources

Unit 4: Satisfying Needs and Wants

Content Standard 4.4: Students will be able to investigate and review the different mechanisms used by individuals, groups, families, institutions, communities, organisations, and businesses to satisfy their wants and needs.

Benchmark 11.4.4.1: Explain the characteristics of international trade, including absolute and comparative advantage, barriers to trade, exchange rates, and balance of trade.

Topic 1: Characteristics of international trade

Sub-topics:

- Features of international trade (definition, reasons, benefits)
- Free and protected trade
- Theory of trade - (Absolute and comparative advantage)
- Balance of payment
- Exchange rates
- Terms of trade

Skills: Analysis - Explain international trade.

Learning Objectives: By the end of the topic, students will be able to:

- Define and discuss the features of international trade.
- Analyse and elaborate on arguments for and against free and protected trade.
- Distinguish between absolute and comparative advantage theories.
- Examine the Balance of Payment in international trade.
- Analyse and discuss exchange rate systems.
- Examine and evaluate terms of trade.

Content Background

What is International Trade?

International trade refers to trade between countries. International Trade occurs because of specialization by countries.

Reasons for trade

Not all countries produce all its needs and wants and therefore international trade makes it easier for countries to trade in order to access varieties of goods and services. They also access goods and services that they do not produce domestically. Due to these trade reasons countries become economically inter-dependant.

Benefits of trade

Countries produce and export its produce whilst import what they do not produce in their countries. Trade will increase the quantity and variety of goods available for consumption. Trade also enhance bilateral relations between trading partners.

Trade also have access to better quality of goods and services and they concentrate on mass producing goods in which they have a comparative advantage. That means the worlds scarce resources are put to best use and costs are minimised.

Trade Protection measures

Government can introduce various measures to restrict the quantity and quality of imports coming in to the country. This is called trade protection. Trade protection methods are barriers used to restrict trade. These are methods such as tariff, embargo, quota, subsidies and technical discriminations.

Principles of international Trade

There are two basic principles of international trade and they are comparative and absolute advantage theories. A country has a comparative advantage over another country in the production of a commodity if it can produce that product at a lower opportunity cost compared to another country. A country has an absolute advantage over another country in the production of a commodity if it can produce that product at a lower cost or with greater efficiency.

Balance of Payment

Balance of payment is a record of all economic transactions between a country and all other countries over a period of time normally a year. Reasons for keeping accurate accounting records is to know income going out and coming in to the country. Hence to know changes in the country's foreign assets and liabilities. Credits are income earned from exports and debits are payments made to countries overseas for imports.

Balance of payment consists of two accounts and they are current account and capital account. Items under current accounts are visible trade, invisible trade, private transfers and official transfers. Items under capital account are official capital flows, private capital flows and non-monetary sector transactions.

Adverse balance of payment problems

A surplus on the current account must be matched by a deficit on capital account meaning that loans and gifts are given out which reduces foreign currency held by the central.

A deficit on current account must be matched by a surplus on the current account which means borrowing from abroad or reducing gold and foreign exchange held by the central bank.

Policies to solve balance of payment

Exchange rate

Exchange rate refers to the price of one currency expressed in terms of another currency. There are three types of exchange rate systems. These exchange rate systems are classified under the following categories and they are;

1. Free, flexible or floating exchange
2. Fixed or controlled exchange rate
3. Managed float exchange rate system

In a Free, flexible or floating exchange the exchange rate is allowed to move freely in response to changes in supply and demand for that nation's currency.

Advantages of floating exchange rates are that it enable a country to find out its natural rate of exchange, it enables a country to prevent the spread of inflation and deflation as well as securing internal stability.

The disadvantages of floating exchange rate are that it makes it quite difficult to estimate the cost of import or estimate the income received from export. It creates a possibility of speculation involving purchasing or sale of different currencies leading to balance of payment problems. A system of fluctuating exchange rate hinders long term foreign investments by creating uncertainties in the minds of lenders and borrowers.

With a fixed or controlled exchange rate the exchange rate remains unchanged unless there is an official decision to change it by the country's financial authorities.

Advantages of fixed exchange rate are that it makes it easier for calculating future costs of imports and exports. It also facilitates international lending and borrowing as well as preventing capital flights.

The managed float is partly fixed and partly floating. The value of the currency is allowed to float within upper and lower limits. This exchange rate system is partly floating and partly fixed. If the exchange rate goes beyond a certain limit the central bank will intervene to bring the exchange rate back to the set limit.

Factors that lead to the demand for a currency are exports of goods out of the country, sale of services to foreign countries and capital inflow into the country. Factors that lead to the supply of a currency are imports into a country, purchases of services from abroad and capital outflow to foreign countries.

Terms of trade

Terms of trade refers to the rate at which a country's exports are exchanged for its imports. The terms of trade are measured by an index number which is obtained by expressing the export price index as a percentage of the import price index.

A base year is chosen and its import and export price relationship is recorded as 100 and the other years are compared with it.

Formula for calculating terms of trade;

$$\text{Terms of Trade} = \frac{\text{Export Price Index}}{\text{Import Price Index}} \times \frac{100}{1}$$

Export Price Index is a measure of the average price received for exports over time. It is calculated using the following formula.

$$\frac{\text{Average price of exports in the current year}}{\text{Average price of exports at base year}} \times \frac{100}{1}$$

Import Price Index is a measure of the average price of imports over time. It is calculated using the following formula.

$$\frac{\text{Average price of imports in the current year}}{\text{Average price of imports at base year}} \times \frac{100}{1}$$

The terms of trade would improve if export price index rose by more than the import price index or the terms of trade would deteriorate if import price index rose by more than the export price index.

Suggested Resources

1. Conway E, 2009, *50 Economic Ideas You Really need to know*. (Chapter 28.The Bond markets), Quercus Editions Ltd, South Block. London.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
4. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
5. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
6. Other appropriate economics resources

Benchmark 11.4.4.2: Examine how values and beliefs such as economic freedom, economic efficiency, equity, full employment, price stability, security and growth influence decisions in different economic systems.

Topic 2: Factors determining economic decision making

Sub-topics:

- Economic freedom
- Economic efficiency
- Economic equity
- Full employment
- Price stability
- Economic security
- Economic growth

Skills: Analysis - Examine factors that determine economic decision-making).

Learning Objectives: By the end of the topic, students will be able to:

- Identify and analyse how the values and beliefs (factors) influence economic decision making.
- Do a comparative analysis between economic systems on how the beliefs and values are addressed in the economic decision making process.

Content Background

Economic freedom

Economic freedom is a concept where an individual has a fundamental right to private property, the ability to profit from their own skills, abilities and labour without interference from the government. Economic freedom is when individual produces goods and services in free market place for their own gain. It is the only system in a free market place that pursues and earns our own success.

Another aspect of Economic freedom is the right to own, control and transfer properties according to the owners wishes. The ability for two or more parties to enter into enforceable contract agreement detailing how goods and services produced are consumed.

Economic efficiency

Economic efficiency measures how well a system generates desired output with a given set of inputs and available technology. Efficiency is improved if more output is generated without changing inputs, or in other words, the amount of “waste” is reduced. A widely accepted general standard is Pareto efficiency, which is reached when no further change can make someone better off without making someone else worse off.

There are three types of economic efficiency and they are efficiency in consumption, efficiency in production and efficiency in product mixture. In consumption efficiency is when goods produced goes to the people or consumers who value them the most. Efficiency in production is when you cannot produce more of one good without producing less of another good.

Product mix efficiency is also called allocated efficiency and that is when the goods produced correspond to those people who actually want or need them.

Economic equity

Economic equity is when everybody gets exactly the same benefit and treatment and when resources are allocated optimally or at a lowest cost possible. That means that resources are allocated in such a way that no one can be made better off without making someone else worse-off.

Full employment

Full employment is a situation where demand for labour is equal to the supply of labour. Economic growth is the most powerful instrument for reducing poverty and improving the quality of life in developing countries. Growth can generate virtuous circles of prosperity and opportunity. Strong growth and employment opportunities improve incentives for parents to invest in their children's education by sending them to school. Strong economic growth therefore advances human development, which, in turn, promotes economic growth.

Price stability

Price stability is one of the main economic aims of any governments. To achieve this policy countries are to ensure that the rate of inflation is minimised. Inflation eats away the purchasing power of money and so financial authorities must be responsible to monitor and maintain price level at a reasonable rate. Price Stability will also ensure easier movement of large sums of money for foreign investments and movement of productive resources such as human and capital for productive purposes.

Economic security

The relationship between economic interdependence and security is considerably important. Some view this relationship in positive terms while others perceive it in negative terms. However the relationship between economic interdependence and security particularly in the Asia Pacific economy is much more complicated than perceived as positive and negative views.

After the Cold War, Asia-Pacific economy has become extraordinarily interdependent both externally and internally in trade, capital flows and people flows. Economic interdependence has spread, extended, or generated such security threats as economic volatility, terrorist activities, and highly contagious diseases to widen the scope of security concerns. It is essential to manage the contemporary tie between economic interdependence and security as well as to cope with relevant insecurity issues.

- Under different conditions, similar rates of growth can have very different effects on poverty, the employment prospects of the poor and broader indicators of human development. The extent to which growth reduces poverty depends on the degree to which the poor participate in the growth process and share in its proceeds. Thus, both the pace and pattern of growth matter for reducing poverty.

- A successful strategy of poverty reduction must have at its core measures to promote rapid and sustained economic growth. The challenge for this policy is to combine growth promoting policies with policies that allow the poor to participate fully in the opportunities unleashed and so contribute to that growth. This includes policies to make labour markets work better, remove gender inequalities and increase financial inclusion.
- Asian countries are increasingly tackling this agenda of 'inclusive growth'. India's most recent development plan has two main objectives: raising economic growth and making growth more inclusive, policy mirrored elsewhere in South Asia and Africa.
- Future growth will need to be based on an increasingly globalised world that offers new opportunities but also new challenges. New technologies offer not only 'catch-up' potential but also 'leapfrogging' possibilities. New science offers better prospects across both productive and service sectors.
- Future growth will also need to be environmentally sustainable. Improved management of water and other natural resources is required, together with movement towards low carbon technologies by both developed and developing countries. With the proper institutions, growth and environmental sustainability may be seen as complements, not substitutes.

