

GEOGRAPHY SYLLABUS

Forms 3, 4 and 5 (Option)



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Geography Syllabus

Forms 3, 4 and 5

Option Groups

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Rationale

Geography makes both a distinctive and a wider contribution to the curriculum. It is an essential component in preparing young people for life in the twenty-first century. As the pace of change quickens, communications get faster and challenges to the environment multiply, a knowledge and understanding of geography is more vital than ever.

Geographical education is indispensable to the development of responsible and active citizens in the present and future world. Geography can be an informing, enabling and stimulating subject at all levels in education, and contributes to a lifelong enjoyment and understanding of our world. Learners require global geographical awareness in order to ensure effective cooperation on a broad range of economic, political, cultural and environmental issues in a shrinking world.

Geography addresses the major challenges that the global community is facing. The resolution of major issues facing our world requires the full commitment of people of all generations. All of the following issues have strong geographical dimensions at a variety of geographic scales. Hence the importance of geography for all students:

- extreme natural events
- global warming and climate change
- deforestation
- desertification
- preservation of bio-diversity
- land-use conflicts
- soil erosion
- atmospheric, soil and water pollution
- use of non-renewable resources
- sustainable economic activities
- population dynamics and migration
- urbanisation
- the processes and impacts of tourism
- access to technology

- access to education – especially literacy
- global and local processes and patterns giving rise to poverty
- unemployment
- disease
- crime
- gender inequalities
- ethnic conflicts
- war
- regionalism and nationalism

In the context of these problems and issues facing humanity, the right to education includes the right to high quality geographical education that encourages both a balanced regional and national identity and a commitment to international and global understanding.

Geography's distinctive contribution to the National Minimum Curriculum (NMC)

The NMC stipulates that geography is a basic subject at secondary school level. The knowledge, understanding, skills and attitudes imparted by the study of geography satisfies many of the *Educational Objectives* that are appraised in the relative section of the NMC. The teaching of Geography facilitates the NMC towards reaching its stated goals of preparing students:

- *for the challenges posed by a competitive global economic environment* (NMC, Recognising the Challenges, p.22);
- *to move forward with an identity in a global scenario where the concepts of nation and national identity are constantly called into question through the process of globalisation* (NMC, Recognising the Challenges, p.22);
- *to be able to understand and tackle the threats posed by contemporary societies to work, relationships, values and environment* (NMC, Recognising the Challenges, p.22);
- for basing their future plans and decisions from a global perspective. *An education with a global perspective would allow students to realise that much of what is taking place in our country is conditioned by external events. One ought also to promote the view that the sustainability of life on earth is contingent on our everyday choices* (NMC, Global Perspective, p.27);
- in establishing a *relationship between the different areas of knowledge* by developing the understanding and skills of the subject in an interdisciplinary approach. The *greater integration of educational content* (NMC, Principle 7, p.34) afforded by geography helps students in this endeavour;

- *for the world of work by helping them to develop knowledge and information about: the different sectors of the Maltese economy; the global economy and how this affects the Maltese economy; the changing work environment in an information society; different workplaces and the required skills; the European Union as an economy and labour market* (NMC, Objective 9, pp. 59-60);
- *for the world of work by helping them to acquire the following skills: planning, organisation and evaluation; discussion and negotiation skills; ability to choose a career in an informed manner; and proficiency in all aspects of literacy and numeracy* (NMC, Objective 9, pp. 60-61);
- *for adequately responding to the tension arising from the confluence of two contemporary cultural trends: the trend of inclusion and the erosion of social barriers; and the strong emphasis on the affirmation of identity and difference; by means of the study of emerging multicultural societies* (NMC, Recognising the Challenges, p.22).

General Aims of Geographical Education

- To develop in young people a knowledge and understanding of the place where they live in, of other people and places, and of how people and places inter-relate and inter-connect; of the significance of location; of human and physical environments; of people-environment relationships; and of causes and consequences of change.
- To develop the skills needed to carry out geographical study e.g. geographical enquiry, map work and fieldwork.
- To simulate an interest in and encourage an appreciation of, the world around us.
- To develop an informed concern for the world around us and ability and willingness to take positive action, both locally and globally.
- To acquire an understanding of different communities and cultures throughout the world and awareness of the contrasting opportunities and constraints presented by different environments.
- To foster an appreciation of environments, thereby enhancing a sense of responsibility for the care of the earth.
- To offer a range of skills and techniques in observing, selecting, analysing and presenting data.
- To gain the ability in using a wide range of geographical information in making judgments and reaching decisions.

Distinctive Contribution to the Education of the Individual – The Objectives of Geography

Although the development of knowledge, understanding, skills and attitudes constitutes the holistic processes of education, these aspects may be grouped into three classes of objectives. Through studies in geography, students are encouraged to explore and develop knowledge and understanding, skills, attitudes and values.

In particular they should develop knowledge and understanding of:

- locations and places in order to set national and international events within a geographical framework and to understand basic spatial relationships;
- major bio-physical systems of the Earth (landforms, soils, water bodies, climate, vegetation) in order to understand the interaction within and between ecosystems;
- major socio-economic systems of the Earth (agriculture, settlement, transport, industry, trade, energy, population and others) in order to achieve a sense of place;
- different ways of creating environments according to differing cultural values, religious beliefs, technical, economic and political systems. This helps facilitate understanding of the diversity of peoples and societies on Earth and the cultural richness of humanity;
- the structure and processes of the home region and country as daily action space; and the challenges of, and opportunities for, global interdependence.

Learners are encouraged to develop skills in:

- cartography where appropriate;
- practising such methods as field observation and mapping, interviewing people and working with qualitative information;
- using and creating geographic data in text, tables, graphs and drawings;
- interpreting secondary resources and using statistics; as well as
- using communication, thinking, practical and social skills to explore geographical topics at a range of scales from local to international.

Learners should explore attitudes and values consistent with:

- their local surroundings and in the variety of environments on the surface of the Earth;
- an appreciation of the beauty of the physical world, on the one hand, and of the different living conditions of people, on the other;
- concern for the global quality and planning for the environment and human habitat for future generations;
- an awareness of the issues of globalisation with reference to the preservation of indigenous cultures;

- understanding the significance of attitudes and values in decision making;
- readiness to use geographical knowledge and skills responsibly in private, professional and public life;
- respect for the rights of all people to equality; and
- dedication to seeking solutions to local, regional, national and international problems on the basis of the Universal Declaration of Human Rights.

Approaches to Teaching and Learning in Geography

Geography is the discipline which seeks to explain the character of places and the distribution of features and events as they occur and change the surface of the earth. Geography is concerned with human – environment interactions in the context of specific places and locations. In addition to its central concern with space and place, it is characterised by a breadth of study, a range of methodologies, a willingness to synthesize work from other disciplines and an interest in the future of people – environment relationships. The attention of teachers is drawn at the Guidelines for the teaching of geography to students with learning difficulties whose attainment level description progresses up to Level Description 2 (Special Education).

Geography often starts with the following questions:

Where is it?

What is it like?

Why is it there?

When did it happen and how does it change?

What impacts does it have?

How should it be managed for the mutual benefit of humanity and the natural environment?

Finding answers to these questions requires investigation of the location, situation, interaction, spatial distribution and differentiation of features. Explanations of current situations come from both historical and contemporary sources. Trends can be identified which indicate possible future developments. Some of the central concepts of geographical studies are location and distribution, place, people-environment relationships, spatial interaction, and regions.

Geographical enquiry and Fieldwork

- provides opportunities for the first-hand investigation of people in their environment
- awakens students to a diversity of environments and cultures, in their local area and beyond
- teaches students to collect, analyse and present data, sharpening their observation, measuring, recording and evaluation skills.

All option classes are expected to be given experience in fieldwork focusing on the topics being covered during the particular year. The students are then to compile a follow up report. The final fieldwork report handed at Form V level must satisfy the requirements set in the SEC Syllabus for Geography.

Working with maps and images

- teaches students to use both maps from the Atlas and those of Ordnance Survey and make simple maps and plans
- enables students to travel confidently
- illuminates current events
- teaches young people to interpret a wide range of visual information namely aerial photographs and satellite images

Information and Communications Technology (ICT)

- provide a range of information sources to enhance geographical understanding
- support the development of a body of geographical knowledge
- provide images of people, places and environments
- develop their ideas using ICT tools to amend and refine their work and enhance its quality and accuracy
- exchange and share information, both directly and through electronic media
- review, modify and evaluate their work, reflecting critically on its quality as it progresses
- contribute to pupils' awareness of the impact of information systems on the changing world
- contribute substantially to the development of a range of ICT capabilities, especially in regards to data handling, use of communication technologies and information sources and modelling

- develop the students' skills in the following ICT toolkit namely word processor; spreadsheet; presentation software e.g. PowerPoint; desktop publishing (DTP) software; internet browser/e-mail; electronic atlas; electronic encyclopaedia; geographic information system (GIS); automatic data logging weather station; digital camera.

Working with others; improving own learning and performance; problem solving

Geography offers a context for the development of all three of these key skills e.g.

- fieldwork encourages teamwork
- individual study promotes action planning and self-review
- decision making exercises , which require problem solving skills, are an established approach to geographical education at all levels

Games and Simulations adapted by teacher

The philosophy underlying the use of games and simulations is in close harmony with the nature of activity methods. The peculiar appeal of simulation games is the radical way in which they alter the learning environment. Pupils move from the audience to the stage. Role playing and simulation call for

- powers of analysis and synthesis
- an ability to think ahead from an exciting situation
- anticipating the probable actions of opponents
- foresee the consequences of alternatives
- evaluate the pros and cons of alternative courses of action one might take.

Use of Resources

The use of quality media, resources and materials both traditional and modern is essential if learners are to gain realistic images of the earth. Ideally geography should be taught in a special room allotted for the purpose which include,

- adequate space for students
- desks with flat surfaces for practical work especially map work
- adequate storage facilities for teaching resources e.g. maps, books, charts, apparatus, posters and handouts
- wall maps including Maltese Islands, Mediterranean, Europe and the World

- political-relief globe
- activity globe that can be marked and cleaned
- weather instruments
- computers with internet facilities
- Interactive whiteboard
- DVD player
- Water supply for use in simple experiments and model making

Developing the understanding of geographical vocabulary

Students need to acquire the appropriate geographical vocabulary so that they can fully participate in lessons, fieldwork and other activities. A sound geographical vocabulary is also crucial to the student's grasp of knowledge, understanding, skills and attitudes related to the local and global environment.

Geography teachers contribute towards the school's literacy policy by ensuring that they,

- encourage accuracy in listening, speaking, reading and writing
- provide pupils with clear definitions of the technical language they need to understand their geography
- provide pupils with the support they need to plan and write logical reports and accounts of their work

Geography across the curriculum

Since geography lies astride the humanities and sciences it lends itself to the students' holistic development through the thematic approach and even the inter-disciplinary approach. The teacher is encouraged to decide and plan unifying themes for learning together with other teachers of different subjects, especially by participating in whole school projects. In this way geography is linked to other relevant areas, thus making learning more challenging to the student. The inter-disciplinary approach creates possibilities for investigation and research and involves the students in purposeful activities through collaboration and social interaction. This approach also connects the teaching of ideas and skills with the realities of the outside world.

Geography teachers may ask colleagues teaching other subjects to establish an exchange of examples and contexts so that students can gain full comprehension of themes discussed. Here are examples of opportunities that link geography to other subjects:

Languages

- Definition of geographical terms that are commonly used
- Geographical information about the country or countries where the language is spoken
- Geographical background to current affairs and issues
- The geography of places discussed in literature

Sciences

- Further understanding of common themes such as ecosystems and world biomes, the natural environment, atmospheric processes (weather and climate), tectonic activity
- Field studies organised jointly with teachers from the Science department
- Sharing of apparatus

Mathematics

- Numeracy gives the opportunity to vary the means of communication.
- The use of numbers can supplement words and so increases the possibility of variety since numbers can be visually represented in so many ways, for example by the use of graphs, histograms, dots or choropleth maps.
- The drawing of maps or diagrams based upon tabulated data
- With the use of statistical methods certain patterns and relationships can be identified and trends can be indicated.
- The use of quantification techniques can help to make teaching a more varied and stimulating experience.
- The teachers of geography may assist mathematics teachers in providing them with data regarding economic, demographic and environmental issues to keep up with current updates.

Arts and Craft

- Using a wide variety of materials to teach basic techniques
- Drawing of maps
- The enlargement and reduction of maps
- Drawing of labelled diagrams

- 3-D models of landscapes and infrastructural models
- Constructing of weather and other instruments
- Drawing of charts
- Knowing about the location of places of great artistic and cultural tradition

Religion

- The geographical distribution of the world's great religions
- Basic geographical knowledge of the Holy Land
- Foster an attitude of respect towards the beliefs of other people

History, Social Studies and European Studies

- Understanding the concept of change through space and time
- Refer to the local environment and community especially in the thematic approach
- Historical environment of Geographical and spatial theorists
- The geographical location and connections of places that are studied in history
- The natural environment that has helped in the economic, social and political development of great civilizations
- The influence of geological and atmospherical phenomena in historical events
- Foster an attitude of respect towards the culture of other people
- Understanding the geographical concepts of waste management, world trade, international aid, development, migration, famine, refugees and displaced persons

Physical Education, Music and Drama

- Knowing about the location of places with great tradition in sport, music and drama
- Role play about environmental and humanitarian issues
- Use of music to create atmosphere linked to country, particular environment or community
- Linking the location of places to participating countries in international sports and song competitions

ICT

- providing and extending access to large quantities of information.
- students investigate, organise, and edit geographical information

- ICT programmes and software help to enhance the learning situation
- Improve presentation techniques in work handed in by students
- Geographical data and themes lends itself easily to work in ICT
- Able to communicate by means of email, internet, fax, video conferencing and other technologies to exchange information locally and worldwide
- Extend their graphical and mapping skills, and their skills in statistical and spatial analysis

Home Economics and Textile Studies

- Enhancement of common themes such as issues of waste management, organic farming, food miles and the use of resources
- Provenance of raw materials used in textile and clothing
- Location of major textile and clothing industries
- Origin of food and beverages
- Problems of nutrition, diseases, and food supply

Business Studies

- Enhancement of common themes such as world economic development and trade
- Different types of employment and their distribution within and among countries
- The impact of economic activity on the physical and human environments
- Spatial distribution of resources, including energy resources, mineral raw materials and food
- Theories of spatial distribution of industry
- Common themes for fieldwork excursions

Strands

The syllabus of geography is divided into six strands: **map reading and interpretation; weather and climate; landforms and processes; socio-economic human systems; environmental concerns; and location and places.** This division is an essential way of categorizing the outcomes of geographical education in schools. All these aspects are equally important. Although students learn these strands in packages, the inter-relationships between them must be emphasized at all times, since a thorough understanding of each theme is only obtained by reference to all aspects.

Assessment

The learning process involves various methods of assessment:

- **Formative** so that a student's achievement can be recognised and so further steps planned
- **Diagnostic** through which learning difficulties can be identified and appropriate measures can be taken
- **Summative** through recording student's achievements in a systematic way
- **Evaluative** in enabling the school's work to be assessed.

Obviously the assessment used must be appropriate to the objective which is being tested. There must be, first of all, a clear purpose in assessment, for example knowing which objectives a student has accomplished. It is also important to note that the kind of objective being assessed will have an effect on the type of assessment exercise constructed. Assessment exercises must be valid, that is, must be such that they really assess what they are supposed to assess.

Assessment Methods in Geography

<i>Type of Assessment</i>	<i>Principal Methods</i>
<i>Objective tests</i>	<ul style="list-style-type: none"> • True/false type • Completion tests • Matching • Multiple choice tests • Short answers
<i>Essays</i>	<ul style="list-style-type: none"> • Timed essays • Resource-based essays
<i>Structured questions</i>	<ul style="list-style-type: none"> • Data response questions - the student has a clearer idea of what is required of him/her. In such questions, stimulus material, providing information to the student has to be analysed and interpreted.
<i>Enquiries</i>	<ul style="list-style-type: none"> • Using primary sources: usually involving fieldwork • Using secondary sources: a teacher planned enquiry-based exercise.
<i>Oral assessment</i>	<ul style="list-style-type: none"> • Presentation: pupil prepares and presents a verbal report to an audience • Discussion work: students interact within a group.
<i>Self-assessment</i>	<ul style="list-style-type: none"> • Checklists • Evaluation sheets focusing on key words.
<i>Classroom observations</i>	<ul style="list-style-type: none"> • Teacher records comments on each individual student • Interviews with students or small groups especially in regards to investigative projects.

