

**2016 specification**  
first exams in 2018



# **GCSE Edexcel A Case Studies with Exam Prep**

## **Topic 4: Changing Cities**

**Nairobi, Kenya (LHD)**

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## Teacher's Introduction

This resource has been developed to provide case studies and exam preparation material to support the GCSE Edexcel A specification (1GA0) **Topic 4: Changing Cities**.

This detailed case study is on **Nairobi, Kenya** representing a country with **low human development** based on the Human Development Index (HDI) classifications.

The case study includes a main content section which can be used as part of a lesson plan or distributed to students for self-guided research; a selection of ICT interactive links to further students' research around each topic and a set of Springboard Images and discussion questions (also available as a PPT file accessible by digital download) which makes a fantastic starter activity.

*A webpage containing all the links listed in this resource is conveniently provided on ZigZag Education's website at [zzed.uk/8822](http://zzed.uk/8822)*



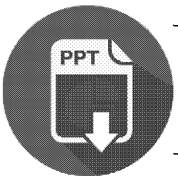
*You may find this helpful for accessing the websites rather than typing in each URL.*

The exam preparation section which follows the case study contains a summary table, bringing together all of the key facts and figures relating to the case study; rapid-fire revision questions (with answers) to help recall and retention of the main points; and an exam-style question and mark scheme, written in the style of the Edexcel A sample material, so that students can practice answering questions relating to case studies and applying relevant knowledge in their answers.

The resource may be used as a source of reference for the required case studies for individual study, or for group work leading to discussion or debate. Subheadings in the information sections are designed to enable tabulated comparisons of social, economic and environmental impacts.

Two other detailed case studies are available for this topic area representing countries with different levels of development:

- Bristol, UK (HHD)
- São Paulo, Brazil (HMHD)



**A PowerPoint presentation containing the Springboard Images starter activity to accompany this resource is available as a free digital download. Just register for free updates using the link below to download all available content for your school or purchasing site.**

*November 2018*

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## Part 1: Case Study

### Background

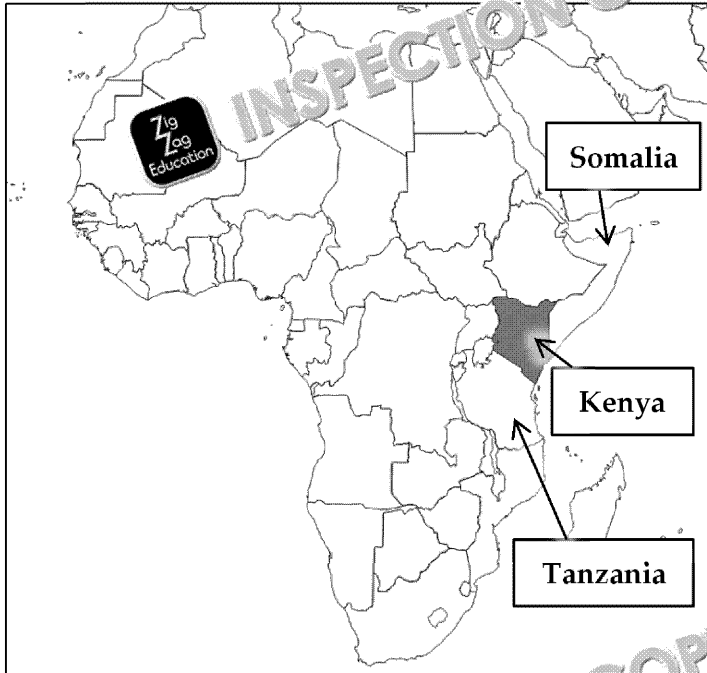


Figure 1: Map showing the location of Kenya in Africa

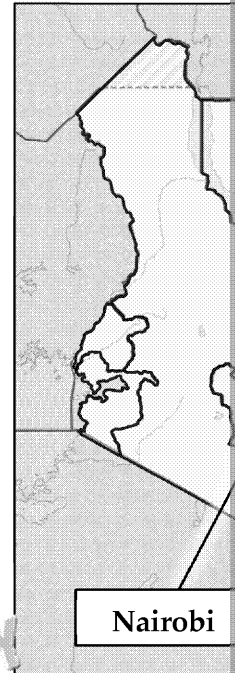


Figure 2: Map showing the location of Nairobi in Kenya

Nairobi is the capital city of Kenya, a coastal country in east Africa. With a population of over 4 million people, Nairobi is a major city in both Kenya and Africa.

It is in the central area of the country. Kenya itself is bordered to the east by Ethiopia, to the north-east by South Sudan, to the west by Uganda, and to the south by Tanzania.

Nairobi is named after the Nairobi River which flows through the area. It is in a mountainous region, and being at high **altitude** – 1,670 m above sea level – means that the air temperature is cooler here than in many parts of Kenya. Before settlement, the area was marshland. While the ready supply of water was vital for the growing city, the land itself has been hard to build upon, and standing water has meant many outbreaks of **malaria**.

#### Did you know...

The name 'Nairobi' comes from the Maasai name for the site: 'Enkare Nyirobi', which means 'cool waters'.

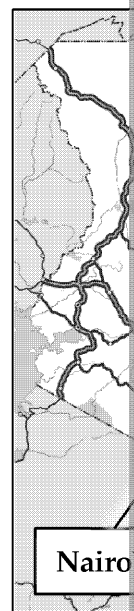


Figure 3: Map showing the location of Nairobi in Kenya

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## Connectivity

When it was founded, Nairobi was a key route between the coastal port of Mombasa and the inland African areas. Today, Nairobi is still very well connected. It has one international airport, Jomo Kenyatta – and two domestic airports. Rail connections are outdated, but the road network is maintained, and connects the city to the coast and neighbouring countries (Tanzania, Uganda, Rwanda, Ethiopia and South Sudan).

## Significance

Nairobi is the political and cultural centre of Kenya, as this was where the Mau Mau uprising took place (fuelled by the Mau Mau uprising), and where the government is based. It is also home to many cultural institutions like The Kenya National Theatre and the National Museum of Kenya.

It is the richest area in Kenya, and people living here are more likely to have access to services than in other regions. For example, in Nairobi, less than 20% of households lack access to electricity, whereas in the coastal areas of Kenya over 80% of people lack access to electricity.

Nairobi is a significant regional capital in Africa. It is the base of operation for many multinational companies (TNCs), such as General Electric, Google, IBM and Coca-Cola, and is the headquarters of the 'United Nations' (UN) African headquarters. This reflects its economic importance and its largest and busiest stock exchanges in Africa.

## Growth

### History

The city itself is relatively young, being founded in 1899 as a rail depot by the British. It was under colonial rule. The only structures built were for the British railway. African and Asian labourers had to build their own houses around the outskirts of the city.

