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91429R

NZQA
NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

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

Level 3 Geography 2020

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

9.30 a.m. Wednesday 2 December 2020
Credits: Four

RESOURCE BOOKLET

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

Check that this booklet has pages 2–14 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
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
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 worldviews 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
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
May be spatial (the arrangement of features on the earth's surface) or temporal (how characteristics differ over time in recognisable ways).

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- or two-way interactions. Landscapes are the visible outcome of interactions. Interaction can bring about environmental change.

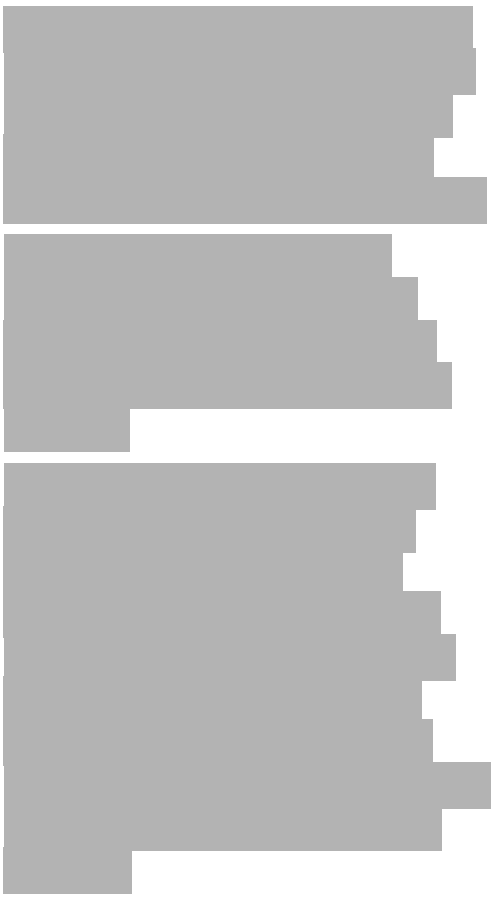
Change
Involves any alteration to the natural or cultural environment. Change can be spatial and / or temporal. Change is a normal process in both natural and cultural environments. It occurs at varying rates, at different times, and in different places. Some changes are predictable, recurrent, or cyclic,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

Sustainability
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.