Suggested Resources

1. Conway E, 2009, *50 Economic Ideas You Really need to know*. (Chapter 28.The Bond markets), Quercus Editions Ltd, South Block. London.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
4. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
5. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
6. Other appropriate economics resources

Benchmark 11.4.4.3: Investigate and document the different ways goods and services are exchanged by individuals, groups and nations to create economic inter-dependence and change.

Topic 3: Economic interdependence and change

Sub-topics:

- Trade
- Economic corporations

Skills: Analysis – Investigate economic interdependence and change.

Learning Objectives: By the end of the topic, students will be able to:

- Identify and analyse how trading between nations create interdependence.
- Analyse and evaluate the work of international corporations membership in creating interdependence e.g. APEC.

Content Background

Trade

Trade factors such as location, resource distribution, climatic condition, and diplomatic relations are creating interdependence in trade. Geographical factors includes the climatic conditions and the location of the economic activities on the planet such as the tropical, temperate and the Polar Regions. Altitudes and the longitudes plays an important role on the types of plants and animals, skills and technologies that influences the economic activities.

Creation of product markets amongst nation

Most of the third world countries dependant on their former colonial masters for trading purposes. The former colonisers normally trade manufactured products back to their former colonies and obtain raw material for further downstream processing in their industries or factories creating dependence on each other.

Economic corporations

Economic corporations refers to collaboration of trading partners. Trading partners signed trading agreements to engage in trade deals. For instance countries in Asia Pacific Region form a trading block known as APEC and those in Europe formed the European Economic Co-operation (EU).

Suggested Resources

1. Conway E, 2009, *50 Economic Ideas You Really need to know*. (Chapter 28.The Bond markets), Quercus Editions Ltd, South Block. London.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
4. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
5. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
6. Other appropriate economics resources

Benchmark 11.4.4.4: Analyze the geographical factors responsible for creating interdependency through trade.

Topic 4: Geographical factors creating economic interdependence

Sub-topics:

- Location
- Climatic condition
- Resource distribution
- Population distribution

Skills: Analysis – Analyse the impacts of geographical factors on trade.

Learning Objectives: By the end of the topic, students will be able to:

- Analyse how locations of countries can create economic interdependence.
- Identify and analyse resource distribution amongst different countries to allows for creation of interdependence.
- Examine how climate create economic interdependence.
- Assess how resources distribution allows or creates economic interdependence.

Content Background

Economic geography

Economic geography refers to the study of human’s economic activity in relation to various geographical locations particularly with respect to the altitudes and climatic conditions. Geography can be categorised under physical and human geography.

Sectors of economic activity includes primary, secondary and tertiary activities. Its economic activities can be either quaternary or quinary activities.

Primary activity includes cultivation, grazing, hunting, fishing, gathering, and lumbering, mining or logging activities. Secondary activities includes manufacturing, developed mining and fishery activities, specialized livestock and agricultural activities while tertiary activities includes transportation, communication, banking, trade and commercial activities.

Quaternary activities includes education, justice, medical and security. Quinary activities includes research, innovation, information, production and distribution activities.

Geographical factors creating interdependence in trade (location, resource distribution, climatic condition)

Geographical factors includes the climatic conditions and the location of the economic activities on the planet such as the tropical, temperate and the Polar Regions. Altitude and the longitudes plays m important role on the types of plants and animals found in those locations or settings. Skills and new technologies and innovations also influence the economic activities of these economies.

Suggested Resources

1. Conway E, 2009, *50 Economic Ideas You Really need to know*. (Chapter 28.The Bond markets), Quercus Editions Ltd, South Block. London.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
4. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
5. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
6. Other appropriate economics resources

Benchmark 11.4.4.5: Investigate the impact of trade on a nation's economy.

Topic 5: Impact of international trade in an economy

Sub-topics:

- Diplomatic relations
- Foreign reserves
- Foreign investments
- Increasing GDP

Skills: Analysis - Investigate impacts of trade on an economy.

Learning Objective: By the end of the topic, students will be able to:

- Analyse and evaluate the impacts of trade in an economy.

Content Background

The impact of trade on a nation's economy and its policies are vast. The impacts and issues depends on the nature of the world areas or world trading zones where countries involved have direct influence on the production, distribution and exchange of goods and services. The following continues to impact trade; political influence, the environmental factors, and technologies and skills in which economic activity occurs.

Suggested Resources

1. Conway E, 2009, *50 Economic Ideas You Really need to know*. (Chapter 28.The Bond markets), Quercus Editions Ltd, South Block. London.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
4. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
5. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
6. Other appropriate economics resources

Benchmark 11.4.4.6: Research the factors that promote or discourage trade between nations.

Topic 6: Factors influencing international trade

Sub-topics:

- Factors promoting international trade
- Factors discouraging international trade

Skills: Analysis - Research factors influencing trade.

Learning Objective: By the end of the topic, students will be able to:

- Identify and analyse factors that promote or discourage trade between nations.

Content Background

Factors promoting trade

Countries produce and export its produce whilst import what they do not produce in their countries. Trade will increase the quantity and variety of goods available for consumption. Trade also enhances bilateral relations between trading partners. Trade also allows for access to better quality of goods and services and allows certain countries to concentrate on mass producing goods in which they have a comparative advantage. That means the world's scarce resources are put to best use and costs are minimised.

Factors discouraging trade

Trade amongst nations can be discouraged through mistrust amongst their trading partners due to various reasons. The standard and quality of goods and services must meet certain national standards set by their trading partners. Conflicts and economic ideologies are also prerequisites for trade discouragement.

Suggested Resources

1. Conway E, 2009, *50 Economic Ideas You Really need to know*. (Chapter 28.The Bond markets), Quercus Editions Ltd, South Block. London.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
4. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
5. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
6. Other appropriate economics resources

Benchmark 11.4.4.8: Research and report on trade retaliation methods between countries that have restricted or hindered and the factors responsible for this.

Topic 7: Trade retaliatory measures

Sub-topics:

- Factors restricting trade relations between nations
- Retaliation tactics

Skills: Analysis – Research and report on trade retaliation tactics between nations.

Learning Objectives: By the end of the topic, students will be able to:

- Research and analyse restricted trade relations and retaliation tactics amongst nations (For example China & USA).
- Present a report on their findings.

Content Background

Restricted trade relations between countries

- There are a number of arguments that support restricting trade. These arguments are based around industry and competition, environmental concerns, and issues of safety and security.
- The infant industry argument for protectionism is that small domestic industries need to be temporarily nurtured and protected from foreign competition for a time so that they can grow into strong competitors. Often, the infant industries never grow up. On the other hand, arguments against dumping (which is setting prices below the cost of production to drive competitors out of the market), often simply seem to be a convenient excuse for imposing protectionism.
- Low-income countries typically have lower environmental standards than high-income countries because they are more worried about immediate basics such as food, education, and healthcare. However, except for a small number of extreme cases, shutting off trade seems unlikely to be an effective method of pursuing a cleaner environment.

Suggested Resources

1. Conway E, 2009, *50 Economic Ideas You Really need to know*. (Chapter 28.The Bond markets), Quercus Editions Ltd, South Block. London.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
4. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
5. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
6. Other appropriate economics resources

Unit 5: Economic Ideologies

Content Standards: 4.5: Students will be able to interrogate and rationalise the influence of economic ideologies on economic systems, production, distribution and consumption of goods and services and on the trade relationship amongst different nations and people.

Benchmark 11.4.5.1: Examine the influence of communist ideology on the production and distribution of resources.

Topic 1: Communist economic system

Sub-topic:

- Production and distribution of resources in a communist economy

Skills: Analysing – Examine the influence of communist ideology.

Learning Objective: By the end of the topic, students will be able to:

- Analyse and discuss the production and distribution of resources in a communist economic system.

Content Background

- A communist economic structure is an economic system where the basic economic decisions are made by the central planning authority which consists of either a person or a group of people. The central authority through its various agencies, decides what, how and for whom the goods will be produced for.
- Production and distribution of resources under communism is decided by the central planning authorities.
Planning authorities decides what percentage of production will be devoted to consumer goods and services as well as what percentages will be devoted to the production of capital goods such as tools or machineries which would be used to produce additional goods and services in the future.
- Economic system related to communist system.
Countries that practice command economic systems are former Soviet Union, China, Cuba, North Korea and Burma. Politically selected committee decide on everything including, the number, colour, size, quantity and prices of everything. The state owns the factors of production.

Suggested Resources

1. Conway E, 2009, *50 Economic Ideas You Really need to know*. (Chapter 28.The Bond markets), Quercus Editions Ltd, South Block. London.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.

3. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
4. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
5. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
6. Other appropriate economics resources

Benchmark 11.4.5.2: Analyze the management and control of the means of production in a communist economic system.

Topic 2: Economic management of the means of production in a communist economy

Sub-topics:

- Ownership of factors of production
- Resource control and management in a communist economic system

Skills: Analysing-Analyse the management and control of the means of production in a communist economic system.

Learning Objectives: By the end of the topic, students will be able to:

- Examine the ownership of factors of production in a communist economy.
- Analyse and evaluate resource control and management in a communist economy.

Content Background

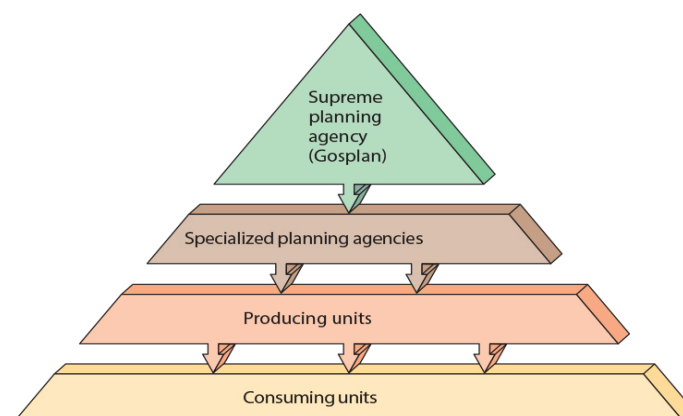
Ownership of factors of production

The state owns the factors of production and dictates answers to the three basic economic questions of what, how and for whom will the goods be produced for. For instance; The authorities decide to produce modern weapons instead of schools or they might decide to build monuments to honour their former rulers instead of producing medicines to cure diseases.

