YISHUN SECONDARY SCHOOL Subject & Code: Pure Geography / 2279 Level & Stream: Sec 4 EXPRESS

The Curriculum and Approaches to Learning	Key Programmes / Competitions
The O-Level Geography syllabus is organised by topics that are grouped according to clusters to achieve a balance between breadth and depth of content coverage. By using geographical concepts and methods in lessons at YSS, students would elevate the relevance and applicability of Geography. Furthermore, students will be able to understand key geographical concepts such as space, place, physical and human processes, environmental and cultural diversity and interdependence and skills to develop in them an appreciation of the physical and human environment.	 Teaching through inquiry-based, differentiated instructions and making thinking visible Reflective learner through self-reflection in their skill sets and knowledge Assessment for learning approaches to assess students and provide feedback to help them improve NUS Geography Challenge Geographical Investigation to connect classroom lessons to real-life context

Term / Week Term 1	Learning Experiences (chapter, activity)	Learning Outcomes & Assessment
1	Back-to-School Programme	N.A
1 2-3	Back-to-School Programme Topic 4.1 – Plate Tectonics KQ4.1.1 – What is the plate tectonic theory? Plate tectonic theory a) Earth's internal structure consists of core, mantle and crust, including continental and oceanic crusts b) explains how forces within Earth drives global plate movements Convection currents a) within the hot softened mantle below the crust b) being the driving force of overlying plates Slab-pull force a) gravity-controlled subduction of denser oceanic plate b) drags the rest of the plate along KQ4.1.2 – How does seafloor spreading support the plate tectonic theory? Seafloor spreading a) magma rises through mid-ocean ridges b) forms new oceanic crusts Evidence from age of rocks a) younger rocks are found nearer the crest of mid-ocean ridges b) rocks get progressively older further away from mid-ocean ridges 	N.A Content Activity: • Experiential learning to better understand the internal structure of the earth • Comparison of the different layers of the internal structure of the earth • Data response question - using figure to describe and explain

	Evidence from limited sediment	
	accumulation	
	a) destruction of older oceanic crusts	
	at trenches	
	b) oceanic crusts younger than	
	continental crusts	
4-6	KQ4.1.3 – How does magnetic striping	Skill Focus:
W6D10-	support the plate tectonic theory?	Data response question
CNY		- using figure to
Celebration	Magnetic striping	describe
on 9/2 – 11/2	a) normal and reversed polarity	
	b) stripes of rock on the seafloor with	
	alternating magnetic properties	
	Evidence from rock composition	
	 a) basalt is a volcanic rock that 	
	forms the oceanic crust	
	b) contains minerals that can be	
	influenced by Earth's magnetic	
	field	
	Evidence from rock patterns	
	a) alternating polarity forms a striped	
	pattern	
	b) not random or isolated	
	occurrences	
7 – 10	Weighted Assessment 1	Content Activity:
W8 – WA1	 Tectonics Cluster KQ4.1 – KQ4.2 	<u>content Activity.</u>
(during	 Skills to be tested: 	
curriculum)	 Data response question 	Skill Focus:
ournouruny	 Evaluative guestion 	Data Response
	 Short-answer question 	Question - using figure
		to describe and explain
	KQ4.1.4 – What happens at plate	 Short-answer question
	boundaries when tectonic plates	 Describe the
	move?	characteristics of
		landforms and
	Divergent plate boundaries	phenomena associated
	a) plates move away from each	with divergent plate
	other	movements.
	b) results in mid-ocean ridges,	 Explain the causes of
	volcanoes including submarine	landforms and
	volcanoes and volcanic islands,	phenomena associated
	rift systems and earthquakes	with divergent plate
		movements.