Homework and Field Reports in Geography

Homework in geography serves a number of useful, interrelated purposes. It:

- promotes independent learning skills, as students extend classroom work and apply skills to areas of personal interest
- provides opportunities for work that takes too long to be accommodated during normal lesson time
- enables pupils to use resources such as Information Technology and reference materials that may not be available in the classroom
- creates opportunities for the development and application of skills, knowledge and values introduced in the classroom
- creates opportunities for teachers to make formative assessments of pupils' work and progress and to evaluate the effectiveness of their own teaching
- encourages research creativity and initiative
- promotes the co-operation of parents and other adults

Good homework practice entails that:

- homework will be set frequently and regularly, as appropriate to the Form and nature of the activities
- a variety of activities will be set
- homework will be differentiated to provide meaningful and accessible activities for pupils
- homework will be clearly relevant to the schemes of work and integral to the teaching of the subject
- marking will be carried out in a way that provides positive and formative support to pupils, and will clearly indicate both areas of success and areas for improvement

Level Descriptors

All six strands (map reading and interpretation; weather and climate; landforms and processes; socio-economic human systems; environmental concerns; and location and places) are covered by the learning outcomes. These are classified by sub-topic, theme and according to Form. The learning outcomes as exposed in the present syllabus complement the Level Descriptors of Geography as published by the Department of Curriculum Management of the Education Division (Malta) in such a way that by the completion of the Form V section the student will be expected to have attained Level 8.

Geography in the school curriculum provides an essential foundation of knowledge, understanding and skills for life-long learning, and equips those students who wish to become specialist geographers with the skills and understanding they will need. Above all, geography is relevant, stimulating and interesting for all students of all ages.

GEOGRAPHY

OPTION SYLLABUS AND LEARNING OUTCOMES

Form 3

Directorate for Quality and Standards in Education
Department for Curriculum Management and E-Learning

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GEOGRAPHY OPTION SYLLABUS FORM 3

GEOGRAPHY OPTIONS SYLLABUS – FORM 3

3.1 Map Reading and Interpretation	3.2 Weather and Climate	3.3 Landforms and Processes	3.4 Socio-Economic Human Systems	3.5 Environmental Concerns	3.6 Location and Places
<p>3.1.1 Basic cartographic skills: scales; measurement of distances and areas; map symbols; grid references; direction; contours and shape.</p> <p>Coasts</p> <p>3.1.2 Recognition of landforms resulting from marine erosion and deposition.</p>	<p>3.2.1 Recording and interpreting the elements of weather and climate – temperature, humidity, rainfall, pressure, wind speed and direction.</p> <p>3.2.2 Temperature and rainfall graphs.</p> <p>3.2.3 How to find out the: mean daily temperatures.</p> <p>3.2.4 Interpretation of synoptic charts/ simple weather maps and simple satellite photos.</p>	<p>3.3.1 The Earth as a Planet The movements (rotation and revolution) of the Earth. Effects of the Earth’s rotation – day and night.</p> <p>Rocks and Soils</p> <p>3.3.2 Formation, characteristics, uses and examples of Igneous, Sedimentary and Metamorphic rocks.</p> <p>3.3.3 Permeability of rocks.</p>	<p>3.4.1 Population Physical and human factors affecting the distribution of population.</p> <p>3.4.2 World population growth.</p> <p>3.4.3 Population growth in LEDCs.</p> <p>3.4.4 Case Study: Brazil: distribution and density.</p> <p>3.4.5 Case Study: China: controlling population growth.</p>	<p>3.5.1 Rocks and Soils Quarrying – benefits and problems.</p> <p>3.5.2 Coasts Physical management of the coast.</p> <p>Energy Resources</p> <p>3.5.3 World energy consumption: the demand for resources.</p> <p>Non-renewable energy resources</p> <p>3.5.4 Coal, oil, natural gas, nuclear - advantages and disadvantages.</p>	<p>3.6.1 Lines of longitude and latitude – how they are measured. Locating the main lines of longitude and latitude:</p> <p>3.6.2 The location of all seven continents and five oceans.</p> <p>3.6.3 The location of these major seas; the Gulf of Mexico, Caribbean Sea, North Sea, Baltic Sea, Caspian Sea, Mediterranean Sea, Red Sea, Arabian Sea, Bay of Bengal, Coral Sea, Persian Gulf.</p>

	<p>3.2.5 Factors affecting temperature Latitude, maritime effect, altitude, prevailing winds and ocean currents.</p> <p>3.2.6 Rainfall Types of rainfall.</p>	<p>3.3.4 Limestone (Karst) characteristic landforms and formation.</p> <p>3.3.5 Rocks of the Maltese Islands: origin, basic properties and uses of the 5 strata of rock.</p> <p>Weathering 3.3.6 The differences between physical, chemical and biological weathering.</p> <p>3.3.7 The processes of freeze-thaw/frost shattering, exfoliation and limestone solution.</p> <p>Coasts 3.3.8 Wave motion – the swash and backwash.</p>	<p>Migration 3.4.6 Types of migration. Voluntary and forced migration.</p> <p>3.4.7 Pull and push factors. Migration between countries. Impacts of migration. Rural-urban migration and counterurbanisation.</p> <p>3.4.8 Case Study: Immigrants into California.</p> <p>3.4.9 Case Study: Migrant workers, Turks in Germany.</p> <p>3.4.10 Case Study: Refugees on Mediterranean beaches.</p>	<p>3.5.5 Fuelwood and the cycle of environmental deprivation in LEDCs.</p> <p>3.5.6 Impacts of energy demand: Global Warming – causes and effects.</p> <p>3.5.7 Impacts of energy demand: Acid Rain.</p> <p>3.5.8 Case Study: Oil and the Environment: Trans-Alaskan oil pipeline and the Exxon Valdez oil spill (1989).</p> <p>Renewable energy resources 3.5.9 Hydro-electric power, solar, geothermal, wind, tidal, biogas/biomass – advantages and disadvantages.</p>	<p>3.6.4 The major Ocean Currents: the Northern and Southern Equatorial Currents, the North Pacific, Californian, Peruvian, Kuro Siwo in the Pacific Ocean, the Gulf Stream, North Atlantic Drift, Labrador, Brazil and Benguela Current in the Atlantic Ocean.</p> <p>3.6.5 Location of these countries and their capital cities:</p> <ol style="list-style-type: none"> All the Mediterranean countries. All the EU countries. These countries: Canada, USA, Mexico, Brazil, Argentina, Venezuela, Sudan, Democratic Republic of Congo, South Africa, Kenya, Egypt,
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		<p>3.3.9 Different types of waves – constructive and destructive waves.</p> <p>3.3.10 The process of coastal erosion – abrasion, hydraulic action, attrition and corrosion/solution.</p> <p>3.3.11 Coastal features created by erosion with specific reference to coastal localities in the Maltese Islands.</p> <p>3.3.12 Wave transport – longshore drift.</p> <p>3.3.13 Coastal features created by deposition.</p>	<p>Settlement 3.4.11 Site, situation and function. Classification of settlements (hierarchies) – Rural or urban, population size, functions.</p> <p>3.4.12 Factors affecting the location of settlements</p> <p>3.4.13 Settlement shape: dispersed, nucleated and linear.</p> <p>Urbanisation 3.4.14 Growth of world cities, megacities.</p> <p>3.4.15 Causes of urbanisation. Rural push factors and urban pull factors.</p>	<p>3.5.10 Case Study: An HEP station Itaipù or Aswan High Dam.</p> <p>3.5.11 Sustainable energy resources – energy efficiency.</p>	<p>Saudi Arabia, Iraq, Iran, India, China, Japan, Russia, Bangladesh, Indonesia, Australia.</p> <p>Tourism 3.6.6 Tourist destinations; Coastal: Spain, Caribbean. Cultural: Greece, Egypt, Malta. Ice: Alps, Rockies, Pyrenees. Pilgrimage: Mecca, Rome, Holy Land. Safari: Kenya, South Africa.</p> <p>Energy Resources 3.6.7 Energy resource rich countries: USA (Alaska), China, Russian Federation, Canada, South Africa, Saudi Arabia, Venezuela, Indonesia, Iran, Libya, Mexico, Nigeria.</p>
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			<p>Tourism</p> <p>3.4.16 Reasons for the increase in tourism.</p> <p>3.4.17 Different types of tourism: cultural, religious, coastal, sports, shopping, mountain, ecotourism.</p> <p>3.4.18 Social, economic and environmental impact of tourism.</p> <p>3.4.19 Tourism in Malta: analysing data (total number of tourists per year/month, tourists by nationality, average nights per person). Malta's attractions. Positive and negative impacts.</p> <p>3.4.20 Case study: Mountain resort Courmayeur.</p>		<p>3.6.8 Location of megacities.</p>
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			3.4.21 Case study: Safaris in Kenya.		
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A field trip with a follow up individual report should be organised during the scholastic year with special reference to topics covered in this syllabus. The report should be between 800 and 1000 words long and should include evidence of geographical skills such as collection of data, well-annotated illustrations, graphs and maps. The aims, methods and conclusions of the report should be stated and developed in the text.

The report will carry 10 marks in the Annual Examination. Criteria for assessment are as follows:

Clear definition of aims and objectives	2 marks
Observation and data collection	2 marks
Development and analysis	2 marks
Conclusions	2 marks
Data refining and presentation including cartographic, graphic and diagrammatic	2 marks

Geography Option Form 3 Learning Outcomes

Map Reading and Interpretation	3.1.1	Basic cartographic skills: scales; measurement of distances and areas; map symbols; grid references; direction; contours and shape.	<ul style="list-style-type: none"> • Use the 3 types of scale, namely, linear scale, written scale e.g. 2cm:1km and representative fraction e.g. 1:50 000 to measure straight line and non-direct distances on maps. • Become familiar with Survey Map Symbols used in both 1:50 000 maps and the 1:25 000 maps. • Locate places and symbols using the four figure grid references and the six figure grid references. • Locate places and symbols using the compass directions. Become familiar with the major 16 points of the compass. • Use grid squares on topographic maps to work out the area of a particular feature to the nearest $\frac{1}{4}$ of a square kilometre. • Use contour lines to calculate the height of places on maps. • Know the meaning of the following; spot height and contour Interval. • Use of contours to obtain information about the steepness of slopes and the direction the land is sloping.
	3.1.2	Recognition of landforms resulting from marine erosion and deposition.	<ul style="list-style-type: none"> • Recognise the following marine landforms on topographic maps: headlands; cliffs; caves; stacks; wave-cut platforms; groynes; sandy beaches; sand dunes; salt marshes; and spits.

Weather and Climate	3.2.1	Weather and Climate: Recording and interpreting the elements of weather and climate – temperature, humidity, rainfall, pressure, wind speed and direction.	<ul style="list-style-type: none"> • Understand the difference between weather and climate. • Recognise the main weather instruments that record and interpret the weather, namely the thermometer, hygrometer, rain gauge, barometer, wind vane and anemometer. • Aware of the purpose of each weather instrument. • Know the units of measure of each instrument. Eg. Thermometer = degrees Celsius (°C). • Understand the characteristics of the Stevenson Screen.
	3.2.2	Temperature and rainfall graphs.	<ul style="list-style-type: none"> • Construct and interpret temperature (line) and rainfall (bar) graphs with data given.
	3.2.3	How to find out the mean daily temperatures.	<ul style="list-style-type: none"> • Use simple calculations to find out the: mean daily temperature; daily range of temperature; mean monthly temperature; mean annual temperature; and the mean annual range of temperature.
	3.2.4	Interpretation of synoptic charts/ simple weather maps and simple satellite photos.	<ul style="list-style-type: none"> • Read and interpret simple weather charts containing isobars, wind direction and strength, cloud cover and weather symbols. Exclude details related to depressions. • Interpret simple satellite photos.

	3.2.5	Factors affecting temperature: Latitude, maritime effect, altitude, prevailing winds and ocean currents.	<ul style="list-style-type: none"> Understand how latitude, the sea, height, prevailing winds and ocean currents affect the climate of an area.
	3.2.6	Types of Rainfall.	<ul style="list-style-type: none"> Distinguish between the three types of rainfall namely, relief or orographic, convectional and frontal rainfall.
Landforms and Processes	3.3.1	<p>The Earth as a Planet The movements (rotation and revolution) of the Earth. Effects of the Earth's rotation – day and night.</p>	<ul style="list-style-type: none"> Understand the rotational movement of the earth on its axis and cause of day and night. Aware of the revolution of the earth around the sun.
	3.3.2	<p>Rocks and Soils Formation, characteristics, uses and examples of Igneous, Sedimentary and Metamorphic rocks.</p>	<ul style="list-style-type: none"> Classify the three different types of rock, namely: Igneous, Sedimentary and Metamorphic. Understand the formation of Igneous, Sedimentary and Metamorphic rocks. Name examples of rock types, eg. Igneous (Basalt and Granite), Sedimentary (Limestone and Clay), Metamorphic (Marble and Slate). Know the main characteristics and uses of rock types. Eg. Limestone for building stone.

Landforms and Processes	3.3.3	Permeability of rocks.	<ul style="list-style-type: none"> • Know the difference between porous, permeable and impermeable rocks. • Aware that rocks contain areas of weakness such as bedding planes and joints along which water flows.
	3.3.4	Limestone (Karst) characteristic landforms and formation.	<ul style="list-style-type: none"> • Consolidate that limestone was laid down in layers on the sea-bed, having bedding planes, joints and fossils. • Understand the formation of the following limestone (karst) scenery: swallow holes, resurgence, dry valleys, limestone pavements, bedding planes, joints, clints, grykes, caverns, stalactites, stalagmites and pillars. • Recognise the characteristic landforms of the above mentioned karst features.
	3.3.5	Rocks of the Maltese Islands: origin, basic properties and uses of the 5 strata of rock.	<ul style="list-style-type: none"> • Identify the 5 main layers of rocks of the Maltese Islands, namely: Upper Coralline Limestone, Greensand, Globigerina Limestone, Lower Coralline Limestone. • Understand how these layers were formed millions of years ago under the sea. • Know the basic properties of the five strata of rock in Malta, including permeability, resistance and colour. • Explore the use of each type of rock.

Landforms and Processes	3.3.6	Weathering: The differences between physical, chemical and biological weathering.	<ul style="list-style-type: none"> • Understand the meaning of the term weathering. • Distinguish between the 3 types of weathering: physical, chemical and biological.
	3.3.7	The processes of freeze-thaw/frost shattering, exfoliation and limestone solution.	<ul style="list-style-type: none"> • Understand the process of rock disintegration by means of: freeze-thaw weathering/ frost shattering, exfoliation and limestone solution.
	3.3.8	Coasts Wave motion – the swash and backwash	<ul style="list-style-type: none"> • Able to describe that water particles follow a circular orbit in open waters. • Able to explain why waves break when they move into shallow waters. • Know how waves break to form swash and backwash.
	3.3.9	Different types of waves – constructive and destructive waves.	<ul style="list-style-type: none"> • Recognise the main characteristics of constructive and destructive waves.
	3.3.10	The process of coastal erosion – abrasion, hydraulic action, attrition and corrosion/solution.	<ul style="list-style-type: none"> • Able to explain that abrasion, hydraulic action, attrition and corrosion/solution are the main erosional processes along the coastline and together these processes give rise to distinctive landforms.

Landforms and processes	3.3.11	Coastal features created by erosion: with specific reference to coastal localities in the Maltese Islands.	<ul style="list-style-type: none"> Recognise the following coastal features: cliff recession, wave-cut platforms, notches, headlands and bays, caves, arches, stacks and stumps. Understand the process that lead to the formation of the above named coastal features.
	3.3.12	Wave transport – longshore drift.	<ul style="list-style-type: none"> Able to explain the process by which the sea transports sediments laterally along the coast through longshore drift.
	3.3.13	Coastal features created by deposition.	<ul style="list-style-type: none"> Recognise the following depositional coastal features created by deposition: beaches, spits, bars and tombolos. Understand the processes that lead to the formation of beaches, spits, bars and tombolos.
	3.4.1	Population Physical and human factors affecting the distribution of population.	<ul style="list-style-type: none"> Know the meaning of the following terms: sparsely, densely, high and low population density. Identify places with high or low population densities. Explain the physical factors affecting distribution of population. Explain the human factors affecting distribution of population. Capable of finding population densities from given data of area and population.

Socio-Economic Human Systems	3.4.2	World Population Growth.	<ul style="list-style-type: none"> • Consolidate the meaning of birth-rate, death-rate and natural increase. • Calculate the natural increase by means of given data of birth and death rate. • Interpret and construct line graphs of population growth throughout given years.
	3.4.3	Population growth in LEDCs.	<ul style="list-style-type: none"> • Identify faster population growth in LEDCs.
	3.4.4	Case Study: Brazil: distribution and density.	<ul style="list-style-type: none"> • Identify low and high densities on a map of Brazil. • Analyse the reasons for such distribution of population.
	3.4.5	Case Study: China: controlling population growth	<ul style="list-style-type: none"> • Know the reasons for China's <i>one-child</i> population policy. • Able to explain the above named policy. • Analyse the outcomes and modifications to the same policy.
	3.4.6	Migration Types of migration. Voluntary and forced migration.	<ul style="list-style-type: none"> • Know the meaning of the terms: migration; emigration; and immigration. • Distinguish between voluntary and forced migration caused by push and pull factors.

