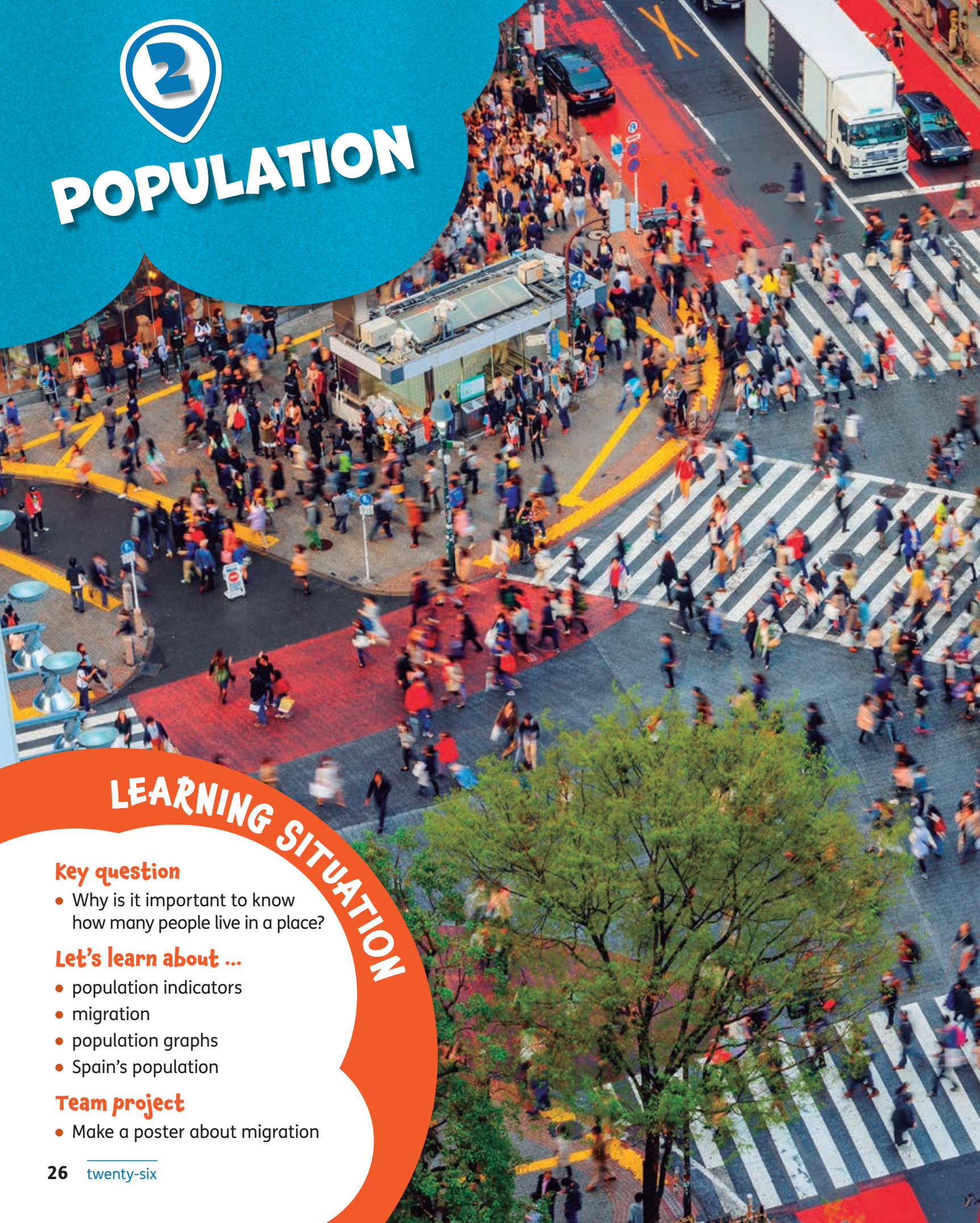
2 POPULATION



LEARNING SITUATION

Key question

- Why is it important to know how many people live in a place?

Let's learn about ...

- population indicators
- migration
- population graphs
- Spain's population

Team project

- Make a poster about migration

LET'S START!

WATCH. What is migration?

THINK BACK. Which countries have got the largest populations?

LOOK. Do you think the city in the photo has got a large population? Why?

I think it ...

There are ...

crowd

WHAT INDICATORS AFFECT POPULATION GROWTH?

Explore

Use a dictionary to find out what demography is.

The **population** is the number of people that live in a place at a specific moment. Population is always changing. **Population growth** is positive when the population increases and negative when it decreases.