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	 Convergent plate boundaries a) plates move towards each other b) results in fold mountains, volcanoes including submarine volcanoes, oceanic trenches and earthquakes Transform plate boundaries a) plates slide past each other b) results in faults and earthquakes 	 Describe the characteristics of landforms and phenomena associated with convergent and transform plate movements. Explain the causes of landforms and phenomena associated with convergent and
	Topic 4.2 – Earthquakes and	transform plate movements.
	volcanoes	 Draw annotated cross
	KQ4.2.1 – How do tectonic processes affect the magnitude of earthquakes?	section of a volcano
	 Tectonic processes of earthquakes a) stress builds up and exceeds strength of the fault b) sudden release of seismic waves, radiating energy from the focus 	
	 Magnitude of earthquakes a) affected by amount of energy released through ground movement b) recorded using seismometers 	
	 Measuring earthquakes a) Richter Scale measures local magnitude of earthquakes b) Moment Magnitude Scale measures larger earthquakes more reliably 	
	KQ4.2.2 – How do tectonic processes affect the magnitude of volcanic eruptions?	
	Tectonic processes of volcanic	
	eruptions	
	a) magma consisting of dissolved	
	gases is less dense	
	b) forces its way upward and breaks	

	through weak areas in the Earth's crust	
Ma	 agnitude of volcanic eruptions a) determined by amount of dissolved gases and magma viscosity b) stratovolcanoes erupt violently and shield volcanoes emit magma gently 	
Me	 easuring volcanic eruptions a) Volcanic Explosivity Index measures relative explosivity of historic eruptions b) considers the volume of ejected materials, height of eruption cloud and duration of the eruption 	
	March Holiday Break (11 – 17 March 2024)	

Term / Week Term 2	Learning Experiences (chapter, activity)	Learning Outcomes & Assessment
1-2	 KQ4.2.3 – How might distribution of earthquakes and volcanoes influence the location of tectonic hazards? Distribution of earthquakes a) along all plate boundaries b) largest concentration at the Pacific Ring of Fire Distribution of volcanoes a) located near convergent and divergent plate boundaries b) hot spot volcanoes are found away from plate boundaries Distribution of tectonic hazards a) most located near plate boundaries, and near earthquakes and volcanoes b) tsunamis and volcanic ash may spread beyond geographic region 	 Skill Focus: Data Response Question - using figure to describe and explain Describing the distribution of tectonic plates through the use of maps Short-answer question
	 KQ4.2.4 – How might tectonic hazards affect the natural and human systems? Earthquake hazards and their impacts a) hazards include ground shaking, soil liquefaction, landslides and tsunamis b) impacts include destroying ecosystems, properties and infrastructure, disrupting services, and causing injury and loss of life Volcanic eruption hazards and their impacts a) hazards include tephra, volcanic gases, lava flows, pyroclastic flows, lahars and volcanic landslides 	 Content Activity: Flipped Classroom to promote self-directed learning using articles showing hazards by earthquakes and volcano and benefits by volcanoes Skill Focus: Data Response Question - using figure to describe and explain Annotation of photograph

	 b) impacts include destroying ecosystems, properties and infrastructure, disrupting services, and threaten public health and causing injury and loss of life Benefits of volcanic eruptions and living near volcanoes a) volcanic eruption provides fertile soil for farming after volcanic materials are broken down and weathered, and makes available valuable minerals and building materials b) living near volcanoes allow harnessing of geothermal energy and tourism activities 	
3-4	 4.3.1 – How does disaster risk management help achieve sustainable development? Disaster Risk Management a) prevent, reduce and manage disaster risks thus strengthening resilience b) apply plans and actions which are developed into various strategies by communities 	Content Activity:
	 Disaster risk and loss a) brings about serious economic, social and environmental consequences b) costly for individuals and countries, and may hinder development 	
	 Reducing disaster risks a) important for disaster-prone developing countries b) cost-effective investment in preventing future losses, thus contributing to sustainable development 	

4.3.2 – Why do disaster risks related to earthquakes and volcanic eruptions vary across places?	
 Tectonic disaster risk a) interaction between tectonic hazards, and vulnerability and exposure to earthquakes and volcanic eruptions b) results in potential loss of human lives and damage to properties Factors influencing disaster risks caused by earthquakes a) nature of hazards including duration and time of obaking 	
duration and time of shaking b) vulnerable conditions including quality of building design and construction, soil and rock properties, and exposure including population density and distance from epicentre	
 Factors influencing disaster risks caused by volcanic eruptions a) nature of hazards including chemical composition of magma b) vulnerable conditions including availability of surface and ground water facilitating the development of lahars, prevailing wind conditions affecting distribution of tephra, and exposure including presence of human settlements 	 <u>Content Activity:</u> Essay writing on effectiveness of strategies in building communities' resilience <u>Skills Focus:</u> Evaluation
4.3.3 – How effective are the strategies in building communities' resilience to earthquakes and volcanic eruptions?	
 Strengthening resilience a) important for communities living in hazard-prone zones b) to resist, adapt and recover from impacts of disasters in a timely and efficient manner 	