AIR POLLUTION IN MONGOLIA

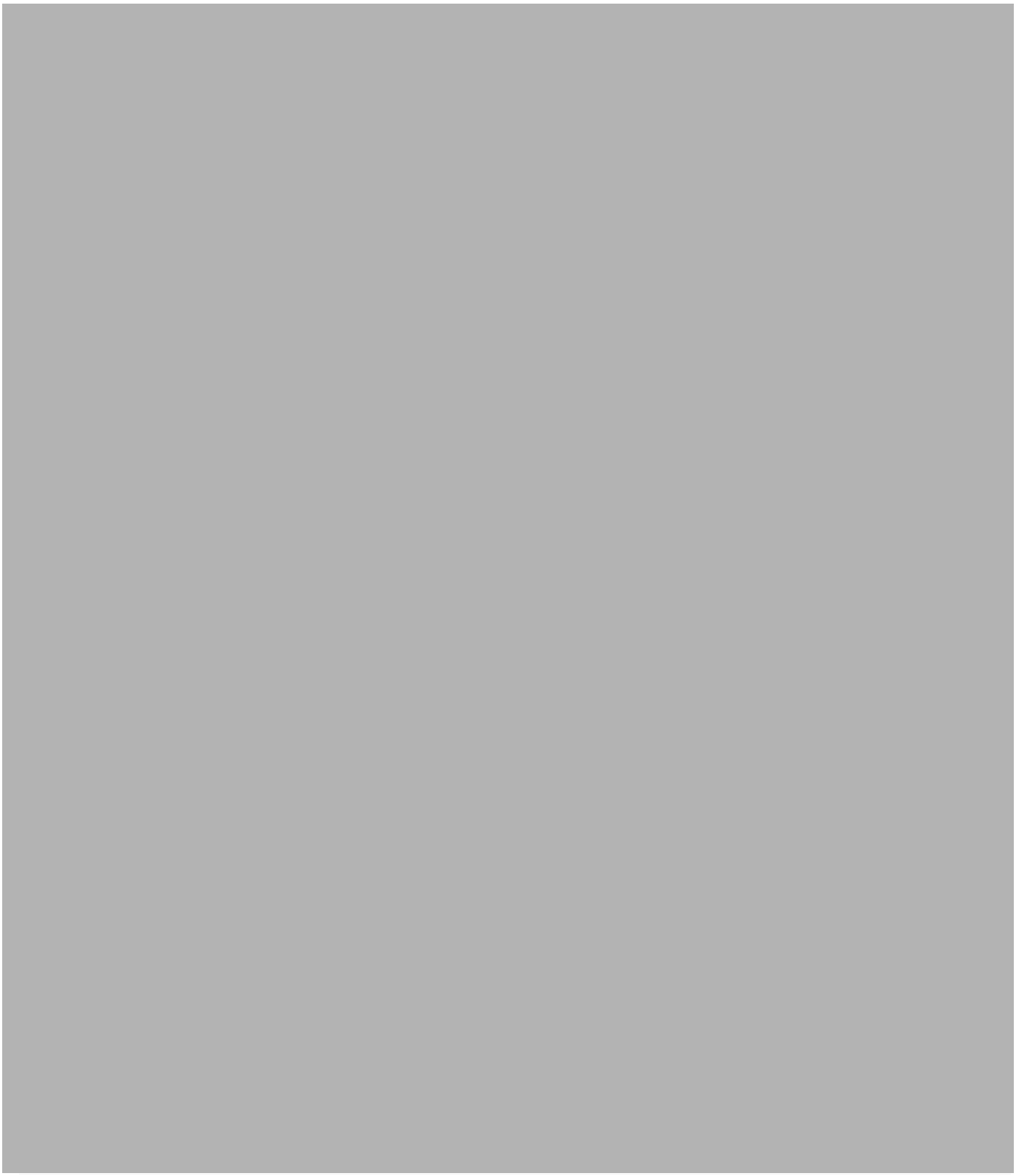
RESOURCE A: Mongolia and Ulaanbaatar

RESOURCE B: Air pollution in Ulaanbaatar



Air pollution in Bayankhoshuu, one of Ulaanbaatar's most heavily polluted neighbourhoods.

RESOURCE C: Air quality Ulaanbaatar

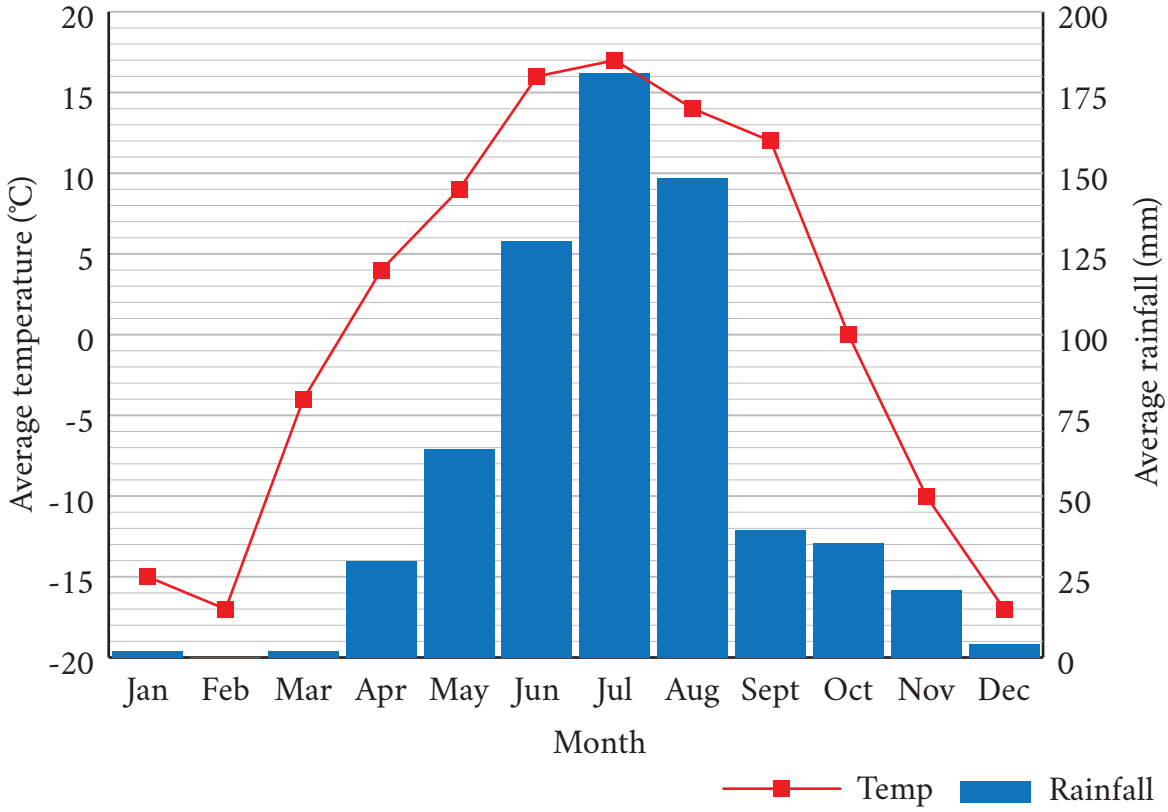


RESOURCE D: Mongolia's population

RESOURCE E: The coldest capital in the world

RESOURCE F: Ulaanbaatar's climate

RESOURCE G: Ulaanbaatar climate graph



RESOURCE H: Pollution and the ger districts

The population of Ulaanbaatar has almost tripled since 1990, to 1.5 million, because of rural–urban migration.