Resources control and management in a communist economic system

The principal feature of a command economy is the central planning board at the top which transmits economic decision down to the various producing and consuming unit below. This process begins with an overall plan from a supreme planning board, such as the Soviet Union Gosplan. The Gosplan established the principal feature of a command economy which is the supreme planning board at the top which transmit economic decisions down to the various producing units below the command.

The Gosplan of Russia (USSR) The Command Economic Structure



The Gosplan established production targets and was the ultimate authority over a layer of specialized planning agencies which authorised capital expansion, raw materials purchases, prices, wages, and all other production decisions for individual producing units. The factories, farms, mines, and all other producers distributed the specified output to consumers according to the approved master plans.

Suggested Resources

1. Conway E, 2009, *50 Economic Ideas You Really need to know*. (Chapter 28.The Bond markets), Quercus Editions Ltd, South Block. London.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
4. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
5. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
6. Other appropriate economics resources

Benchmark 11.4.5.3: Evaluate the strengths and weaknesses of communist economic system.

Topic 3: Strengths and weakness (SWOT) of communist economic systems

Sub-topics:

- Strengths of the communist economic systems
- Weaknesses of the communist economic systems
- Opportunities available in the communist economic system
- Treats to other economic systems

Skills: Evaluation - Evaluate the strengths and weaknesses of communist economic system.

Learning Objectives: By the end of the topic, students will be able to:

- List and discuss the strengths of the communist economic system.
- Identify the weaknesses of the communist system.
- Examine and evaluate any threats or opportunities available from communist system.

Content Background

Strengths and weakness of the communist economic system

The command system can be defended. Proponents argue that economic change occurs much faster than in a traditional economy. This is one reason those dissatisfied with a traditional society might advocate establishment of a command system. The central authorities can ignore custom and order new ways of doing things.

Another reason for adopting a command economy is the controversial belief that the government will provide economic security and equity. It is alleged that central authorities ensure that everyone is provided food, clothing, shelter and medical care regardless of their ability to contribute to society.

The absolute power of central authorities to make right decisions is also the power to be absolutely wrong. Often the planners do not set production goals accurately, and either shortages or surpluses of goods and services are the result. For example, at one point the planners miscalculated and produced too few windshield wipers and side mirrors for Soviet cars. Faced with shortages of these parts, Soviet drivers removed windshield wipers and side mirrors whenever they parked their cars to prevent theft. On the other hand, the Gosplan allocated some collective farms far more fertilizer than they could use. To receive the same amount of fertilizer again the next year, farmers simply burned the excess fertilizer. As a result of such decision-making errors, people waited in long line or steal goods. Because profit is not the motive of producers in a command economy, quality and variety of goods also suffer. If the Gosplan ordered a state enterprise to produce 100,000 side mirrors for cars for example, producers had little incentive to make the extra effort required to create a quality product in a variety of styles. The easiest way to meet the goal was to produce a low quality product in one style regardless of consumer demand.

Suggested Resources

1. Conway E, 2009, *50 Economic Ideas You Really need to know*. (Chapter 28.The Bond markets), Quercus Editions Ltd, South Block. London.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
4. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
5. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
6. Other appropriate economics resources

Benchmark 11.4.5.4: Explain how financial institutions function in a communist economic system.

Topic 4: Financial system in a communist economy

Sub-topic:

- Financial institutions in a communist economy

Skills: Analysis – Explain functions of financial systems in communist economies.

Learning Objective: By the end of the topic, students will be able to:

- Examine and evaluate how the financial systems are organized, operated and managed in a communist economy.

Content Background

In a communist economy the ownership of financial markets/sector is purely controlled by the state. The central command is responsible for setting the bond prices.

Its financial systems are heavily influenced by the central economic coordinating authority then the specialized financial agencies. Financial agencies are carefully scrutinized for any further capital expansions in their operations.

Suggested Resources

1. Conway E, 2009, *50 Economic Ideas You Really need to know*. (Chapter 28.The Bond markets), Quercus Editions Ltd, South Block. London.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
4. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
5. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
6. Other appropriate economics resources

Benchmark 11.4.5.5: Examine the influence of the communist ideology on the exchange of goods and services between governments and between people.

Topic 5: Provision of goods and services in a communist economic system

Sub-topic:

- Efficiency of government provision of goods and services

Skills: Analysis - Examine influence of government on provisions of goods and services.

Learning Objective: By the end of the topic, students will be able to:

- Examine and analyse the effectiveness of provision of goods and services to the people by the government.

Content Background

The effectiveness of the provision of goods and services to the people by the government

The central authority decides what, how and for whom to produce goods and services for. Production and consumption targets such as capital expansion purchase of, raw materials purchases, price control, wages, and all other production, distribution and consumption decisions for agencies and individuals are decided by the state. The factories, farms, mines, and all other producers distribute the specified output to consumers according to the approved master plans.

The efficiency of its provision of goods and services by the citizens operating under the communist system

The state decides what, how and for whom goods and services where to be produced for. Production and consumption decisions can be either favourable or unfavourable. It's citizens can enjoy a favourable and better living stands but if its decisions are unfavourable, then its citizens will be suppressed and as well as oppressed and will not be free to choose goods and services leading to many socio-economic problem. Often the planners do not set production goals accurately, and either shortages or surpluses of goods and services are the result. For example, at one point the planners miscalculated and produced too few goods and services or surpluses of an item.

Suggested Resources

1. Conway E, 2009, *50 Economic Ideas You Really need to know*. (Chapter 28.The Bond markets), Quercus Editions Ltd, South Block. London.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
4. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
5. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
6. Other appropriate economics resources

Benchmark 11.4.5.6: Evaluate producer and consumer behavior patterns in communist economies.

Topic 6: Behaviours of producers and consumers in communist economies

Sub-topics:

- Producers' behaviour in the market in a communist economy
- Consumers' behaviour in the market in a communist economy.

Skills: Evaluation - Evaluate the behaviours of producers and consumers.

Learning Objective: By the end of the topic, students will be able to:

- Examine how producers and consumer behave in a communist economy.

Content Background

How producers act in markets in the communist economy

To reach this goal, the central planners set the price of a good or services which is below the Equilibrium price, than all state owned enterprise will apply the pricing formula for the maximum price. This maximum pricing creates shortages for goods and services leading to long lines, empty shelves, and existence of black markets. Free market economy is the opposite of this type of economy where consumers have varieties of goods and services to choose from.

How consumers act in markets in the communist economy

In the communist economy consumers do not make choices but consume what is provided unlike the consumers in a free market economy. In a free market economy consumers decide for themselves what to be afforded and consume. A Command economy has only state owned enterprises and not private enterprises. Most firms operating in comand economies sets price ceiling and not at the equilibrium price due to demand and supply factors. In the free market economy prices are set due to the interaction of demand and supply.

Suggested Resources

1. Conway E, 2009, *50 Economic Ideas You Really need to know*. (Chapter 28.The Bond markets), Quercus Editions Ltd, South Block. London.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
4. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
5. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
6. Other appropriate economics resources

Benchmark 11.5.5.7: Illustrate how private enterprises operate in a communist economy.

Topic 7: Operations of private enterprises in a communist economy

Sub-topic:

- Operations of private enterprises in a communist economy

Skills: Analysis - Illustrate operation of private enterprise in communist economy.

Learning Objective: By the end of the topic, students will be able to:

- Examine and analyse private enterprises in a communist economy.

Content Background

Private enterprise

Private enterprises are enterprises owned by private individuals and the public. There are no private enterprises in a Communist state. However many governments of centrally planned economies engage in state own enterprise. Suppose one of the principal goals of the command economy is to keep the prices low. All state owned enterprise will apply price ceiling formula. The price ceiling will create shortages for goods and services. A command economy has only state owned enterprises.

Comparative examination with operations of private enterprises in a free market economy

The setting of maximum price creates shortages for goods and services. The consequence of shortages is that black markets or thefts would occur. A Command economy has only state owned enterprises and not private enterprises. Most firms operating in command economies sets price ceiling and not at the equilibrium price due to demand and supply factors. In the free market economy prices are set due to the interaction of demand and supply.

Suggested Resources

1. Conway E, 2009, *50 Economic Ideas You Really need to know*. (Chapter 28.The Bond markets), Quercus Editions Ltd, South Block. London.
2. Harcourt S.V, 1980, *Commerce and Development in Papua New Guinea*, (2nd edition) Pearson Education, Melbourne, Australia.
3. Parry G and Kemp S, 1989, *Pathways in Economics*, (Page.77-104).Tactic Publication, South Perth, Western Australia.
4. Shade E.D, C.G.Latty and P.M. Scott, 1989, *Fundamentals of Economics* (3rd.ed.Vol 1) McGraw Hill Book Company, Australia.
5. Shade E.D. and R.J.Miller, 2000, *Foundations of Economics*, (4th Edition. Page.106–144).Addison, Wesley Longman, Melbourne, Australia.
6. Other appropriate economics resources

Standards-Based Lesson Planning

What are Standards-Based Lessons?

In a Standards-Based Lesson, the most important or key distinction is that, a student is expected to meet a defined standard for proficiency. When planning a lesson, the teacher ensures that the content and the methods of teaching the content enable students to learn both the skills and the concepts defined in the standard for that grade level and to demonstrate evidence of their learning.

Planning lessons that are built on standards and creating aligned assessments that measure student progress towards standards is the first step teacher must take to help their students reach success. A lesson plan is a step-by-step guide that provides a structure for an essential learning.

