

91429R



NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

QUALIFY FOR THE FUTURE WORLD
KIA NOHO TAKATŪ KI TŌ ĀMUA AO!

Level 3 Geography, 2017

91429 Demonstrate understanding of a given environment(s) through selection and application of geographic concepts and skills

2.00 p.m. Wednesday 22 November 2017

Credits: Four

RESOURCE BOOKLET

Refer to this booklet to answer the questions for Geography 91429.

Check that this booklet has pages 2–11 in the correct order and that none of these pages is blank.

YOU MAY KEEP THIS BOOKLET AT THE END OF THE EXAMINATION.

Relevant geographic concepts

Environments

Environments may be natural and / or cultural. They have particular characteristics and features, which can be the result of natural and / or cultural processes. The particular characteristics of an environment may be similar to and / or different from another. A cultural environment includes people and / or the built environment.

Perspectives

Perspectives are ways of seeing the world that help explain differences in decisions about, responses to, and interactions with, environments. Perspectives are bodies of thought, theories, or world views that shape people's values and have built up over time. They involve people's *perceptions* (how they view and interpret environments) and *viewpoints* (what they think) about geographic issues. Perceptions and viewpoints are influenced by people's *values* (deeply held beliefs about what is important or desirable).

Processes

Processes are a sequence of actions, natural and / or cultural, that shape and change environments, places, and societies. Some examples of geographic processes include erosion, migration, desertification, and globalisation.

Patterns

Patterns may be spatial (the arrangement of features on the earth's surface) or temporal (how characteristics differ over time in recognisable ways).

Interaction

Interaction involves elements of an environment affecting each other and being linked together. Interaction incorporates movement, flows, connections, links, and interrelationships, which work together and may be one-way or two-way interactions. Landscapes are the visible outcome of interactions. Interaction can bring about environmental change.

Change

Change involves any alteration to the natural or cultural environment. Change can be spatial and / or temporal. Change is a normal process in both natural and cultural environments. It occurs at varying rates, at different times, and in different places. Some changes are predictable, recurrent, or cyclic, while others are unpredictable or erratic. Change can bring about further change.

Sustainability

Sustainability involves adopting ways of thinking and behaving that allow individuals, groups, and societies to meet their needs and aspirations without preventing future generations from meeting theirs. Sustainable interaction with the environment may be achieved by preventing, limiting, minimising, or correcting environmental damage to water, air, and soil, as well as considering ecosystems and problems related to waste, noise, and visual pollution.

PUTARURU'S BLUE SPRING – NEW ZEALAND'S BEST KEPT SECRET?

Resource B: Accessibility to Putaruru's Blue Spring

Locals from in and around South Waikato can't get enough of the treasure that is Putaruru's Blue Spring. Putaruru may just be hiding one of the country's best kept secrets, according to one Hamilton man who says of the Blue Spring, "It's amazing, it's so clear, and it's a little tucked away secret in the North Island".

The floor of the spring is unbelievably blue in some parts. The spring, animated with coral-like plants that grow sideways with the current, really is hidden. There are two entrances to the South Waikato landmark, both of which inevitably require a trip down roads less travelled.

There is something still about the spring itself that leaves you doubting the fact the water actually flows at a rate that could fill a 23 m swimming pool in around 12 minutes.

The spring is fed from the Mamaku Plateau, where the water takes up to 100 years to filter through. During this long residence in aquifers, particles and light-absorbing matter are effectively removed from the water, leaving it with very high clarity – one of the reasons it is clean enough to provide 70 % of the country's bottled water.

Unlike a few of its cousins in the North Island, this stream really is clear. On a sunny day you could be fooled into thinking it is a perfect swimming hole. In fact, the Automobile Association (AA) named the spring in its *Directions* Magazine on its list of "New Zealand Top 10 Swimming Holes" to cool off in. However, the spring's temperature is only ever 11°C all year round,

but the cool temperature never stops locals swimming here. The South Waikato District Council realised the spring's potential a while back, and has been promoting it ever since. When word really does get out, this relatively unbeaten track may seriously put Putaruru back on the map.

