

Candidate 1 evidence

ENTER NUMBER OF QUESTION	SNOW accumulates in north facing hollows. when more snow falls in winter than melts in summer. The north and north east facing slopes are more shaded so snow will lie for longer. The weight of the fresh snow weighs down on the snow underneath compressing it into a substance called neve. Plucking steepens the sides of the valley. Plucking is when ice freezes onto the bedrocks and pulls loose rocks away as it slides downhill. Abrasion deepens the valley floor. Abrasion is when the rocks are embedded in the glacier from the process of plucking. This then grinds away at the hillside like a big piece of sandpaper. Gravity causes the ice to flow downhill, following existing V-shaped valleys. Former interlocking spurs may be cut off by the	DO NOT WRITE IN THIS MARGIN
1.		

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	<p>glacier as it flows downhill leaving truncated spurs and steep valley sides. The width and shape of the resulting glacial trough will depend on the nature of the rock type and the intensity and weight of the glacier and its erosion. Ribbon lakes are formed when softer rock is eroded more deeply than the surrounding area. Ribbon lakes can be formed by from a natural dam. An example of a ribbon lake is Lake Windermere in the Lake District.</p>	
2.	<p>Sand spits^{bars} are formed by the process of longshore drift. Swash is where waves, driven by prevailing winds push material up the beach at an angle. The returning backwash is dragged back by gravity down</p>	

ENTER NUMBER OF QUESTION	Differential erosion occurs where	DO NOT WRITE IN THIS MARGIN
4.	the softer rock is eroded more	
	quickly than the hard rock.	
	Hydraulic action is when	
	air is compressed into the	
	river banks causing materials	
	to be dislodged. Abrasion is	
	when the force of the water	
	throws bedload against the	
	banks, causing erosion. Solution	
	is when soluble rocks dissolve	
	in the acids in the water.	
	Attrition is when rocks in	
	the river bed are broken up	
	by the rocks in the river	
	Undercutting creates	
	an overhang of hard rock.	
	Over time, this overhang is	
	unsupported and collapses	
	due to gravity into the	
	plunge pool. Attrition can	
	occur here, where rocks in	
	the plunge pool hit off	
	each other causing them to	
	become rounder and smaller.	
	These rocks can then be used	

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	as an abrasive material to deepen the plunge pool. The waterfall retreats upstream.	
5.	Hadley cell:	
	Energy from the sun heats the air at the equator, this warm air rises. The air is deflected by the upper atmosphere towards the poles. The air sinks back down at 30°N and 30°S . This causes areas of high pressure in the Tropic of Cancer and Tropic of Capricorn. This This air returns to the equator in the form of surface winds. This completes the Hadley cell by moving surplus energy from the equator to 30°N and 30°S .	
	Ferrel cell:	
	This cell is driven by the Polar and Hadley cell. It redistributes energy heat	

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	between 30°N and 60°N and then 30°S and 60°S . This cell is not driven by temperature.	
	Polar cell:	
	Cold air sinks back down at the poles. This air travels towards the equator where it begins to heat up. This air rises at 60°N and 60°S and is deflected by the upper atmosphere, and returning to the poles. This completes the cell Polar cell redistributing an energy deficit between the poles and $60^{\circ}\text{N}/60^{\circ}\text{S}$.	
8.	Low temperatures lead to slow decomposition of leaf litter. Coniferous needles and cones produce an acidic mor humus. Heavy precipitation leads to leaching which is the downward movement of aluminium and iron oxides. This leads to the	

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	<p>from getting ill and to prevent the child mortality rate increasing. Money will have to be spent on healthcare for an ageing population as in the years to come, there will be a large increase in elderly people. A youthful population also means there is a larger potential work force. However, this can result in higher unemployment rates or underemployment as job vacancies become full. the More stress will be applied to the economically active population as they will have to supply the the resources for the increasing dependent population.</p>
9.	<p>In the Glasgow, new tenements have been built, replacing the high-rise flats. This is has been effective as people have</p>

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10.	<p>3.3km of protected cycle lanes have been added to the streets of Rio de Janeiro. In 2003, 1300 bikes have been added to key locations. These are cheap, allowing all residents to hire them, costing as little as £2-50 a month. This has been useful ^{useful} as it has reduced traffic congestion of the roads and improved air quality. Buses have been made more frequent and cheaper (60p per journey). This has been effective as buses are seen as more reliable now, encouraging people to take public transport to work instead of their cars. Cable cars were installed to allow allow residents access to the favelas on the steep hills surrounding the city. This was ineffective as the cable cars often broke down and cost a lot of</p>	