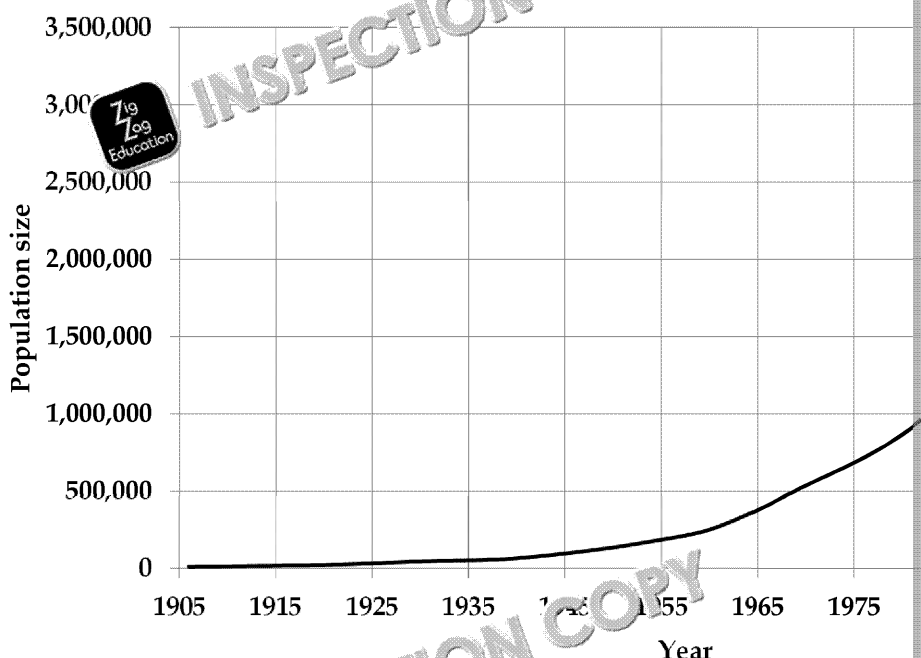


Figure 4: Population growth in Nairobi from 1906 to 2009

Growth in Nairobi really took off in the 1960s, as the first democratic elections were held in 1961, and the country became independent in 1963. The current growth rate is high. The population was 350,000 in 1962, but had swollen to 3,138,368 in 2009 (see Figure 4). The population lived in Nairobi itself in 2005.

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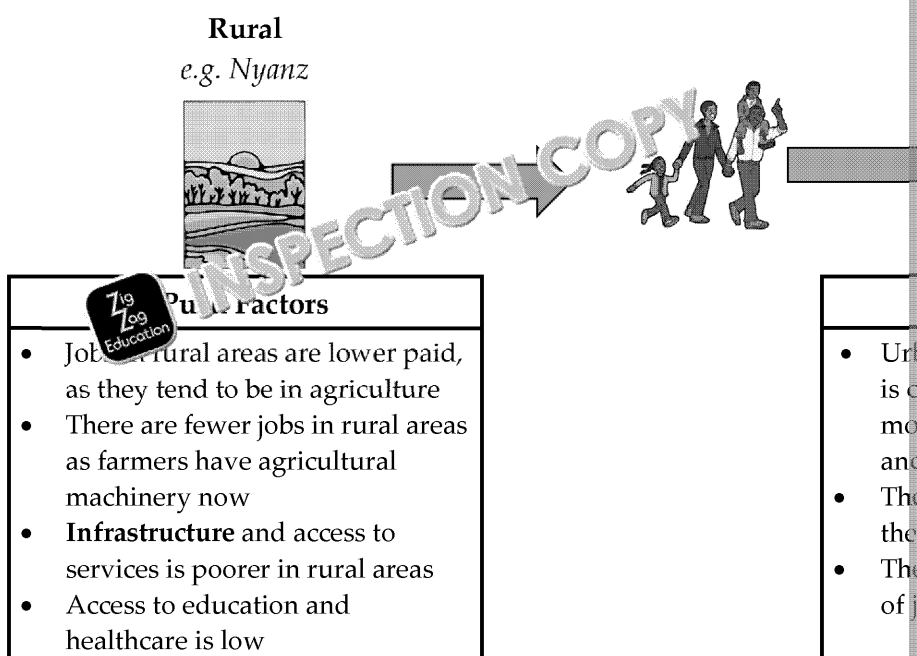
### Causes of growth

One of the main causes of Nairobi's growth in population is **natural increase**. Birth rates are very high, partly due to low **contraception** rates, low uptake on educational and cultural traditions which value large families. However, recently birth rates have fallen, which reflect the increasing **development** and changing culture in Kenya – women are more likely to have children if they are not working in agriculture, women are more likely to have access to contraception is increasing.

#### – Internal migration

The poor development prospects in the rest of Kenya are a contributing factor to internal migration. People move from the rural areas to the city in search of better or more secure employment and a higher standard of living. The government focus their economic development programmes on urban areas in Kenya, meaning that large cities like Nairobi have more prospects than rural areas.

The recent growth of Nairobi has in part been due to changing migration policies. Before 1963, men were allowed to migrate in Kenya, meaning that whole families could migrate in search of better lives, and so men went to cities to work temporarily and then return home. After 1963, women and children were allowed to migrate too, meaning that more people could move to cities.



#### – International migration

Nairobi is a migration destination for many countries in Africa, including: Somalia, Ethiopia, Sudan, Rwanda and Uganda. This is partly due to the great wealth in Nairobi, and also the economic success of Kenya and the political stability of the Kenyan government. People come for economic reasons, but also to flee conflict and persecution in their own countries.

A sizeable minority of Nairobi residents are from Europe – these are usually live in segregated areas, and send their children to international schools.

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Nairobi also finds itself the source of many international migrants, as Kenyans move to other countries in search of high wages or more opportunities abroad. This phenomenon is called **brain drain**, and has a negative impact on the economy.

#### Impacts of migration

##### – Age structure

Most people who migrate to Nairobi from rural areas are young people, looking to earn money to support parents in villages, or to continue their education, or start families in an area with a better quality of life. This means Nairobi has a youthful population (see Figure 5) and does much of Kenya.

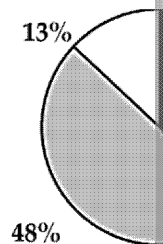


Figure 5

##### – Housing

Migration puts extreme pressure on housing in Nairobi, both the availability of housing and the prices of housing. Rising property in the city centre or suburbs, driving up prices and meaning less housing for lower-income residents. Additionally, the migrants who come to Nairobi from other parts of Kenya also need houses – it's estimated that 100,000 move to the city every year. There are not enough houses to meet this demand, and especially not enough for the poor. This causes people to have to live in informal settlements around the city.

##### – Ethnicity

Many people who live in Kenya belong not only to the country, but to different tribes. Nairobi, as the capital city, contains people from all around the country. For the most part this is a peaceful coexistence, but the people from the Kikuyu tribe and the history of British colonists forcing land from other tribes sometimes causes ethnic tension and violence in the city.

##### – Services

Increasing rural-urban migration has put pressure on the city authorities to provide services to residents. This is due to poor planning by the city government, but also a lack of money. Many people are forced to live in squatter settlements with no access to clean water, sanitation, or electricity. Hospitals in the city report running out of medicines, and schools cannot properly teach classes as there are too many students in them.

##### – Urban sprawl

Increasing rural-urban migration has also caused the city to grow, as the city's population grows. The growth of the city has caused tensions with Maasai peoples to the south, as the city encroaches on their land.



Figure 6: Map showing Nairobi in 2015

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## Ways of life in the city

Nairobi is like many other large cities, in that the middle and upper classes consumption, spending their **disposable income** in shopping malls and cinema music, coming from America in the 1990s, is influential in both fashion and *an economist at the Institute for Economic Affairs, says growth in the leisure sector demand from a growing middle class.'*

There are many different ethnic groups living in Nairobi, which is reflective of the makeup of Kenya as a whole. Some of the major ethnic groups are the Kikuyu (the dominant group), the Luo, the Kalenjin, the Luhya, the Kisumu, the Kamba peoples, as well as people from other African, European and Asian descent.