Resource C: Topographic map of Putaruru

Horizontal scale
Blue grid lines are 1 km apart.

Resource D: How to find the Blue Spring

Getting to the Blue Spring is easy, but you need your own transport, as no shuttle service is available from Putaruru. Limited car parking is available along Whites Road, and from here, the walkway takes around 1.5 hours. The terrain varies from easy walking, to back-country trekking, with stile crossings. In some areas, the track has been benched, and steps constructed through the gorge area. Hazards such as waterfalls, electric fences, and livestock may be encountered along the way.

Alternatively, a shorter track occurs from Leslie Road, although this involves driving

down a narrow, windy lane that is not suited to large numbers of vehicles, and has limited parking once there.

Resource E: History of the Blue Spring region

The history of the Waihou River dates back to the time of the first human visitors. It was a journeying place of King Te Wherowhero Tawhiao, the second Māori King of New Zealand, as it provided him with his main travelling route. The river gave him food, and the flax was used for many purposes. As such, the Blue Spring (Te Puna), was considered a natural taonga that needed protection.

While locals have always recognised the beauty of the place as a swimming hole, it was not until the 1980s that it gained national attention, when Coca-Cola® applied for a resource consent to bottle the water from the spring. Once this was accepted, a bottling plant was set up in the local township, providing jobs for 70 locals. The spring also supplies the region with their water supply.

In 2014, the South Waikato District Council decided to promote the Te Waihou Walkway, as the potential to bring in money to the region was realised. Money was spent developing the attraction, by building boardwalks and steps for easier access, and by introducing a viewing platform.

Resource F: The Blue Spring in 2016

During the summer of 2016, there was a significant increase in usage at Te Waihou Walkway, and especially swimming in the Blue Spring area. The communications manager for the local council said that the aim was for 10 000 to 11 000 to use the walkway per year, however a record number of 8 949 people visited the springs in a single month, in January 2016.

Some feel that the spring has become a victim of its own success, in the sense that the infrastructure is not designed to cope with these numbers, and concerns have been raised about the impacts of:

- dangerous driving and a lack of signage – one councillor said having no road markings on Leslie Road was a concern: “It’s very windy, and now we are getting a lot of out-of-town people, who have probably never driven down a rural road before, making it very dangerous and an accident waiting to happen”
- a lack of parking – local residents are also concerned about accessing their properties – at busy times, cars and buses line both sides of the road, since only 17 cars can be accommodated in the car park
- a lack of toilets – there is only one toilet provided at the White Road Car Park, which has queues of up to 50 people at a time
- littering – there is significant degradation of the fragile environment, with up to 400 visitors recorded at one time, and water users have inevitably had a negative impact on the vegetation in the riverbed, as well as the visual amenity.

Regular visitors have also commented that it was often “chaos – the track was back-to-back – and no-one could get past”. Several solutions have been suggested, from closing off the springs to all visitors completely, to the private development of the region, with a submission to build a café and restaurant. The i-SITE manager for Tokoroa and Tirau said the Blue Spring was a “springboard” to other activities: “It brings people here, and if you do the right job to attract them to do other activities, they will stay longer”. The potential is huge, especially since many of the visitors from China come to New Zealand specifically to see the spring. Several landowners have offered land to help alleviate the car parking issue, but this suggestion was turned down when it became clear that they proposed charging people to park there.

However, the council has decided not to rush into anything, but to work closely with local iwi (the Ruakawa), and the Department of Conservation, in working out what is best in the long term. In the meantime, signs have been erected to discourage swimming in the Blue Spring and surrounding river, and access from the Leslie Road end will be reduced, using fences.