Socio-Economic Human Systems	3.4.7	Pull and push factors. Migration between countries. Impacts of migration. Rural-urban migration and counterurbanisation.	<ul style="list-style-type: none"> Analyse the effects of migration on the receiving country and on the country of origin. Understand the meaning of rural-urban migration and counterurbanisation.
	3.4.8	Case Study: Immigrants into California.	<ul style="list-style-type: none"> Identify the location of migration between Mexico and California. Know the causes of the above-named case. Know about the main jobs taken up by Mexicans in California. Aware of the restrictions on migration into the USA.
	3.4.9	Case Study: Migrant workers, Turks in Germany.	<ul style="list-style-type: none"> Identify the movement of migrants between Turkey and Germany. Know the pull and push factors of the above-named migration. Aware of the advantages and disadvantages of migration for the losing and the receiving country. Know about the main jobs taken by the Turks in Germany.

Socio-Economic Human Systems	3.4.10	Case Study: Refugees on Mediterranean beaches.	<ul style="list-style-type: none"> • Know the meaning of the term refugee and the difference from illegal migrant. • Identify the location of migration across the Mediterranean. • Know the causes of such migration, including push and pull factors. • Aware of the effects on the receiving countries.
	3.4.11	Settlement Site, situation and function. Classification of settlements (hierarchies) according to population size and functions.	<ul style="list-style-type: none"> • Understand the difference between settlement site and settlement situation. • Recognise the major function of certain settlements including market town, industrial, port, tourist resort, residential, capital - administrative, and religious. • Identify named examples of such settlements. • Aware that the function of a settlement can change over time. • Recognise hierarchy of settlement (hamlet, village, small town, large town, city, conurbation) and range of services provided.
	3.4.12	Factors affecting the location of settlements	<ul style="list-style-type: none"> • Analyse the locational factors affecting the development of original settlement including wet point, dry point, building materials, defence, fuel supply, bridging point, shelter and aspect.

Socio-Economic Human Systems	3.4.13	Settlement shape: dispersed, nucleated and linear.	<ul style="list-style-type: none"> Recognise the different patterns (shapes) of settlement including; dispersed, nucleated and linear. Know the reasons for the development of the three types of settlement shapes.
	3.4.14	Urbanisation Growth of world cities, megacities.	<ul style="list-style-type: none"> Identify on a world map the location of the world's largest cities (refer to 3.6.8). Explain the global distribution of the world's largest cities.
	3.4.15	Causes of Urbanisation. Rural push factors and urban pull factors.	<ul style="list-style-type: none"> Know the meaning of the term urbanisation. Explain the continental distribution of urban population. Know the reasons why people move from a rural to an urban area. Able to list the pull factors of urban areas. Able to list the push factors of rural areas.
	3.4.16	Tourism Reasons for the increase in tourism.	<ul style="list-style-type: none"> Know the reasons for the increase in world tourism, including; more leisure time, longer paid holidays, greater affluence, improvement in transport, more advertising, and better amenities in tourist areas.
	3.4.17	Different types of tourism: cultural, religious, coastal, sports, shopping, mountain, ecotourism.	<ul style="list-style-type: none"> Recognise the different types of tourism including; cultural/historical, coastal, religious, places of natural beauty, mountains, other sport, cruises, ecotourism and safari.

Socio-Economic Human Systems	3.4.18	Social, economic and environmental impact of tourism.	<ul style="list-style-type: none"> Realise that tourism can benefit and harm local communities, and local environments, such as coastal and mountainous areas and wildlife.
	3.4.19	<p>Tourism in Malta: analysing data (total number of tourists per year/month, tourists by nationality, average nights per person). Malta's attractions.</p> <p>Positive and negative impacts.</p>	<ul style="list-style-type: none"> Capable of drawing and/or interpreting data either graphical or tabulated regarding: total number of tourist departures per year and per month; and by nationality. Know about the tourist's average nights per person. Explore Malta's tourist attractions including: climate, beaches, hospitality, historical and cultural places. Aware of the positive effects of tourism in Malta including: greater affluence, foreign currency, greater employment, social interaction, rehabilitation of historical and tourist areas, and development in infrastructure. Aware of the negative environmental and social effects of tourism in Malta including; conflict regarding land use, overcrowding, traffic congestion, pressure on infrastructure, loss of natural environments, pollution, increase in waste, loss of traditional way of life.
	3.4.20	Case study: Mountain resort Courmayeur.	<ul style="list-style-type: none"> Locate Courmayeur on a map of Europe. Analyse the benefits.

	3.4.21	Case study: Safaris in Kenya.	<ul style="list-style-type: none"> • Locate Kenya as a Safari destination on a world map or a map of Africa. • Describe the characteristics of a safari trip. • Analyse the problems caused by tourism on people, wildlife and the environment in Kenya.
Environmental Concerns	3.5.1	Rocks and Soils Quarrying – benefits and problems.	<ul style="list-style-type: none"> • Aware of the advantages and problems of quarrying limestone with special reference to Malta. • Identify possible solutions to problems of quarrying including rehabilitation.
	3.5.2	Coasts Physical management of the coast.	<ul style="list-style-type: none"> • Aware of the attempts that are carried out to manage the coast by the use of concrete sea walls, boulder barriers, groynes and beach nourishment.
	3.5.3	Energy Resources World energy consumption: the demand for resources.	<ul style="list-style-type: none"> • Define the term natural resources. • Analyse the increase in demand for natural resources.

Environmental Concerns	3.5.4	Non-renewable energy resources. Coal, oil, natural gas, nuclear - advantages and disadvantages.	<ul style="list-style-type: none"> • Know the meaning of the terms non-renewable energy resources and fossil fuels. • Aware of the advantages and disadvantages of coal, oil, natural gas, and nuclear energy.
	3.5.5	Fuelwood and the cycle of environmental deprivation in LEDCs.	<ul style="list-style-type: none"> • Realising that fuelwood is still in demand in some of the LEDCs. • List the different uses of fuelwood. • Interpret the cycle of environmental deprivation.
	3.5.6	Impacts of energy demand: Global Warming – causes and effects.	<ul style="list-style-type: none"> • Know the meaning of the term Global Warming. • Understand the natural greenhouse effect. • Aware of what is causing global temperatures to rise, namely carbon dioxide, nitrous oxide, methane, CFCs (greenhouse gasses) and deforestation. • Able to explain the effects of global warming on the world. • Explore what can be done to reduce greenhouse gasses emissions.

Environmental Concerns	3.5.7	Impacts of energy demand: Acid Rain.	<ul style="list-style-type: none"> • Aware of the causes of acid rain, namely the release of sulphur dioxide and nitrogen oxide. • Know the difference between dry and wet deposition. • Understand the pH scale. • Describe the effects of acid rain on lakes and rivers, forests, farming, ground water, and buildings. Describe the health risks involved. • Explore what can be done to reduce the problem of acid rain.
	3.5.8	Case Study: Oil and the Environment: Trans-Alaskan oil pipeline and the Exxon Valdez oil spill (1989).	<ul style="list-style-type: none"> • Locate and find the position of the following on a map of Alaska: Valdez; Prudhoe Bay; and Trans-Alaskan pipeline. • Analyse the problems that were overcome before oil could be transported out of Alaska. • Aware of the solutions found to overcome the above mentioned problems and lessen the impact on the environment. • Account for the 1989 Exxon Valdez oil spill disaster. • Aware of the extent of the spillage and its effect on the physical environment and economy of this fragile region.

Environmental Concerns	3.5.9	Renewable energy resources: Hydro-electric power, Solar, Geothermal, Wind, Tidal, Biogas/biomass – advantages and disadvantages.	<ul style="list-style-type: none"> • Know the meaning of the terms renewable and alternative energy resources. • List the various types of renewable energy resources including hydro-electric power, solar, geothermal, wind, tidal, and biogas/biomass. • Explore the means by which the above-mentioned renewable resources are harnessed. • Appreciate the advantages and consider the disadvantages of hydro-electric power, solar, geothermal, and wind.
	3.5.10	Case Study: An HEP station Itaipù or Aswan High Dam.	<ul style="list-style-type: none"> • Locate an important HEP station on a map of the world. • Analyse the reasons for the choice of its location regarding the main requirements for building this HEP station. • List the reasons why this multi-purpose project was constructed. • Appreciate the advantages and consider the disadvantages of this HEP scheme.
	3.5.11	Sustainable energy resources – energy efficiency.	<ul style="list-style-type: none"> • Aware of measures taken to protect the earth's resources for better sustainability, including conservation, recycling, greater efficiency in use, developing renewable resources etc.

Location and Places	3.6.1	Lines of longitude and latitude – how they are measured. Locating the main lines of longitude and latitude.	<ul style="list-style-type: none"> Understanding the origin of latitude and longitude. Know the position and locate on a world map the main lines of latitude and longitude including: Prime /Greenwich Meridian (0°), International Date Line (180°), Equator (0°), North Pole (90°N), South Pole (90°S), Tropic of Cancer (23½°N), Tropic of Capricorn (23½°S), Antarctic Circle (66½°S), and Arctic Circle (66½°N).
	3.6.2	The location of all seven continents and five oceans.	<ul style="list-style-type: none"> Know the position and locate on a world map the continents including: North America, South America, Europe, Africa, Asia, Oceania, Australasia, Antarctica. Know the position and locate on a world map the oceans including: Arctic Ocean, Pacific Ocean, Atlantic Ocean, Indian Ocean, Southern (Antarctic) Ocean.
	3.6.3	The location of these major seas; the Gulf of Mexico, Caribbean Sea, North Sea, Baltic Sea, Caspian Sea, Mediterranean Sea, Black Sea, Red Sea, Arabian Sea, Bay of Bengal, Coral Sea, Persian Gulf.	<ul style="list-style-type: none"> Know the position and locate on a world map the major seas including; the Gulf of Mexico, Caribbean Sea, North Sea, Baltic Sea, Caspian Sea, Mediterranean Sea, Black Sea, Red Sea, Arabian Sea, Bay of Bengal, Coral Sea, Persian Gulf.

Location and Places	3.6.4	The major Ocean Currents: the Northern and Southern Equatorial Currents, the North Pacific, Californian, Peruvian, Kuro Siwo in the Pacific Ocean, the Gulf Stream, North Atlantic Drift, Labrador, Brazil and Benguela Current in the Atlantic Ocean.	<ul style="list-style-type: none"> • Know the position and locate on a world map the major warm sea currents including; the Northern and Southern Equatorial Currents, Kuro Siwo, the Gulf Stream, North Atlantic Drift, Brazil Current. • Know the position and locate on a world map the major cold sea currents including; the North Pacific, Californian, Peruvian, Labrador, and Benguela Current.
	3.6.5	<p>Location of these countries and their capital cities:</p> <ol style="list-style-type: none"> a. All the Mediterranean countries. b. All the EU countries. c. These countries: Canada, USA, Mexico, Brazil, Argentina, Venezuela, Sudan, Democratic Republic of Congo, South Africa, Kenya, Egypt, Saudi Arabia, Iraq, Iran, India, China, Japan, Russia, Bangladesh, Indonesia, Australia. 	<ul style="list-style-type: none"> • Know the position and locate on a map all the Mediterranean countries together with their capital cities. • Know the position and locate on a map of Europe all the countries of the European Union. • Know the position and locate on a map of the world the following countries: Canada, USA, Mexico, Brazil, Argentina, Venezuela, Sudan, Democratic Republic of Congo, South Africa, Kenya, Egypt, Saudi Arabia, Iraq, Iran, India, China, Japan, Russia, Bangladesh, Indonesia, Australia. • Know the capital cities of the above-mentioned countries. Locating their exact position is not required.

Location and Places	3.6.6	<p>Tourist destinations; <i>Coastal:</i> Spain, Caribbean. <i>Cultural:</i> Greece, Egypt, Malta. <i>Ice:</i> Alps, Rockies, Pyrenees. <i>Pilgrimage:</i> Mecca, Rome, Holy Land. <i>Safari:</i> Kenya, South Africa.</p>	<p>Know the position and locate on a world map important tourist destinations including: (Coastal) - Spain and the Caribbean; (Cultural) - Greece, Egypt and Malta; (Ice) - Alps, Rockies, and the Pyrenees; (Pilgrimage) Jerusalem, Mecca, Rome and (Safari) - Kenya and South Africa.</p>
	3.6.7	<p>Energy resource rich countries: USA (Alaska), China, Russian Federation, Canada, South Africa, Saudi Arabia, Venezuela, Indonesia, Iran, Libya, Mexico, Nigeria.</p>	<ul style="list-style-type: none"> • Know the position and locate on a world map the energy resource rich countries including; Alaska (USA), Canada, USA, Mexico, Venezuela, China, Russian Federation, South Africa, Saudi Arabia, Indonesia, Iran, Libya, Nigeria.
	3.6.8	<p>Location of megacities.</p>	<ul style="list-style-type: none"> • Know the position and locate on a world map the following cities with a population of more than 10 million inhabitants including: New York, Los Angeles, Mexico City, São Paulo, Buenos Aires, Lagos, Tianjin, Beijing, Shanghai, Seoul, Tokyo, Osaka-Kobe, Jakarta, Mumbai, Calcutta, Karachi

GEOGRAPHY

OPTION SYLLABUS AND LEARNING OUTCOMES

Form 4

Directorate for Quality and Standards in Education
Department for Curriculum Management and E-Learning

Edward Gilson
Rita De Battista
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GEOGRAPHY OPTION SYLLABUS FORM 4

GEOGRAPHY OPTION SYLLABUS – FORM 4

4.1 Map Reading and Interpretation	4.2 Weather and Climate	4.3 Landforms and Processes	4.4 Socio-Economic Human Systems	4.5 Environmental Concerns	4.6 Location and Places
<p>4.1.1 Basic cartographic skills: map enlargement and reduction.</p> <p>4.1.2 Recognition of landforms resulting from river erosion.</p> <p>4.1.3 Interpretation of settlements, urban/rural land use patterns.</p>	<p>Depressions and Anticyclones</p> <p>4.2.1 Weather sequence of a typical depression.</p> <p>4.2.2 Winter and summer anticyclones.</p> <p>4.2.3 Tropical storms: formation and effects.</p> <p>4.2.4 Case Study: Katrina 2005.</p> <p>Microclimate of an Urban Area</p> <p>4.2.5 Temperature (urban heat island), air quality (photochemical smog), precipitation and wind.</p>	<p>The Earth as a Planet</p> <p>4.3.1 Locating places using latitude and longitude.</p> <p>4.3.2 Longitude and time. Standard time zones and the International Date Line.</p> <p>Soil</p> <p>4.3.3 Soil profile (Horizons A,B,C).</p> <p>4.3.4 Formation and properties of soil (air, water, organic matter and mineral particles).</p>	<p>Population</p> <p>4.4.1 The demographic transition model.</p> <p>4.4.2 Population Structure.</p> <p>4.4.3 Case Study: Italy : an ageing population.</p> <p>Settlement</p> <p>4.4.4 Location, appearance and land use characteristics of the three major urban zones – the CBD, Inner City and Residential suburbs.</p>	<p>Soil Erosion and Management</p> <p>4.5.1 Natural causes of soil erosion.</p> <p>4.5.2 Common farming practices which lead to soil erosion.</p> <p>4.5.3 Soil conservation.</p> <p>Flooding</p> <p>4.5.4 Causes of flooding.</p> <p>4.5.5 Flood hydrographs.</p> <p>4.5.6 Flood management.</p>	<p>4.6.1 Awareness of the 24 different Time Zones in the world and calculation of Time (plus or minus from Greenwich Meridian).</p> <p>4.6.2 Major Fold Mountain Systems: the Rockies, Andes, Alps, Atlas, Drakensberg, Himalayas, Australian Alps.</p> <p>4.6.3 Major Volcanoes: Mauna Kea, Mauna Loa, Mt. St Helens, Mt. Pelée, Mt. Cotopaxi, Mt. Chimborazo, Mt. Nevado del Ruiz, Mt. Vesuvius, Mt. Etna, Mt. Kilimanjaro,</p>