The **birth rate** is the number of children born in a year per 1 000 people in the population.

The **death rate** is the number of deaths in a year per 1 000 people in the population.

There are two types of population growth: natural increase and real population growth.

Natural increase is the difference between births and deaths in a population. We express it as a percentage (%).

$$\text{natural increase} = \frac{\text{births} - \text{deaths}}{\text{population}} \times 100$$

The **fertility rate** and **life expectancy** are two important indicators that influence natural increase. This is because they affect birth and death rates.

The **fertility rate** is the average number of children per adult woman in a population. Natural increase is possible with a fertility rate of 2.1 children per woman or more.

Life expectancy is the average number of years that a person is expected to live. We express it in years. Many factors influence life expectancy, for example healthcare and diet.

A population that hasn't got positive natural increase can still grow as a result of **net migration**. This is another population indicator.

- **Immigrants** come from one country to live in another country.
- **Emigrants** leave their country to live in another country.

When there are more immigrants than emigrants, there's **positive net migration**. When there are more emigrants than immigrants, there's **negative net migration**.

We calculate real **population growth** using natural increase and net migration.

real population growth = natural increase + net migration

Activities

1 **In your notebook, COPY and COMPLETE the sentences.**

a. ... is population growth produced by births and deaths.

b. ... also includes population growth produced by migration.

c. When a country has got a ... of 2.1 children per woman, its population can increase naturally.

d. A healthy diet can increase a population's ... .

2 **With a partner, DISCUSS how these factors can affect life expectancy. Do you think they increase or decrease it?**

low levels of education	low rates of smoking	new treatments for diseases
increases in food prices	high rates of obesity	high rates of physical activity

3 **READ. Then CALCULATE the rate of natural increase using the formula on page 28 and a calculator.**

In 2024 there were 322 034 births and 439 146 deaths in Spain. The total population was 48.8 million people.

Listen

Which population indicator is each speaker talking about?

I think this factor increases life expectancy because ...

Key words

birth rate
death rate
fertility rate
life expectancy
natural increase
net migration

WHY DO PEOPLE MIGRATE?

Migration is the movement of people from one country to another. In recent years, global migration has increased. In 1990, there were about 153 000 000 international migrants. In 2024, there were about 304 000 000 international migrants.

Explore

Do the Class Webquest.

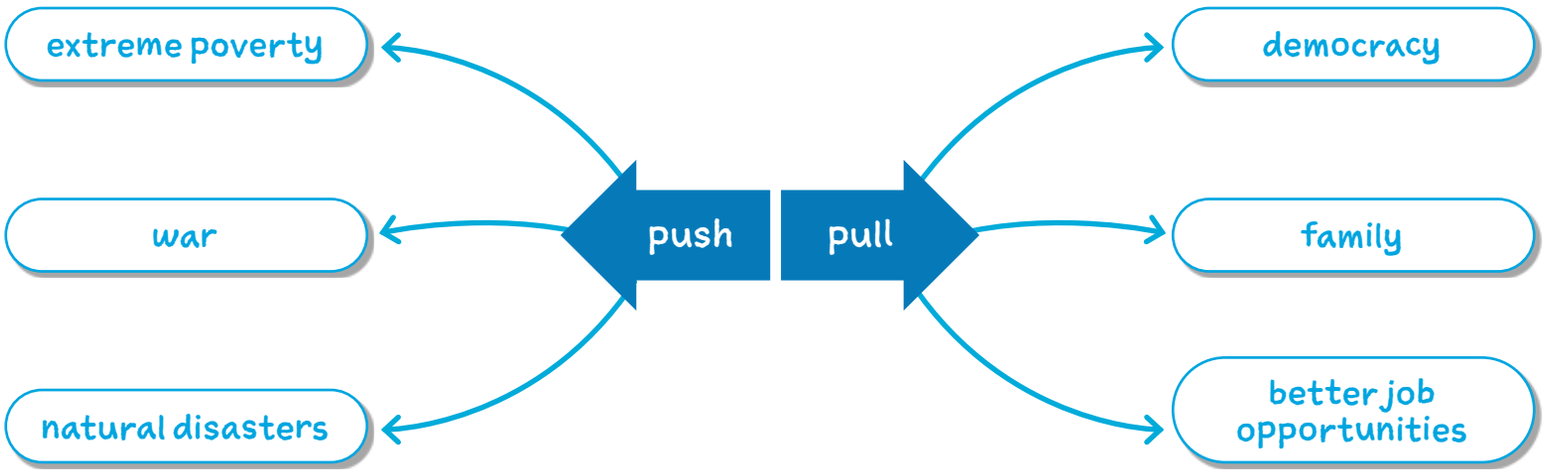
Forced migration

Forced migration is when people don't choose to leave their country. Circumstances force them to migrate. They become **refugees**. Between 2022 and 2024, 6 500 000 people left Ukraine because of the war there.