This mix of ethnic groups combined with Kenya's colonial history and internal conflict, and the massive influx of people from rural areas, has contributed to a 'melting-pot' culture in the city.

## Challenges

### Housing

The rapidly expanding population means that there is a drastic housing shortage. Although more houses are being built by the city authorities, this is often not low-cost housing. People arriving from rural areas, who are forced to live in **informal housing** in the city.

In Nairobi, there are 2.5 million people living in 200 different **squatter settlements**. The population of the city living on only 6% of its land! Kibera is one of those settlements.

### Kibera



Figure 7 Location of Kibera ©2015 Google. Image: ©DigitalGlobe



Figure 8: A

Kibera has been called the biggest slum in Africa. Over 280,000 people live in the slum, but only 10% of them live on legal land. Their housing situation is dire, and there is no power, no clean water, and no sanitation in many of these shacks, and people must pay £6 a month to a landlord.

<b>Housing</b>	Up to eight people can live in a small 12 ft × 12 ft shack, built with mud and brick.
<b>Electricity</b>	It costs around £5 to hook a shack up with electricity, an expensive cost for many. Although a UN scheme is working on providing electricity, current power supply is unreliable.
<b>Clean water</b>	While residents used to get their water from the polluted Nairobi River, they now get it from water pipes in the area. It costs around two pence for 20 litres of water.
<b>Sewerage</b>	No flushing toilets or pit-latrines, which must be emptied by hand. Waste is often dumped in the river. There is one latrine for 50 shacks.
<b>Health</b>	There is no public health care provision and residents cannot afford to pay for private care. Health schemes are run by national and international charities.
<b>Unemployment</b>	Half of the people in Kibera don't work, despite living near to one of the city's major industrial areas.
<b>Crime</b>	There are many sources of conflict in Kibera; between those who own land and those who don't, between landlords and tenants, and between different ethnic groups. Crime is a major problem in Kibera, and contributes to high crime rates.

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## Services and infrastructure

### – Health care

Health care is improving all over Kenya, thanks to increased spending. However, health care is improving much slower in urban areas like Nairobi than rural areas. This is because of the large populations that live in squatter settlements in Nairobi.

Some diseases that affect Nairobi are:

- HIV/AIDS – Nairobi has a higher rate of infection than the country as there are more people living in a smaller area.
- Malaria and dengue fever are a big problem in the poorer areas of the city, especially around the rivers. Both of these diseases are spread by mosquitoes.

Health care is much more of an issue for those living in squatter settlements. They may not have money to pay for medicines and treatment, but they are more likely to be affected by environmental hazards like unclean water.

### – Education

Although primary school education is free, many children in Nairobi do not go to school. There may be other fees, such as uniform, transport and books, which children can't afford. Some children may be forced to stay at home to help out with household chores or to work to earn money so the family can buy food. Secondary schools are only for the wealthiest of families, and there are no secondary schools in squatter settlements. If children do not go to school, they can't gain skills that will help them get a well-paying job. They will be trapped in a **cycle of poverty**.

The lack of education provision is caused by a lack of funding by the government. Many schools lack facilities and teachers. High-income families often send their children to private schools, as these have more resources.

### – Water and sanitation

One of Nairobi's most enduring problems has been **infrastructure**. Lack of clean water supply and poor drainage solutions contribute to problems with pollution, **contamination** and disease. While there are pipes for water in some areas (see Kibera above), many people in Nairobi buy bottled water from kiosk sellers, which is expensive. There are also problems with leakage and illegal tapping of water pipes: 40% of all water produced in Nairobi is wasted in this way. The regions where Nairobi sources its water from are suffering from **water scarcity**, and to have such high levels of wastage, combined with poor maintenance and metering, is dangerous for the environment and long-term prospects.

The sewerage network in Nairobi is patchy. In the most affluent areas, sewerage systems exist, while in most of the city there are just open channels. In some areas there are no sewers at all (see Kibera above).

### – Energy

Energy in Nairobi is unreliable and in short supply. Only 50% of households have electricity. The majority of Nairobi's electricity is generated from **geothermal energy**. In times of **drought**, the dams may run dry, meaning energy shortages, and must import more oil to generate electricity, which is expensive. **Blackouts** are also caused by failures in the electricity network, which are often due to old infrastructure.

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To cope with the energy issues, here's what people do:

- High-income families and most businesses have back-up **generators** that run on petrol. These are expensive, and contribute to air pollution.
- Low-income families charge their phones at public stations, cook on stoves that burn wood or charcoal, and use kerosene (a type of petrol) lamps for light. The stoves cause poor air quality in home, and kerosene lamps can explode unexpectedly.

### Crime and

Crime is a problem in Nairobi, including hijacking of vehicles, theft and gang violence due to the high levels of **poverty** and deprivation: often people feel that they engage in crime in order to earn a living. This is exacerbated by the fact that the unemployment rate is very high in Nairobi: over 40% of 15 to 24 year olds don't have a job. Development Goals have demonstrated the need for education and training in order to escape poverty and foster development, many young people cannot afford schools, and without a job, young people lose hope. This is especially important because by 2030 it is predicted that two-thirds of the population of Nairobi will be less than 25 years of age.

Over one million people in Nairobi work in the **informal sector**, and women work informally more than men. The number of informal workers is growing, in part it forces those already living in cities to make a living outside the **formal economy** who may arrive to the city from rural areas without sufficient skills or connections to the economy. Children are often employed in the informal sector, which disrupts their education.

### Jua Kali

Over 500,000 of the informal workers in Nairobi are Jua Kali, skilled craftspeople who provide a range of services to residents in the city. Jua Kali may make products from waste, repair items, and provide other services. They are respected for their creativity, and many aspects of Nairobi life would not function without them. However, their work is insecure, as they are not recognised by the government. Their informal status also means less protection for the consumer – Jua Kali is good, but breaking once the customer walks away!

### Did you know?

Jua Kali means 'the day after tomorrow' to sellers who work in the informal sector.

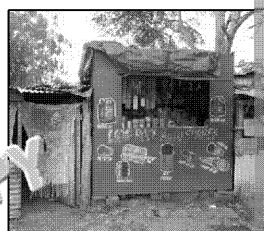
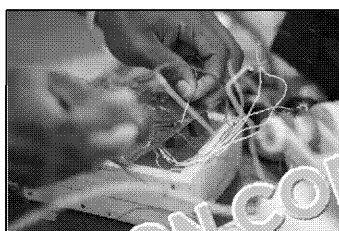


Fig. 1.1 Images of Jua Kali crafts, services and stalls

Some Jua Kali workers are recognised by the Nairobi authorities, and have permanent stalls. However, many stalls are not recognised, and they can experience being asked to move away from areas where they work, which results in the service – perhaps selling lunch to office workers – not being provided. Better management and integration of the Jua Kali by the city authorities would help to secure their temporary land use rights.

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For those who do work in formal industries in Nairobi, such as textile factories, the work is often tough. Strict laws mean that these workers may find it hard to campaign for better conditions, as they are often not allowed by the city government.

### Transport issues

**Congestion** in Nairobi is a significant problem, as the transport infrastructure network cannot keep up with the growth of people and traffic.

In recent years the government has attempted to combat the congestion by building new roads around the city, but crucially there has been no increased capacity on existing busy roads, and there has been insufficient investment in public transport.

Public transport in the city currently does not have good coverage, and one third of commuters use private minibuses called Matatus. Matatus are often elaborately decorated by their owners, but have a poor record for safety.