Around one fifth of Mongolia's entire population has relocated to the capital city.

A mixture of social and environmental factors have made the traditional nomadic life more difficult, and better schools, hospitals, and job prospects have drawn former herders to the city.

A ger district

Rural–urban migration has led to an increase in the number of informal settlements, called ger districts, in the north of the city.

Ger districts are home to more than 60% of Ulaanbaatar's population.

Of the tens of thousands of gers and self-built houses, almost all are lacking central heating, running water, and plumbing.

Dug out of the ground in the city's Nalaikh area, coal is very cheap. There is no affordable alternative in terms of clean fuel.

Gers are heated with traditional stoves, which stand in the centre of the structure and are connected to a chimney that passes up through the roof.

Inside a ger

The stoves can burn coal, wood, and dung, but during the winter, when temperatures can drop to −40 °C, coal is used because it burns longer than other fuels.

The coal burned is not washed or processed in any way. It produces large amounts of particulate matter as well as sulfur dioxide, carbon monoxide, and nitrogen oxide.

In the winter months, over 600 000 tonnes of raw coal are burned for heating in the city's approximately 200 000 gers, accounting for about 80% of Ulaanbaatar's winter pollution.

RESOURCE I: Air quality in Mongolia vs Ulaanbaatar

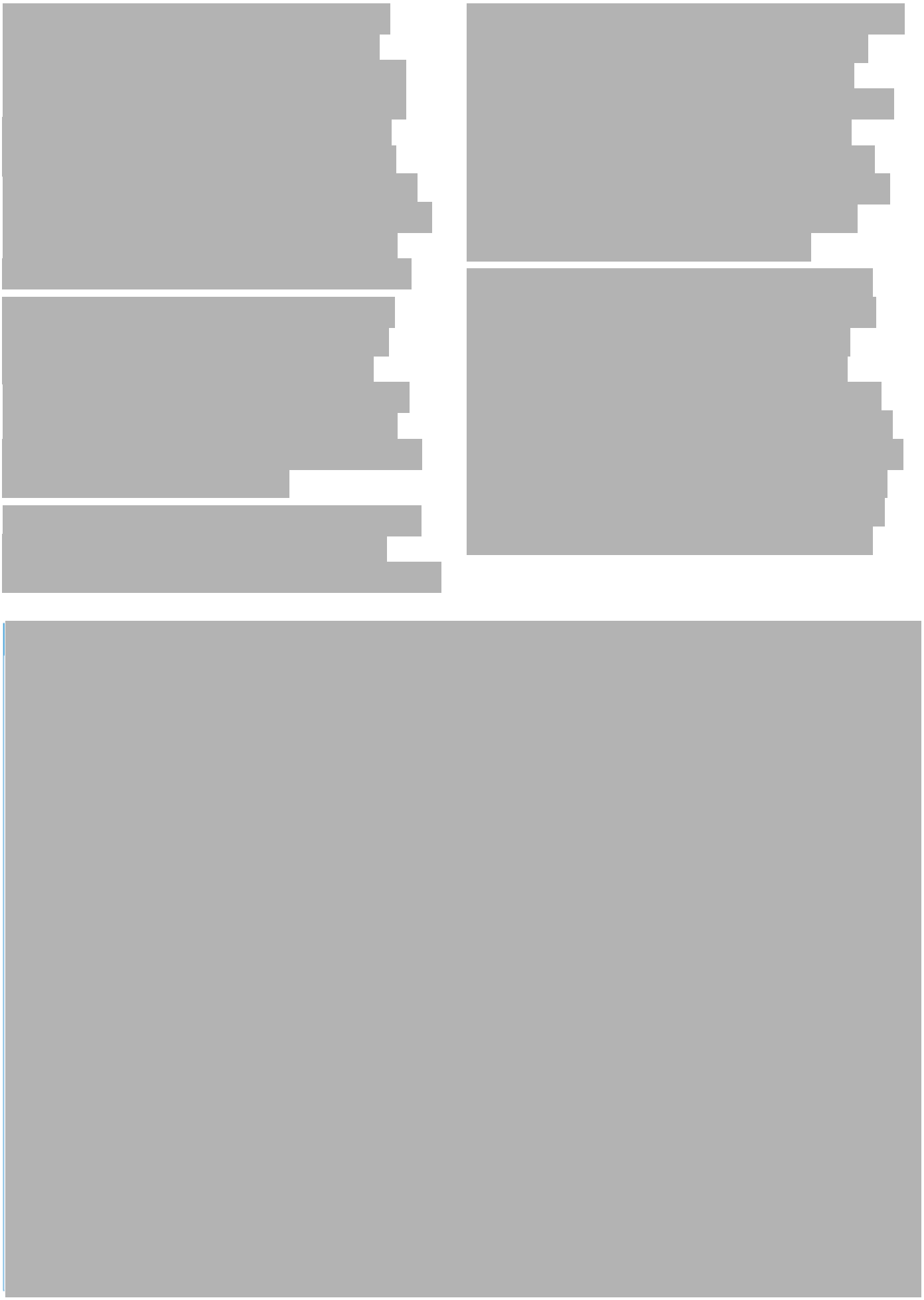
Air pollution measured by PM2.5 mean annual exposure (micrograms per cubic metre)