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	<p>money to repair. They are no longer in use and residents feel like the money could have been better used to improve sanitation, education or healthcare as it cost £75 million to build. Tram systems have been integrated into the BRT ^(Bus Rapid Transit) and meaning commuters are able to switch modes of transport easily to get to their final destination. This has reduced the amount of people on buses at the one time, making public transport more comfortable and appealing.</p> <p>Amazon Rainforest:</p> <p>11. Agro-forestry - farmers grow crops and trees at the same time to reduce large scale deforestation and subsequent soil erosion with protection from the rain/sun. This has been effective as the crops</p>	

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	<p>also benefit from the nutrients of the deep leaf litter and decomposing, adding to the fertility of the soil soil. Selective logging - trees are only felled when they reach a particular height. This is effective as it allows trees a guaranteed life span thus preventing the soil from erosion. Afforestation projects reduce wind erosion and prevent soil erosion as the roots from the trees being planted and bind to the soil and hold it in place. Forest reserves - these are areas purchased by conservation groups or the government, protecting them from exploitation. This has been effective as it has allowed indigenous people e.g. the Yanomami, to practice shifting cultivation which is less destructive of the soil.</p>	

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	<p>Monitoring - use of satellite technology and photography can be used to check that any activities taking place are legal and follow the guidelines for sustainability. This has been effective as it has reduced deforestation by 60% in Brazil. Education - this can be used to explain to locals and other people globally; the problems and effects with deforestation which could encourage people not to do it. Eco-tourism - this allows tourists to see plants, animals and the spectacular scenery in their natural state. This has been effective as it has given people in these areas jobs as tour guides and has attracted more income to the area. This money can then be invested into conservation programmes</p>	

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	to protect the rainforest.	
12.	Loch Lomond:	
	Tourists often wander off	
	footpaths by climbing over	
	fences or stone walls. This	
	can damage the fences/	
	stone walls and cause	
	footpath erosion. Tourists	
	also often leave litter, causing	
	livestock to choke on it which	
	can be costly to the farmer.	
	Gates are also left open by	
	tourists causing livestock to	
	escape, leading to the farmer	
	losing money. Litter also	
	causes visual pollution, making	
	the area look less attractive,	
	making people not wanting to	
	return. People often let their	
	dogs off the leash in fields	
	which can scare the sheep,	
	causing them to have miscarriages	
	Tourists also often park at	
	the sides of narrow rural	

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	<p>roads which leads to traffic congestion. They In holiday locations such as Luss, they also park on grassy verges which can erode the landscape, making the area look unattractive. People like to use the loch for water sports such as jet skiing or using speed boats. As these boats speed along the loch, this creates waves and which erode the shores. The oil that comes from speed boats can also be be harmful to the marine life and pollute the loch. People also like to buy holiday homes in these locations causing prices to rise in these areas. This leads to locals moving away and causing rural de-population. This also leads to the grocery shops in the area shutting down and being replaced with gift shops.</p>	

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30)	<p>From 9:00 - 19:00 the level of discharge stays fairly constant, below 10 cumecs. From 19:00 - 5:00 there is a large increase in discharge from 9 cumecs to 32 cumecs. From 5:00 - 15:00, there is a large decrease in discharge from 32 cumecs to 12 cumecs. From 15:00 - 19:00 there is an increase in discharge from 12 cumecs to 25 cumecs. From 20:00 - 5:00, there is a large decrease in discharge from 22 cumecs to 6 cumecs.</p>
b)	<p>A small drainage basin can lead to a slow rising limb as it takes 10 hours to reach its maximum discharge. The drainage basin could also be quite flat causing a long lag time. Infiltration and</p>

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	<p>percolation can lead to a long lag time and and a gentle rising limb as it will take longer for the water to move to the main trunk river. There may also be a lot of vegetation such as trees that absorb some of the rain or intercept the rain creating a longer lag time as the water takes longer to get get to the main trunk river.</p>	
	<p>6. Undercutting causes an unsupported overhang of hard rock</p>	

