

S4G3 SS Preliminary Examination 2024

Answer Scheme

SECTION A

1	Study Source A. What can you learn from Source A about the impact of the release of the Fukushima wastewater on China? Explain your answer.	[5]
LEVEL	DESCRIPTORS	MARKS
L1	Lifting/ Provenance E.g. I can learn that the release of the Fukushima wastewater would have a negative impact as it has cost Japan a hefty sum to recover.	1
L2	Inference unsupported <i>Award 2m for one inference, 3m for 2 inferences</i> E.g. I can learn that China was angry over the release of the Fukushima wastewater as it would lead to a disastrous impact on China since the surrounding waters would be polluted. AND/OR I can learn that the release of the Fukushima wastewater would have a negative impact on the seafood source of China as they would have to source for alternative supply after their ban on all imports of fish from Japan. AND/OR I can learn that the release of the Fukushima wastewater would have a detrimental impact on China's relationship with Japan as the action had one-sided action had resulted in Chinese protest as well as the Chinese belabeling the Japanese as irresponsible.	2-3
L3	Inferences supported <i>Award 5m for well-supported answers.</i> E.g. I can learn that the release of the Fukushima wastewater would have a disastrous impact on China as the surrounding waters would be polluted. This is seen from the source, 'It's polluting oceans and creating known long-	4-5

	term risks that we don't quite understand.' This shows the Chinese concerns for environmental damage that they will also incur with the release of wastewater into the surrounding waters.	
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2	Study Sources B and C. How far does source B agree with source C? Explain your answer, using details from the source.	[6]
LEVEL	DESCRIPTORS	MARKS
L1	Similar/Different based on provenance E.g. Both sources would agree as they are both published by China.	1
L2	Similar/Different based on content, unsupported <i>Award 3m for both similar and different, unsupported.</i> E.g. The sources would agree as they both portray the Japanese in a negative way – that they lack responsibility in their action in the release of the Fukushima wastewater. OR Source B would not agree with source C as they differ in portraying the responsibility of the Japanese government.	2-3
L3	Similar/Different based on content, supported <i>Award 5m for both similar and different, supported.</i> E.g. The sources would agree as they both <u>portray the Japanese in a negative way – that they lack responsibility in their action in the release of the Fukushima wastewater.</u> This is evident in Source B where the giant arm stretches above the protestors' heads, pouring radioactive waste into the ocean, ignoring the pleas from them not to do so, as well as harming the marine life that is inhabiting the ocean. Similarly, Source C shows TEPCO workers painting 'safe, reliable and transparent' onto the contaminated water tanks, aiming to convince the world of the safety of the wastewater in which the onlooker commented 'my distrust of TEPCO runs deeper than the water tank', suggesting that he doesn't believe that the water is indeed safe. <u>However, source B would not agree with source C as they differ in portraying the responsibility of the Japanese government.</u> Source B shows the giant arm stretches above the protestors' heads, pouring radioactive waste into the ocean. The provenance also stated that it was the "Japanese	4-5

	government's decision". This shows that it was the Japanese government who took the selfish decision to release the wastewater, harming marine life as well as affecting the lives of the people around it. However, Source C shows that the plant operator is painting over the power plant with words like "safe, reliable, transparent". The bystander is also commenting "my distrust of TEPCO runs deeper than the water tank!". This suggests that the Japanese government could have been misguided by TEPCO who was dishonest about the safety of the wastewater and hence, is not the responsible one. They were simply given false information.	
L4	Similar in intention/outcome E.g. The sources would agree as they have similar intentions. Both cartoonists want to criticise the Japanese for being inconsiderate/irresponsible in their decision to release the wastewater from the damaged Fukushima nuclear plant. In doing so, the cartoonists hope to pressure the Japanese government into seeing the dangers and then reconsider its decision and halt the release of wastewater into the Pacific Ocean.	6

3	Study Source D. How useful is this source as evidence that the risk of contamination from the release of Fukushima wastewater is low? Explain your answer.	[7]
LEVEL	DESCRIPTORS	MARKS
L1	Useful/not useful based on undeveloped provenance or general understanding of the source (i.e. not focused on addressing whether the risk of contamination is low) <i>Note that answers that do not address utility of source at all will be awarded 0m.</i> E.g. Source D is useful in showing that how the release of Fukushima wastewater is done. OR Source D is not useful as it is by TEPCO.	1
L2	Not useful based on typicality E.g.	2