	<p>4.2.6 Climate of the Maltese Islands: distribution and reliability of rainfall, mean temperatures and prevailing winds.</p>	<p>4.3.5 Water movement in the soil: leaching and capillary action.</p> <p>Plate Tectonics</p> <p>4.3.6 Structure of the earth: core, mantle and crust (continental and oceanic crust).</p> <p>4.3.7 Convection currents in the mantle and the idea of continental drift.</p> <p>4.3.8 Major Plates of the Earth's crust.</p> <p>4.3.9 The movement of the Earth's plates – constructive boundaries, destructive boundaries and conservative boundaries.</p>	<p>4.4.5 Arrangements of land use zones in cities, urban land use models – Burgess and Hoyt.</p> <p>4.4.6 Changing cities – changes in the CBD, in the inner city and at the rural-urban fringe.</p> <p>4.4.7 Problems and solutions of urban transport.</p> <p>Urbanisation</p> <p>4.4.8 Differences in Urbanisation between LEDCs and MEDCs.</p> <p>4.4.9 Urban problems in LEDCs.</p> <p>4.4.10 Patterns of urban land use in LEDCs - features of shanty towns or squatter settlements.</p>	<p>4.5.7 Case study: River flooding in Bangladesh.</p> <p>4.5.8 Case study: Flood control – The Three Gorges Dam.</p> <p>Agriculture</p> <p>4.5.9 Environmental impact of farming; use of chemicals, loss of wildlife habitat, removal of hedgerows/rubble walls, drainage of wetlands.</p>	<p>Mt. Krakatoa,, Mt. Pinatubo, Mt. Fujiyama, Montserrat, Tristan da Cunha, Surtsey.</p> <p>4.6.4 Major tectonic plates: Pacific Plate, Nazca Plate, North American Plate, South American Plate, Antarctic Plate, Juan de Fuca Plate, African Plate, Eurasian Plate, Indo-Australian Plate.</p> <p>4.6.5 Location of Kobe and areas in the Indian Ocean devastated by the tsunami of the 26th December 2004.</p> <p>4.6.6 Location of these major rivers: St. Lawrence, McKenzie, Mississippi, Missouri, Colorado, Orinoco, Amazon,</p>
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		<p>4.3.10 Plate movements and the formation of fold mountains.</p> <p>4.3.11 The relationship between earthquakes, volcanoes and plate boundaries.</p> <p>Earthquakes: 4.3.12 The causes of earthquakes: focus, epicentre and seismic waves.</p> <p>4.3.13 Measurement of earthquakes: the Richter Scale.</p> <p>4.3.14 Effects of an Earthquake; short and long-term impact – social, economic and environmental impact.</p>	<p>4.4.11 Shanty town improvements.</p> <p>4.4.12 Case Study: Urban growth in São Paolo and Rio de Janeiro.</p> <p>4.4.13 Case Study: Cairo – Primate city.</p> <p>Agriculture 4.4.14 Farming as a system with inputs, processes and outputs.</p> <p>4.4.15 Types of farming – arable, pastoral and mixed, subsistence and commercial, extensive or intensive, shifting or sedentary.</p>		<p>Parana, Rhône, Rhine,, Danube, Volga, Indus, Ganges, Huang He, Yangtse, Murray-Darling, Nile, Zambezi, Niger and Congo.</p> <p>4.6.7 Location of major HEP stations: Aswan High Dam, Three Gorges Dam, Itaipu.</p>
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		<p>4.3.15 Resisting earthquakes.</p> <p>4.3.16 Case study: Kobe earthquake, 1995.</p> <p>4.3.17 Case study: Tsunami of the Indian Ocean, 2004.</p> <p>Volcanoes</p> <p>4.3.18 Formation and features of composite cone, acid and basic lava volcanoes – crater, secondary or parasitic cone, lava tube, magma chamber, side vents.</p> <p>4.3.19 Volcanic activity: active, dormant and extinct volcanoes.</p> <p>4.3.20 Predicting and preparing for volcanic eruptions.</p>	<p>4.4.16 Physical, human and political factors affecting farming.</p> <p>4.4.17 Improved technology.</p> <p>4.4.18 Organic farming.</p> <p>4.4.19 EU Agricultural Policy (CAP).</p> <p>4.4.20 The Green Revolution: high yield varieties, irrigation, appropriate technology and land reform.</p> <p>4.4.21 Case Study: Rice farming in India.</p> <p>4.4.22 Case Study: Dairy farming in Denmark.</p>		
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		<p>4.3.27 The drainage basin – source, mouth, tributary, confluence, watershed, main river.</p> <p>4.3.28 Factors affecting the rate of a river’s discharge.</p> <p>4.3.29 Processes of river erosion – abrasion or corrasion, solution or corrosion, hydraulic action and attrition.</p> <p>4.3.30 Processes by which a river transports its load: traction, saltation, suspension and solution.</p> <p>4.3.31 River landforms in the uplands – formation of V-shaped valleys, gorges, interlocking spurs, waterfalls and rapids.</p>			
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		<p>4.3.32 The river and its valley in the lowlands: formation of meanders, ox-bow lakes, flood plain, levées, and deltas (arcuate and bird's foot).</p> <p>4.3.33 Human activities in rivers and their valleys.</p>			
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A field trip with a follow up individual report should be organised during the scholastic year with special reference to topics covered in this syllabus. The report should be between 800 and 1000 words long and should include evidence of geographical skills such as collection of data, well-annotated illustrations, graphs and maps. The aims, methods and conclusions of the report should be stated and developed in the text.

The report will carry 10 marks in the Annual Examination. Criteria for assessment are as follows:

Clear definition of aims and objectives	2 marks
Observation and data collection	2 marks
Development and analysis	2 marks
Conclusions	2 marks
Data refining and presentation including cartographic, graphic and diagramatic	2 marks

Geography Option Form 4 Learning Outcomes

Map Reading and Interpretation	4.1.1	Basic cartographic skills: map enlargement and reduction.	<ul style="list-style-type: none"> • Reduce by half or enlarge by doubling the grid of the original map. • Locate and insert any obvious or more important details such as hilltops, drainage features and important landmarks. • Tick where important line features such as main roads cross grid lines. • Add the correct scale to the map.
	4.1.2	Recognition of landforms resulting from river erosion.	<ul style="list-style-type: none"> • Recognise the watershed by means of contour lines. • Tell the direction of flow of rivers. • Identify features of upper and lower courses of rivers including: V-shaped valleys, interlocking spurs, waterfalls, meanders and ox-bow lakes, floodplains, estuaries and deltas.
	4.1.3	Interpretation of settlements, urban/rural land use patterns.	<ul style="list-style-type: none"> • Interpret the site and situation of settlements especially in relation to aspect, drainage, physical features, communications and resources. • Recognise settlement layout including nucleated, linear (ribbon) and dispersed. • List the differences between urban (towns) and rural (villages) recognizable on a topographic map including open spaces/high density, low order/ high order goods and services. • Differentiate between the main urban use including CBD, residential, recreational and industrial. • Describe the relationship between the river valleys and the roads and settlement.

Weather and Climate	4.2.1	<p>Depressions and Anticyclones</p> <p>Weather sequence of a typical depression.</p>	<ul style="list-style-type: none"> • Be aware of the typical sequence of weather during the passage of a mid-latitude depression including air pressure, wind direction, rainfall and temperature. • Understand the meaning and sequence of the warm front, warm sector, cold front and occluded front. • Identify the above fronts and sector on a weather chart. • Interpret the pattern of isobars on a weather chart. • To forecast the weather for a particular locality shown on the weather chart that shows a mid-latitude depression. • Compare satellite images showing a mid-latitude depression to the relative weather chart.
	4.2.2	<p>Winter and summer anticyclones.</p>	<ul style="list-style-type: none"> • Demonstrate the main features of an anticyclone including pressure, movement and weather conditions. • Describe the weather conditions of a summer anticyclone. • Describe the weather condition of a winter anticyclone. • Comprehend a weather chart showing an anticyclone area.
	4.2.3	<p>Tropical storms: formation and effects.</p>	<ul style="list-style-type: none"> • List the causes of the origin of a typical tropical storm. • Analyse the main features of a hurricane. • Aware of the destructive effects of a tropical storm including, high winds, storm or tidal surges, flooding and landslides.

Weather and Climate	4.2.4	Case Study: Katrina 2005.	<ul style="list-style-type: none"> • Locate the origin and course of hurricane Katrina. • Describe the weather conditions over New Orleans during the storm. • List the destructive results of hurricane Katrina as they affected the population, building and property, places and the economy in general.
	4.2.5	Microclimate of an Urban Area: Temperature (urban heat island), air quality (photochemical smog), precipitation and wind.	<ul style="list-style-type: none"> • Describe the particular climate of a large city including lower wind speeds, more clouds, slightly higher rainfall because of dust, less snowfall, more convection leading to heavy rainfall, more surface run-off, water vapour and smog. • Define and explain the term urban heat island.
	4.2.6	Climate of the Maltese Islands: distribution and reliability of rainfall, mean temperatures and prevailing winds.	<ul style="list-style-type: none"> • Interpret a simple climate graph of the Maltese Islands showing the average monthly temperature and rainfall. • Interpret the distribution of wind direction on a wind rose. • Recognise the difference between convectional and frontal rainfall as experienced in Malta.
	4.3.1	The Earth as a Planet Locating places using latitude and longitude.	<ul style="list-style-type: none"> • Consolidate and integrate the knowledge about latitude and longitude in order to locate places on a world map.

Landforms and Processes	4.3.2	Longitude and time. Standard time zones and the International Date Line.	<ul style="list-style-type: none"> • Understand the concept of different time zones as a result of the earth's rotation. • Appreciate the importance of longitude in the calculation of time. • Calculate the difference in degrees of longitude for one hour. • Calculate the value in time of one degree of longitude. • Understand the concept of the Prime or Greenwich Meridian as Universal Time (UT). • Calculate time to the nearest hour for any locality given midday in Greenwich and determining the standard time zone. • Understand the concept of the International Date Line by moving 12 hours west or east of Greenwich.
	4.3.3	Soil Soil profile (Horizons A,B,C).	<ul style="list-style-type: none"> • Identify the three main soil horizons A,B,C. • Label soil profile diagram with the following components: parent rock, decaying leaves and vegetation, organic activity and weathered parent material.

	4.3.4	Formation and properties of soil (air, water, organic matter and mineral particles).	<ul style="list-style-type: none"> • Realise the dependence of different life forms on soil. • Aware that soil is a renewable resource. • Know the following factors affecting the formation of soil, namely parent material, climate, flora and fauna, and time. • Understand that soil is formed by the weathering of rocks, the addition of water, gases (air), living organisms (biota) as well as decayed organic matter (humus).
Landforms and Processes	4.3.5	Water movement in the soil: leaching and capillary action.	<ul style="list-style-type: none"> • Understand what happens to the soil when evaporation is greater than rainfall and vice-versa. • Trace the movement of water up (capillary action), or down (leaching) in the soil, in a soil profile diagram.
	4.3.6	<p>Plate Tectonics</p> <p>Structure of the earth: core, mantle and crust (continental and oceanic crust).</p>	<ul style="list-style-type: none"> • Recognise the core, mantle and crust in a diagram representing a cross-section of the Earth. • Describe the basic characteristics of the core (i.e. inner - solid, outer - semi-molten, very high temperatures), mantle (i.e. semi-molten, magma) and crust (outer shell, solid rocks). • Differentiate between the main characteristics of oceanic and continental crust.

	4.3.7	Convection currents in the mantle and the idea of continental drift.	<ul style="list-style-type: none"> • Able to explain the idea that the world's continents were once joined in a large super-continent. • Understand the reason why plates move, i.e. convectional currents in the mantle.
	4.3.8	Major Plates of the Earth's crust.	<ul style="list-style-type: none"> • Identify the major plates of the earth's crust, as in 4.6.4.

Landforms and Processes	4.3.9	The movement of the Earth's plates – constructive boundaries, destructive boundaries and conservative boundaries.	<ul style="list-style-type: none"> • Differentiate between 3 types of movement of plates i.e. away from, towards and past each other. • Recognise and describe the process and results of these movements at constructive, destructive, collision and conservative margins.
	4.3.10	Plate movements and the formation of fold mountains.	<ul style="list-style-type: none"> • Describe how fold mountains are formed at destructive and collision margins. • Locate the distribution of major fold mountain ranges as in 4.6.2.
	4.3.11	The relationship between earthquakes, volcanoes and plate boundaries.	<ul style="list-style-type: none"> • Compare world maps showing the location of plate boundaries, volcanoes and recent major earthquakes. • Recognise earthquakes and volcanoes as a result of plate movements.

	4.3.12	<p>Earthquakes</p> <p>The causes of earthquakes: focus, epicentre and seismic waves.</p>	<ul style="list-style-type: none"> • Define the terms, earthquakes, focus, epicentre and seismic waves. • Understand that an earthquake is a sudden movement of the earth's crust as a result of release of tension that is built up at collision, destructive and conservative margins.
Landforms and Processes	4.3.13	Measurement of earthquakes: the Richter Scale.	<ul style="list-style-type: none"> • Know about the use of the seismograph to measure the strength of an earthquake. • Explain the Richter Scale to calculate the magnitude and relative effects of an earthquake.
	4.3.14	Effects of an Earthquake; short and long-term impact – social, economic and environmental impact.	<ul style="list-style-type: none"> • Differentiate between primary and secondary effects of an earthquake. • Describe the social, economic and environmental effects of an earthquake.
	4.3.15	Resisting earthquakes.	<ul style="list-style-type: none"> • List the measures that can be taken in order to reduce the damaging effects of an earthquake.

	4.3.16	Case study: Kobe earthquake, 1995.	<ul style="list-style-type: none"> Identify the location of Kobe on a map of Japan that includes the position of the plate margins involved. Explain the causes of the earthquake. Describe the course of events as well as the primary and secondary effects of the earthquake.
	4.3.17	Case study: Tsunami of the Indian Ocean, 2004.	<ul style="list-style-type: none"> Locate on a world map the epicentre and the worst affected places of the tsunami. Explain the causes of the earthquake and tsunami. Describe the course of events and the effects of the tsunami.
	4.3.18	Volcanoes: Formation and features of composite cone, acid and basic lava volcanoes – crater, secondary or parasitic cone, lava tube, magma chamber, side vents.	<ul style="list-style-type: none"> Label the various features of a cross-section diagram of a volcano, including; crater, secondary or parasitic cone, lava tube, magma chamber and side vents. List the main characteristics of composite cone, acid and basic lava volcanoes.
Landforms and Processes	4.3.19	Volcanic activity: active, dormant and extinct volcanoes.	<ul style="list-style-type: none"> Classify the three main types of volcano, according to frequency of eruptions.

	4.3.20	Predicting and preparing for volcanic eruptions.	<ul style="list-style-type: none"> Describe the measures that can be taken to lessen the hazards of a volcano.
	4.3.21	The hazards and benefits of volcanoes.	<ul style="list-style-type: none"> List and define the hazard effects of a volcano on people and the environment including volcanic gases, ash cloud, lava flow, pyroclastic flow and lahars. Appreciate the advantages of living in volcanic areas, including, fertile soil, geothermal energy, tourism, building materials, and rich mineral deposits.
	4.3.22	Case Study: Mount St Helens, USA, 1980.	<ul style="list-style-type: none"> Identify the location of Mt St Helens on a world map. Explain the causes of the eruption including plate boundaries. Describe the course of events as well as the effects of the eruption.
	4.3.23	Case Study: Mount Etna (Sicily).	<ul style="list-style-type: none"> On a map of the Central Mediterranean locate the position of Mt. Etna in relation to the African and Eurasian plate boundaries. Describe the eruptions of Mt. Etna as an active volcano. Aware of the damage caused by some eruptions. Identify the advantages of the volcano to the local people.
Landforms and Processes	4.3.24	The Hydrological Cycle and Rivers Processes, flows and stores in the hydrological cycle.	<ul style="list-style-type: none"> Understand the terms evaporation, transpiration, condensation and precipitation. Label diagrams or flow charts of the hydrological cycle including the above terms as well as water stored as ice and snow, in lakes and rivers, as ground water. Include also water stored in oceans and seas.

	4.3.25	Sources of water in the Maltese Islands: Reverse Osmosis Plants and underground water.	<ul style="list-style-type: none"> • Illustrate and describe the two aquifers in the layers of the Maltese rocks namely the sea level aquifer and the perched aquifer. • Differentiate between water obtained from the aquifers and water obtained from the sea by means of the Reverse Osmosis Plants. • Explain briefly how salty water is changed into pure drinking water.
	4.3.26	The drainage basin as a system: inputs, throughputs and outputs.	<ul style="list-style-type: none"> • Understand the terms inputs, storage, flows or transfers and outputs in a drainage basin or a river basin system. • Apply the above terms to a flow chart. • Show how the whole system can be easily disturbed.
	4.3.27	The drainage basin – source, mouth, tributary, confluence, watershed, main river.	<ul style="list-style-type: none"> • Recognise the main features of a drainage basin mainly source, tributary, watershed, confluence, mouth and main river.
	4.3.28	Factors affecting the rate of a river's discharge	<ul style="list-style-type: none"> • Identify the factors that affect the water level in the main river namely precipitation, relief, rock type, soil, natural vegetation, land use, use of river, and drainage density.
	4.3.29	Processes of river erosion – abrasion or corrasion, solution or corrosion, hydraulic action and attrition.	<ul style="list-style-type: none"> • Describe the four processes by which a river can erode its banks and bed namely by abrasion or corrasion, solution or corrosion, hydraulic action and attrition.
	4.3.30	Processes by which a river transports its load: traction, saltation, suspension and solution.	<ul style="list-style-type: none"> • Understand how a river can transport its load through traction, and saltation along its bed, and suspension and solution within the river itself.