#### Key facts

- The number of vehicles in Nairobi doubles every six years.
- It is estimated that there is a loss of over £200 million each year in working hours lost, fuel used up and pollution emitted.
- In 2015 there was a traffic jam in Nairobi that lasted for 30 miles!



Figure 13: Congestion in Nairobi

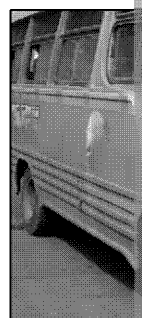


Figure 14: A Matatu in Nairobi

### Environmental issues

#### Water pollution

The lack of proper sanitation services has meant that the Nairobi River has become a major problem for the city's history. Human excrement and waste from the river, which mixes with industrial waste due to Kenya's low environmental standards, means the water in the river is so polluted it can support no life, and is a danger to people in the past have obtained their water from it. A lack of river management means that when the river floods, the pollution is spread through many of the squatter settlements.

#### Air pollution

Air pollution in Nairobi is a real issue. The amount of particulates in the air is double the WHO guidelines, and the amount of cancer-causing particles is nearly ten times higher than WHO guidelines. Such poor air quality has negative health impacts and can cause lung and breathing conditions, heart disease, and cancer. Most at risk are the children and the many people who work on Nairobi's streets for a living.

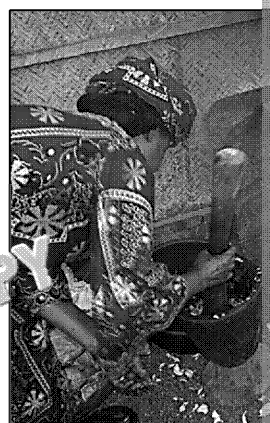


Figure 14: Air pollution in Nairobi

Although Kenya has made steps to combat the air pollution by banning diesel generators, it still has a long way to go in combatting air pollution: partly because they can't be sure of the scale of the problem, and partly because of the high cost of air pollution.

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In Nairobi, it is not only emissions from cars (most of which are second-hand) but also from diesel generators used when electricity runs out, diesel lamps, and homes to cook and eat. These stoves use cheap fuels like wood and charcoal of poor quality. They are especially common in lower-income areas, meaning emissions are heavily linked with poverty.

– Waste disposal

The rapid population growth in Nairobi means that the city council does not have the equipment and expert staff to deal with the waste management issues. Waste is collected in any way possible, and most residents have to pay for private refuse collectors. One dumpsite in the city, Dandora, and it's rapidly filling up, meaning many illegal dumping sites around the city. Those living close to dumping sites are poor residents, and they can experience health issues as a result of the gases. 50% of the waste generated is organic matter, which could easily be composted.

### Sustainable Management

One area of sustainable management in which Nairobi excels is informal recycling. People scavenge in waste tips for materials which may be re-sold. The Jua Kali crafters are re-purposing of waste material and selling it to tourists. While those who are marginalised by the government, recent aid projects have tried to increase their income. *Worldbike* is supporting recycling efforts by providing local people with motorbikes to collect waste from people's homes: meaning it can be sorted and separated and earning the collectors extra income. The rubbish collectors charge only a small fee, and they can invest in repairing the bikes and publicising their services. This provides a better alternative to government services, which are often unaffordable for those living in informal settlements.

#### Urban Greenspace

The city has many well-maintained green spaces, such as the Nairobi National Park. Many of these only exist due to the work of individual people, such as Wangari Maathai, who won the Nobel Peace Prize in 2004 for her work protecting Uhuru Park from urban expansion. Uhuru means 'freedom' in Swahili. She did this through promoting tree planting schemes, and empowering local women to take ownership of the forest.

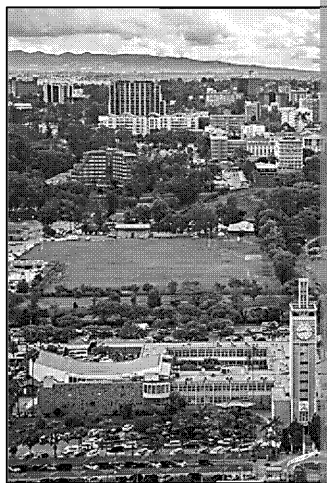


Figure 15: Nairobi National Park

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## Fact Table

Population	3.36 million people
Predicted population by 2025	Five million people
Population density	1,500 people per square kilometre
Growth rate	4.1%
Access to electricity in Kibera	20%
Birth rate	32 children per 1,000 people
Infant mortality	49.7 deaths per 1,000 live births
Child mortality	93 deaths per 1,000 live births
Malaria prevalence	37.7% of the population infected with M
Poverty rate	22% of the city's population lived in ex
Illiteracy rate	7.8% for women and 5.8% for men (compared to 12% for men in the country as a whole)

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<b>Altitude</b>	Height of the land above sea level
<b>Birth rate</b>	A measure of the number of live births per 1,000 people per year (%)
<b>Blackout</b>	A common name for loss of power
<b>Brain drain</b>	Process where educated people from a developing country move to better paying work abroad
<b>Colonialism</b>	A process where a global power settles in and controls another country, making that land a colony and often forcing it to submit to the rule of the global power
<b>Congestion</b>	The slow-flowing of traffic, caused by a large amount of traffic exceeding transport capacity
<b>Contamination</b>	When clean safe land/objects are touched by pollutants
<b>Contraception</b>	Medicines and items that are used to prevent pregnancy and transmitted diseases
<b>Cycle of poverty</b>	Where many generations of a family are unable to escape poverty
<b>Democratic</b>	A system of government where ordinary people have a say in how it is run. Usually this involves voting to elect leaders
<b>Development</b>	A process that a country goes through which increases its standard of living for its inhabitants
<b>Drought</b>	A lack of water caused by low precipitation
<b>Fertility rate</b>	A measure of the number of live births per 1,000 women per year
<b>Formal economy</b>	Business activities and transactions that are officially recorded and regulated
<b>Generator</b>	Equipment that burns fuel (usually oil based) to make electricity
<b>Geothermal energy</b>	The use of heat generated by Earth, usually via steam turbines. This is used in tectonically active regions
<b>Hydroelectric power</b>	The production of power, e.g. electricity, through the use of falling water
<b>Informal economy</b>	Business activities and transactions that are not officially recorded or regulated
<b>Informal housing</b>	Areas of housing that are unregulated and may be built on land not intended for settlements or occupation of abandoned housing
<b>Infrastructure</b>	The services and structures needed for society to function
<b>Jua Kali</b>	Kenyan craftspeople
<b>Maasai</b>	Indigenous people (tribe) whose lands stretch across Kenya and northern Tanzania
<b>Malaria</b>	Disease spread by a species of mosquito in tropical and subtropical areas, potentially fatal
<b>Mau Mau</b>	A rebellion against the British colonial powers in Kenya, leading to independence in 1963. 'Mau Mau' was an informal name for the indigenous Kenyans who formed the Kenya Land and Freedom Army
<b>Migration</b>	The change in residence of an individual or group of people, either permanent or semi-permanent