BOTTLED WATER CONSUMPTION

Resource G: Bottled water consumption per capita 2005–2015 (litres per person per annum)

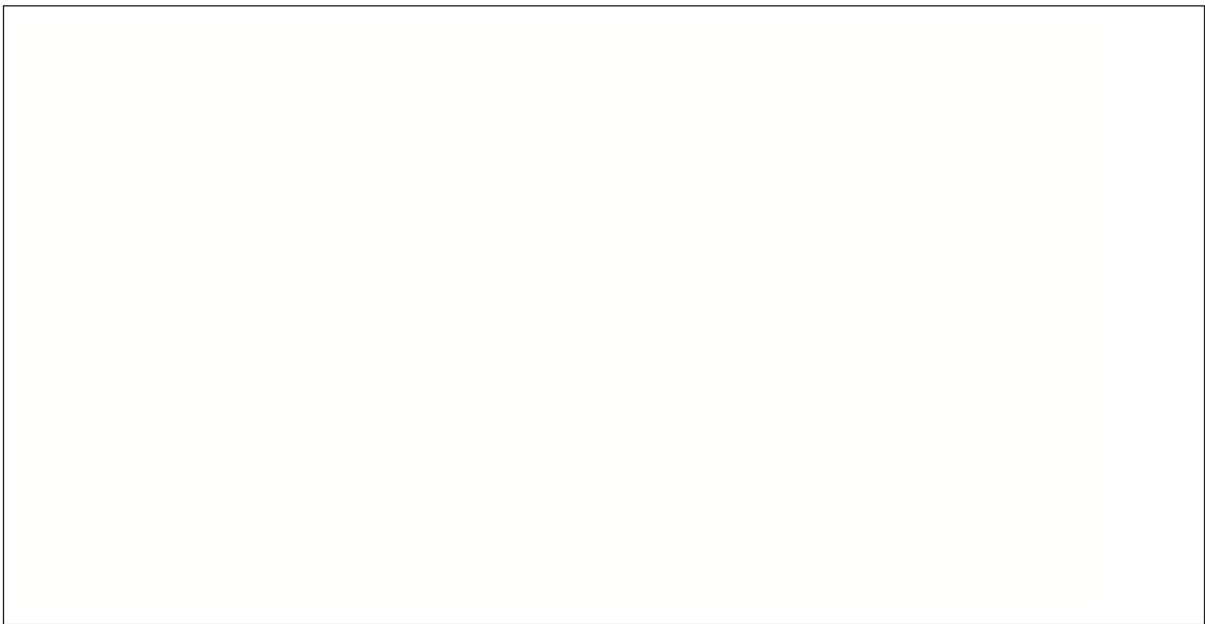
COUNTRY	2005	2010	2015
Italy	191	187	178
Mexico	179	242	244
Spain	146	124	115
France	139	132	139
Germany	128	134	142
USA	99	107	138
Thailand	77	111	204
India	5	16	21
China	10	19	30
Average World	25	31	37

Resource H: Present bottled water consumption around the world (by volume)

Note: The countries on this map are resized according to their total annual bottled water consumption.

Resource I: Projected global bottled water market 2014–2020

This resource shows that the value of bottled water in 2014 was US\$170 billion and will reach US\$280 billion by 2020 and that the volume that was consumed globally in 2014 was 288.36 billion litres.

Resource J: Top 11 global packaged water countries ranked in terms of volume 2015 and 2020 (by % share of volume)

This resource, which has **percentages by share of volume**, shows how the top 11 countries in 2015 accounted for 64% of total bottled water consumption and how China and India will account for almost half of the additional bottled water consumption by 2020.

Resource K: The rise of bottled water globally

This year, bottled water is expected to overtake fizzy drinks, with sales of over 233 billion litres, compared with 227 billion litres of fizzy drinks.

While growth in the bottled water category is expected to continue outpacing growth in the fizzy drinks category in the next few years, most of this growth will come from emerging markets such as China, India, and Mexico – where clean tap water is not as easily available, and where flooding and other natural occurrences lead to water contamination and the spread of diseases. In contrast, developed markets might not contribute much to the global bottled water growth. Packaged water in Germany, Italy, France, and Spain is forecast to grow at merely 1% from 2015 to 2020. However, an exception to this is the U.S., which remains the fastest-growing bottled water market outside Asia, mainly because customers have grown more health conscious, and are looking to trade in their sugary soft drinks for healthier and more natural drinks, which bodes well for water.

