

Case study: Rio de Janeiro

Lesson Map: <http://esriaustralia.com.au/education/SpatialActivity66>

Engage

What physical features have shaped Rio's urbanisation? How has this impacted on population growth and distribution?

- ➔ Click on the URL above to open the Story Map (with built-in interactive maps). This StoryMap explores the challenges facing the megacity of Rio de Janeiro and the solutions that have been presented to combat these challenges.
- ➔ Scroll down to the section titled 'Where is Rio de Janeiro?' Read the information and take notes if required. Explore the map according to the instructions on the Story Map in order to answer the question.
- ? Describe the natural and man-made physical features that have shaped Rio de Janeiro's urban development. *[Natural features that have impacted on Rio's urban development include forested areas, mountainous terrain, lakes and coastlines. Man-made features that have impacted upon the urbanisation of Rio appear to include agricultural land, favelas built up on the sides of mountainous terrain and high-density urbanisation across the area leaving a distinct lack of green spaces (excluding the forested, mountainous terrain).]*
- ➔ Scroll down to the section titled 'Population insights: density'. Read the information and take notes if required.
- ➔ Scroll down to the section titled 'Population insights: growth and distribution'. Read the information and take notes if required.
- ? What does the map display? *[The map displays the spatial distribution of Rio's senior population.]*
- ? Explain the spatial distribution of retirees or elderly people in the city and its wider boundaries. *[As evident on the map, there are plenty of areas beyond the inner city where 10% of the population are in the senior demographic. However, Rio's inner-city area has a high density of senior citizens. This can be explained as the beaches and seascapes make it a popular place of retirement.]*

Download student worksheet [here](#).

Time

45 minutes

Activity

Investigate Rio de Janeiro's response to environmental, economic and social challenges.

Learning Outcome

Students will be able to:

- Identify physical features that have shaped Rio's urbanisation and population distribution
- Understand the key environmental, economic and social challenges that Jakarta faces
- Examine and analyse Jakarta's proposed solutions to overcoming the challenges it faces

ACARA Curriculum Link

[Year 11 Geography | Planning sustainable places: Managing challenges facing a megacity](#)

Teacher Feedback:

To share your feedback on this, or any Spatial Activity, please contact education@esriaustralia.com.au

Acknowledgements:

See 'References' section in Story Map.

→ Scroll down to the section titled 'Population insights: distribution of youth'. Read the information and take notes if required.

? Why might these locations be of value for younger demographics? *[Whilst youth are distributed across Rio's wider city area, a heavy cluster of youth resides in Rio's inner-city areas. These areas are likely of value to young people as they provide places of learning (universities etc.), a higher concentration of jobs and a more enviable lifestyle, being close to the main tourist, beach and nightlife districts.]*

Explore

Challenges facing Rio: public transport systems, traffic congestion and ageing infrastructure.

→ Scroll down the next section of the Story Map, titled 'Challenges facing the city'. Read the text. Take notes if required. Stop to discuss as necessary.

→ Scroll down the next section of the Story Map, titled 'Inadequate public transportation systems and traffic congestion'. Read the text. Take notes if required. Stop to discuss as necessary.

? Consider the fact that Rio's population is going to increase by 1.2 million people between 2018 to 2030. Does the new BRT line, which can move approximately 450,000 people a day, contribute significantly to the improvement of Rio's road problems? *[The new BRT line will contribute significantly in providing an improvement to Rio's traffic congestion. This new line alone will be able to service up to 33% of the additional 1.2 million people living in Rio by 2030. However, the BRT line does not solve the issue by itself; Rio's transportation department will need to continue to plan for the future and its effectiveness will also depend on public uptake of these services.]*

→ Scroll down the next section of the Story Map, titled 'Ageing infrastructure'. Read the text. Take notes if required. Stop to discuss as necessary.

? The Arbored-Squares project aims to provide green spaces that are accessible for all residents within 15 minutes walking distance of their home. Compare this to your current place of residence. How does it compare? *[Student responses will vary. E.g. Although this project will look to improve the livability of the area for residents it is evidence of poor urban planning. It is reactive rather than proactive. In contrast to Rio's Arbored-Squares project, I can access 2 parks within a 2-minute walk from my house, and a further 3 or 4 parks within a 5-minute walk from my house.]*

Explain

Challenges facing Rio: rainfall flooding and landslides, sea level rise, water scarcity and use

- Continue to the next section titled 'Rainfall flooding and landslides.' Read the text. Take notes if required. Stop to discuss as necessary.
- ? Explain the relationship between height of terrain and land susceptible to landslides. *[The more mountainous regions in Rio's city limits are more susceptible to landslides. Certain areas of the coast are also more susceptible to the effects of landslides.]*
- ? What demographics of the population do you think are most susceptible to these landslides? Why? *[The demographic most susceptible to landslides are the poorer residents in Rio, who reside in favelas that have been constructed on the sides of these mountains. Not only are the mountains more susceptible to landslides, but the favelas have been poorly designed and constructed and therefore, are more at risk of being damaged or washed away in the event of a landslide.]*
- Continue to the next section titled 'Sea level rise'. Read the text. Take notes if required. Stop to discuss as necessary.
- ? Other than threatening infrastructure and freshwater systems, what else does sea level rise threaten? *[Sea level rise threatens Rio's tourism industry. It's iconic coastlines and popular beaches may be affected, which will result in tourists travelling elsewhere.]*
- Continue to the next section titled 'Water scarcity and water use.' Read the text. Take notes if required. Stop to discuss as necessary.

Extend

Challenges in Rio: epidemics and pandemics

- Continue to the next section titled 'Epidemics and pandemics'. Read the text. Take notes if required. Stop to discuss as necessary.
- View the map and legend to explore the mosquito's distribution.

Next Steps:

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