	4.3.31	River landforms in the uplands – formation of V-shaped valleys, gorges, interlocking spurs, waterfalls and rapids.	<ul style="list-style-type: none"> • Explain why the upper reaches of a river form a V shaped valley through vertical erosion. • Describe and interpret the distinct features caused namely interlocking spurs and rapids. • Demonstrate how waterfalls and gorges form. • Label the profile of a waterfall including the following terms : layer of soft rock, layer of resistant rock, plunge pool, undercutting, overhang, waterfall retreats upstream, steep sided gorge.
Landforms and Processes	4.3.32	The river and its valley in the lowlands: formation of meanders, ox-bow lakes, flood plain, levées, and deltas (arcuate and bird’s foot).	<ul style="list-style-type: none"> • Explain the processes by which the river forms meanders and ox-bow lakes. • Illustrate and interpret a cross-section of a meander including slip-off slope, small river cliff, position of slow and fast currents. • Label and explain the cross-section of river landforms and channel in the lowland area, which is more liable to flooding, including the terms flood plain and levees. • Aware of the conditions that result in the build up of a delta. • Distinguish between arcuate and bird’s foot delta.
	4.3.33	Human activities in rivers and their valleys.	<ul style="list-style-type: none"> • Demonstrate the use of a river for human activities including irrigation and farming, fishing, harnessing the waters of a river by means of dams to produce HEP, leisure and tourism, transport, domestic and industrial use.

Socio-Economic Human Systems	4.4.1	Population The demographic transition model.	<ul style="list-style-type: none"> • Interpret a demographic transition model showing the four (and possibly the fifth) stages of population development. • Analyse the reasons in the fluctuations of the birth and death rates in the different stages of the demographic transition model. • Apply the different stages to particular countries.
	4.4.2	Population Structure.	<ul style="list-style-type: none"> • Interpret a population pyramid (age – sex structure graph) including gender, five year age groups as percentage of total population, and subdivision into the following broad age groups: young dependants (0 to 14); economically active (15 to 64); elderly dependants (65+). • Compare the different shapes of population pyramids according to the stages of the demographic transition model. • Apply the different types of pyramids to LEDCs and MEDCs.
	4.4.3	Case Study: Italy : an ageing population.	<ul style="list-style-type: none"> • Summarise the problems created by the ageing population of Italy.
	4.4.4	Settlement Location, appearance and land use characteristics of the three major urban zones – the CBD, Inner City and Residential suburbs.	<ul style="list-style-type: none"> • Define the main characteristics of the CBD namely its centrality, accessibility, high density of services and traffic, and high land value. • Define the main characteristics of the Inner City including its location next to the CBD, crowded high density terraced housing, narrow unplanned streets, large old abandoned factories, railway stations, and polluted canals. • Define the main characteristics of the Residential Suburbs namely its location at the edge of the built up area, smarter appearance, more open space, more recent and larger houses, and small shopping centers.

	4.4.5	Arrangements of land use zones in cities, urban land use models – Burgess and Hoyt.	<ul style="list-style-type: none"> • Illustrate and interpret the two most important urban land use models by Burgess and Hoyt to include the CBD, Transitional, Twilight Zone and Modern Suburbia.
Socio-Economic Human Systems	4.4.6	Changing cities –changes in the CBD, in the inner city and at the rural-urban fringe.	<ul style="list-style-type: none"> • List and explain the changes occurring in the CBD such as improvements in public transport and creation of pedestrian areas. • List and explain the changes occurring in the Inner City such as redevelopment of abandoned and derelict buildings or slum areas. • List and explain the developments that are taking place at the Rural-Urban Fringe such as out of town shopping centers and science and business parks. • Explain the term urban sprawl and the measures taken to contain it by the use of green belts and green wedges.
	4.4.7	Problems and solutions of urban transport.	<ul style="list-style-type: none"> • Explain the reasons for the increase in urban transport. • Demonstrate the damaging effects of increased traffic in urban areas. • Suggest ways to reduce the damaging effects of increased traffic.
	4.4.8	Urbanisation Differences in Urbanisation between LEDCs and MEDCs.	<ul style="list-style-type: none"> • Consolidate the differences in urban growth between developed and developing cities.
	4.4.9	Urban problems in LEDCs.	<ul style="list-style-type: none"> • List the problems of a developing city including housing, crime, traffic, unemployment, lack of services and pollution.

	4.4.10	Patterns of urban land use in LEDCs - features of shanty towns or squatter settlements.	<ul style="list-style-type: none"> • Label and explain a model of land use patterns in a developing city. • Understand the terms shanty towns or squatter settlements. • Describe the main characteristics of a shanty town in a LEDC.
Socio-Economic Human Systems	4.4.11	Shanty town improvements.	<ul style="list-style-type: none"> • Appreciate the attempts at improving the quality of life in shanty town areas such as self-help schemes, and community housing projects.
	4.4.12	Case Study: Urban growth in São Paulo and Rio de Janeiro.	<ul style="list-style-type: none"> • Account for the rapid urban growth of São Paulo and Rio de Janeiro. • Outline the main problems attached to the rapid growth of these two cities. • Appreciate the attempts to solve these problems.
	4.4.13	Case Study: Cairo – Primate city.	<ul style="list-style-type: none"> • Account for the rapid urban growth of Cairo. • Understand the term Primate City. • Outline the main problems attached to the rapid growth of this city. • Appreciate the attempts to solve these problems.
	4.4.14	Agriculture Farming as a system with inputs, processes and outputs.	<ul style="list-style-type: none"> • Apply the meaning of inputs, processes and outputs for an arable and pastoral farm.

	4.4.15	Types of farming – arable, pastoral and mixed, subsistence and commercial, extensive or intensive, shifting or sedentary.	<ul style="list-style-type: none"> • Aware of different classifications of types of farming. • Differentiate between pastoral, arable and mixed farming. • Know the meaning of subsistence and intensive farming. • Define extensive and intensive farming. • Describe shifting and sedentary farming.
Socio-Economic Human Systems	4.4.16	Physical, human and political factors affecting farming.	<ul style="list-style-type: none"> • Comprehend how relief, soils, temperature, and rainfall affect farming. • Understand the way by means human (social) and economic inputs affect farming namely size of farms, transport and market, capital and mechanization. • Outline the influence of governments through political decisions in providing subsidies and grants.
	4.4.17	Improved technology.	<ul style="list-style-type: none"> • Aware of the greater use of machinery, greenhouses, tools, fertilizers, pesticides, computerized systems and modern irrigation methods.
	4.4.18	Organic farming.	<ul style="list-style-type: none"> • Understand the meaning of Organic Farming. • Aware of the positive and negative aspects of Organic Farming.
	4.4.19	EU Agricultural Policy (CAP).	<ul style="list-style-type: none"> • Know the main aims behind the setup of the CAP by the EU. • Aware of the agricultural reforms of 1992. • Describe the successes and problems of the CAP. • Understand the terms: set aside land, subsidy, quota, and diversification.

	4.4.20	The Green Revolution: high yield varieties, irrigation, appropriate technology and land reform.	<ul style="list-style-type: none"> Identify the four main parts to the Green Revolution namely the use of high yielding varieties of plants (HYVs); the introduction of irrigation schemes; the greater use of chemical fertilizers and the use of pesticides.
Socio-Economic Human Systems	4.4.21	Case Study: Rice farming in India.	<ul style="list-style-type: none"> Locate on the map of Asia the Ganges Valley and its delta. Consolidate knowledge about: the terms subsistence and intensive farming; the physical and human inputs, to rice cultivation in India. Interpret a climatic graph in relation to the process of rice cultivation. Consolidate Green Revolution applications and recent changes in rice farming in India including land reform to increase farm size, grant ownership to farm labourers, limit the land that a wealthy family can own and the use of HYVs.
	4.4.22	Case Study: Dairy farming in Denmark.	<ul style="list-style-type: none"> Locate Denmark on a map of Europe. Account for the rise of cooperatives to assist small farmers. Describe a typical Danish farm.
	4.4.23	Farming, food supply and famine.	<ul style="list-style-type: none"> List the causes of famine in LEDCs namely drought, desertification, political instability, poverty, trade and international debt. Understand the meaning of malnutrition. Comprehend the circle of hunger in LEDCs.
	4.4.24	Case Study: Farming reform in the Mezzogiorno (Southern Italy).	<ul style="list-style-type: none"> Locate the Mezzogiorno on a map of Italy. Appreciate the schemes to improve farming in the Mezzogiorno and so reduce the gap in wealth between the north and south.

Socio-Economic Human Systems	4.4.25	Case Study: Farming in Brazil – Shifting cultivation and plantations.	<ul style="list-style-type: none"> • Locate Brazil on a map of South America. • Consolidate the meaning of the term shifting cultivation in relation to Brazil. • Understand the meaning of plantations in relation to Brazil. • Describe the main features of plantation agriculture in Brazil.
	4.4.26	Case Study: Intensive market gardening in the Netherlands.	<ul style="list-style-type: none"> • Locate the Netherlands on a map of Europe. • Consolidate the meaning of intensive agriculture in relation to the Netherlands. • Understand the meaning of the term market gardening and horticulture. • Know the reasons for the development of such farms in the Netherlands.
	4.5.1	Soil Erosion and Management Natural causes of soil erosion.	<ul style="list-style-type: none"> • Understand the meaning of soil erosion and how this vital resource can be removed by heavy rainfall and wind.
	4.5.2	Common farming practices which lead to soil erosion.	<ul style="list-style-type: none"> • Aware of the human impact leading to soil erosion namely overcultivation, overgrazing, deforestation and up and down ploughing.
	4.5.3	Soil conservation.	<ul style="list-style-type: none"> • Explain how terracing, replanting of trees, grass and hedges, contour ploughing, controlled grazing, crop rotation and replacing organic matter can reduce soil erosion.

Environmental Concerns	4.5.4	Flooding Causes of flooding.	<ul style="list-style-type: none"> List the main physical and human causes of flooding namely steep gradients, low lying areas, impermeable type of rock, heavy rains, thawing of snow, silting of river beds, deforestation, increase in population, rapid surface runoff due to urbanisation, and bridges trapping debris.
	4.5.5	Flood hydrographs.	<ul style="list-style-type: none"> Interpret simple hydrographs (excluding base flow). Understand the terms peak discharge, velocity, lag time and volume.
	4.5.6	Flood management.	<ul style="list-style-type: none"> Appreciate the means by which flooding can be reduced namely by afforestation projects, raising the embankments, damming the river to control it, dredging the silt and proper landscaping of river banks.
	4.5.7	Case study: River flooding in Bangladesh.	<ul style="list-style-type: none"> Locate the position of Bangladesh in the Indian sub-continent in relation to the Himalayas and the rivers Brahmaputra and Ganges. Consolidate the physical and human causes of flooding with reference to Bangladesh. Describe the effects of a particular flood in Bangladesh.
	4.5.8	Case study: Flood control – The Three Gorges Dam.	<ul style="list-style-type: none"> Locate the Yangtse River on a map of China and the position of the Three Gorges Dam. Aware of the scale, advantages and disadvantages of this scheme.

	4.5.9	<p>Agriculture Environmental impact of farming; use of chemicals, loss of wildlife habitat, removal of hedgerows/rubble walls, drainage of wetlands.</p>	<ul style="list-style-type: none"> • Aware of the disadvantages of the use of chemicals by farmers on the environment. • Aware of the loss of wildlife habitats due to the intensification of farmland. • List the advantages and disadvantages of hedgerows and rubble walls and identify reasons for their removal. • Understand the meaning of wetlands and the problems created when these are drained for farming.
Location and Places	4.6.1	Awareness of the 24 different Time Zones in the world and calculation of Time (plus or minus from Greenwich Meridian).	<ul style="list-style-type: none"> • Consolidate and identify on a world map the Greenwich Meridian and the International Date Line.
	4.6.2	Major Fold Mountain Systems: the Rockies, Andes, Alps, Atlas, Drakensberg, Himalayas, Australian Alps.	<ul style="list-style-type: none"> • Know the position of and locate on a world map the following major mountain chains namely the Rockies, Andes, Alps, Atlas, Drakensberg, Himalayas, Australian Alps.
	4.6.3	Major Volcanoes: Mauna Kea, Mauna Loa, Mt. St Helens, Mt. Pelée, Mt. Cotopaxi, Mt. Chimborazo, Mt. Nevado del Ruiz, Mt. Vesuvius, Mt. Etna, Mt. Kilimanjaro, Mt. Krakatoa,, Mt. Pinatubo, Mt. Fujiyama, Montserrat, Tristan da Cunha, Surtsey.	<ul style="list-style-type: none"> • Know the position of and locate on a world map the following important volcanoes namely Mauna Kea, Mauna Loa, Mt. St Helens, Mt. Pelée, Mt. Cotopaxi, Mt. Chimborazo, Mt. Nevado del Ruiz, Mt. Vesuvius, Mt. Etna, Mt. Kilimanjaro, Mt. Krakatoa,, Mt. Pinatubo, Mt. Fujiyama, Montserrat, Tristan da Cunha, Surtsey.

Location and Places	4.6.4	Major tectonic plates: Pacific Plate, Nazca Plate, North American Plate, South American Plate, Antarctic Plate, Juan de Fuca Plate, African Plate, Eurasian Plate, Indo-Australian Plate.	<ul style="list-style-type: none"> Identify the following major tectonic plates on a world map namely Pacific Plate, Nazca Plate, North American Plate, South American Plate, Antarctic Plate, Juan de Fuca Plate, African Plate, Eurasian Plate, Indo-Australian Plate.
	4.6.5	Location of Kobe and areas in the Indian Ocean devastated by the tsunami of the 26 th December 2004.	<ul style="list-style-type: none"> Consolidate 4.3.16
	4.6.6	Location of these major rivers: St.Lawrence, McKenzie, Mississippi, Missouri, Colorado, Orinoco, Amazon, Rhône, Rhine, Danube, Volga, Indus, Ganges, Huang He, Yangtse, Murray-Darling, Nile, Zambezi, Niger and Congo.	<ul style="list-style-type: none"> Know the position of and locate on a world map the following rivers namely St.Lawrence, McKenzie, Mississippi, Missouri, Colorado, Orinoco, Amazon, Rhône, Rhine, Danube, Volga, Indus, Ganges, Huang He, Yangtse, Murray-Darling, Nile, Zambezi, Niger and Congo.
	4.6.7	Location of major HEP stations: Aswan High Dam, Three Gorges Dam, Itaipù.	<ul style="list-style-type: none"> Know the position of and locate on a world map the following places Aswan High Dam, Three Gorges Dam, Itaipù and their respective rivers, Nile, Yangtse and Paraná.

GEOGRAPHY

OPTION SYLLABUS AND LEARNING OUTCOMES

Form 5

Directorate for Quality and Standards in Education
Department for Curriculum Management and E-Learning

Edward Gilson
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Anton Quintano

GEOGRAPHY OPTION SYLLABUS FORM 5

GEOGRAPHY OPTION SYLLABUS – FORM 5

5.1 Map Reading and Interpretation	5.2 Weather and Climate	5.3 Landforms and Processes	5.4 Socio-Economic Human Systems	5.5 Environmental Concerns	5.6 Location and Places
<p>5.1.1 Basic cartographic skills: section drawing; intervisibility and gradients.</p> <p>5.1.2 Recognition of landforms resulting from glaciation.</p> <p>5.1.3 Interpretation of communication patterns and location of economic activity.</p>	<p>Tropical Rainforest 5.2.1 Equatorial climate.</p> <p>5.2.2 Appearance (vegetation levels) and adaptation of the vegetation.</p> <p>5.2.3 Rainforest water and nutrient cycle.</p> <p>Tropical Savanna Grasslands 5.2.4 Tropical Continental Climate. Appearance of Tropical Savanna Grasslands and adaptation of the vegetation.</p>	<p>The Earth as a Planet 5.3.1 Effects of the Earth’s revolution – (a) the seasons; (b) the varying lengths of day and night.</p> <p>Ice Landscapes 5.3.2 The Ice Age.</p> <p>5.3.3 Processes of ice erosion – abrasion, plucking and freeze-thaw weathering (frost shattering).</p>	<p>Industrial Activity 5.4.1 Classification of economic activities – Primary, Secondary, Tertiary and Quaternary.</p> <p>5.4.2 Comparing employment structures – triangular graphs.</p> <p>5.4.3 Industry as a system: inputs, processes and outputs.</p> <p>5.4.4 Factors affecting industrial location. Footloose Industries.</p>	<p>Ecosystems 5.5.1 How an ecosystem works.</p> <p>5.5.2 Basic processes of an ecosystem: flow of energy and the recycling of nutrients.</p> <p>5.5.3 Distribution of major world natural vegetation zones (biomes).</p> <p>5.5.4 Case Study: Causes and effects of deforestation in the Amazon Rainforest.</p> <p>5.5.5 Sustainable Forestry.</p>	<p>5.6.1 Location of deserts: Californian, Arizona, Atacama, Sahara, Namib, Kalahari, Arabian, Thar, Gobi, Australian.</p> <p>5.6.2 Distribution of major world biomes: Tundra, Taiga (coniferous forests), Temperate deciduous forests, Temperate Grasslands, Mediterranean, Hot Desert, Tropical Rainforests, Savanna Grasslands.</p>