Candidate 2 evidence

ENTER QUESTION NUMBER BELOW	Do not type in this shaded box	DO NOT WRITE IN THIS MARGIN
1.	<p>A Ribbon Lake is formed through the processes of Glacial erosion. Before Glaciation, a Corrie is a bowl shaped hollow. These are mainly found on shaded, north facing slopes where more snow falls in winter than what melts in summer. As snow gathers in a hollow it will gradually compact and compress into firn, then ice. During Glaciation, water will seep into cracks in the rocks, this will then freeze, expand, and shatter the rock. This process is known as 'Frost Shattering'. During Glaciation, the process of Plucking will occur, this is the process in which the Glacier freezes onto the shattered rock and pulls it from the surface. This shattered rock is then embedded into the Glacier and will proceed to smooth and sand the surface by Abrasion.</p>	
2.	<p>A sand bar is formed through the processes of Coastal deposition. Constructive waves have low energy, a long fetch and are formed in calm conditions. A sand bar will then be created through the process of Longshore Drift, this lateral movement occurs when waves, driven by prevailing wind push material up the beach, known as the swash (45 degrees). This material will then be dragged back down the beach at right angles due to Gravity, this is known as the Backwash.</p>	
3.	<p>There is a Gentle falling limb from 9 cumecs at 09:00 to roughly 7 cumecs at 14:00. There is a Steep rising limb at roughly 19:00 from just under 9 cumecs to just over 30 cumecs around 05:00, it also reaches its peak discharge at this time. There is a steep falling limb shortly after the peak discharge, in which the discharge falls to just 11 cumecs after 10:00. There is another rising limb around 15:00 which reaches back up to 23 cumecs, before continuing to fall and rise again until 20:00. And finally, there is another steep falling limb up to 05:00 where the discharge lowers to just 9 cumecs once again. The reasons as to why these changes in discharge level have occurred is due to the rainfall and the time of the day. There is very low amounts of rainfall throughout the day, as a result of this the overall number of cumecs stays quite low. In addition to this, during the times of the day where there is no rainfall, the discharge will also fall, this can be seen with the lagtime of the discharge</p>	

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	meeting it's peak around 05:00 when there is rainfall, before falling again until the rain returns, where the Discharge will start to rise again.	
4.	Waterfalls are formed due to the processes of Hydraulic Action, Corrasion and Solution. Hydraulic Action is the process of waves compressing trapped air into the rocks, this will then create an explosive blast which weakens and loosens rock fragments. Corrasion is the process of rock fragments hitting against the river to create a sandpaper (Abrasive) action. And solution is the chemicals and acid in the water weathering away at the soft rock of the river.	
5.	Atmospheric Circulation involves the 3 circulation cells, these are the Polar Cell, Ferrel Cell and Hadley Cell. These help to transport and energy around the world in circular movements which redistribute Insolation to different areas. This helps to ensure places in the world aren't either too warm or too cold. In areas of High Pressure, such as the poles air will flatten and squeeze outward, pushing cold air around to areas with a large portion of energy, and in areas with low pressure, such as the Equator and the tropics, warm air will rise upwards and circulate to areas with Energy deficit. These surface winds are also known as the Transport winds, an example of these are the Polar Easterlies.	
6.	(In Answer Booklet)	
7.	There are many different methods used by countries to collect accurate population data. One of these methods used is a Census, this is a survey sent out every decade which requires citizens to state their employment, their gender, their race, their religion, how many people are living in their home, etc. Another method used by countries to collect accurate population data are Vital Registrations, this requires the date of birth, date of death and marriages to be documented for legal purposes, this allows the Government to keep track of how many people are currently in the country. Furthermore, another method used by countries to collect accurate population data is Border Control. This is used to register and keep track of how many people are entering and exiting the country at a time, this allows the Government to keep track of how many people are currently in the country. And a final method used to collect accurate population data is the use of Samples, these are surveys that only 1% of the population is asked about, this helps the	

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	Government to have constant updates on population changes at a smaller scale, which makes the process a lot more manageable.	
8.	<p>One possible consequence of a growing population is that due to the large amount of young people in the country there will be a growing demand for education from schools as well as teachers being required. This also results in a large demand of carers being needed for children who do not have guardians or parents, this also results in a large demand for hospitals in order to ensure children have healthcare and that they are feeling well. Due to the large amount of young people in the population there are now less workers in the country, this will result in the Government receiving less taxes, which will proceed to make it much harder for the Government to be able to fund all of these requirements, this could cause a large number of the population to become un-educated and illiterate as a result of the lack of education, causing the problem to just continue to get worse. In addition, the possible lack of healthcare could result in infant mortality, which will then include the problem of the population slowly decreasing</p>	
9.	<p>The developed world city I have studied is Glasgow. One of the strategies used to improve housing in Glasgow is the improvement of the Gorbals. This was a city that previously had very low living standards, however improvements were made to the area in order to boost the general living conditions, this involved renovations to housing in order to make them more modern and up to health standard to make sure people were living in proper and safe conditions. The Gorbals centre was also opened, this involved activities to help people keep fit as well as libraries to ensure people had available access to education. There is also the Athletes Village, this was improvements made to Dalnarnock, a very poor area. At the time of the Commonwealth Games the Government wanted their athletes to be living close to the event, so had renovated old housing in order to make sure the athletes were living in clean conditions. After the Commonwealth Games had ended, people were able to move into these improved homes which helped to boost the health of the area and resolve issues related to poverty. These strategies were effective as they were</p>	