	New Zealand	United Kingdom	Mongolia	Ulaanbaatar*
2010	7.1	12.3	43.3	60
2011	7.4	12.8	45.3	141
2012	6.8	11.8	42.6	130
2013	6.7	11.6	42.3	102
2014	6.3	10.8	39.2	98
2015	6.3	10.7	42.5	69
2016	5.9	10.5	38.2	66.5
2017	5.9	10.4	40.1	66.5

*2016 and 2017 figures are estimates.

RESOURCE J: 'I want to go back home'

RESOURCE K: Mongolian government tackles air pollution in Ulaanbaatar by legislation



RESOURCE L: Better air quality for Ulaanbaatar begins in ger districts

RESOURCE M: Housing policy changes needed

Acknowledgements

Material from the following sources has been adapted for use in this examination:

Resource A

Text: https://www.cia.gov/library/publications/resources/the-world-factbook/geos/mg.html
https://en.wikipedia.org/wiki/Mongolia

Image: https://commons.wikimedia.org/w/index.php?curid=389412

Resource B

Text: https://www.who.int/bulletin/volumes/97/2/19-020219/en/
https://www.unicef.org/eap/sites/unicef.org.eap/files/press-releases/eap-media-Mongolia_air_pollution_crisis_ENG.pdf

Image: https://www.nationalgeographic.com/environment/2019/03/mongolia-air-pollution/

Resource C

https://www.nationalgeographic.com/environment/2019/03/mongolia-air-pollution/

Resource D

https://www.populationpyramid.net/mongolia/2019/

Resource E

Text: https://en.wikipedia.org/wiki/Ulaanbaatar
https://www.theguardian.com/world/2018/sep/24/pollution-pushes-mongolias-herders-to-reconsider-city-life

Resource F

Text: https://en.wikipedia.org/wiki/Ulaanbaatar

Resource G

Data: https://www.worldweatheronline.com/ulaanbaatar-weather-averages/ulaanbaatar/mn.aspx

Resource H

Image 1: http://blogs.reuters.com/photographers-blog/2013/08/07/inside-mongolias-ger-district/

Image 2: https://livingnomads.com/2017/06/mongolia-travel-blog/mongolia-yurt-334/

Text: https://www.who.int/bulletin/volumes/97/2/19-020219/en/
https://time.com/longform/ulan-bator-mongolia-most-polluted-capital/

Resource I

Data (Ulaanbaatar):
https://iopscience.iop.org/article/10.1088/1755-1315/67/1/012029/pdf

Data (Mongolia, NZ, UK):
https://www.indexmundi.com/facts/indicators/EN.ATM.PM25.MC.M3/rankings

Resource J

Text and images:
https://www.theguardian.com/world/2018/sep/24/pollution-pushes-mongolias-herders-to-reconsider-city-life

Resource K

Text and images:
https://breathelife2030.org/news/mongolia-tackles-air-pollution-ulaanbaatar-legislation-example/
https://www.unicef.org/eap/sites/unicef.org.eap/files/press-releases/eap-media-Mongolia_air_pollution_crisis_ENG.pdf

Resource L

Text and images:
https://www.worldbank.org/en/news/feature/2018/06/26/better-air-quality-in-ulaanbaatar-begins-in-ger-areas

Resource M

https://www.who.int/bulletin/volumes/97/2/19-020219/en/