	<p>Mediterranean Climate 5.2.5 Mediterranean type of Climate. Natural Vegetation: Woodland and scrub (maquis and garigue). Adaptation of the vegetation to the summer drought.</p> <p>Tropical Desert Climate 5.2.6 Climate characteristics of tropical deserts. How plants and wildlife survive in tropical deserts.</p> <p>Monsoon Climate 5.2.7 Monsoon climate characteristics with special reference to the Indian sub-continent.</p>	<p>5.3.4 Processes that lead to the formation of glacial features – hanging valleys, corries (cirques/cwms), pyramidal peaks (horns), truncated spurs, arêtes, U shaped glacial troughs, ribbon lakes.</p> <p>5.3.5 Types of moraine – ground, lateral, medial and terminal. Features of glacial deposition – erratics and drumlins.</p> <p>5.3.6 Landuse in glacial areas (farming, forestry, water supply, HEP and tourism).</p> <p>Hot Desrts 5.3.7 Desert environment: rainfall and temperature characteristics.</p>	<p>5.4.5 Industrial change – deindustrialisation (decline in primary and in manufacturing industries) – South Wales or the Rhine –Ruhr industrial region as an example.</p> <p>5.4.6 High technology industry – the M4 corridor in the UK.</p> <p>5.4.7 Multinational or transnational corporations (TNCs). Positive and negative impacts of TNCs.</p> <p>5.4.8 Global Industry.</p> <p>5.4.9 Emergence of newly industrialised countries (NICs) – The Pacific Rim.</p>	<p>5.5.6 Case Study: Desertification in the Sahel</p> <p>5.5.7 Destruction of the natural vegetation by deforestation, grazing animals and fire.</p>	<p>5.6.3 The location of these major ports: Vancouver, Seattle, San Francisco, Los Angeles, New York, Caracas, Rio de Janeiro, São Paulo, Buenos Aires, Rotterdam, Antwerp, Barcellona, Marseilles, Trieste, Genoa, Valletta, Istanbul, Port Said, Cape Town, Mumbai, Madras, Singapore, Hong Kong, Shanghai, Tokyo, Osaka-Kobe, Sydney, Melbourne.</p> <p>5.6.4 Location of the following ice covered areas: Antarctica, Greenland, Iceland, Spitzbergen, Bearing Sea, Baltic Sea, White Sea.</p>
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A field trip with a follow up individual report should be organised during the scholastic year with special reference to topics covered in this syllabus. The report should be between 800 and 1000 words long and should include evidence of geographical skills such as collection of data, well-annotated illustrations, graphs and maps. The aims, methods and conclusions of the report should be stated and developed in the text. The report will carry 10 marks in the Annual Examination. Criteria for assessment are as follows:

Clear definition of aims and objectives	2 marks
Observation and data collection	2 marks
Development and analysis	2 marks
Conclusions	2 marks
Data refining and presentation including cartographic, graphic and diagramatic	2 marks

Geography Option Form 5 Learning Outcomes

Map Reading and interpretation	5.1.1	Basic cartographic skills: section drawing; intervisibility and gradients.	<ul style="list-style-type: none"> • Carry out simple calculations to find out the gradient of slopes between two places on a topographic map. • Draw an accurate cross-section between two given points on a topographic map. • Noting and labeling given features on the cross-section. • Determining intervisibility between two points on the cross-section. • Identify the following slope patterns by means of contours: concave slope, convex slope, even slope, compound slope and cliff.
	5.1.2	Recognition of landforms resulting from glaciation.	<ul style="list-style-type: none"> • Identify the following erosional glacial features on topographical maps: hanging valleys, corries (cirques/cwms), arêtes, pyramidal peaks (horns), U-shaped glacial troughs, ribbon lakes.
	5.1.3	Interpretation of communication patterns and location of economic activity.	<ul style="list-style-type: none"> • Differentiate between classifications of transport networks including types of railways and roads, electricity transmission lines, bridges, stations, tunnels, heliports, ferries, quays, jetties, docks and lighthouses. • Identifying evidence of primary industry including mining and quarrying, that is mines, waste heaps, quarries, freight lines. • Understand the rural landscapes in topographic maps by noting high or low density of farms and fields, noting and distinguishing between coniferous and deciduous woodland and other features relating to farming activities such as reservoirs, wind-pumps, water tanks, drainage ditches, glasshouses and windmills.

Weather and Climate			<ul style="list-style-type: none"> • Understanding recreational land use in rural landscapes on topographic maps by noting parks, nature reserves, lakes and golf courses. • Identify evidence of tourist activity including information centers, telephone booths, public convenience, hotels, inns, youth hostels, restaurants, golf courses, swimming pools, public houses, museums, places of interest and view points, parking areas, picnic, camping and caravan sites, mountain restaurants and inns, ski lifts and cable railways. • Interpreting industrial land use on topographic maps by identifying factories, works, industrial estates, round storage tanks, rail links, oil refineries, jetties, power stations, round cooling towers, power transmission lines and docks. Exploring relationships in the functions and workings of the above named features.
	5.2.1	Tropical Rainforest Equatorial climate.	<ul style="list-style-type: none"> • On a world map locate the three major areas of the tropical rainforest biome namely the Amazon, Congo and Indonesia. • Describe the main characteristics of the equatorial type of climate. • Know the daily pattern of the weather experienced in such areas. • Interpret a climate graph of this type of climate.
	5.2.2	Appearance (vegetation levels) and adaptation of the vegetation.	<ul style="list-style-type: none"> • Describe the appearance of the layers of a tropical rainforest including the shrub layer, under canopy, main canopy and emergents. • Explore the particular adaptations and their reasons including straight tree trunks, large buttress roots, lianas, leaves with drip-tips and lack of undergrowth.

Weather and Climate	5.2.3	Rainforest water and nutrient cycle.	<ul style="list-style-type: none"> • Apply the nutrient cycle to the tropical rainforest. • Aware of the consequences of tree clearance to the nutrient cycle of the tropical rainforest.
	5.2.4	<p>Tropical Savanna Grasslands</p> <p>Tropical Continental Climate. Appearance of Tropical Savanna Grasslands and adaptation of the vegetation.</p>	<ul style="list-style-type: none"> • On a world map locate the five major areas of the tropical continental climate (savanna) namely the Mexico, Venezuela, Brazil (Mato Grosso), Sahel region and east Africa, and parts of northern Australia. • Describe the main characteristics of the tropical continental type of climate (savanna). • Know the seasonal pattern of the weather experienced in such areas. • Interpret a climate graph of this type of climate. • Understand how the natural vegetation of the savanna has adapted to the hot temperatures and drought during the dry season.
	5.2.5	<p>Mediterranean Climate</p> <p>Mediterranean type of Climate.</p> <p>Natural Vegetation: Woodland and scrub (maquis and garigue).</p> <p>Adaptation of the vegetation to the summer drought.</p>	<ul style="list-style-type: none"> • On a world map locate the six areas of the Mediterranean type of climate namely the Mediterranean region, California, Central Chile, South Africa, South-west Australia and South Australia. • Identifying the general position of such areas that is between 30° and 40° latitude on the western margins of continents. • Describe the main characteristics of the Mediterranean type of climate. • Know the seasonal pattern of the weather experienced in such areas. • Interpret a climate graph of this type of climate.

Weather and Climate			<ul style="list-style-type: none"> • Describe the two main types of Mediterranean natural vegetation namely woodland and scrub (maquis and garigue). • Name examples of trees typical of Mediterranean woodland including evergreen oaks and conifers. • Name examples of plants typical of the garigue such as rosemary, lavender and thyme. • Recognise the difference between maquis and garigue environments using illustrations. • Explain how these plants adapt to the summer drought including small waxy glossy leaves, thorns, protective barks, long tap roots, short life cycle during winters and lying dormant during the summer drought. • Aware of man's intervention in this ecosystem by means of massive deforestation, grazing of animals and fire.
	5.2.6	<p>Tropical Desert Climate</p> <p>Climate characteristics of tropical deserts.</p> <p>How plants and wildlife survive in tropical deserts.</p>	<ul style="list-style-type: none"> • On a world map locate the seven areas of the hot desert climate namely the Sahara, Arabian, Kalahari/Namib, Californian, Arizona, Atacama, and Australian. • Identifying the general position of such areas that is between 10° and 30° latitude north or south of the equator and in regions of high pressure. • Describe the main characteristics of the desert type of climate namely that summers are very hot; winters are cool; very little rain (less than 250mm per year); and daily range of temperatures. • Interpret a climate graph of this type of climate.

Weather and Climate			<ul style="list-style-type: none"> • Name examples of plants and wildlife surviving in the desert areas such as the prickly pear cactus, saguaro cactus, camels, antelope, lizards, kangaroos, rattlesnakes, rats, scorpions and other insects. • Explain how plants adapt to the summer drought including thin, spiky or glossy leaves, long tap roots, store moisture in bulbs, seeds can lie dormant for several years, and thorns instead of leaves to stop animals from eating them. • Explain how wildlife have adapted to the desert climate by nocturnal activity, burrowing into the sand to avoid the high day temperatures, storing water eg. camel, obtaining water from plants. Some creatures are cold blooded.
	5.2.7	<p>Monsoon Climate</p> <p>Monsoon climate characteristics with special reference to the Indian sub-continent.</p>	<ul style="list-style-type: none"> • On a world map locate areas of Monsoon Climate including the Indian Sub-continent and South East Asia. • Know the seasonal pattern of the weather experienced in such areas. • Explain the causes of the dry and wet monsoon. • Interpret a climate graph of this type of climate.

Landforms and Processes	5.3.1	<p>The Earth as a Planet</p> <p>Effects of the Earth's revolution (a) the seasons; (b) the varying lengths of day and night.</p>	<ul style="list-style-type: none"> • Explain how the earth's tilt and revolution round the sun cause the sun's rays to heat in differing amounts throughout the year. • Interpret a diagram of the earth's journey round the sun showing its position on 21st March, 21st June, 21st September and 21st December. • Know the meaning of the terms Northern Solstice, Southern Solstice, and Equinoxes. • Understand how the earth's orbit around the sun affects the varying lengths of day and night according to latitude and time of year. • Know the concept of Midnight Sun and 24 hours darkness at the poles. • Know that places on the equator always receive 12 hours daylight and 12 hours darkness throughout the year.
	5.3.2	<p>Ice Landscapes</p> <p>The Ice Age.</p>	<ul style="list-style-type: none"> • Understand the terms glacial and inter-glacial periods. • Explain how glaciers form and expand or retreat in the glacial system.
	5.3.3	<p>Processes of ice erosion – abrasion, plucking and freeze-thaw weathering (frost shattering).</p>	<ul style="list-style-type: none"> • Aware that the glacier as an agent of erosion causes abrasion and plucking to widen and deepen its own valley. • Consolidate the process of freeze-thaw weathering.

Landforms and Processes	5.3.4	Processes that lead to the formation of glacial features – hanging valleys, corries (cirques/cwms), pyramidal peaks (horns), truncated spurs, arêtes, U shaped glacial troughs, ribbon lakes.	<ul style="list-style-type: none"> Identify the following glaciated features on diagrams namely hanging valleys, corries (cirques/cwms), pyramidal peaks (horns), truncated spurs, arêtes, U shaped glacial troughs, ribbon lakes. Describe how the above mentioned features are formed.
	5.3.5	Types of moraine – ground, lateral, medial and terminal. Features of glacial deposition – erratics and drumlins.	<ul style="list-style-type: none"> Identify the following depositional features on diagrams namely ground, lateral, medial and terminal. Explain how erratics, drumlins as well as the above mentioned features are formed.
	5.3.6	Landuse in glacial areas (farming, forestry, water supply, HEP and tourism).	<ul style="list-style-type: none"> Aware of how glaciated areas are being utilised by man namely for farming, forestry, water supply, HEP and tourism.
	5.3.7	Hot Deserts Desert environment: rainfall and temperature characteristics.	<ul style="list-style-type: none"> Consolidate the climatic characteristics of how desert type of climate.
	5.3.8	Weathering in Hot Deserts: the effects of exfoliation.	<ul style="list-style-type: none"> Explain the process of onion skin weathering (exfoliation) in shaping the desert landscape.

	5.3.9	Water as an agent in the formation of desert scenery (wadis, playas, isolated hills – inselbergs, mesas and buttes).	<ul style="list-style-type: none"> Identify the following desert features on diagrams produced by running water as wadis, playas, isolated hills – inselbergs, mesas and buttes. Describe how the above mentioned features are formed.
	5.3.10	Landforms produced by wind: deflation hollows, rock pedestals, yardangs and zeugens, and sand dunes (barchans).	<ul style="list-style-type: none"> Describe the formation of each of the following desert features produced by wind as deflation hollows, rock pedestals, yardangs and zeugens, and sand dunes (barchans). Able to draw labeled sketch diagrams of yardangs and zeugens, and sand dunes (barchans) to show their formation.
Socio-Economic Human Systems	5.4.1	<p>Industrial Activity</p> <p>Classification of economic activities – Primary, Secondary, Tertiary and Quaternary.</p>	<ul style="list-style-type: none"> Classify economic activities according to type of work. Know the meaning of Primary, Secondary, Tertiary and Quaternary industries. List specific jobs under the right economic activity.
	5.4.2	Comparing employment structures – triangular graphs.	<ul style="list-style-type: none"> Know and understand that employment structures change over time and vary between places. Interpret pie charts, showing percentage of people employed in the various sectors according to economic activities, to indicate and compare levels of development. Interpret triangular graphs according to percentage employed in the three main economic activities.

	5.4.3	Industry as a system: inputs, processes and outputs.	<ul style="list-style-type: none"> • Know and understand that industry or a factory can be regarded as a system with inputs, processes and outputs. • Complete flow diagrams of a particular factory with examples of inputs, processes and outputs.
Socio-Economic Human	5.4.4	Factors affecting industrial location. Footloose Industries.	<ul style="list-style-type: none"> • Appreciate that industrial location is determined by physical, human and economic factors. • Realise that these locational factors can change over a period of time. Physical factors were more important in the past. Nowadays human and economic factors are more important. • Know the meaning of the term footloose industries that have come about due to the development in the transport network.

	5.4.5	Industrial change – deindustrialisation (decline in primary and in manufacturing industries) – South Wales or the Rhine –Ruhr industrial region as an example.	<ul style="list-style-type: none"> • Know the meaning of the term deindustrialisation. • Understand the reasons for the decline in primary and secondary industries including mechanisation and automation, lack of money for upgrading factories, competition from newly industrialised countries producing similar products that are cheaper. • Locate South Wales or the Rhine-Ruhr industrial region on a map of Europe. • Locate the more important places connected with the industry on a map of the region of South Wales or the Rhine-Ruhr area. • Account for the physical factors that contributed to the original development of industry in South Wales or the Rhine-Ruhr area. • Understand the reasons for the decline in the chosen area. • Know the contributing factors that led to the regeneration of industry within the chosen area.
Socio-Economic Human Systems	5.4.6	High technology industry – the M4 corridor in the UK.	<ul style="list-style-type: none"> • Know the meaning of the terms high-tech industry, science and business parks. • Know the factors encouraging the location of high-tech industry in the M4 corridor namely accessibility (transport), universities, cultural and social attractions, labour supply and attractive countryside.
	5.4.7	Multinational or transnational corporations (TNCs). Positive and negative impacts of TNCs.	<ul style="list-style-type: none"> • Define the terms multinational or transnational corporations (TNCs). • Aware of the functions and scope of multinational or transnational corporations (TNCs). • Identify some world renowned multinational corporations. • Understand the advantages and disadvantages of TNCs.

Socio-Economic Human Systems	5.4.8	Global Industry.	<ul style="list-style-type: none"> Understand the meaning of the term globalisation.
	5.4.9	Emergence of newly industrialised countries (NICs) – The Pacific Rim.	<ul style="list-style-type: none"> Define the term NIC as Newly Industrialised Countries. Locate the newly industrialised countries of China, Indonesia, Malaysia, Philippines, Singapore, South Korea, Taiwan and Thailand on a map of Asia. Explain the reasons for the rapid economic growth of NICs of the Pacific Rim.
	5.4.10	Case Study: Industry in Osaka-Kobe conurbation.	<ul style="list-style-type: none"> Locate Osaka-Kobe conurbation on a map of Japan. Identify the reasons for the industrial growth within this conurbation. Aware of the different sized companies which compose Japan's industrial pyramid. Describe a particular important industry in the Osaka-Kobe area. Recognise the problems of the chosen industry and the attempted solutions.
	5.4.11	Case Study: Industry in São Paulo.	<ul style="list-style-type: none"> Locate São Paulo on a map of South America. Account for the main features of São Paulo's rapid economic growth including early industry and the nature of more recent industrial development. Distinguish between the formal and informal industrial sectors. Recognise the problems caused by this rapid industrial growth in São Paulo and the attempted solutions.

	5.4.12	<p>World Development</p> <p>The development gap; the North-South divide.</p>	<ul style="list-style-type: none"> • Interpret a world map showing the North-South Divide. • Know the meaning of LEDCs and MEDCs.
Socio-Economic Human Systems	5.4.13	<p>Measuring development – indicators of development – economic and social indicators e.g. GNP, mortality rate, life expectancy, literacy rate, housing, diet etc.).</p>	<ul style="list-style-type: none"> • Define the meaning of the term Gross National Product and GNP per capita as the most common measure of economic wealth within a country. • Aware of inequalities in GNP per capita in different areas of the same country. • Define and understand the terms mortality rate, infant mortality, life expectancy and literacy rate. • Explain how the following indicators as employment, housing, diet, health, education, population, energy and trade determine the actual standard of living.
	5.4.14	<p>The Human Development Index (HDI).</p>	<ul style="list-style-type: none"> • Understand the meaning of the Human Development Index (HDI) as a statistical measure of the quality of life adopted by the United Nations. • Know the three components of HDI that is life expectancy (health), adult literacy (education), and real GNP per capita (standard of living). • Analyse and evaluate HDI values for particular countries to compare quality of life.