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	egies in building community	
	reducing exposure including land use planning, reducing vulnerability including hazard- resistant building designs, and monitoring and warning systems increasing preparedness for response and recovery	 <u>Content Activity:</u> Essay writing on effectiveness of
Chall	enges in building community	strategies in disaster
resili		management
	extent of community's resources	
b)	capability of community to	Skills Focus:
	organise itself for disasters	 Evaluation
mana	 How effective are the disaster igement strategies after an quake or a volcanic eruption? 	
Disas	ster management	
	organisation, planning and	
,	application of strategies	
b)	responding to and recovering from disasters	
	ster management strategies	
a)	disaster response includes search and rescue efforts, timely evacuation, and provision of basic social and psychosocial services to affected communities	
b)	disaster recovery includes	
	restoring and improving facilities	
	and living conditions of affected	
	communities	
	enges in disaster management	
a)	lack of domestic resources,	
	including technological and	
	financial resources	
b)	engaging relevant stakeholders to	
	collaborate and integrate disaster	
	management strategies into their	
5 64	practices	
5 Stude	ent Learning Festival Week 2024	

6 – 9	Topic 5.1 – Small island city-state	
	5.1.1 – What are the natural characteristics of Singapore?	
	Size and elevation	
	a) small landmass with limited	
	natural resources	
	b) low-lying island	
	Climate	
	a) tropical equatorial climate	
	b) experiences Northeast and	
	Southwest monsoons	
	Ecosystems with large biodiversity	
	a) land-based ecosystem including	
	tropical rainforests	
	b) coastal ecosystems including	
	inter-tidal areas, mangroves and	
	coral reefs	
	5.1.2 – What are the human	
	characteristics of Singapore?	
	Economic characteristics	
	a) diversified economy	
	b) wide range of service and	
	manufacturing industries	
	Social characteristics	
	a) open and globalised	
	b) densely populated and well-	
	connected internationally	
	Political characteristics	
	a) independent sovereign state	
	b) active contributor to global	
	initiatives	
	5.1.3 – What are Singapore's	
	vulnerabilities?	
	Limited land and natural resources	
	a) difficult to achieve sustainable	
	urban development	

	b) vulnerable to food, water and energy insecurities
	Changing demographics
	a) decreasing birth rate, ageing population and increasingly
	diverse society b) vulnerable to labour shortage and economic slowdown
	External shocks and global uncertainties
	a) environmental, social and
	economic uncertainties b) vulnerable to climate change, pandemics and financial crises
	5.1.4 – What contributes towards Singapore's resilience?
	Resilient in terms of survival
	a) Singapore is able to overcome national crises
	a) b) effective management of economic recessions and pandemics
	Resilient in terms of adaptability
	a) Singapore adapts to changing circumstances
	b) puts in place robust infrastructure and strong systems
	Resilient in terms of thriving
	a) Singapore thrives as a small island city-state
	 b) focused on building a liveable and sustainable city
4	5.2 – Challenges and Opportunities
	5.2.1 – How might climate change affect Singapore?
	Impacts of climate change a) rising sea level

 b) increased daily mean temperatures and changing weather patterns 	
 Challenges due to climate change a) floods, urban heat island effect, vector-borne diseases b) threats to biodiversity, food and water insecurities 	
 Opportunities created to adapt to climate change a) land reclamation, coastal management, increasing health resilience b) high technology farming and development of water technologies 	
5.2.2 – How might tectonic hazards affect Singapore?	
 Impacts of tectonic hazards a) not susceptible to majority of tectonic disasters b) major tectonic movements close to the Sunda Megathrust may still affect Singapore 	
 Challenges due to plausible occurrence of tectonic hazards in the region a) destruction of structures built on reclaimed land, and threat of floods from a mega earthquake b) threat of ash clouds from volcanic eruptions affecting health and disrupting the economy 	
Opportunities created to mitigate and adapt to tectonic hazards in the region a) national preparedness plans, use	
of technology to monitor tectonic movements b) partnerships between countries	