When planning a standards-based lesson, teacher instructions are very crucial for your lessons. How teachers instruct the students is what really points out an innovative teacher to an ordinary teacher. Teacher must engage and prepare motivating instructional activities that will provide the students with opportunities to demonstrate the benchmarks. For instance, teacher should at least identify 3-5 teaching strategies in a lesson; teacher lectures, ask questions, put students into groups for discussion and role play what was discussed.

Why is Standards-Based Lesson Planning Important?

There are many important benefits of having a clear and organized set of lesson plans. Good planning allows for more effective teaching and learning. The lesson plan is a guide and map for organizing the materials and the teacher for the purpose of helping the students achieve the standards. Lesson plans also provide a record that allows good, reflective teachers to go back, analyze their own teaching (what went well, what didn't), and then improve on it in the future.

Standards-based lesson planning is vital because the content standards and benchmarks must be comparable, rigorous, measurable and of course evidence based and be applicable in real life that we expect students to achieve. Therefore, teachers must plan effective lessons to teach students to meet these standards. As schools implement new standards, there will be much more evidence that teachers will use to support student learning to help them reach the highest levels of cognitive complexity. That is, students will be developing high-level cognitive skills.

Components of a Standards-Based Lesson Plan

An effective lesson plan has three basic components;

- aims and objectives of the course;
- teaching and learning activities;
- assessments to check student understanding of the topic.

Effective teaching demonstrates deep subject knowledge, including key concepts, current and relevant research, methodologies, tools and techniques, and meaningful applications.

Planning for under-achievers

Who are underachieving students?

Under achievers are students who fail or do not perform as expected. Underachievement may be caused by emotions (low self-esteem) and the environment (cultural influences, unsupportive family)

How can we help underachievement?

Underachievement varies between students. Not all students are in the same category of underachievement.

Given below a suggested strategies teachers may adopt to assist underachievers in the classroom.

- Examine the Problem Individually
It is important that underachieving students are addressed individually by focusing on the student's strengths.
- Create a Teacher-Parent Collaboration
Teachers and parents need to work together and pool their information and experience regarding the child. Teachers and parents begin by asking questions such as;
 - In what areas has the child shown exceptional ability?
 - What are the child's preferred learning styles?
 - What insights do parents and teachers have about the child's strengths and problem areas?
- Help student to plan every activity in the classroom
- Help students set realistic expectations
- Encourage and promote the student's interests and passions.
- Help children set short and long-term academic goals
- Talk with them about possible goals.
Ensure that all students are challenged (but not frustrated) by classroom activities
- Always reinforce students

Sample of Standards-Based Lesson Plan

To help teachers plan effective Standards-Based lesson plans, a sample lesson is provided here. Teachers are encouraged to study the layout of the different components of this lesson and follow this design in their preparation and teaching of each lesson. Planning a good lesson helps the teacher to focus on the essential knowledge, skill, value and attitude that students are expected to learn and master at the end of the lesson.

NOTE FOR TEACHER:

GIVEN BELOW ARE GRADE 10 SBC LESSON PLANS. USE THESE TO HELP YOU DESIGN YOUR LESSON PLANS FOR GRADE 11 ECONOMICS

Strand 4: Economics

Unit 1: Factors of Production and Consumption

Content Standard 4.1: Students will be able to identify and analyze the different factors that influence and contribute to the production, distribution and consumption of goods and services.

Benchmark 10.4.1.1: Identify and analyse the role of labour unions in the processes of production and the distribution of resources.

Topic 1: Role of the Labour Unions (Trade Unions)

Lesson Topic: Importance of Labour Unions (Trade Unions)

Grade: 10

Length of lesson: 40 minutes

Essential knowledge, skills, values and attitude

Knowledge: The importance of labour Unions (trade union)

Skill(s): Analysis (explain), Evaluate (justify and make judgments on the importance of having labour unions (trade unions)

Values: Compensate humans efforts accordingly for work done

Attitudes: Appreciate the importance of the labour union (trade union)

Performance indicator: Identify and discuss the importance of labour unions.

Materials:

Instructional Objective(s): By the end of the lesson, students will be able to;

- Identify and discuss the importance of labour unions (trade unions).

Essential Questions:

- What is a labour union (trade union)?
- What is the importance of a labour union (trade union)?

Lesson Procedure

Teacher Activities	Student Activities
Introduction (time in minutes)	
<p>Ask students to act out a drama for 2 minutes on the topic Example:</p> <ul style="list-style-type: none"> • <i>Sit in strike by workers for wage raise</i> • <i>Rally for company to meet demands of workers for lack of incentives for the demanding work pressure by the company</i> • <i>What is this drama depicting?</i> • <i>Have you come across such situations?</i> <p>Build on the answers given by students to ask more relating questions on Labour Union</p> <p>Tell the students the importance of studying this topic</p>	<p>Observe, listen and answer (possible answers)</p> <ul style="list-style-type: none"> • <i>Sit in strike by workers for wage raise</i> • <i>Rally for company to meet demands of workers</i> • <i>For lack of incentives for the demanding work</i> • <i>Pressure by the company</i> • <i>Yes/No</i>
Body (time in minutes)	
Modeling	
<p>Show pictures, cartoons, or newspaper articles with reference to the topic for the lesson</p>	<p>Listen and observe</p>
Guided Practice	
<p>Ask students how the companies of those workers going on strike reacted.</p>	<p>Listen and answer questions</p>
Independent Practice	
<p>Give students handout on the labour union (trade union) Ask students to use the handout to do the following;</p> <ul style="list-style-type: none"> • <i>What is labour union (trade union)?</i> • <i>Explain the importance of the labour union (trade union)?</i> • <i>Use newspapers and cut out articles on issues dealing with labour union (trade union)?</i> 	<p>Use handouts to answer the set questions on the topic for this lesson.</p> <ul style="list-style-type: none"> • <i>Write down role or function of labour union (trade union)</i> • <i>Explain importance of the labour union (trade union)</i> • <i>Cut out newspaper articles on issues dealing with the labour union (trade union)</i>
Conclusion (time in minutes)	
<p>Name one importance of the labour union (trade union)</p>	<p>Listen carefully and answer</p>

Assessments, Reporting and Monitoring

What is Standards-Based Assessment (SBA)?

Standards-Based Assessment is an on-going and a systematic process of **assessing, evaluating, reporting** and **monitoring** students' performance and progression towards meeting grade and national level expectations. It is the measurement of students' proficiency on a learning objective or a specific component of a content standard and progression towards the attainment of a benchmark and content standard.

Purpose of Standards-Based Assessment

Standards-Based Assessment (SBA) serves different purposes. These include instruction and learning purposes. The primary purpose of SBA is to improve student learning so that all students can attain the expected level of proficiency or quality of learning.

Enabling purposes of SBA is to:

- measure students' proficiency on well-defined content standards, benchmarks and learning objectives
- ascertain students' attainment or progress towards the attainment of specific component of a content standard
- ascertain what each student knows and can do and what each student needs to learn to reach the expected level of proficiency
- enable teachers to make informed decisions and plans about how and what they would do to assist weak students to make adequate progress towards meeting the expected level of proficiency
- enable students to know what they can do and help them to develop and implement strategies to improve their learning and proficiency level
- communicate to parents, guardians, and relevant stakeholders the performance and progress towards the attainment of content standards or its components
- compare students' performances and the performances of other students

Principles of Standards-Based Assessment

The principle of SBA is for assessment to be;

- emphasising on tasks that should encourage deeper learning
- be an integral component of a course, unit or topic and not something to add on afterwards
- a good assessment requires clarity of purpose, goals, standards and criteria
- of practices that should use a range of measures allowing students to demonstrate what they know and can do
- based on an understanding of how students learn
- of practices that promote deeper understanding of learning processes by developing students' capacity for self-assessment
- improving performance that involves feedback and reflection
- on-going rather than episodic

- given the required attention to outcomes and processes
- be closely aligned and linked to learning objectives, benchmarks and content standards.

Standards-Based Assessment Types

In standards-Based Assessment, there are three broad assessments types.

1. Formative Assessment

Formative assessment includes ‘assessment *for* and *as*’ and is conducted during the teaching and learning of activities of a topic.

Purposes of Assessment For Learning

- On-going assessment that allows teachers to monitor students on a day-to-day basis.
- Provide continuous feedback and evidence to the teachers that should enable them to identify gaps and issues with their teaching, and improve their classroom teaching practice.
- Helps students to continuously evaluate, reflect on, and improve their learning.
- Help teachers to make inferences about student learning to inform their teaching.
- Provide continuous feedback to both students and teachers which enables them to monitor progress, identify and address gaps and errors in learning.

Purposes of Assessment As Learning

- Occurs when students reflect on and monitor their progress to inform their future learning goals.
- Helps students to continuously evaluate, reflect, and improve their own learning.
- Helps students to understand the purpose of their learning and clarify learning goals.

2. Summative Assessment

Summative assessment focuses on ‘assessment of learning’ and is conducted after or at the conclusion of teaching and learning of activities or a topic.

Purposes of Assessment Of Learning

- Help teachers to determine what each student has achieved and how much progress he/she has made towards meeting national and grade-level expectations.
- Help teachers to determine what each student has achieved at the end of a learning sequence or a unit.
- Enable teachers to ascertain each student’s development against the unit or topic objectives and to set future directions for learning.
- Help students to evaluate, reflect on, and prepare for next stage of learning.

3. Authentic Assessment

- Is performed in a real life context that approximates as much as possible, the use of a skill or concept in the real world.
- Is based on the development of a meaningful product, performance or process.
- Students develop and demonstrate the application of their knowledge, skills, values and attitudes in real life situations which promote and support the development of deeper levels of understanding.

Authentic Assessment Criteria

Authentic assessment refers to assessment that:

- Looks at students actively engaged in completing a task that represents the achievement of a learning objective or standard.
- Takes place in real life situations.
- Asks students to apply their knowledge, skills, values and attitudes in real life situations.
- Students are given the criteria against which they are being assessed.

Performance Assessment

Performance assessment is a form of testing that requires students to perform a task rather than select an answer from a ready-made list. For example, a student may be asked to explain historical events, generate scientific hypotheses, solve math problems, converse in a foreign language, or conduct research on an assigned topic. Teachers, then judge the quality of the student's work based on an agreed-upon set of criteria. It is an assessment which requires students to demonstrate that they have mastered specific skills and competencies by performing or producing something.