	Source D is not useful as it is only from TEPCO and cannot represent the locals' or neighbouring countries' evaluations/assessment of the safety of the Fukushima wastewater.	
L3	Useful/Not useful, with reference to source content <i>Award 3m for support.</i> E.g. Source D is useful in showing that the risk of contamination from the release of Fukushima wastewater is low (2m) as the infographic shows how the ALPS ensures the removal of radioactive materials from the contaminated water before releasing it into the ocean. (3m) OR Not useful / limitation of source (<i>implicit use of source content</i>) Source D is not useful as it does not provide evidence of any impact of the release of the wastewater for us to establish/conclude whether the risk of contamination is low. (3m)	3-4
L4	Both useful and not useful	5
L5	Useful/not useful based on cross-referencing <i>Note that answers that don't establish the reliability of Source C in proving its utility will not be awarded at this level.</i> <i>Award 6m for well-supported answers.</i> E.g. Source D is useful in showing that the risk of contamination from the release of Fukushima wastewater is low as the infographic shows how the ALPS ensures the removal of radioactive materials from the contaminated water before releasing it into the ocean. Source D is reliable and hence useful, as it is supported by Source F which also supports that the risk of contamination from the release of Fukushima wastewater is low. As evident from Source F, 'the IAEA had endorsed the release as planned would have a negligible radiological impact to people and the environment.' This shows that people don't have to worry as safety precautions have been put in place. OR Source D is unreliable and hence not useful, as it is contradicted by Source A which shows that there is a substantial amount of contamination risk from the release of Fukushima wastewater. As evident from Source A, 'It's polluting oceans and creating known long-term risks that we don't quite understand.' This shows that there will be environmental damage as well as perceived dangers to people in the long-term.	6-7

L6	Not useful based on evaluation of provenance E.g. Source D is not useful as it is by TEPCO, the operator behind the Fukushima nuclear plant who is bound to safeguard its reputation. Through this infographic, TEPCO would want to convince critics / sway public opinion to see that the process put in place by them in the release of the wastewater is sufficient and to reassure people through persuading that the radioactive element Tritium 'is also found in things around us and in our bodies' so that people would stop protesting and accept the solution that the Japanese government has taken in their handling of the accumulated wastewater.	7
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4	Study Sources E and F. Does Source E make Source F surprising? Explain your answer.	7
LEVEL	DESCRIPTORS	MARKS
L1	Mentions only Source E, does not address the element of surprise of Source F. <i>Note that answers that do not address surprise at all will be awarded 0m.</i> E.g. I am not surprised by Source E as it explains how the Japanese government was being irresponsible with its decision to release the treated water from Fukushima. OR I am surprised by Source E as it criticises the Japanese government who despite having an alternative solution, still chose to release the water into the ocean, which would definitely incur public backlash.	1
L2	Describes Source F, but does not explain why it's surprising or not surprising. E.g. I am not surprised by Source F as it states that the release of the wastewater was a decision made after considering safety as well as the impact to people and environment.	2
L3	Surprised or not surprised based on undeveloped comparison of Sources E and F.	3

	E.g. I'm not surprised as Source E is from Greenpeace Japan that is pledged on environmental protection while Source F is from IAEA that is the agency that endorses the release of wastewater to be safe and that they hold contradictory perspectives towards the release of the wastewater into the ocean.	
L4	Surprised or not surprised by Source F based on internal reasons of Source F. E.g. I am not surprised by Source F as it states that the release of the wastewater was a decision made after considering safety as well as the impact to people and environment and being a recognised body for international atomic energy, I am not surprised it has the capability to make such conclusions based on accurate testing. OR I am not surprised by Source F as it concludes that the release of the wastewater is safe and this is further backed up by a sampling which confirmed that the 'tritium concentration in the latest batch of diluted treated water, is far below the country's operational limit'.	4
L5	Surprised or not surprised based on comparison of Source E and F in content <i>Award 6m for more developed answers</i> E.g. Source E makes Source F surprising as they are different in terms of their perspective on whether the release of the wastewater from Fukushima nuclear plant is right/safe. Source E says that the release of the wastewater is unsafe while Source F says that it is safe. This is evident in Source E, 'Instead of engaging in an honest debate about this reality, the Japanese government has opted to engage in deliberate radioactive pollution of the marine environment.' This suggests that the decision has impacted the environment negatively. However, Source F states that 'The International Atomic Energy Agency's (IAEA) comprehensive report issued on 4 July 2023 found Japan's plan for handling the treated water to be consistent with international safety standards and that the release as planned would have a negligible radiological impact to people and the environment.' This suggests that it is entirely safe for the environment and it will not cause any harm.	5-6