It is interesting to consider these consumers, who choose water in a bottle rather than much cheaper water out of a tap. Water experts suggest bottled water costs nearly 1 000 times more than water from the tap. The reasons given for the increasing popularity of bottled water include the convenience – you can't lug your kitchen sink around with you – and also taste and health benefits. Perrier and Evian began this idea in their marketing campaigns 20 years ago, positioning their water as a desirable, flavourless beverage that, when chosen, indicated a person of superior taste and standing. Evian was the first to associate water with fitness, with an early advertisement titled "Revival of the Fittest", suggesting that its unique minerals could rid the body of impurities faster, and replace fluids lost during a workout.

The argument that bottled water is purer than tap water however does not seem to hold. *The New York Times* reports that one-third of bottled water is tap water, and bottled water is as susceptible to contamination as any water. While many bottled water brands supposedly source their water from mountain streams, artesian wells, and an assortment of springs, much of it comes from the town water supply. Starbucks, Wal-mart, and Nestlé recently suffered a public backlash for sourcing their bottled water from the California water supply during a drought that required household to limit their water consumption.

While bottled water sales have overtaken soft drinks this year, the industry might be at something of a crossroad. The public is becoming increasingly vocal about the shortcomings of the bottled water industry. Bottling plants have been shut down by campaigners determined to protect precious water and avoid environmental impact. There is concern that plastic bottles create too much waste. New York City has begun to promote tap water, offering portable fountains around the city and at civic events.

Acknowledgements

Material from the following sources has been adapted for use in this examination (accessed 27 March 2017).

Geographic Concepts

<http://seniorsecondary.tki.org.nz/Social-sciences/Geography/Key-concepts>.

Resource A

<https://www.google.co.nz/maps/place/Blue+Spring/@-38.0362089,173.5939954,7z/data=!4m5!3m4!1s0x6d6c4f2941648d99:0x35070aee0b1e61aa!8m2!3d-38.0362089!4d175.8352064?>

Resource B

<http://www.stuff.co.nz/travel/76641892/south-waikato-jewel-in-the-crown-a-successful-nightmare> (first image)

<http://www.stuff.co.nz/travel/destinations/nz/75223005/putaruru-blue-spring--nzs-best-kept-secret> (second image).

<http://www.stuff.co.nz/environment/83474560/te-waihou-walkway-blue-spring-closed-to-swimmers> (third image).

Resource C

<http://www.linz.govt.nz/land/maps/linz-topographic-maps/map-chooser/map-chooser---be35>.

Resource D

<http://www.southwaikato.govt.nz/our-district/sport-and-recreation/parks-and-reserves/Pages/Te-Waihou-Walkway.aspx> (map).

Resource F

<http://www.stuff.co.nz/travel/news/76924237/Blue-Springs-could-bring-economic-benefits> and <http://www.stuff.co.nz/national/83640730/blue-spring-cafe-decision-still-unclear> (text).

http://www.radionz.co.nz/assets/news/69588/eight_col_signs_edited.jpg?1464230042 (image)

Resource G

http://tunza.mobi/wp-content/uploads/2013/04/Bottles_Eng-2.jpg (table statistics).

Resource H

<http://www.viewsoftheworld.net/wp-content/uploads/2011/03/BottledWaterConsumption.jpg> (first image).

Resource I

<http://www.statista.com/statistics/387255/global-bottled-water-consumption/>

Resource J

<http://wp-uploads-trefis.s3.amazonaws.com/articles/wp-content/uploads/2015/06/Bottled-water-20201.png>.

Resource K

http://www.nzherald.co.nz/fisher-funds/news/article.cfm?c_id=1503733&objectid=11451231 and <http://www.forbes.com/sites/greatspeculations/2015/06/26/bottled-water-is-a-potential-growth-category-that-cant-be-ignored/#3bd957e73a42> (text).

<http://www.greenberg-art.com/.Toons/.Toons,%20Environ/BottledWater.html> (cartoon).