Types of performance assessment;

i. Products

This refers to concrete tangible items that students create through either the visual, written or auditory media such as;

- Creating a health/physical activity poster
- Video a class game or performance and write a broadcast commentary
- Write a speech to be given at a school council meeting advocating for increased time for health and physical education in the curriculum
- Write the skill cues for a series of skill photo's
- Create a brochure to be handed out to parents during education week
- Develop an interview for a favorite sportsperson
- Write a review of a dance performance
- Essays
- Projects

ii. Process Focused Tasks

It shows the thinking processes and learning strategies students use as they work such as;

- Survival scenarios
- Problem-solving initiative/adventure/activities
- Decision making such as scenario's related to health issues
- Event tasks such as creating a game, choreographing a dance/ gymnastics routine, creating an obstacle course
- Game play analysis

- Peer assessment of skills or performances
- Self-assessment activities
- Goal setting, deciding a strategy and monitoring progress towards achievement

iii. Portfolio

This refers to a collection of student work and additional information gathered over a period of time that demonstrates learning progress.

iv. Performances

It deals with observable affective or psycho-motor behaviours put into action such as;

- Skills check during game play
- Role plays
- Officiating a game
- Debates
- Performing dance/gymnastics routines
- Teaching a skill/game/dance to peers

Performance Standards

Performance Standards are concrete statements of how well students must learn what is set out in the content standards, often called the “be able to do” of “what students should know and be able to do.” Performance standards are the indicators of quality that specify how competent a students’ demonstration or performance must be. They include explanations of how well students must demonstrate the content, explaining how good is good enough.

Performance standards:

- measure students’ performance and proficiency (using performance indicators) in the use of a specific knowledge, skill, value, or attitude in real life or related situations
- provide the basis (performance indicators) for evaluating, reporting and monitoring students’ level of proficiency in use of a specific knowledge, skills, value, or attitude
- are used to plan for individual instruction to help students not yet meeting expectations (desired level of mastery and proficiency) to make adequate progress towards the full attainment of benchmarks and content standards
- are used as the basis for measuring students’ progress towards meeting grade-level benchmarks and content standards.

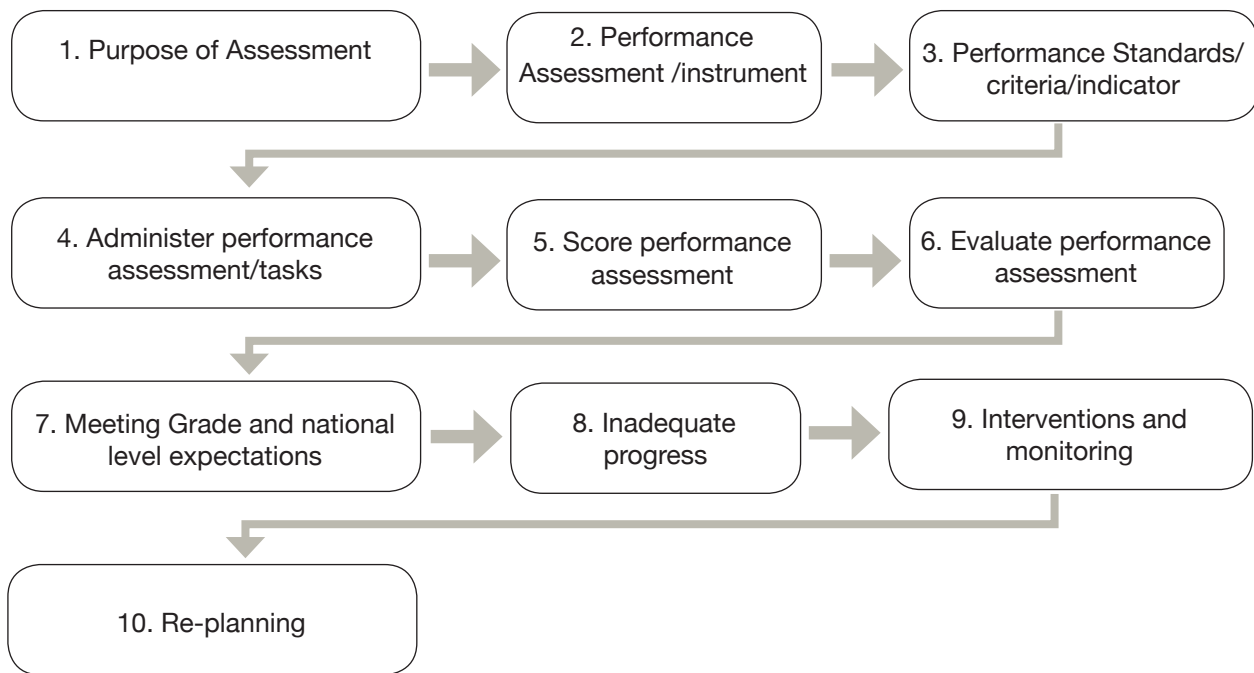
Assessment Strategies

It is important for teachers to know that, assessment is administered in different ways. Assessment does not mean a test only. There are many different ways to find out about student’s strengths and weaknesses. Relying on only one method of assessing will not reflect student’s achievement. Provided in the appendices is a list of suggested strategies you can use to assess student’s performances. These strategies are applicable in all the standards-based assessment types.

Please refer to Appendix 5 to see the suggested strategies.

There are different performance assessment methods and assessment strategies for assessing students’ learning and performance on significant components of content standards.

Standards-Based Assessment Process



Scoring Students' Assessment

Assessment scoring methods describe how students' assessment tasks will be scored.

The most commonly used methods of scoring students' assessment are:

- i. Checklists
- ii. Rating Scales
- iii. Rubrics

Students' performance is assessed and scored using:

- i. a set of well-defined criteria
- ii. performance standards or indicators,

Checklists, rating scales and rubrics are tools that state specific criteria and allow teachers and students to gather information and to make judgements about what students know and can do in relation to the standards. They offer systematic ways of collecting data about specific behaviours, knowledge and skills.

The quality of information acquired through the use of checklists, rating scales and rubrics is highly dependent on the quality of the descriptors chosen for assessment.

Checklists usually offer a yes/no format in relation to student demonstration of specific criteria. This is similar to a light switch; the light is either on or off. They may be used to record observations of an individual, a group or a whole class.

Rating Scales allow teachers to indicate the degree or frequency of the behaviours, skills and strategies displayed by the learner. Rating scales state the criteria and provide three or four response selections to describe the quality or frequency of student work.

Teachers can use rating scales to record observations and students can use them as self-assessment tools. Teaching students to use descriptive words, such as *always*, *usually*, *sometimes* and *never* helps them pinpoint specific strengths and needs. Rating scales also give students information for setting goals and improving performance. In a rating scale, the descriptive word is more important than the related number. The more precise and descriptive the words for each scale point, the more reliable the tool.

Effective rating scales use descriptors with clearly understood measures, such as frequency. Scales that rely on subjective descriptors of quality, such as *fair*, *good* or *excellent*, are less effective because the single adjective does not contain enough information on what criteria are indicated at each of these points on the scale.

Rubrics use a set of criteria to evaluate a student's performance. They consist of a fixed measurement scale and detailed description of the characteristics for each level of performance. These descriptions focus on the *quality* of the product or performance and not the quantity; e.g., not number of paragraphs, examples to support an idea, spelling errors. Rubrics are commonly used to evaluate student performance with the intention of including the result in a grade for reporting purposes. Rubrics can increase the consistency and reliability of scoring.

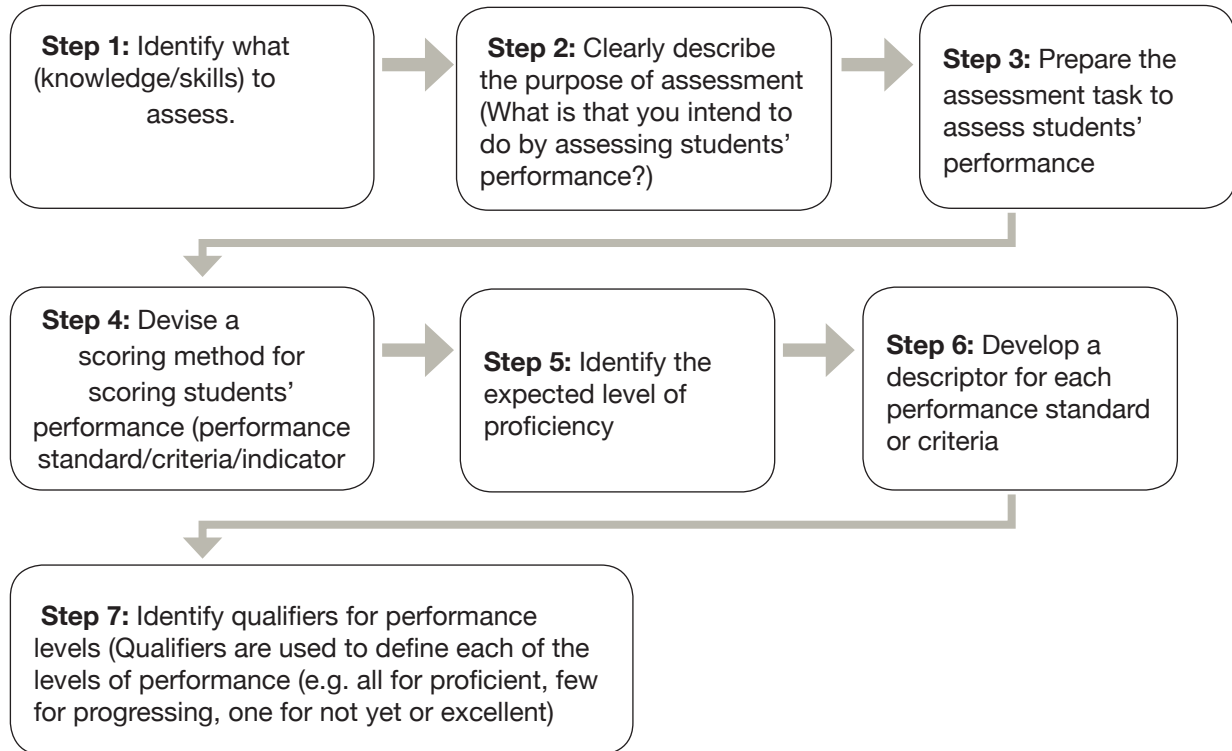
Rubrics use a set of specific criteria to evaluate student performance. They may be used to assess individuals or groups and, as with rating scales, may be compared over time.