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<b>Natural increase</b>	Birth rate is higher than death rate
<b>Pollution</b>	Particles emitted/released by human activity that can damage environments and human health
<b>Poverty</b>	A person living with a low income, with a poor quality of living. Often defined by living on under two USD a day
<b>Rail depot</b>	A station where cargo can be changed between trains, and repairs
<b>Rural-urban migration</b>	The movement of people from the countryside to cities as push and pull factors
<b>Sanitation</b>	Systems of managing and disposing of waste and excrements to protect human health
<b>Sewerage</b>	Pipes and system that take away sewage (human waste)
<b>Slum / Squatter settlement</b>	Urban area that is illegitimate; people have built houses illegally, few services and there may be overcrowding
<b>Stock Exchange</b>	A market for financial goods like shares and investments
<b>Sulfur</b>	A chemical that is dangerous to human health and the environment
<b>Trans-national Company</b>	A firm that has operations in more than one country, e.g. manufacturing in China, sales in Europe. Often make a lot of money, very powerful. Abbreviated to TNC
<b>United Nations</b>	An international body aimed towards world peace and international cooperation. It aims to promote development. Abbreviated to UN
<b>Water scarcity</b>	The area does not have an adequate and reliable supply of water
<b>WHO</b>	World Health Organization, a branch of the UN which deals with health issues
<b>Disposable income</b>	The 'take-home-pay' that a person receives after taxes have been paid
<b>Ethnicity</b>	A group that is connected by shared cultural characteristics like language or religion



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### Videos:

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Want to know about culture and immigration in Nairobi? Watch this video.
- 🖱 [https://www.youtube.com/watch?v=Ed5RE6l\\_EI](https://www.youtube.com/watch?v=Ed5RE6l_EI)  
A guided tour of the city.
- 🖱 <https://www.youtube.com/watch?v=KUid4Td4cCU>  
A case study from the World Bank on bringing electricity to squatter settlements.
- 🖱 <https://www.youtube.com/watch?v=NYWnq4p2OBY>  
An unusual pupil takes up the Kenyan Government's offer of free primary education.

### News Stories:

- 🖱 <http://www.bbc.co.uk/news/world-africa-33578890>  
A shopping mall in Nairobi reopens.
- 🖱 <http://www.theguardian.com/global-development/2015/jul/23/nairobi-dispensing-machines-infrastructure-twitter>  
The challenges of encouraging development in squatter settlements.
- 🖱 <http://www.theguardian.com/global-development/2014/oct/29/nairobi-land-rights>  
Women from informal settlements stand up for their rights.

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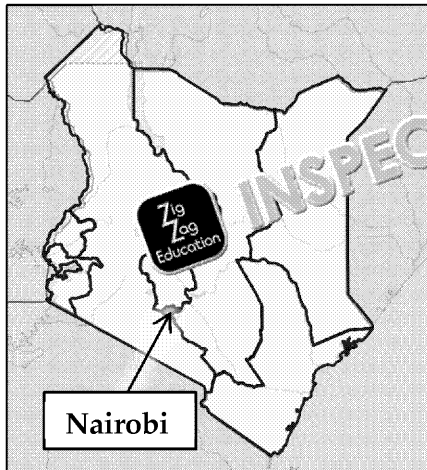
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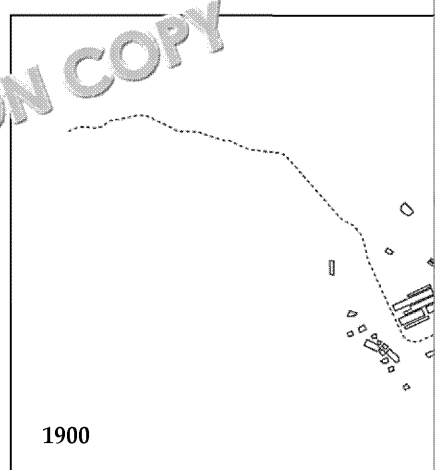




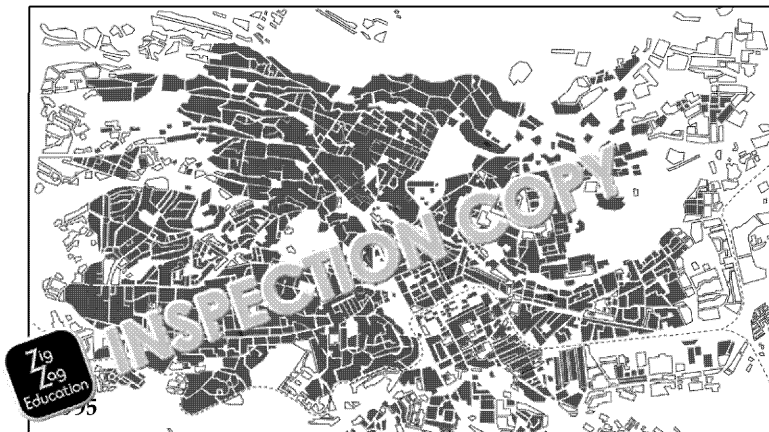
Growth



Location of Nairobi



Nairobi in 1900



Nairobi in 1995

1. Why is Nairobi situated where it is?
2. Describe how Nairobi has grown.
3. Why has Nairobi grown so fast?

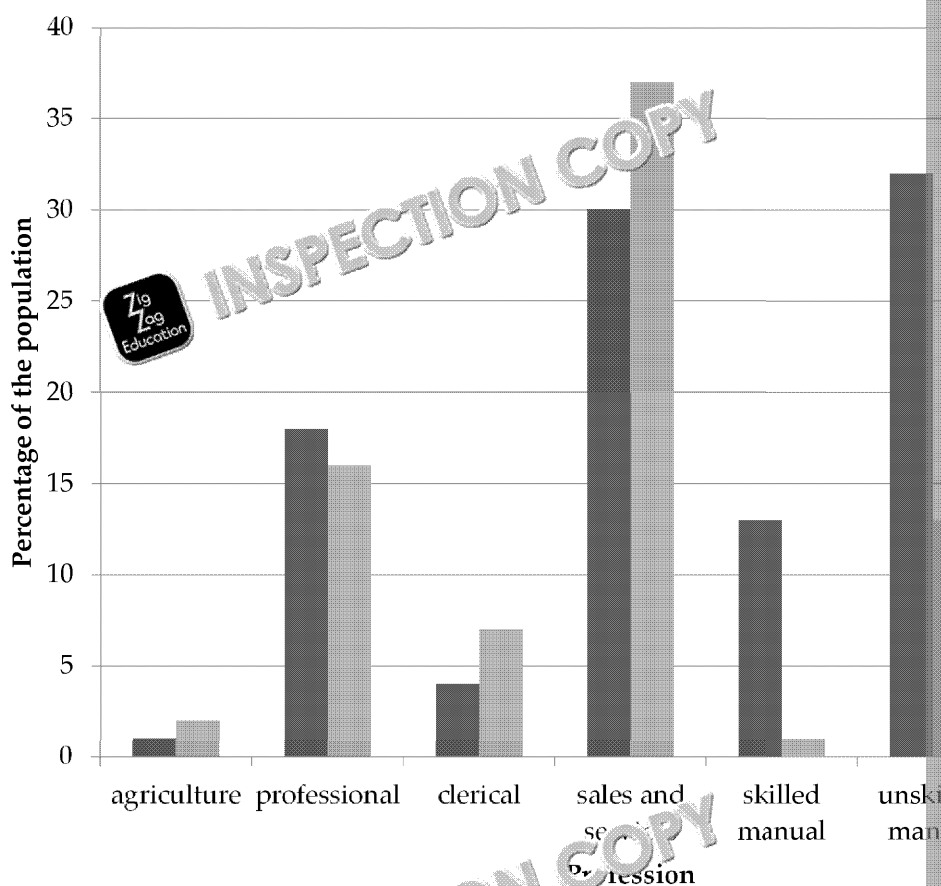
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## Opportunities



*Employment in Nairobi in 2004*

1. Describe what sort of professions men and women are likely to have in Nairobi.
2. Can you explain the differences between men and women?
3. Why might employment motivate people to move to Nairobi?