L6	Not surprised based on provenance (different objectives) OR based on CR of Source F. E.g. Source E does not make Source F surprising as I can explain why their perspectives towards the release of the wastewater differ. Source E is by Greenpeace Japan, an organisation pledged on environmental protection. By raising the alarm on the release of the wastewater, it hopes to achieve international support and condemnation of the action taken by the Japanese government so that they would stop harming the sea and take an alternative approach. On the other hand, Source F is by IAEA, the authority behind the endorsement of the Japanese government's decision and will hence step forward to guard its credibility by reporting latest findings so as to convince the public and assure them of the safety of the waters. And it is this difference in motive that is the reason why the IAEA in Source F needs to be publishing a report in April 2024 to convince critics and to assure the public of the safety of the radioactive levels in the water. OR I am not surprised by Source F as Source D supports it. Source D also confirms the safety of the ocean after the release of the wastewater. As shown in the infographic, TEPCO even rears fish and shellfish in the seawater in which ALPS treated water is added with the same intention as IAEA to prove that the ocean is indeed safe.	7
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5	‘The Japanese government was right to release the Fukushima wastewater into the Pacific Ocean.’ Using the sources in the case study, explain how far you would agree with this statement.	[10]				
LEVEL	DESCRIPTORS	MARKS				
L1	Writes about statement, no valid source use/specific knowledge. E.g. The Japanese government should not have released the Fukushima wastewater into the Pacific Ocean as it is not safe.	1				
L2	Yes/No supported by valid source use <i>Award 2m for one Yes OR one No</i> <i>Award 3-4m for two Yes OR two No</i> E.g. Agree: Source A*, D & F Disagree: Source A, B, C & E Source can only be used for one side (either to support ‘show’ or ‘not show’) <table><tr><td>AGREE</td><td>DISAGREE</td></tr><tr><td> <u>Source A</u> Source A agrees that the Japanese government was right to release the Fukushima wastewater due to the high costs Japan will incur on its economy. This is evident in ‘As of March 2022, about 12.1 trillion yen (\$112 billion) had been spent on efforts responding to the Fukushima disaster, including compensation, decommissioning and decontamination. <u>This suggests that the Japanese government has made its decision based on the economic losses that the country would incur should they still seek alternative solution, hence they opted for a more cost-effective solution.</u> </td><td> <u>Source A</u> Source A disagrees that the Japanese government was right to release the Fukushima wastewater as the action would have detrimental impact on the environment. As evident, "It's polluting oceans and creating known long-term risks that we don't quite understand." <u>This suggests that the government failed to measure the impact of its action against environmental damage that it will create.</u> OR “Many Chinese accused the Japanese government of only being concerned about the costs and called the release of the wastewater irresponsible.” <u>This suggests that the government doesn’t bother</u> </td></tr></table>	AGREE	DISAGREE	<u>Source A</u> Source A agrees that the Japanese government was right to release the Fukushima wastewater due to the high costs Japan will incur on its economy. This is evident in ‘As of March 2022, about 12.1 trillion yen (\$112 billion) had been spent on efforts responding to the Fukushima disaster, including compensation, decommissioning and decontamination. <u>This suggests that the Japanese government has made its decision based on the economic losses that the country would incur should they still seek alternative solution, hence they opted for a more cost-effective solution.</u>	<u>Source A</u> Source A disagrees that the Japanese government was right to release the Fukushima wastewater as the action would have detrimental impact on the environment. As evident, "It's polluting oceans and creating known long-term risks that we don't quite understand." <u>This suggests that the government failed to measure the impact of its action against environmental damage that it will create.</u> OR “Many Chinese accused the Japanese government of only being concerned about the costs and called the release of the wastewater irresponsible.” <u>This suggests that the government doesn’t bother</u>	2-4
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		<u>about the consequence of their action on the environment.</u>	
		<u>Source B</u> Source B disagrees that the Japanese government was right to release the Fukushima wastewater as it ignores people's concerns and harms marine life. This is evident in the cartoon where a giant arm stretches above protestors' heads, dumping radioactive waste into the ocean, killing the fishes in it. <u>This suggests that the Japanese government is just going ahead with their decision despite concerns over the environment as well as probably food safety and livelihoods at stake.</u> Bonus mark (Reliability): Source B is unreliable as it is a Chinese cartoon, whom I expect to be on the side of the Chinese government. Since the government is clearly showing disapproval of the Japanese government's actions, it is natural that a citizen would produce a source that echoes the government's stand.	
		<u>Source C</u> Source C disagrees that the Japanese government was right to release the Fukushima wastewater as they were being dishonest about the actual safety of the water. This is evident in the cartoon where TEPCO workers are painting 'safe, reliable and transparent' onto the contaminated water tanks, aiming to convince the world of the safety	