Rubrics are recognized as a way to effectively assess student learning and communicate expectations directly, clearly and concisely to students. The inclusion of rubrics in a teaching resource provides opportunities to consider what demonstrations of learning look like, and to describe stages in the development and growth of knowledge, understandings and skills. To be most effective, rubrics should allow students to see the progression of mastery in the development of understandings and skills.

However, regardless of which method is used, students' performance, proficiency, and quality of learning should be meaningfully and effectively measured. This will help ascertain if students are meeting grade-level expectations and progressing towards meeting the content standard.

Assessment Samples

Teachers are required to use the steps outlined below when planning assessment. These steps will guide you to develop effective assessments to improve student's learning as well as evaluating their progress towards meeting national and grade –level expectations.



There are three (3) assessment samples provided here to guide teachers when preparing assessment for students. There is a/an;

- i. formative assessment sample
- ii. summative assessment sample
- iii. authentic assessment sample

Teachers are encouraged to give a variety of assessments using different strategies on one topic to test the understanding and achievement of a content standard and a benchmark by individual students.

Assessment Types

NOTE FOR TEACHER:

GIVEN BELOW ARE GRADE 10 ASSESSMENT SAMPLES. USE THESE TO HELP YOU DESIGN YOUR LESSON PLANS FOR GRADE 11 ECONOMICS

Formative Assessment

Strand 1: Geography**Unit 1:** Skills in Geography

Content Standard 1.1: Student will be able to use geographical tools to locate and interpret information about people, places and environment.

Benchmark 10.1.1.1: Identify and explain the different types of population pyramids.

Topic 1: Types of population pyramids

Lesson Topic: Expansive population pyramid

What is to be assessed? - (KSAVs)

Expansive population pyramid and label its features.

Performance Task

Draw a sketch of the expansive population pyramid and label its features.

Purpose of the assessment

To measure students' proficiency on the achievement of the benchmark and learning objectives

Expected level of proficiency

Identify main features of expansive population pyramid.

Assessment Strategy

This assessment can be conducted in one lesson as an assessed lesson exercise.

Assessment Scoring

Rubrics must be developed to articulate the real proficiency of the child. This is an analytical rubrics used to assess the child's learning through the assessment tool a lesson exercise.

Performance standards/Criteria	A	B	C	D	Score
	Advance 10	Proficient 9-5	Progressing 3-4	Not Yet 2	___/10 Marks
Draw a sketch of the expansive population pyramid and describe its features (10 marks)	Correct sketch drawing of the expansive population pyramid and describes and <u>explain all</u> its features	Good sketch drawing of the expansive population pyramid and <u>describes some</u> of its features	Satisfactory sketch drawing of the expansive population pyramid and <u>describes 2</u> of its features	Poor sketch drawing of the an expansive population pyramid and <u>describes only 1</u> feature	

Summative Assessment

Strand 2: History

Unit 1: Making Sense of History

Content Standard 2.1: Student will be able to discover that people construct knowledge of the past from multiple and various types of sources to make sense of historical patterns, periods of time and the relationship among these elements.

Benchmarks 10.2.1.1-10.2.1.5: *(refer to the benchmarks in unit1)*

Topics 1-5: *(refer to the topics in unit 1)*

What is to be assessed? - (KSAVs)

Historical events that occurred in the Pacific Region

Performance Task

Students will do an assignment out of 30marks. You can use other assessment tools (assignment, projects, etc.) to assess student's proficiency on these benchmarks.

Task: Students will be given two week to complete this assignment. They are to;

1. *Choose one of the following countries; PNG, Fiji, Solomon Islands, Tahiti and New Caledonia*
2. *Research on a major event that occurred in one of these countries which shaped the history of the Pacific Region. Use criteria (performance standard) given in the assessment scoring.*

Purpose of the assessment

To measure students' proficiency on the achievement of the benchmarks and learning objectives in this unit. (This assessment is to be conducted after teaching the unit)

Expected level of proficiency

All students are expected to;

- Identify and interpret major social, political, economic, religious and cultural events that have shaped the history of the Pacific Region
- Define and investigate a social, political, economic, religious and cultural events that occurred in the Pacific Region.
- Use available information to document and compare the social, political, economic, religious and cultural history of the people of the Pacific region
- Examine how knowledge of history is constructed, stored, managed and disseminated in different countries of the Pacific Region
- Analyse the colonial history of the countries of the Pacific Region in terms of the reasons for colonisation, and social, economic, political and cultural impact.

Assessment Strategy

An assignment will be used to measure students proficiency.

Assessment Scoring

Rubrics must be developed to articulate the real proficiency of the child. This is an analytical rubric used to assess the child's learning through the assessment tool an assignment.

Performance standards/Criteria	A	B	C	D	Score
	Advance 30	Proficient 29-25	Progressing 15-24	Not Yet 2-10	___/30 Marks
State and explain the major event, the date it occurred and the Pacific Island country that it happened in. (2 marks)	Exceptional title, detailed, clear and succinct explanation of the event	Good title and clear explanation of the event	Fair title and satisfactory explanation of the event	Title has no connection to the assigned tasks and the explanation of the event is poor	
Draw a map of the Pacific Island country it happened in and plot the location the major event occurred at. (10 marks)	Correct map drawn and precise location of the place where the event occurred	Good map and place of event marked almost near to the exact location	Satisfactory drawing but the location is far from the exact location	Poor drawing of the map and no attempt to mark the location	
Name the key person or persons who were involved in this major event Attach their profile (pictures, photographs, memoirs). (10 marks)	Detailed profile of the person or persons involved in these events	Shows good knowledge of person or persons involved in these events	Shows fair knowledge of the person or persons involved in these major events	Shows poor knowledge of the person or persons involved in these major events	
Name other foreign countries that took part in this event and what was their reason for taking part. (3 marks)	Correct names of foreign countries who took part and the correct reasons for them taking part in this major event(s)	Shows good knowledge of why foreign countries got involved in this major event(s)	Shows fair knowledge of why foreign got involved in this major event(s)	Shows no idea of foreign countries involvement in this event (s)	
How has this event shaped the history of the Pacific. (5 marks)	Correct explanation of the impact of this event on the Pacific	Good explanation of the impact of this event on the Pacific	Fair explanation of the impact of this event on the Pacific	Unsatisfactory explanation of this event on the Pacific	

Authentic Assessment

Strand 3: Political Science

Unit 4: Government and Citizenship

Content Standard 3.4: Students will be able to evaluate and elaborate on the roles and responsibilities, and the rights of citizens in different government systems.

Benchmarks 10.3.4.1-10.3.4.5: (refer to the benchmarks in unit 4)

Topics 1-5: (refer to the topics in unit 4)

What is to be assessed? - (KSAVs)

Human Rights in Papua New Guinea

Performance Task

Students will do a project worth 20 marks. You can use other assessment tools (assignment, simulation, interview etc) to assess students' proficiency on these benchmarks.

Task: Students will be given two weeks to complete this project then carry out awareness.

1. *They will collect information on Human Rights for example; Children's Rights, Women Rights etc.*
2. *They will make presentation on these rights during assembly, recess and lunch time. (Students will be grouped into 5-6 students per group)*
3. *The best presentation will be given a chance to make a presentation in public in their local community.*

The aim of this project is to develop in students the art of oration or public speaking and at the same time gear them towards careers in this field and promoting good citizenship for all.

Purpose of the assessment

To measure students proficiency on the achievement of the benchmarks and learning objectives in this unit. This assessment is to be conducted after teaching this unit.

Expected level of proficiency

All students are expected to;

- examine policies and laws on human rights in Papua New Guinea and create context to appropriately implement or apply each law.
- identify and evaluate the types of human rights spelt out in the Papua New Guinea constitution.
- probe the difference between inalienable rights and other rights and how each is promoted and protected using the legal system.
- investigate and report on how the rights of women and girls, people with disability, and other marginalised and vulnerable groups are enforced in Papua New Guinea.
- examine the rights of children and evaluate the policy and legal frame works as well as the processes for enforcing and protecting these rights.

Assessment Strategy

A project will be used to measure students' proficiency.

Assessment Scoring

Rubrics will be developed to find out the real proficiency of the child. This is an analytical rubrics used to assess the child's learning through the assessment tool of a project.

Performance standards/Criteria	A	B	C	D	Score
	Advance 25	Proficient 20-24	Progressing 10-19	Not Yet 2-9	_/ Marks
Define Human Rights, identify and explain one Human Rights and explain this right (5marks)	Exceptional title, keywords clearly defined and very clear, logical explanations of the issues on Human Rights	Very good title, key words defined and good explanations covering issues on Human Rights researched on.	Good title, satisfactory explanation of the key words and fair explanations covering issues on Human Rights researched on	Poor title, key words not defined well as well as poor explanations covering issues on Human Rights researched on	
Findings must be substantiated with facts and figures (Newspapers, photographs and articles must be quoted or cited) (10 marks)	Correct information supporting the findings	Some correct information used to substantiate research	Few information used to substantiate findings	No information used to substitute findings	
Presentation of finding as an awareness in the school	Work presented is clear on the chart, oral presentation is loud and clear and confidence is clearly portrayed	Good presentation of the awareness, that is poster was logic but oral presentation and confidence were moderate	Fair presentation of the awareness, that is poster had few inconsistency on the findings and oral presentation and confidence was fair	Poor presentation of the awareness, poster work was oral presentation was inaudible and general lack in confidence during presentation	

STEAM Assessment

Strand 5: Environment

Unit 1: Environmental Change

Content Standard 5.4: Students will be able to critique and make sense of the impact of human activities on the environment.