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	on disaster response and recovery	
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	5.2.3 – How might tourism activity affect Singapore?	
	Impacts of tourism activity in Singapore	
	a) economic and social impactsb) environmental impacts	
	 Challenges affecting tourism development in Singapore a) intensifying regional competition and increasingly discerning visitors b) ageing population, resource constraints and threats from global uncertainties 	
	 Opportunities created to mitigate and adapt to impacts of tourism activity in Singapore a) benefits due to growing Asia and develop partnerships with stakeholders to spearhead placemaking initiatives b) trial sustainability solutions and develop skilled workers 	
10	Sec 4E5N Mother Tongue Intensive Week	
June Holiday Break		
Term / Week	Learning Experiences (chapter, activity)	Learning Outcomes & Assessment
Term 3		
1 – 2	5.3 – Sustainable and resilient Singapore	
	5.3.1 – Why is sustainable	

development important for Singapore?
 Ensure competitive economy a) attract investments b) provide employment opportunities Ensure sustainable environment a) clean and healthy environment b) excellent air and water quality
 Achieve high quality of life for all a) foster community spirit a) facilitate active participation in sustainable development
5.3.2 – How does Singapore approach sustainable development?
 Building up resilience crucial to achieving sustainable development a) increases Singapore's capacity to survive, adapt and thrive b) on-going process involving past, present and future actions
 Integrated master planning key to achieve sustainable development a) adopts long-term approach in reviewing land-use plans and demands b) strikes a balance between economic and social development
 Dynamic urban governance key to achieve sustainable development a) political leadership sets clear direction and cooperation among different government agencies to implement and execute policies b) public service and institutions with well-thought out systems and processes
5.3.3 – What are Singapore's efforts in sustainable development?

Environment and climate resilience
efforts
 a) cleaning and greening Singapore b) mitigation efforts include green buildings and clean energy, and adaptation efforts include water resilience and food resilience
Economic resilience efforts
 a) deepen and diversify international connections and strengthen business capabilities to innovate
b) encourage Singaporeans to acquire and utilise deep skills
Social resilience efforts
a) develop skills throughout life through SkillsFuture national movement and mobilising communities in preparedness measures
b) creating shared spaces to bring people together, offer input to government planning and address social concerns
5.3.4 How might Singapore continue to develop sustainably?
Environmental considerations
 a) life-support systems of the global environment and nature in providing ecosystem services b) limitations of Singapore's physical environment and possible threats including transboundary haze and
climate change
 Economic and social considerations a) ability of Singapore's society to advance its economy b) commitment and contribution from all stakeholders in society
Political considerations a) good governance with strong

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	political willpower b) commitment to develop and improve long term sustainable development plans			
3	Buffer Week			
4 – 8	Revision for Preliminary Exam:	Skills Activity:		
National Day Celebration on W7D4 - 5	 Sec 3 and Sec 4 topics Practice AO1+2 and AO 1+3 questions Topical Revision on Geography in Everyday Life Cluster Climate Cluster Tectonic Cluster Tourism Cluster Singapore Cluster 	 Drill students on key skills Data Response Question Evaluation Question GI Skills Timed Practices using TYS Specimen Papers 		
8 – 10	Preliminary Exam			
	 Refer to exam format and topics 			
Teachers' Day Celebrations on W10D9				
September Holiday Break				
Term / Week	Learning Experiences (chapter, activity)	Learning Outcomes & Assessment		
Term 4				
1	Script Checking			
2 – 5	Revision for O Level Exam:	Skills Activity:		
	Weather and Climate GI	Drill students on key		
Graduation	Weather and Climate	skills		
Day on	Tectonics	 Data Response 		
W2D10	Tourism	Question		
	Food	 Evaluation Question 		
		 GI Skills Timed Practice using TYS and HEG Papers 		
	O Level Exam			
6 – 9				

	 W6D10 – W9D5, 20 Oct – 10 Nov 	
*All information is correct at the time of publication and may be subjected to change.		