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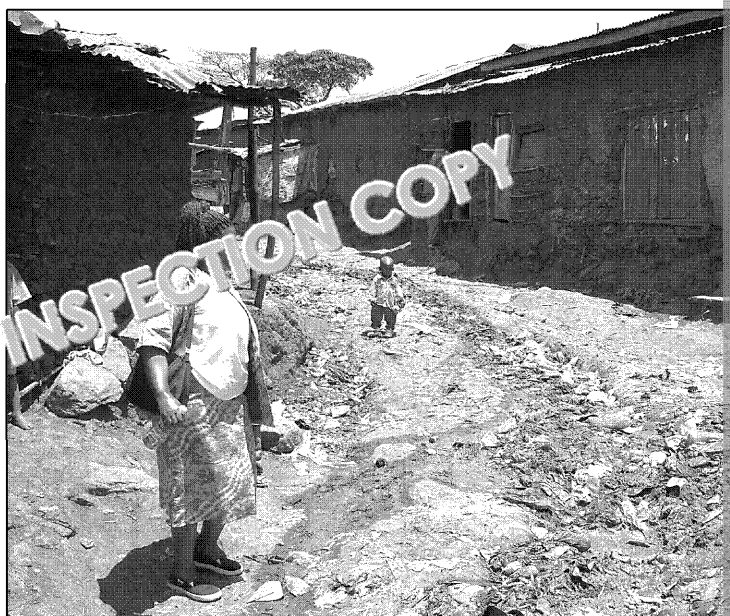
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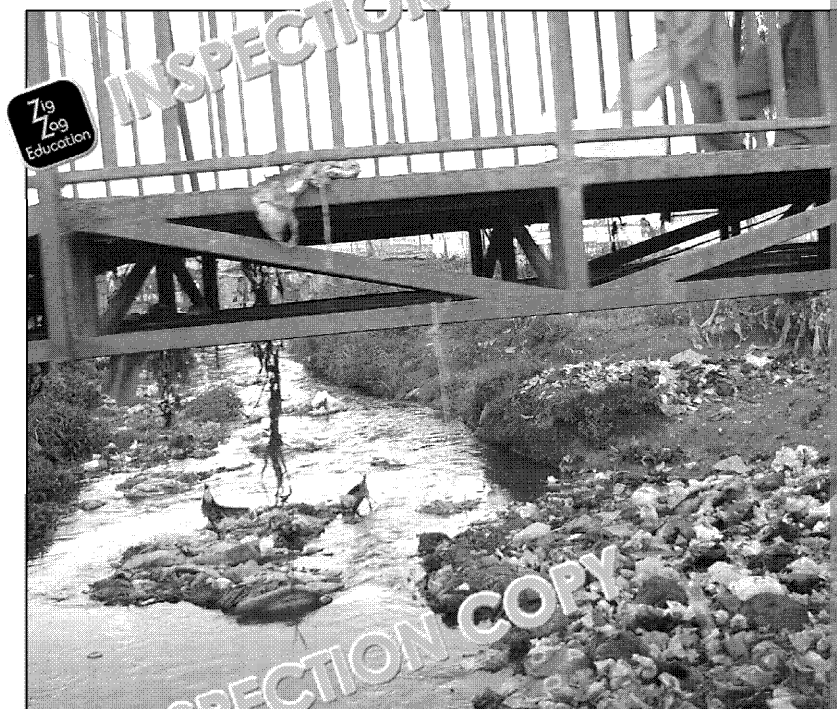
## Kibera



*Image of a street in Kibera*

1. Describe the conditions shown in the photo.
2. How could living in Kibera lead to a 'cycle of poverty'?
3. If you had to choose, what **one** thing would you improve about Kibera?

## Water



*The Nairobi River*

1. What sort of condition is the Nairobi River in?
2. Why is this?
3. Why is this a problem?

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## Sustainable waste

### Quote 1: Rethinking management in Nairobi's informal settlements

Nairobi is experiencing rapid urbanization which brings with it several challenges. Informal settlements have responded to the lack of public services, including waste management, by the absence of the state or other private institutions. Their work has profound implications for the city's future. However, due to the age-old practices and complicated, in some cases non-existent, legal frameworks, the city council, they often fall short of realizing their full potential.



### Quote 2: Worldbike.org

Worldbike has partnered with UN Habitat to evaluate bicycles and other forms of low-cost solutions for Kibera, the largest slum in East Africa. Worldbike is collaborating with the local community to develop bike-based technologies and business models that empower local entrepreneurs while simultaneously helping address the trash problem.

### Quotes about Waste management in Nairobi

1. How do people in Nairobi dispose of their waste?
2. How does Worldbike help with waste management?
3. Why is Worldbike needed to help waste management?
4. How can waste management be improved?



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## Springboard Suggested Answers

Springboard	Q	Suggested answer / discussion
<b>Growth</b> 	1	<ul style="list-style-type: none"> <li>It has a cool climate (high altitude)</li> <li>It has plenty of water around for water supplies</li> <li>Key transport route between coastal ports and east Africa</li> </ul>
	2	<ul style="list-style-type: none"> <li>It has grown around the central point</li> <li>Lots of people who have come from informal settlements to live on the side of the river)</li> <li>Growth has been blocked to the south by the National Park</li> </ul>
	3	<ul style="list-style-type: none"> <li>Mostly from rural-urban migration</li> <li>Natural increase in squatter settlements as birth rates are high</li> <li>International migration: mainly from Asia</li> </ul>
<b>Opportunities</b>	1	<ul style="list-style-type: none"> <li>Not many people work in agriculture</li> <li>It is mostly men who work in the secondary industry</li> <li>It is mostly women who work in the domestic services</li> <li>Sales and services employs the highest % of women (over 50%)</li> <li>Unskilled manual employs the highest % of men (over 50%)</li> </ul>
	2	<ul style="list-style-type: none"> <li>It is a traditional society, where men are expected to work in the secondary industry and women work in domestic services</li> <li>Very low proportions work in agriculture as it's a city</li> <li>The secondary industry is low because Kenya is not very good at manufacturing capacity</li> <li>Services industry is high because there are a lot of people who work in the services industry</li> </ul>
	3	<ul style="list-style-type: none"> <li>People who don't want to work in farming anymore</li> <li>More professional and high skilled jobs than in rural areas</li> <li>More likely to find a job here</li> <li>It is likely to be better paid</li> </ul>
<b>Kibera</b> 	1	<ul style="list-style-type: none"> <li>There is litter on the unpaved streets</li> <li>Houses are built from mud with tin rooves</li> <li>No water pipes: water is just draining into the street (polluting the water)</li> <li>No electric lights for the street or power cables at all</li> </ul>
	2	<ul style="list-style-type: none"> <li>Definition of the poverty cycle</li> <li>If you lived here, you probably wouldn't have a lot of money</li> <li>If you lived here, it might be hard to go to school, so you wouldn't get a good job</li> <li>You might get sick from the poor environmental conditions</li> <li>It's not very safe, so you might be affected by crime</li> </ul>
	3	<ul style="list-style-type: none"> <li>Housing: If the housing was improved or replaced then people would have more space and their houses would be safer to live in</li> <li>Land rights: If people were entitled to live on the land then they could improve their houses: at the moment they might not be able to because they are evicted</li> <li>Water: If there was clean water then people wouldn't get sick</li> <li>Education: If people were educated they could get better jobs and improve the area</li> <li>Electricity: If there were street-lights then there would be less crime and people wouldn't have to cook with dirty fuel in their house</li> <li>Waste management: if there were proper waste collection then people wouldn't get sick and this would be a nicer place to live</li> </ul>