Benchmark 10.5.4.2: Investigate and explain the notion of “ecological foot print”

Topic : Ecological Footprint

Lesson Topic: Notion of ‘ecological footprint’

What is to be assessed? - (KSAVs)

The topic, ‘ecological foot print’.

Purpose of the assessment

To measure students proficiency on the achievement of the benchmarks and learning objectives in this topic. This assessment is to be conducted after teaching this topic.

Expected level of proficiency

All students are expected to;

- investigate and explain the notion of “ecological foot print”

Performance Task

Student will carry out a project worth 30 marks that should contribute to the School Learning Improvement Program (SLIP). This project will assess students' proficiency on the mentioned benchmarks. In order for this assessment type to attain its intended purpose the following must be done carefully;

Task: Students will be given a month to complete this project.

1. *all grade 10 Social Science teachers discuss the STEAM project with their HOD*
2. *the Social Science HOD brings this project to the attention of the Head Teacher hence it will involve the learning of all grade 10 classes in the school.*
3. *once approved by the Head Teacher, the Social Science HOD now convenes a meeting with all other subject HOD to integrate this project into their learning. HOD for Social Science will have developed a criteria already and will discuss around that.*
4. *the HOD for other subjects meet with their respective subject teachers to gauge their views and write up criteria with reference to the theme of the project, “Ecological Footprints” bringing out the essence of their subjects in this project.*

5. *the Head Teacher then convenes a meeting with all teachers as they are now aware of the project. HOD for respective subjects give feedback from their meetings. Issues concerning this project must be ironed out and all subjects now carry out this assessment, starting with Social Science.*

The grade 10 Social Science teacher will now do the following;

- i. *Group the students into groups of 6 to design (drawing and manual) a tangible technology that will enhance the notion of “ Ecological Footprints”*
- ii. *The teacher then assess their designs and the best designs now competes with the other best designs from other grade 10 classes.*
- iii. *All the best designers now create models of their designs (e.g., greenhouse) with assistance from their class members. At this stage the other subjects now carry forward this assessed projects theme, ‘Ecological Footprint’ however in the context of their subjects. STEAM is an integrated approach of teaching. All subjects must incorporate the theme put forward by Social Science. They develop criteria that should address this theme. For instance; Business Studies teacher can already think of income earning opportunities for the school by developing a criteria for students to develop business plan from this project. Technology and Industrial Arts (TIA) will develop criteria that will engage the students to construct the models. Science teachers will develop criteria to test students knowledge of the Science process of Engineering Design thinking when they create the models around the theme of ‘Ecological Footprint’. The English subject teachers will set criteria and guidelines for students on how to write manuals so they write about this technology. They must also be given guidelines to writing report. Students get to write report of how they designed this technology. The Mathematics teacher will provide a criteria for the students in terms of the measurements, angles and operations used to work out the size and shape of the technology (e.g., Greenhouse)*

Assessment Scoring

Rubrics must be developed to find out the real proficiency of the child. This is an analytical rubrics used to assess the child's learning through the assessment tool a project.

Performance standards/Criteria	A	B	C	D	Score
	Advance 30	Proficient 29-25	Progressing 15-24	Not Yet 2-14	___/ Marks
Design (drawing) a simple technology which should portray the theme (10 marks)	Exceptional title, drawing is clear, detailed and precise	Very good title, drawing is clear though some details missing	Good title, drawing is clear but a lot of details missing	Poor title, drawing does not capture the essence of the theme	
Write a simple manual that is steps on how to create this technology (5 marks)	All steps to create the model clearly explained and in logical order	Steps are in order but not explained clearly	Some steps are missing and explanation of these steps not clear	Steps not in order and explanation is poor	
Construct simple model (prototype) of the technology (15 marks)	Construction of the model captures all aspects of the theme	Some aspects of the theme captured in the model	Few aspects of the theme captured in the mode	No aspects of the theme evident in the model	

Glossary

Terms	Definitions
Assessment	Activities teachers use to help students learn and to measure and monitor their progress towards the attainment of expected levels of proficiency.
Assessment As Learning	Assessment is used to help students understand and reflect on what they have learnt or are having difficulties with, identify areas of strengths and weaknesses, and set clear, measurable, and attainable personal goals to improve their own learning.
Assessment For Learning	A common form of assessment. It is an ongoing assessment process that arises out of the interaction between teaching and learning. Also referred to as formative assessment.
Assessment Of Learning	Provides a summary of students learning over a given period of time and is generally carried out at the end of a course of study. Also referred to as summative assessment.
Assessment Strategies	Different ways or approaches of assessing students work.
Authentic Assessment	A type of broad assessment that involves students actively engaged in completing a task that represents the achievement of a learning objective or standard. Authentic assessment takes place in real life situations.
Benchmarks	Benchmarks are more detailed descriptions of a specific level of performance expected of students at particular ages, grades, school levels or levels of development. They are the specific components of the knowledge, process, skill, concept, principle, or idea identified by a content standard.
Content Standards	Content Standards are broadly stated expectations of what (content) students should know. They describe the knowledge, skills, values, and attitudes that students should attain.
Curriculum Integration	Curriculum integration in teaching and learning refers to an approach or methodology that cuts across and draws on multiple subject areas to focus on a topic or theme.
Diagnostic Assessment	An assessment given to identify child's strengths and learning needs for improvement.
Evidence Outcomes	Evidence outcomes are indicators that indicate students' mastery of essential knowledge, skills, values and attitudes at the end of each grade or school level.
Formative Assessment	A form of assessment used throughout a unit of study in teaching and learning to measure student's understanding and progress.
Monitoring	General supervision over the teaching and learning of the standards.
Performance Assessment	A form of assessment that is focused on measuring students' mastery of knowledge, skills, values and attitudes taught and learnt in each lesson.
Performance Standards	Performance standards are the indicators of quality that specify how competent a students' demonstration or performance must be.
Proficiency	Mastery of the essential knowledge, skills, values and attitudes in the content standards and benchmarks.

Rubrics	It is a scoring guide used to assess the quality of students responses in an assessment often presented in a table with evaluative criteria at certain levels of achievement.
Self-Assessment	A judgment for official purposes for teachers to make about their abilities, principles or decisions.
Standard	A standard is a level of quality or achievement, especially a level that is thought to be acceptable. It is something used to measure or estimate the quality or degree of something, for example, how good a piece of work is.
Standards-Based Curriculum	Describes what all students should know and be able to do at the end of a grade or school level. The main idea behind standards-based curriculum is standards .
Standards-Based Education	An academic program in which clearly defined academic content and benchmarks are aligned. It spells out what schools and communities need to do to ensure achievement of expectations. The main idea behind standards-based education is standards .
Standards-Based Assessment	A systematic and ongoing process of collecting and interpreting information about students' achievements.
21st Century Skills	Refers to a broad set of knowledge, skills, work habits, and character traits that are believed by educators, school reformers, college professors, employers, and others to be critically important to success in today's world, particularly in collegiate programs and contemporary careers and workplaces.

References

Bandara, P. (2013). *Economics for Grade 12*. 94/1 Arthurugiriya Road, Kottawa, Sri Lanka: Sara Publications.

Bank of Papua New Guinea. (2007). *Money and Banking* (Vol. 2). Victoria: Melbourne University Publishing Ltd.

Constitutional Planning Committee, (1974). *Constitution of the independent State of Papua New Guinea*. Port Moresby, Office of the Legislative Council.

E.D.Shade, R. M. (1995). *Fundamentals of Economics*. (4 ed. Vol. 1). Longman House, Kings Garden, 95 Coventry Street, Melbourne 3205, Australia: Longman Australia Pty Ltd.

John.B.Varey, (2016). *Know your Parliament with Theo Zurenuoc*. Port Moresby. Office of the Speaker, PNG National Parliament,

Mannur, H. G. (1996). *Foundation Economics*. Port Moresby: UPNG Press & Bookshop.

Mickleburgh, A. (1992). *Economics for Developing Nation* (Vol. Book 1). Level 9 5 Queens Road Melbourne 3004 Australia: Pearson Education Australia.

O'Neill, E. (2014). *A Guide to Papua New Guinea Taxation*. Port Moresby, Papua New Guinea. UPNG Press & Bookshop.

Appendices

Appendix 1: Bloom's Taxonomy

Level of Understanding	Key Verbs
Creating Can the student create a new product or point of view?	Construct, design, and develop, generate, hypothesize, invent, plan, produce, compose, create, make, perform, plan, produce, assemble, formulate,
Evaluating Can the student justify a stand or decision?	Appraise, argue, assess, choose, conclude, critique, decide, defend, evaluate, judge, justify, predict, prioritize, provoke, rank, rate, select, support, monitor,
Analyzing Can the student distinguish between the different parts?	Analyzing, characterize, classify, compare, contrast, debate, criticise, deconstruct, deduce, differentiate, discriminate, distinguish, examine, organize, outline, relate, research, separate, experiment, question, test,
Applying Can the student use the information in a new way?	Apply, change, choose, compute, dramatize, implement, interview, prepare, produce, role play, select, show, transfer, use, demonstrate, illustrate, interpret, operate, sketch, solve, write,
Understanding Can the student comprehend ideas or concepts?	Classify, compare, exemplify, conclude, demonstrate, discuss, explain, identify, illustrate, interpret, paraphrase, predict, report, translate, describe, classify,
Remembering Can the student recall or remember the information?	Define, describe, draw, find, identify, label, list, match, name, quote, recall, recite, tell, write, duplicate, memorise, recall, repeat, reproduce, state,