	5.4.15	Causes and consequences of inequalities in world development.	<ul style="list-style-type: none"> Identify the economic, social, political and environmental factors that lead to inequalities in development. Recognise the resultant factors caused by such inequalities including high birth and infant mortality rate, shorter life expectancy, poor education facilities, more jobs in informal sectors, small volume of trade and less purchasing power.
Socio-Economic Human Systems	5.4.16	Trading blocs – tariffs and quotas – (EU, NAFTA, LAFTA, OPEC, ASEAN).	<ul style="list-style-type: none"> Know the general aims and scope of trading blocs, tariffs and quotas. Aware that some countries have grouped together to form Trading Blocs. Know what the abbreviations of the Trading Blocs EU, NAFTA, LAFTA, OPEC, ASEAN stand for. Identify the world regions represented by the Trading Blocs above.
	5.4.17	Types of aid: bilateral, multilateral, voluntary and emergency aid.	<ul style="list-style-type: none"> Explain what is aid and why countries may need aid. Differentiate between three major kinds of aid money, goods and people. Classify types of aid including government bilateral or multilateral aid as well as non-governmental organisations (NGOs) which provide voluntary and emergency aid.
	5.4.18	The benefits and problems of aid.	<ul style="list-style-type: none"> Recognise the advantages and disadvantages of each of the above mentioned types of aid.

	5.4.19	Case Study: Countries with different levels of development. Japan and Kenya.	<ul style="list-style-type: none"> Analyse the differences in development between Japan and Kenya. Differentiate between the main types of imports, exports, trading partners, trade balance and value of Japan and Kenya.
	5.4.20	Difference within countries: Italy	<ul style="list-style-type: none"> Analyse in regards to development the advantages of Northern Italy and the disadvantages of the South known as the Mezzogiorno. Describe the nature of the economic improvements in the South of Italy.
Environmental Concerns	5.5.1	Ecosystems How an ecosystem works.	<ul style="list-style-type: none"> Define the term ecosystem. Distinguish between micro, meso and global ecosystems giving most common examples. Identify the roles of flora, fauna, rocks and soils as components of an ecosystem. Aware of the interaction between the living and non living aspects of an ecosystem.
	5.5.2	Basic processes of an ecosystem: flow of energy and the recycling of nutrients.	<ul style="list-style-type: none"> Understand the terms and functions of the food chain including producers, consumers (herbivores), consumers (carnivores), decomposers. Recognise the energy flow in a simple ecosystem through the process of photosynthesis and the food chain. Able to draw a simple labelled flow diagram to show the nutrient cycle within an ecosystem.

	5.5.3	Distribution of major world natural vegetation zones (biomes).	<ul style="list-style-type: none"> Identify and locate on a world map the distribution of the following major natural vegetation zones (biomes): tropical rainforest, savanna, desert, Mediterranean, temperate deciduous, temperate grasslands, northern coniferous, and tundra.
Environmental Concerns	5.5.4	Case Study: Causes and effects of deforestation in the Amazon Rainforest.	<ul style="list-style-type: none"> Locate the Amazon Rainforest on a map of South America. Define the term deforestation. List the main reasons for deforestation within the Amazon Rainforest including shifting agriculture (slash and burn), subsistence farming, cattle ranching, hydro electric power schemes, mining, logging, new roads, and settlements. Recognise the following effects of forest clearance in Brazil namely loss of species and forest ecosystem, reduction of Amerindians and loss of their traditional culture, less rainfall in the region, soil erosion, soil infertility and Global Warming.
	5.5.5	Sustainable Forestry.	<ul style="list-style-type: none"> Understand the term sustainable forestry. Aware of how the forest can be managed to ensure sustainability by protection of forest, creation of national parks, controlled and selective logging, heli-logging, replanting of forested areas that have been felled and restriction of logging licences.

	5.5.6	Case Study: Desertification in the Sahel	<ul style="list-style-type: none"> • Define the term desertification. • Locate the countries within the Sahel Region on a map of Africa including Ethiopia, Sudan, Chad, Niger and Somalia. • Classify the natural and human causes leading to desertification including decrease in rainfall, effects of global warming, overgrazing, overcultivation and population growth. • Analyse how the growth of population in the Sahel results in overgrazing, overcultivation and deforestation which lead to desertification. • Aware of the possible solutions to stop the desert from advancing.
	5.5.7	Destruction of the natural vegetation by deforestation, grazing animals and fire.	<ul style="list-style-type: none"> • Consolidate how deforestation is a major cause of desertification.
Location and	5.6.1	Location of deserts: Californian, Arizona, Atacama, Sahara, Namib, Kalahari, Arabian, Thar, Gobi, Australian.	<ul style="list-style-type: none"> • Know the position of and locate on a world map the following deserts, Californian, Arizona, Atacama, Sahara, Namib, Kalahari, Arabian, Thar, Gobi, Australian

	5.6.2	<p>Distribution of major world biomes:</p> <p>Tundra, Taiga (coniferous forests), Temperate deciduous forests, Temperate Grasslands, Mediterranean, Hot Desert, Tropical Rainforests, Savanna Grasslands.</p>	<ul style="list-style-type: none"> Identify the following major biomes on a map of the world: Tundra, Taiga (coniferous forests), Temperate deciduous forests, Temperate Grasslands, Mediterranean, Hot Desert, Tropical Rainforests, Savanna Grasslands.
Location and Places	5.6.3	<p>The location of these major ports:</p> <p>Vancouver, Seattle, San Francisco, Los Angeles, New York, Caracas, Rio de Janeiro, São Paulo, Buenos Aires, Rotterdam, Antwerp, Barcellona, Marseilles, Trieste, Genoa, Valletta, Istanbul, Port Said, Cape Town, Mumbai, Madras, Singapore, Hong Kong, Shanghai, Tokyo, Osaka-Kobe, Sydney, Melbourne.</p>	<p>Know the position of and locate the following major ports on a world map: Vancouver, Seattle, San Francisco, Los Angeles, New York, Caracas, Rio de Janeiro, São Paulo, Buenos Aires, Rotterdam, Antwerp, Barcellona, Marseilles, Trieste, Genoa, Valletta, Istanbul, Port Said, Cape Town, Mumbai, Madras, Singapore, Hong Kong, Shanghai, Tokyo, Osaka-Kobe, Sydney, Melbourne.</p>

	5.6.4	Location of the following ice covered areas: Antarctica, Greenland, Iceland, Spitzbergen, Bearing Sea, Baltic Sea, White Sea.	<ul style="list-style-type: none">Identify the following ice covered areas on a world map namely Antarctica, Greenland, Iceland, Spitzbergen, Bearing Sea, Baltic Sea, White Sea.
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Annexe 1 The Annual Examination Papers

The examination will consist of one paper of 1 hour 30 minutes duration. Papers will be set in English and candidates are expected to answer in good English.

The use of non-programmable calculators, geometrical instruments, pencil colours, piece of string and blank sheet of paper for calculating curved distances on Topographic Maps is permitted during the examination.

Exam papers of each Form will reflect the topics covered as indicated by the present document. However, in regards to Map Reading and Interpretation the exam papers for Forms 4 and 5 will also refer to the topics covered during the previous years. The exam papers for Forms 3 ,4 and 5 are prepared by the Education Assessment Unit at the Directorate for Quality and Standards in Education and will carry a maximum of 90 marks consisting of nine structured questions as indicated in the table below. The remaining 10 marks will be awarded for the fieldwork according to the set criteria in the syllabus.

Strands	No. of questions	Marks
Map Reading and Interpretation	1	12
Location and Places	1	8
Weather and Climate	1	12
Landforms and Processes	2	20
Socio-Economic Human Systems	2	20
Environmental Concerns	2	18
		Total: 90

Teachers are encouraged to follow this format in the setting of their school based half yearly examinations.

The following are the areas of study which should be given priority for the Annual Examination for Forms 5 which is held during the month of February.

5.1 Map reading and Interpretation	5.1.1, 5.1.2, 5.1.3
5.2 Weather and Climate	5.2.1, 5.2.2, 5.2.3, 5.2.4, 5.2.5, 5.2.7
5.3 Landforms and Processes	5.3.1, 5.3.2, 5.3.3, 5.3.4, 5.3.5, 5.3.6
5.4 Socio-Economic Human Systems	5.4.1, 5.4.2, 5.4.3, 5.4.4, 5.4.5, 5.4.6, 5.4.7, 5.4.8, 5.4.9, 5.4.10, 5.4.11
5.5 Environmental Concerns	5.5.1, 5.5.2, 5.5.3, 5.5.4, 5.5.5
5.6 Location and Places	5.6.2 5.6.3, 5.6.4

The rest of the syllabus then needs to be covered for SEC examination purposes.

Annexe 2

Sample Annual Exam Paper

SECONDARY SCHOOL ANNUAL EXAMINATIONS

Directorate for Quality and Standards in Education

Educational Assessment Unit

FORM 3

GEOGRAPHY (OPTION)

TIME: 1h30min

Name: _____

Class: _____

Instructions to Candidates

Answer all questions in the space provided. Write your answers neatly and in good English. Credit will be given for relevant illustrations. The marks for individual questions are shown in round brackets: e.g. (4). There are 9 questions in all. The total mark for this paper is 90.

Examiner's use only

Question No.	1	2	3	4	5	6	7	8	9	Written Exam	Fieldwork Report	Total
Max. Mark	12	8	12	12	8	13	7	12	6	90	10	100
Score												

1. Study the 1:50 000 OS map extract of Blakeney Point (Map1 on page 3). Now answer the following questions.

a. Answer **church with tower, public house, parking** or **windmill** to the following.

i. The is in grid reference **033 436**.

ii. The is in grid reference **053 439**.

iii. The is in grid reference **033 440**.

iv. The is in grid reference **073 439**.

(4)

b. Shade grid square **07 46**.

(1)

c. Using the map of Blakeney Point work out the compass direction from the visitor centre in grid square 00 44 to Warham Hole in grid square 98 46.

.....

(1)

- d. Give the straight line distances in kilometres.
- i. The point marked by the letter A to point B. kilometres.
 - ii. The letter C to the point marked by the letter A. kilometres. **(2)**
- e. The type of vegetation that grows at **The Marrams** at grid reference 030456 consists of

(Tick (✓) the correct answer)

non-coniferous woods	
coniferous trees	
marshes	

(1)

- f. Fill in the missing words.

The map shows a spit which is a ridge of attached to the land at one end and finishing in the open at the other. The length of the spit from the Peddars to the East Bar is about km.

(3)

2. Study the **world map** (Map 2 on page 5) and then answer the following questions.

- a. Name the lines marked on the map and numbered **1, 2, 3** and **4**.

Choose from: **Equator, Prime Meridian, Arctic Circle, Tropic of Capricorn, Tropic of Cancer** and the **Antarctic Circle**.

1	
2	
3	
4	

(2)

- b. Name the two countries numbered **5** and **6**.

.....

(2)

- c. Shade and name on the map (Map 2) the continent of **South America**. **(1)**

d. Name the countries located on the following lines of latitude and longitude.

	Country
20°S 140°E	
40°N 0°	

(2)

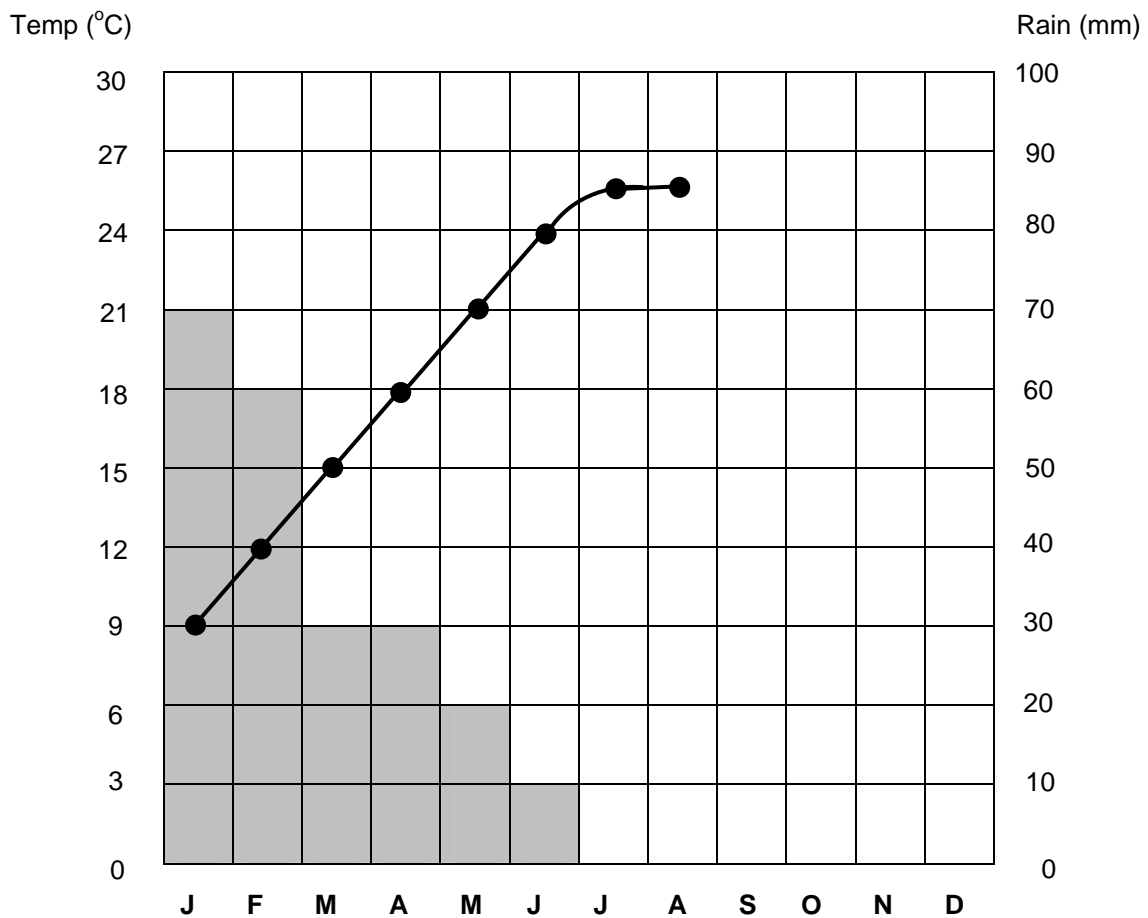
e. Name the sea numbered 7 on the map.

.....

(1)

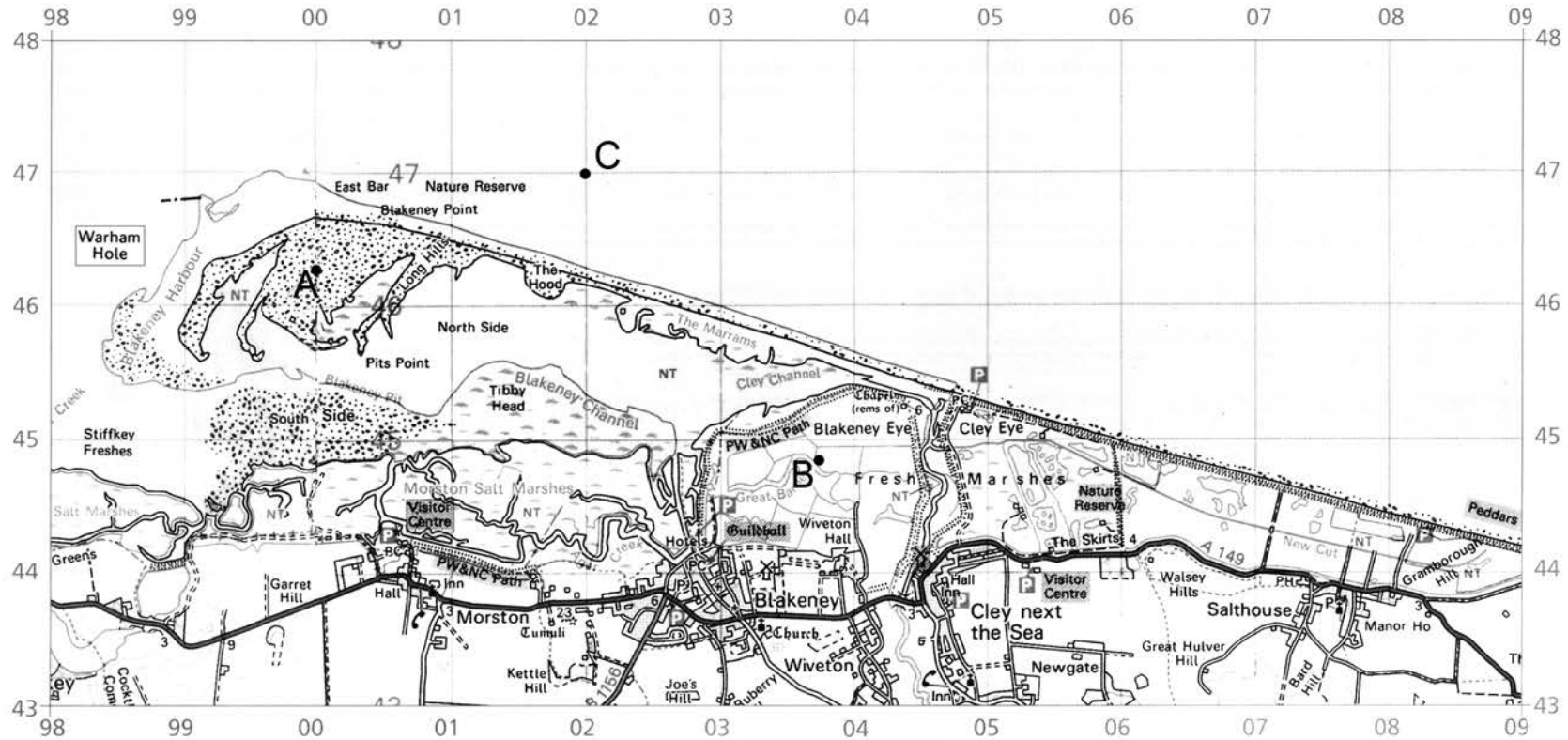
3. Study carefully the climate data and graph shown below.