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Water	1	<ul style="list-style-type: none"> <li>It is in a very poor condition: there is waste in there for</li> <li>Likely to be no wildlife</li> <li>No river management, so if the river floods then it will flood homes</li> </ul>
	2	<ul style="list-style-type: none"> <li>Because there is no proper waste management: everything is dumped</li> <li>Because there are no proper ways to protect it and people are dumping things in there</li> <li>Because the government doesn't have the money to manage it</li> </ul>
		<ul style="list-style-type: none"> <li>Because there aren't that many water sources: people use the river for washing, cooking, drinking</li> <li>Because it may flood informal settlements</li> <li>Because they are damaging the wildlife habitat</li> </ul>
Waste	1	<ul style="list-style-type: none"> <li>Informal settlements: dump on streets / in rivers (lots of reusable material)</li> <li>Formal settlements: pay for private collectors to move the waste</li> </ul>
	2	<ul style="list-style-type: none"> <li>They give local people in informal settlements ways of transport (other vehicle), which gives people jobs and an income</li> <li>waste collection service for very low cost</li> </ul>
	3	<ul style="list-style-type: none"> <li>Because the government and city authorities don't have the resources for services</li> <li>Because the city authorities aren't dealing with the problem properly (unwillingness/inefficiency)</li> <li>Because waste management is a real problem in the area</li> </ul>
	4	<ul style="list-style-type: none"> <li>By making the city authorities cooperate with efforts to improve waste management</li> <li>By providing funding</li> <li>By supporting local people and involving them in the process (sustainable)</li> <li>By educating people as to its importance</li> </ul>

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## Part 2: Exam Preparation



### Summary

#### Nairobi, Kenya

Background	
Altitude	1,676 m above sea level
Physical geography	<ul style="list-style-type: none"> <li>High altitude means cooler temperatures</li> <li>Nairobi river: lots of water about</li> </ul>
Connectivity	<ul style="list-style-type: none"> <li>Three airports</li> <li>Crucial link with the coast</li> </ul>
Significance	<ul style="list-style-type: none"> <li>Nairobi is the Capital City of Kenya, East Africa</li> <li>National cultural focus: seat of government, city culture</li> <li>Regional economic hub: the base of UN operations in Africa, regional headquarters</li> </ul>
Growth of the city	
History	<ul style="list-style-type: none"> <li>Founded in 1899 as British rail depot: good connections</li> <li>Explosion in population from 1960: from only ¼ million today</li> <li>The growth rate is over 4.1%</li> </ul>
Causes of growth	<ul style="list-style-type: none"> <li>Natural increase from high birth rates</li> <li>Domestic rural-urban migration: mostly economic reasons</li> <li>1960s immigration from Asia</li> <li>Immigration from unstable countries in east Africa</li> </ul>
Impacts of migration	<ul style="list-style-type: none"> <li>Youthful age structure</li> <li>Pressure on housing and services</li> <li>Ethnic conflict</li> <li>Urban sprawl</li> </ul>
Ways of life in the city	
American cultural features	Shopping malls, hip-hop music
Ethnic diversity	Kikuyu are dominant group but there are immigrants and
Challenges	
Housing	<ul style="list-style-type: none"> <li>Housing shortage for migrants leads to expansion of squatter settlements living in these in Nairobi</li> <li>Kibera: biggest slum in Africa, small shacks, only 20% water supply improvement to water source (taps cost two pence for 2 litres), high unemployment</li> </ul>
Services and infrastructure	<ul style="list-style-type: none"> <li>Water: poor water supply means most people either drink from kiosks, lack of sanitation means people dump refuse</li> <li>Health: malaria is a big problem: 37.7% infected in 2006</li> <li>Education: youthful population and a promise for free education services in the city</li> </ul>
Crime and jobs	<ul style="list-style-type: none"> <li>Unemployment: with unemployment at over 40%, driving crime</li> </ul>
Transport issues	<ul style="list-style-type: none"> <li>Constantly unsafe Matatus, huge congestion, lack of public transport</li> </ul>
Environmental issues	<ul style="list-style-type: none"> <li>Pollution: lack of sewerage means that the Nairobi river is polluted</li> <li>Waste: mostly informal, and only 25% of waste is collected</li> </ul>
Sustainable management	
Refuse collection	Worldbike charity is providing refuse collection bikes to community groups to collect and sort waste quickly and efficiently
Green space	Lots of parks thanks to Wangari Maathai (as authorities were

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## Revision Questions

Nairobi, Kenya



Quick-fire Questions



1	What is the population size of Nairobi?	
2	Describe the physical geography of the land around Nairobi.	
3	Name a TNC that has a base in Nairobi.	
4	When was Nairobi founded?	
5	In 2005, what percentage of Kenyan citizens lived in Nairobi?	
6	Why are there fewer jobs in rural areas in Kenya today?	
7	There was a wave of migration in the 1960s. Where were the immigrants from?	
8	What percentage of Nairobians live in informal settlements?	
9	How do people in Kibera access health care?	

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10	Why are residents of squatter settlements more likely to be ill?	
11	What is the difference between public and private schools in Nairobi?	
12	How much water is wasted by illegal tap-ins?	
13	Why do people have to use diesel generators in Nairobi?	
14	Why do people join gangs?	
15	Who are the Jua Kali?	
16	What are the negative impacts of congestion?	
17	How does a lack of sewers affect the Nairobi river?	
18	Give evidence of the poor air quality in Nairobi	
19	What is Dandora?	
20	How can the problem of waste disposal be solved?	

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## Quick-fire Answers

1	3.36 million people
2	It is in a mountainous area with cool air, but the immediate area around the Nairobi river is mar
3	Coca-Cola, IBM, General Electric, UN African Headquarters
4	1899
5	8.2%
6	Because some farmers have access to machines that can do the agricultural work
7	India and Pakistan
8	60%
9	Many can't, as they can't afford private health care. Some mobile clinics are operated by charities
10	They can't pay for medicines to stop them getting ill, and the environment they live in is dirty and
11	Public schools are free, private schools are paid for. Public schools often have large class sizes, and
12	40%
13	<ul style="list-style-type: none"> <li>Because there may be a drought and not enough hydroelectric power is generated</li> <li>Because of faulty electricity infrastructure</li> </ul>
14	Because unemployment is high, and people need ways to make money
15	Craftspeople and service providers who recycle waste in Nairobi
16	Loss of money (£200 million), as people could be working, they use up fuel, and there's pollution e
17	Many people don't have sewers and so their human waste goes directly into the river, polluting it
18	<ul style="list-style-type: none"> <li>The amount of particulates in the air is double the WHO guidelines</li> <li>The amount of cancer causing particles is nearly ten times higher than WHO guidelines</li> </ul>
19	Nairobi's only official dump – it's nearly full!
20	<ul style="list-style-type: none"> <li>Increase amount of dumping site</li> <li>Don't let people live near the dump</li> <li>Increase waste collection</li> <li>Increase recycling and recycling</li> </ul>

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## Extension Questions

1. Describe how Nairobi is connected to the rest of the world.
2. Why was Nairobi founded?
3. Why are birth rates in Kenya falling?
4. How has migration affected Nairobi?
5. Describe the environment of Kibera.
6. Why might children in Nairobi not go to school?
7. How do people cook in squatter settlements? Why? How is it a problem?
8. Why is malaria a problem in Nairobi?
9. Give some examples of illegal activity that are a problem for Nairobi, and explain why.
10. Give some criticisms of the city authority's management of Nairobi.