Appendix 2: 21st Century Skills

Ways of Thinking	<p>Creativity and innovation</p> <ul style="list-style-type: none"> • Think creatively • Work creatively with others • Implement innovations <p>Critical thinking, problem-solving and decision making</p> <ul style="list-style-type: none"> • Reason effectively and evaluate evidence • Solve problems • Articulate findings <p>Learning to learn and meta-cognition</p> <ul style="list-style-type: none"> • Self-motivation • Positive appreciation of learning • Adaptability and flexibility
Ways of Working	<p>Communication</p> <ul style="list-style-type: none"> • Competency in written and oral language • Open minded and preparedness to listen • Sensitivity to cultural differences <p>Collaboration and teamwork</p> <ul style="list-style-type: none"> • Interact effectively with others • Work effectively in diverse teams • Prioritise, plan and manage projects
Tools for Working	<p>Information literacy</p> <ul style="list-style-type: none"> • Access and evaluate information • Use and manage information • Apply technology effectively <p>ICT literacy</p> <ul style="list-style-type: none"> • Open to new ideas, information, tools and ways of thinking • Use ICT accurately, creatively, ethically and legally • Be aware of cultural and social differences • Apply technology appropriately and effectively
Living in the World	<p>Citizenship – global and local</p> <ul style="list-style-type: none"> • Awareness and understanding of rights and responsibilities as a global citizen • Preparedness to participate in community activities • Respect the values and privacy of others <p>Personal and social responsibility</p> <ul style="list-style-type: none"> • Communicate constructively in different social situations • Understand different viewpoints and perspectives <p>Life and career</p> <ul style="list-style-type: none"> • Adapt to change • Manage goals and time • Be a self-directed learner • Interact effectively with others

Appendix 3: Teaching and Learning Strategies

Strategy	Teacher	Students
<p>Case study Used to extend students' understanding of real life issues</p>	Provide students with case studies related to the topic of the lesson and allow them to analyse and evaluate.	Study the case study and identify the problem addressed. They analyse the problem and suggest solutions supported by conceptual justifications and make presentations. This enriches the students' existing knowledge of the topic.
<p>Debate A method used to increase students' interest, involvement and participation</p>	Provide the topic or question of debate on current issues affecting a bigger population, clearly outlining the expectations of the debate. Explain the steps involved in debating and set a criteria/ standard to be achieved.	<p>Conduct researches to gather supporting evidence about the selected topic and summarising the points.</p> <p>They are engaged in collaborative learning by delegating and sharing tasks to group members.</p> <p>When debating, they improve their communication skills.</p>
<p>Discussion The purpose of discussion is to educate students about the process of group thinking and collective decision.</p>	<p>The teacher opens a discussion on certain topic by asking essential questions.</p> <p>During the discussion, the teacher reinforces and emphasises on important points from students responses. Teacher guide the direction to motivate students to explore the topic in greater depth and the topic in more detail.</p> <p>Use how and why follow-up questions to guide the discussion toward the objective of helping students understand the subject and summarise main ideas.</p>	<p>Students ponder over the question and answer by providing ideas, experiences and examples.</p> <p>Students participate in the discussion by exchanging ideas with others.</p>
<p>Games and simulations Encourages motivation and creates a spirit of competition and challenge to enhance learning.</p>	Being creative and select appropriate games for the topic of the lesson. Give clear instructions and guidelines. The game selected must be fun and build a competitive spirit to score more than their peers to win small prizes.	<p>Go into groups and organize.</p> <p>Follow the instructions and play to win</p>

<p>Observation Method used to allow students to work independently to discover why and how things happen as the way they are. It builds curiosity.</p>	<p>Give instructions and monitor every activity students do</p>	<p>Students possess instinct of curiosity and are curious to see the things for themselves and particularly those things which exist around them. A thing observed and a fact discovered by the child for himself becomes a part of mental life of the child. It is certainly more valuable to him than the same fact or facts learnt from the teacher or a book. Students</p> <ul style="list-style-type: none"> • Observe and ask essential questions • Record • Interpret
<p>Peer teaching and learning (<i>power point presentations, pair learning</i>) Students teach each other using different ways to learn from each other. It encourages; team work, develops confidence, feel free to ask questions, improves communication skills and most importantly develop the spirit of inquiry.</p>	<p>Distribute topics to groups to research and teach others in the classroom.</p> <p>Go through the basics of how to present their peer teaching.</p>	<p>Go into their established working groups.</p> <p>Develop a plan for the topic.</p> <p>Each group member is allocated a task to work on.</p> <p>Research and collect information about the topic allocated to the group. Outline the important points from the research and present their findings in class.</p>
<p>Performance-related tasks (<i>dramatization, song/lyrics, wall magazines</i>) Encourages creativity and take on the overarching ideas of the topic and are able to recall them at a later date</p>	<p>Students are given the opportunity to perform the using the main ideas of a topic.</p> <p>Provide the guidelines, expectations and the set criteria</p>	<p>Go into their established working groups.</p> <p>Being creative and create dramas, songs/lyrics or wall magazines in line with the topic.</p>
<p>Project (<i>individual/group</i>) Helps students complete tasks individually or collectively</p>	<p>Teacher outline the steps and procedures of how to do and the criteria</p>	<p>Students are involved in investigations and finding solutions to problems to real life experiences. They carry out researches to analyse the causes and effects of problems to provide achievable solutions. Students carefully utilise the problem-solving approach to complete projects.</p>
<p>Use media and technology to teach and generate engagement <u>depending on the age of the students</u></p>	<p>Show a full movie, an animated one, a few episodes form documentaries, you tube movies and others depending on the lesson.</p> <p>Provide questions for students to answer before viewing</p>	<p>Viewing can provoke questions, debates, critical thinking, emotion and reaction.</p> <p>After viewing, students engage in critical thinking and debate</p>

Appendix 4: Lesson Plan Template

Strand:

Unit:

Content Standard:

Benchmark:

Topic 1:

Lesson Topic:

Grade:

Length of Lesson:

Essential KSAVs

Knowledge:

Skill(s):

Values:

Attitudes:

Performance Indicator:

Materials:

Instructional (lesson) Objective(s): By the end of the lesson, students will be able to;

-
-
-

Essential Questions:

-
-

Lesson Procedure

Teacher Activities	Student Activities
Introduction (time in minutes)	
Body (time in minutes)	
<i>Modeling</i>	
<i>Guided Practice</i>	
<i>Independent Practice</i>	
Conclusion (time in minutes)	

Appendix 5: Assessment Strategies

Strategy	Description
Analogies	Students create an analogy between something they are familiar with and the new information they have learned. When asking students to explain the analogy, it will show the depth of their understanding of a topic.
Classroom presentations	A classroom presentation is an assessment strategy that requires students to verbalize their knowledge, select and present samples of finished work, and organize their thoughts about a topic in order to present a summary of their learning. It may provide the basis for assessment upon completion of a student's project or essay.
Conferences	A conference is a formal or informal meeting between the teacher and a student for the purpose of exchanging information or sharing ideas. A conference might be held to explore the student's thinking and suggest next steps; assess the student's level of understanding of a particular concept or procedure; and review, clarify, and extend what the student has already completed.
Discussions	Having a class discussion on a unit of study provides teachers with valuable information about what the students know about the subject. Focus the discussions on higher level thinking skills and allow students to reflect their learning before the discussion commences.
Essays	An essay is a writing sample in which a student constructs a response to a question, topic, or brief statement, and supplies supporting details or arguments. The essay allows the teacher to assess the student's understanding and/or ability to analyse and synthesize information.
Exhibitions/ demonstrations	An exhibition/demonstration is a performance in a public setting, during which a student explains and applies a process, procedure, etc., in concrete ways to show individual achievement of specific skills and knowledge.
Interviews	An interview is a face-to-face conversation in which teacher and student use inquiry to share their knowledge and understanding of a topic or problem, and can be used by the teacher to explore the student's thinking; assess the student's level of understanding of a concept or procedure and gather information, obtain clarification, determine positions, and probe for motivations.
Learning logs	A learning log is an ongoing, visible record kept by a student and recording what he or she is doing or thinking while working on a particular task or assignment. It can be used to assess student progress and growth over time.
Observation	Observation is a process of systematically viewing and recording students while they work, for the purpose of making programming and instruction decisions. Observation can take place at any time and in any setting. It provides information on students' strengths and weaknesses, learning styles, interests, and attitudes.
Peer assessment	Assessment by peers is a powerful way to gather information about students and their understanding. Students can use set criteria to assess the work of their classmates.

Performance tasks	During a performance task, students create, produce, perform, or present works on “real world” issues. The performance task may be used to assess a skill or proficiency, and provides useful information on the process as well as the product.
Portfolios	A portfolio is a collection of samples of a student’s work, and is focused, selective, reflective, and collaborative. It offers a visual demonstration of a student’s achievement, capabilities, strengths, weaknesses, knowledge, and specific skills, over time and in a variety of contexts.
Questions and answers (oral)	In the question–and–answer strategy, the teacher poses a question and the student answers verbally, rather than in writing. This strategy helps the teacher to determine whether students understand what is being, or has been, presented, and helps students to extend their thinking, generate ideas, or solve problems.
Quizzes, tests, examinations	A quiz, test, or examination requires students to respond to prompts in order to demonstrate their knowledge (orally or in writing) or their skills (e.g., through performance). Quizzes are usually short; examinations are usually longer. Quizzes, tests, or examinations can be adapted for exceptional students and for re-teaching and retesting.
Questionnaires	Questionnaires can be used for a variety of purposes. When used as a formative assessment strategy, they provide teachers with information on student learning that they can use to plan further instruction.
Response journals	A response journal is a student’s personal record containing written, reflective responses to material he or she is reading, viewing, listening to, or discussing. The response journal can be used as an assessment tool in all subject areas.
Selected responses	Strictly speaking a part of quizzes, tests, and examinations, selected responses require students to identify the one correct answer. The strategy can take the form of multiple-choice or true/false formats. Selected response is a commonly used formal procedure for gathering objective evidence about student learning, specifically in memory, recall, and comprehension.
Student self-assessments	Self-assessment is a process by which the student gathers information about, and reflects on, his or her own learning. It is the student’s own assessment of personal progress in terms of knowledge, skills, processes, or attitudes. Self-assessment leads students to a greater awareness and understanding of themselves as learners.
Posters	
Video analysis	
Reflective writing	
Projects	
Observation reports	

'FREE ISSUE - NOT FOR SALE'