Voluntary migration

Voluntary migration is when people choose to leave their country. They migrate to find better jobs, education or living conditions. International students are an example of this. They go to university in another country.

Migration is caused by push factors and pull factors. A **push factor** is a negative situation in the country of origin. A **pull factor** is a positive situation in the new country. Push and pull factors can be political, economic, social or environmental.



MULTICULTURAL SOCIETIES

Immigration makes societies more **diverse**. There are people from different cultures and different ethnic groups. As a result, societies are **multicultural** and **multiethnic**.

Think

Can a person be an immigrant and an emigrant at the same time?

Activities

1 **LOOK at the mind map on page 30. With a partner, SAY which factors are *political*, *economic*, *social* or *environmental*.**

2 **In your notebook, WRITE if these examples are *forced* or *voluntary migration*.**

a. Many people emigrate from El Salvador, Guatemala and Honduras because of violence, poverty and climate change.

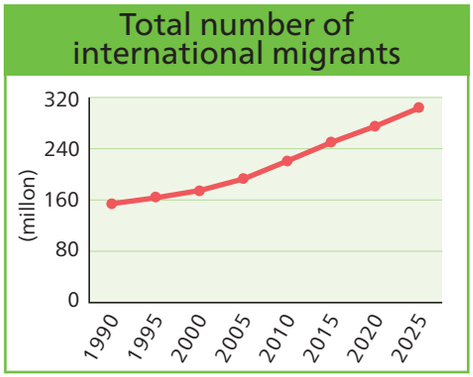
b. As a result of years of civil war and violence, in 2025 the global total of Syrian refugees was more than 6 000 000 people.

c. Every year, students from all over the world move to Spain to study their university degrees.

3 **LOOK at the graph. ANSWER the questions.**

a. What time period does the graph show?

b. When was the biggest increase in global migration: 1990–2000, 2000–2010 or 2010–2020?



Key words

forced migration
multicultural
multiethnic
refugee
voluntary migration

WHICH GRAPHS CAN HELP US UNDERSTAND POPULATION?

Graphs are an important tool for studying population. Graphs make information clear and easy to understand. They help us to compare population groups and to see changes in population over time.

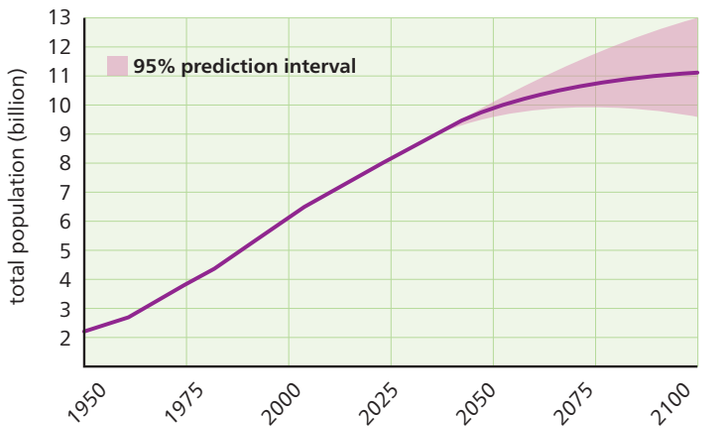
Governments, for example, can use graphs to make better decisions about schools, hospitals and other services that people need.

Watch

What graph can you use to represent the population distributed by age?

Line graphs

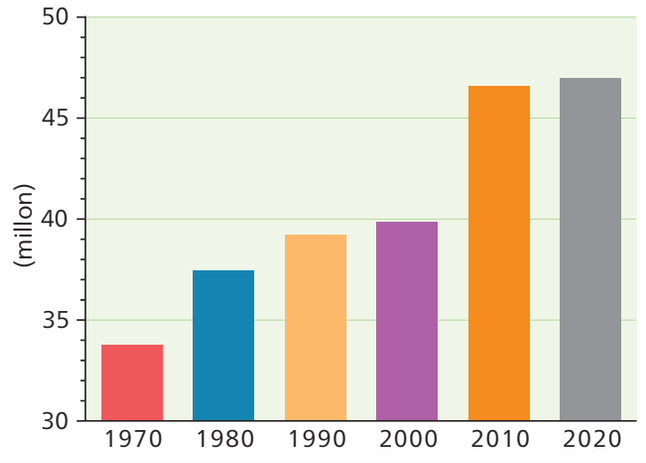
The world population



We use **line graphs** to show the relationship between two factors, such as population and time. They can help us identify long-term changes.