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## Extension Answers

1. By air – through the Jomo Kenyatta airport  
By land and rail – major routes to Uganda and Tanzania, as well as to the coast of trade is
2. As a railway depot for transporting goods into the British Empire.
3.
  - Decreasing importance of agriculture – farmers traditionally had a lot of land
  - Education means paid jobs for women, which means they are more likely to use contraception later
  - Use of contraception to control when people have children
4.
  - Youthful age structure as migrants are usually young people
  - Housing shortage
  - Rise of squatter settlements
  - Ethnic tensions
  - Pressure on services
  - Shortage of infrastructure
  - Urban sprawls
5. Poorly built shacks, no infrastructure, some water pipes, no flushing toilets, little electricity
6.
  - They have to work to earn money for the family
  - They (usually girls) must stay at home to help the family with domestic work
  - They can't afford the uniforms/books/travel
  - They are too ill
  - The school is too far away
7.
  - Open fires are fuelled by wood or charcoal
  - Because they can't afford electricity or gas
  - It can cause deforestation
  - It can cause poor air quality
8.
  - Because it's a marshy area
  - Because it's a tropical country with a warm climate
  - Because there are standing bodies of water where mosquitoes can breed
  - Because a lot of people can't access hospitals for prevention and treatment
  - Because malaria can cause death
9.
  - Living on land you don't own – leads to rise of squatter settlements
  - Theft and vandalism – creates tension and leaves some people poorer
  - Accessing electricity or water supplies illegally – results in fewer resources
  - Corruption – which takes money away from people who need it
10.
  - Corruption, which takes money away from development
  - Poor urban planning – people have nowhere to live and no services
  - Free education isn't really free, as children still have to get to school and

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## Exam-style Question



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Examine how the challenges faced by cities today differ between a developing / an emerging city.



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## Level Marking

Level	Mark	Description
1	1–3	<ul style="list-style-type: none"> <li>The student evidences limited understanding between places, environments and processes.</li> <li>A limited ability to evaluate is evidenced through knowledge and understanding. The argument is weak. There is little evidence to support the conclusion.</li> </ul>
2	4–6	<ul style="list-style-type: none"> <li>The student evidences good understanding of the relationship between places, environments and processes.</li> <li>A reasonable ability to evaluate is evidenced through knowledge and understanding. The argument is only partially logical. There is some evidence to support the conclusion.</li> </ul>
3	7–8	<ul style="list-style-type: none"> <li>The student evidences a firm understanding of the relationship between places, environments and processes.</li> <li>A strong ability to evaluate is evidenced through knowledge and understanding. The argument is logical and well explored. There is consistent evidence to support the conclusion.</li> </ul>

### Indicative Content

- The student must discuss the challenges faced by both a UK city **and** a developing city. Reference to two case studies.
- The student must offer some evaluation of the similarities and differences of the challenges.

### Suggested Content

*Challenges faced in a UK city (Bristol, UK):*

- The influx of people, including international and domestic migrants, creates pressure on housing. In Bristol there is a shortage of affordable housing, meaning that in 2014, the demand for houses was high, resulting in house prices increasing much faster than the rate of inflation.
- The size of the population, and poorly integrated transport links, creates serious congestion. Journey times in the city being some of the slowest in the UK.
- The diversity of people in Bristol means that many people struggle to access the city. For example, immigrants who cannot speak English will struggle to access services. As there are few ESOL courses in the city, problems are likely to persist. The size of the population means that places in local primary and secondary schools quickly being filled.
- There is clear inequality within Bristol, creating marked differences in the quality of life between affluent and poor areas of the city. International migrants often settle in more deprived areas, meaning these groups are most likely to have a lower quality of life.

*Challenges faced in a developing city (Nairobi, Kenya):*

- Poor infrastructure is one of the greatest challenges faced in Nairobi. Poor clean water supply systems lead to problems of water contamination, pollution and disease. Water is not available within the city, which is made worse by the high degree of wastage created through leaks in the pipes.
- There is also a housing shortage in Nairobi, as there is in Bristol; however, in Nairobi the informal housing in the form of squatter settlements is more prevalent. In Nairobi there are over 2.5 million people living in informal squatter settlements across the city.
- Transport issues are a major problem in Nairobi, as in Bristol. Congestion in Nairobi is estimated that over 2 million each year is lost due to a loss of working hours. Unlike in Bristol, the congestion has been caused as the transport system has not kept pace with the increasing size of the population.
- The provision of healthcare in Nairobi is a serious problem, particularly in the informal settlements. People are too poor to afford medicine, and poor sanitation and hygiene increase the risk of dengue fever and HIV/AIDS are the main diseases threatening the people of Nairobi.

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- Poor education rates in Nairobi is another challenge faced by the city. While the education is free, many families cannot afford the uniform, transport and books required. Children cannot attend secondary school, meaning the poorest families get trapped in a cycle of poverty and education or training required to gain a well-paid job.
- Poor provision of energy in Nairobi is also a problem, and continues to limit social and economic growth. Only 50% of households in Nairobi have access to electricity cables. The electricity is unreliable, meaning blackouts often occur due to failures in the power network.
- High levels of poverty and poor employment rates have resulted in high levels of unemployment.
- Nairobi also faces severe environmental challenges, in the form of water pollution. The Nairobi River is now so polluted that it cannot support life, and the amount of pollution has doubled the WHO guideline.

#### Challenges for an emerging city (São Paulo):

- Housing shortages and low incomes in São Paulo mean there are squatter settlements across the city. 11% of the city's population live in these settlements. In 'mature' cities, a long time, some services may have been installed, either by the city authorities or private companies. Water pipes and electricity lines, and some people may have upgraded their homes. Favelas are usually inhabited by the poorest in society. Citizens who live in the favelas often lack access to basic services.
- Although healthcare is relatively good in São Paulo, not all drugs are on the Brazilian National List; residents in São Paulo are often forced to sue the city in order to get the drugs they need, such as insulin. Additionally, waiting times in hospitals and clinics are long, as people often have to wait for a long time to see a doctor.
- Despite education being free up until the age of 14, many children still do not go to school. In low-income areas are less likely to go to school, as there are fewer schools nearer the home. This can perpetuate a cycle of poverty, as these children will have low-paying jobs when they grow up and have to stay in the favela.
- 43% of jobs in São Paulo are in the informal sector. Informal work is bad for both workers and the city. Often people are driven to it because they have no formal education, but it means they lack rights or protection, and can suffer from exploitation. For the city, having so many people in the informal sector means it loses out on tax revenue.
- Increasing population in the city has led to an increasing amount of waste with poor waste management impacts on the whole of the city – contributing to poor air quality and pollution, increasing the emission of greenhouse gases. This in turn can lead to climate change and negative impacts on human health.

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