	J	F	M	A	M	J	J	A	S	O	N	D
Temp (°C)	9	12		18	21	24	26	26	21	15	12	9
Rain (mm)	70	60		30	10	10	0	5	20	50	60	80



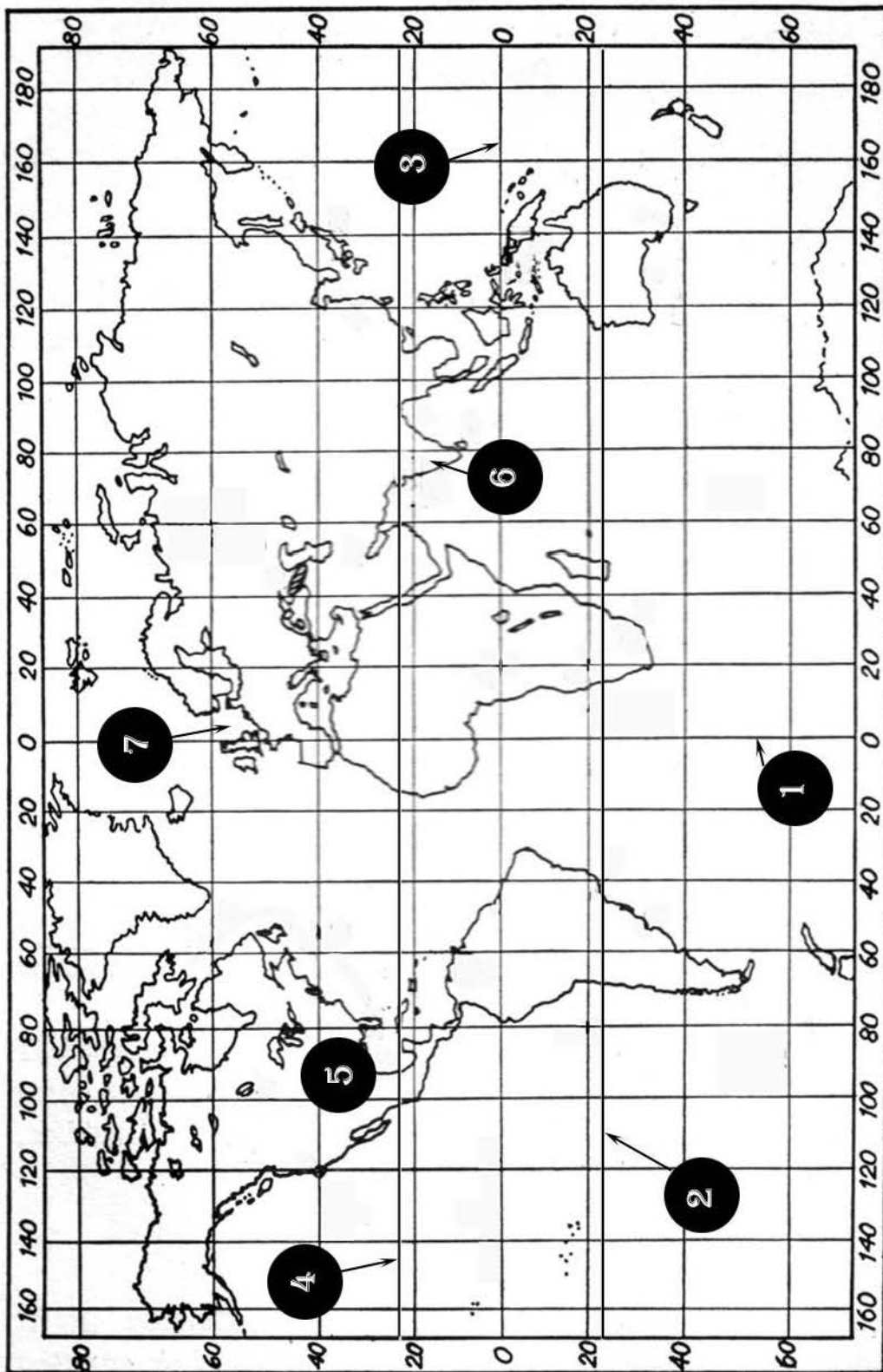
Map 1 BLAKENEY POINT

1:50 000 OS MAP EXTRACT



1:50 000 OS map extract: Blakeney Point





a. The figures for the month of March are missing from the table. By referring to the graph fill in the missing numbers. (2)

b. Use the figures from the box to continue the temperature graph. (2)

c. Use the figures from the box to finish the rainfall graph. (3)

d. Now describe what the graph shows by filling the blank spaces in the paragraph below.

i. The warmest months are and The temperature reaches degrees Celsius.

ii. The coldest months are and The temperature falls to 9°C.

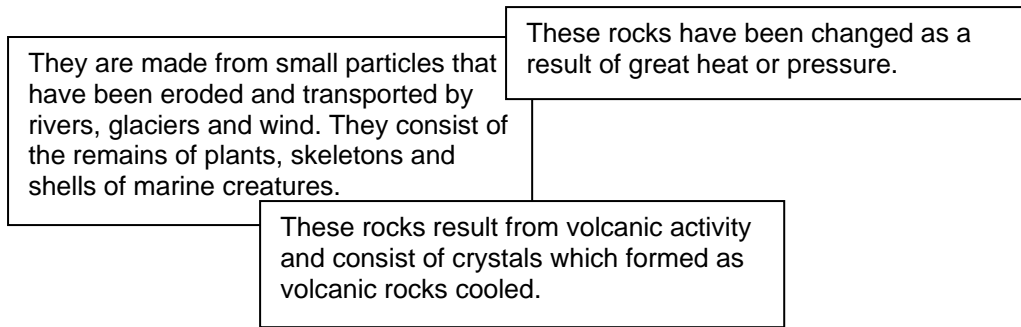
iii. The wettest months are and
 mm of rain falls in the month of May. There is no rain in the month of
 The total annual rainfall is mm.

(5)

4. The earth's crust is made up of three different types of rock. We can group rocks into three main types, **Igneous**, **Sedimentary** and **Metamorphic** rocks.

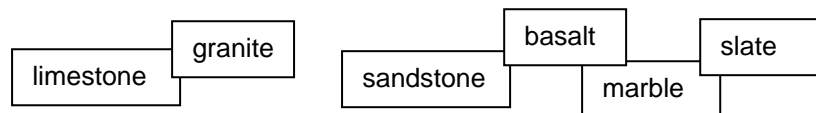
	How the rock was formed	Two examples
Igneous Rocks		
Sedimentary Rocks		
Metamorphic Rocks		

- a. Fill in column two of the table below with the information about how each type of rock was formed.



(3)

- b. Fill in column three of the table with two examples for each type of rock. Choose from the following:



(3)

- c. What evidence is there to suggest that limestone was formed on the sea bed?

.....

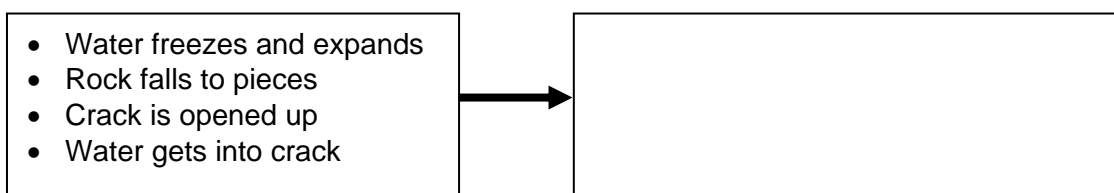
(2)

- d. Briefly describe what is **weathering**.

.....

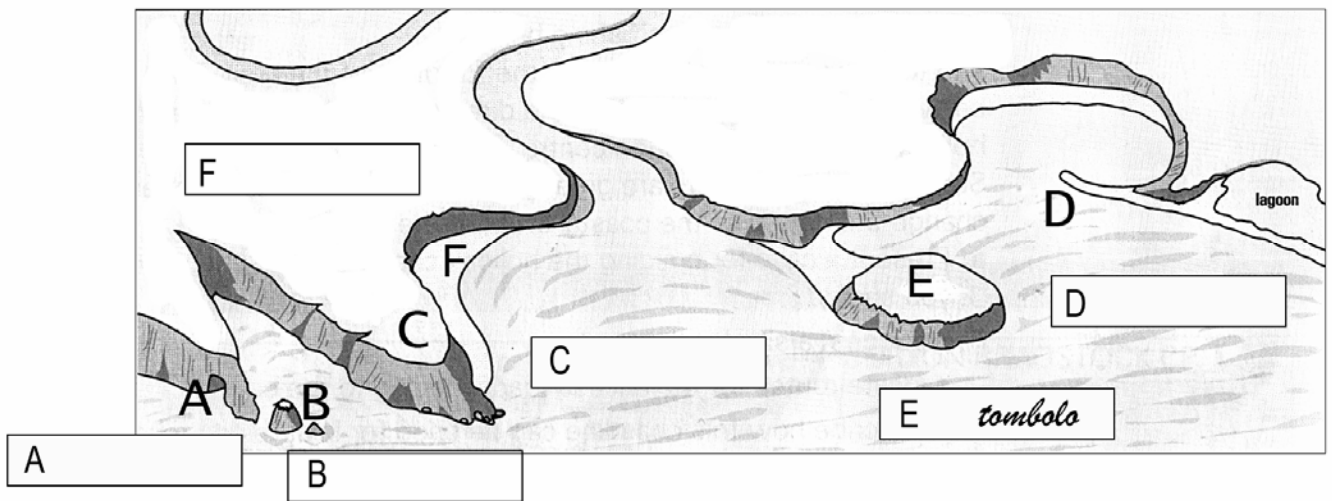
(2)

- e. Show how frost action can break up rocks by putting the following in the correct order.



(2)

5. Look at the diagram showing some coastal features.



a. Place the following features next to each letter on the diagram. One of them has been done for you.

- headland spit arch beach stack

(5)

b. Describe how feature A has been formed.

.....

.....

.....

.....

.....

.....

(3)

6 a. What is meant by the **function** of a settlement?

.....
.....

(2)

b. Write in the table below the main function of these four towns.

Town	Main function
This town is by the sea. There are many hotels and places of entertainment near the sea front.	
Many people visit this place for religious purposes.	
The majority of residents live here, but work somewhere else.	
Ships come here. Their cargoes are loaded and unloaded.	

(4)

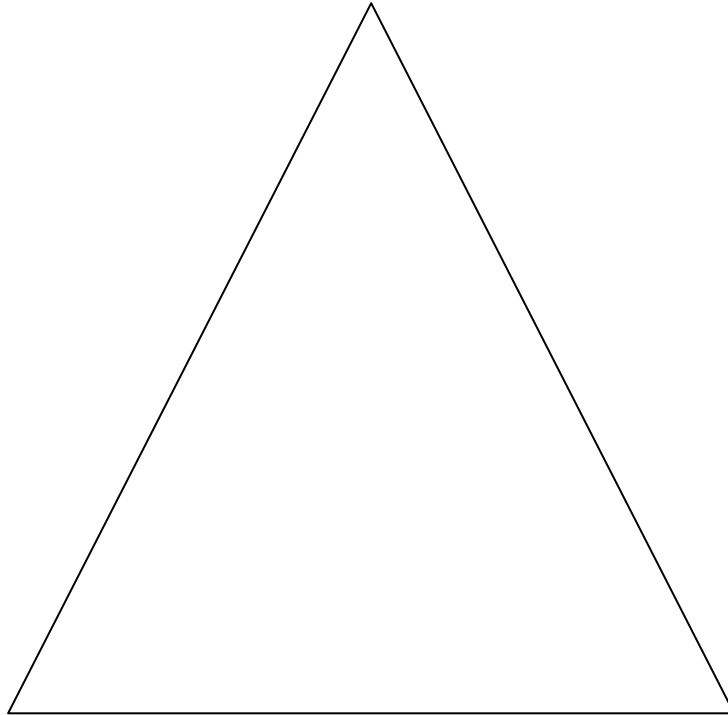
c. Name a town that is known for each function you named above.

.....

(4)

d. Fill in the settlement hierarchy by writing the following in the correct place.

- large town small town village
- city hamlet conurbation



Settlement

Hierarchy

(3)

7. Some places in Brazil are crowded whilst others are almost empty.



a. Say if places marked by the letters A and B are sparsely or densely populated.

A	
B	

(2)

b. What is meant by the terms **sparsely** and **densely** populated places?

Sparsely populated:

.....
.....

Densely populated:

.....
.....

(2)

c. On the map itself write one reason for the population distribution and density in areas marked **A** and **B** on the map.

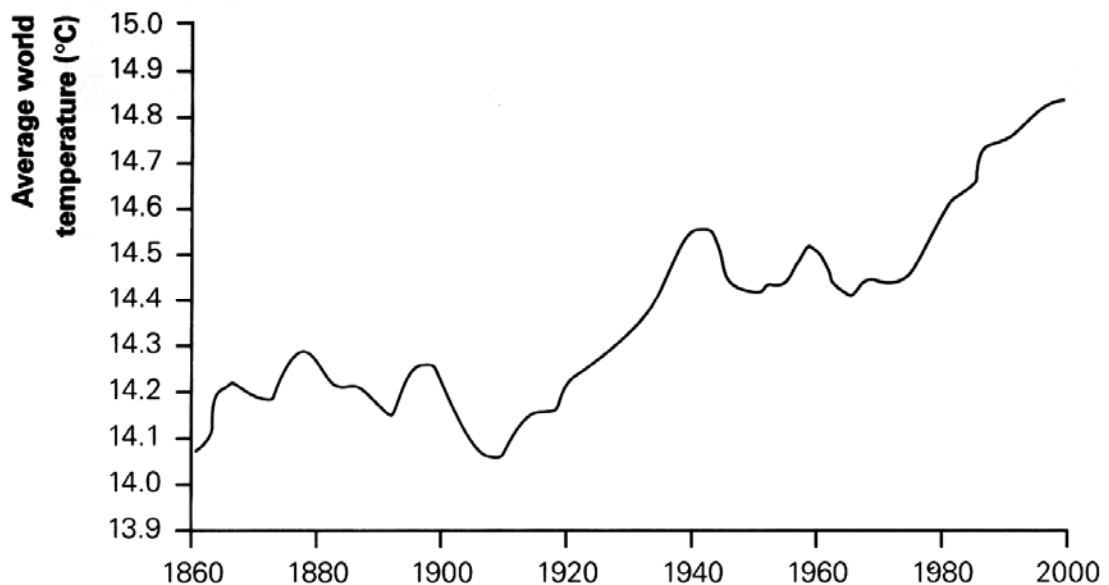
(2)

d. How is population density calculated?

.....
.....

(1)

8. Study the graph below.



a. Tick (✓) the correct statements about the graph.

The graph shows the average world temperatures since 1860.	
The graph shows that temperatures are getting colder.	
In 1880 the average temperature was about 14.3°C.	
In 1940 the average temperature was about 13.9°C.	
By the year 2000 the temperature had risen to more than 14.8°C.	
Between 1980 and 2000 the temperature increased by 3°C.	
The graph shows that the world temperature is warming up.	
Between 1860 and 2000 there was an increase of 0.7°C in temperature.	

(5)

b. Explain what is global warming?

.....
.....
.....
.....
.....

(3)

c. Name the two principal greenhouse gases responsible for global warming.

.....

(2)

d. Name the main sources for each gas you named above.

.....
.....
.....

(2)

9. The wind has been used for thousands of years as a source of energy.



a. What do we call the feature shown in the photo?

..... (1)

b. Is the energy obtained from this feature a renewable or a non-renewable resource?

..... (1)

c. Give two advantages of using this type of energy.

.....
.....

(2)

d. Why do some people disapprove of this type of energy resource?

.....
.....
.....
.....
.....
.....

(2)