		of the wastewater in which the onlooker commented 'my distrust of TEPCO runs deeper than the water tank', suggesting that he doesn't believe that the water is indeed safe. <u>This suggests that the Japanese government was trying to hide the dangers of the wastewater from the world.</u> Bonus mark (Reliability): Source C is unreliable as it is published by a Chinese editorial page, whom I expect to be on the side of the Chinese government, who had since banned the imports of seafood from Japan, and would therefore mount on a campaign to tarnish the reputation of TEPCO, so as to see lower the confidence level of the world towards TEPCO's management of the wastewater in order to get them to stop releasing it into the Ocean.	
	<u>Source D</u> Source D agrees that the Japanese government was right to release the Fukushima wastewater as it is safe. As evident in the infographic 'water to be discharged into the sea meets the government's safety standard'. <u>This suggests that the government is confident in the process that they have undertaken to remove all contaminants that will cause danger to human health or marine life.</u>		
		<u>Source E</u> Source E disagrees that the Japanese government was right to release the Fukushima wastewater as the government is being irresponsible. As evident, 'More importantly it ignores its	

	people's concerns, including fishermen whose livelihood depends on the pristine condition of the ocean.' <u>This suggests that the government failed to provide an alternative solution that could cater to the living needs of the fishermen and as such they will be affected by loss of sales.</u> Source F Source F agrees that the Japanese government was right to release the Fukushima wastewater as it is endorsed and supported by a renowned authority. As evident, 'The International Atomic Energy Agency's (IAEA) comprehensive report issued on 4 July 2023 found Japan's plan for handling the treated water to be consistent with international safety standards and that the release as planned would have a negligible radiological impact to people and the environment.' <u>This suggests that the Japanese government made no mistake in its innovative decision in response to the crisis and has not created any environmental damage at all.</u>	
L3	Yes and No with valid source use. Award 5m for one Yes AND one No Award 6m for two Yes AND one No / one Yes AND two No Award 7-8 for two Yes AND two No	5-8
	** To score additional 2m, take any of these 3 routes: • Through analysing at least 1 source in relation to its reliability, utility or sufficiency • By sharing example(s) from their contextual knowledge regarding release of Fukushima wastewater. • By giving a balanced conclusion / resolution E.g. Judging from the sources analysed, the wastewater definitely contain contaminants and some are admitted as hard to treat. Hence, the	

	only secure path is to publish actual figures of the radioactive levels of the water from time to time so as to reassure members of the public that technology does work and the released water is indeed safe.	
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(6) Extract 1 shows the development in technology and artificial intelligence.

In your opinion, what are the impacts that artificial intelligence might have on secondary students in Singapore? Explain your answer with reference to **two** impacts.

[7]

LEVEL	DESCRIPTORS	MARKS
L1	Describes the Topic E.g: Artificial intelligence, or AI, is technology that enables computers and machines to simulate human intelligence and problem-solving capabilities.	1
L2	Identifies/Describes Reason • L2/2 : Identify 1 reason • L2/3: Identify 2 reasons OR Describe 1 reason • L2/4: Describe 2 reasons Eg. Artificial intelligence can help Singaporean students to study more efficiently. Artificial intelligence (AI) can significantly enhance the efficiency of youths' study habits by providing personalized learning experiences tailored to individual needs and learning styles. AND/OR Eg: Artificial intelligence can make Singaporean students too reliant on technology and affect their critical thinking skills. It is now common to turn to ChatGPT to get answers for homework and youths also use ChatGPT to brainstorm for ideas when they are writing essays. Youths also start to be reliant on spell-checking tools like Grammarly which hinder spelling skills and lead to a decline in grammar proficiency.	2-4
L3	L2 + Explain reasons • L3/5-6 : Explain 1 reason • L3/6-7: Explain 2 reasons Eg: Artificial intelligence can help Singaporean students to study more efficiently. Artificial intelligence (AI) can significantly enhance the efficiency of youths' study habits by providing personalized learning experiences tailored to individual needs and learning styles. AI-driven educational platforms can analyze students' performance data to identify strengths and weaknesses, offering targeted exercises and resources to address specific areas of difficulty. An example that youths in Singapore uses is Geniebook which uses AI to recommend questions based on academic strengths and gaps while	5-7