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	<p>able to improve the way people were living, houses were at a higher standard of living and people were able to gain medical care when that was previously un-available to them, the general safety of these areas also improved as the newer housing was less susceptible to crime and theft, as a result of this the mental health of people also improved as there was much less stress around living now.</p>	
10	<p>One strategy used in Nairobi to manage traffic is the introduction of traffic lights, this helps to manage the flow of traffic as people are aware when to stop and go, resulting in the streets becoming more manageable and safer. Another strategy used to manage traffic is the introduction of traffic wardens, these are people who also help to manage the flow of traffic and re-direct people if necessary, once again making it easier to control the streets of Nairobi. These strategies are useful as it helps people to understand the laws of the road, as well as lowering traffic congestion as there is a steady flow of cars always moving. However, one issue with these strategies is that many people are still not aware of what traffic lights or wardens are in these developing countries, as the concept is still quite new. And as a result accidents may still often occur.</p>	
11	<p>The semi-arid area I have studied is the Sahel Region. The Sahel Region spans across multiple countries (Chad, Mali, Niger) and is a large area suffering from desertification, causing people to move as the areas effected by this are infertile and cannot sustain life. There are many management strategies used to manage the rural land degradation of this area, one of which being the introduction of Shelterbelts, this is a wall of trees placed perpendicular to the wind at right angles, this protects the soils behind it from being blown away and damaged, ensuring that people are still able to have food that they can eat. Another management strategy used to manage rural land degradation in this area is the Great Green Wall. This is a project that spans across 7 countries, and involves the process of planting a wall of seeds which will keep fertile grassland safe and ensure people have a food supply. Another management strategy used to manage rural land degradation in the Sahel is the Magic Stones of Burkina Faso. These are a wall of stones placed</p>	

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	<p>underneath a hill that are created to act as rainwater taps, rainfall is ridiculously rare in areas such as the Sahel Region, so ensuring that it is stored all year round is a very valuable process. And one final management strategy used to manage rural land degradation in the Sahel is the construction of Acacia Trees. These are trees that are capable of surviving in the infertile desert and can sustain themselves, these will also produce a product known as 'Acacia Gum' which locals can collect from these trees. These strategies are all very effective on combatting rural land degradation, as they all ensure that locals of these areas have access to food and water all year round, which will greatly help to improve living conditions as well as improving people's health, as well as with the Acacia Gum, locals can sell this material at local markets which will help to boost the local economy of the area, which can then be used to improve further advancements to living conditions.</p>	
12	<p>The coastal area I have studied is the Dorset Coast. There are many land use conflicts in this area as a result of the various land use conflicts. One of these is the conflict between locals and tourists, tourists visiting the Dorset Coast often will litter quite often, this annoys the locals as it acts as a scar on the landscape, causing visual pollution, as well as physically harming the land as these materials such as plastics do not break down naturally at a fast pace. Another conflict is between tourists and farmers, many people will bring their dogs with them to the coast and proceed to let them off the leash, this can result in the animals harming the farmers livestock, such a sheep, this can cause the farmer a lot of money as he may have to spend time and money to find these lost animals. Another conflict is between the locals and the military, the military will use Dorset Coast for military training, this irritates locals as it causes visual and sound pollution, as the damage from the training can be seen on the landscape and the loud sound from these training drills can annoy people. Another landuse conflict is between locals and tourists once again, this conflict is based on how tourists effect the cost of living and employment in the areas, many tourists will own holiday homes in Dorset, as a result, these are often left completely empty for most of the year which causes the cost of living for the locals to increase, driving many people from the area. Due to tourists also only coming during certain times of the year seasonal employment becomes an issue for locals, as there are little job</p>	

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	opportunities throughout the year, further increasing the cost of living in these areas.	

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6.			
	A° Horizon	* Coniferous forestry	
	A Horizon	Poor breakdown of organic materials due to the slow decay of pines and needles, further effected by the lack of soil biota. (earthworms, beetles, centipedes)	
	B Horizon	Iron Pan	
	C Horizon	Impedes drainage, resulting in poor living conditions for soil biota, resulting in a lack of nutrients and causing the soil to become infertile.	
	* Clearly defined horizons due to the lack of soil biota making the horizons	water lessed conditions due to limited leaching, results in the soil being unable to support life.	