	providing live and pre-recorded online classes. AI allows personalisation of students' learning journeys where they can pinpoint individual strengths, weakness and get timely feedback which makes learning more engaging and accessible. This personalized approach ensures that students spend their study time more effectively, focusing on concepts they need to master rather than revisiting material they already understand. These advancements not only make studying more efficient but also help maintain students' motivation and interest in their educational pursuits. AND/OR Eg: Artificial intelligence can make Singaporean students too reliant on technology and affect their critical thinking skills. It is now common to turn to ChatGPT to get answers for homework and youths also use ChatGPT to brainstorm for ideas when they are writing essays. Youths also start to be reliant on spell-checking tools like Grammarly which hinder spelling skills and lead to a decline in grammar proficiency. The more that students use machines to do the thinking for them, the more dependent on these machines they will become. Relying on AI effectively skips giving our brains the challenge and exercise needed to sharpen their ability to think critically as we get an answer without needing to think through the question or problem.	
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(7) Extracts 2 and 3 show the cultural impact of globalisation.

Do you think globalisation bring more harm than good to cultures? Explain your answer. [8]

LEVEL	DESCRIPTORS	MARKS
L1	Writes about the topic but without addressing the question Eg. Globalization refers to the growing interdependence of the world's economies, cultures, and populations.	1-2
L2	Describes the role of factors <i>[Award 3 marks for describing one factor]</i> <i>[Award 4 marks for describing both factors]</i> Eg. A good which globalization has on culture is the spread of it. Globalisation has led to an interconnected world as developments in transportation has enabled easy travelling around the world. When people travel, they bring	3-4

	along their cultures and share this information with people from other countries which enables us to learn from one another. Developments in technology has led to the creation of internet and smartphones which allow us to get access to information about other parts of the world and culture, while still being in Singapore. An example is the Hallyu wave or the Korean wave. AND/OR Eg: A harm which globalisation has on culture is the dilution of it. Local cultures may come under threat because of the spread of other cultures through globalization. They can risk being diluted or lose their significance. An example can be seen in modernisation of weddings where we see certain cultural practices fading away as the younger generation no longer want to practice it anymore. Some individuals might not want to hold a wedding banquet anymore, opting for a simple ceremony while some might not want to wear traditional wedding outfits because they prefer wearing western suits and dresses.	
L3	Explains the role of factors <i>[Award 5 – 6 marks for explaining one factor]</i> <i>[Award 6 – 7 marks for explaining both factors]</i> Eg. A good which globalization has on culture is the spread of it. Globalisation has led to an interconnected world as developments in transportation has enabled easy travelling around the world. When people travel, they bring along their cultures and share this information with people from other countries which enables us to learn from one another. Developments in technology has led to the creation of internet and smartphones which allow us to get access to information about other parts of the world and culture, while still being in Singapore. An example is the Hallyu wave or the Korean wave. Internet has made it easy for people around the world to keep themselves up to date with latest Korean music and drama releases. Without travelling, we can simply enter youtube to watch a newly released music video or log into Netflix to watch a new Korean drama that was also newly aired in Korea. Globalisation leads to awareness and appreciation of different cultures. We get to experience and learn about other people's culture because of a more interconnected world. In this way, this enhances relationship amongst people of the world as with deeper understanding, it reduces chances of misunderstandings. This enables better working ties between two countries, paving the way for more potential economic and governmental collaborations.	5-7

	AND/OR Eg: A negative impact which globalisation has on culture is the dilution of culture. Local cultures may come under threat because of the spread of other cultures through globalization. They can risk being diluted or lose their significance. An example can be seen in modernisation of weddings where we see certain cultural practices fading away as the younger generation no longer want to practice it anymore. Some individuals might not want to hold a wedding banquet anymore, opting for a simple ceremony while some might not want to wear traditional wedding outfits because they prefer wearing western suits and dresses. This often happens because, as more people become immersed in global cultural products and lifestyles, the practice of local cultures or ethnic traditions may become less widespread. People may prefer other cultural products because they appreciate it more or perhaps, because it is simpler to adopt. Adoption of popular and consumer culture could gradually lead to their replacement. Dilution of local culture may eventually lead to some of these cultures being forgotten over time. When this happens, intrarelationship becomes loose, and families and friends become less close-knitted.	
L4	Both aspects of L3 + explains the relative importance of each factor Eg. L3 + In conclusion, globalization can bring both harm and good impacts on culture. It can lead to greater cultural diversity, economic opportunities, and technological advancements, but it can also result in loss of uniqueness in culture, economic inequality, and social conflict. Its overall impact depends on how countries and individuals react to it, and this is dependent on various social, political or economic reasons. It is almost impossible to reject globalisation which means there needs to be a way to balance both positive and negative impacts of globalisation that will preserve cultures while embracing changes around the world.	8