Bar charts

Evolution of the population in Spain



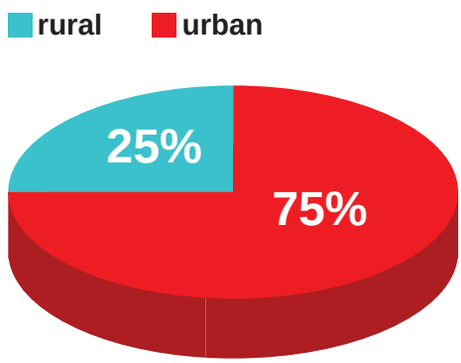
We use **bar charts** to compare population data from different places or to see how population changes in one place over time.

Pie charts

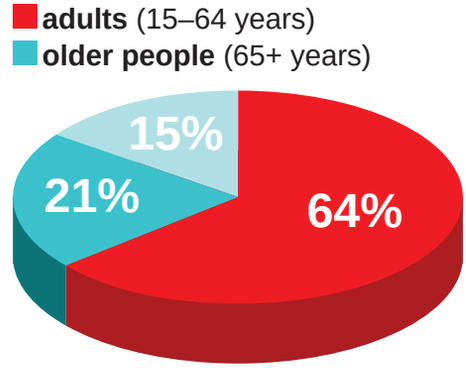
We use **pie charts** to show how a whole is divided into parts. Each part is represented as a slice of the pie. The size of the slice shows how big that part is compared to the whole. For example, a pie chart can show the percentage of a population that's rural or urban.

Pie charts make it easy to see which groups are largest or smallest, and how each group compares to the others.

The EU population by residence



The EU population by age

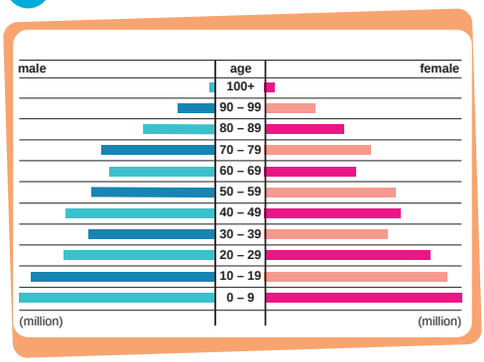


Population pyramids

We use **population pyramids** to understand the **age** and **gender** structure of a population. A population pyramid shows the number of people in different age groups. The left side usually shows males, and the right side shows females. Each horizontal bar represents an age group. We can use a population pyramid to compare the number of males and females. We can also see if there are more young people, adults or older people.

The shape of a population pyramid tells us if a population is growing (wide base, narrow top); shrinking (narrow base, wider top); or staying the same (base and middle are similar).

1



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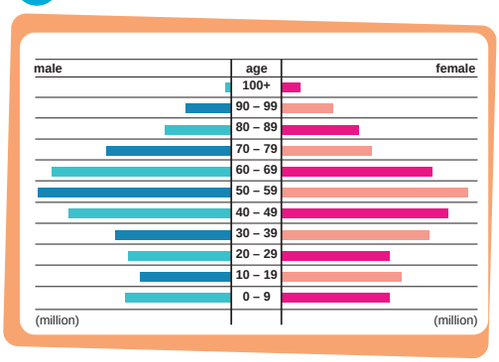


3

Activities

1 **LOOK at the line graph on page 32. In your notebook, ANSWER the questions.**

a. What was the world population in 2000?

b. What was the world population in 1975?

c. What's the prediction for the world population in 2075?

2 **LOOK at the bar chart on page 32. ANSWER the questions.**

a. When did Spain's population reach 40 000 000?

b. When did the population increase the most?

c. When did the population increase the least?

3 **What services does an older population need? What about a population with more young people? DISCUSS with a partner.**

healthcare | nurseries | social care | schools

4 **LOOK at the population pyramids. MATCH each pyramid to a description.**

a. a growing population

b. a decreasing population

c. a stable population

Key words

bar chart
line graph
pie chart
population pyramid

WHAT ARE THE CHARACTERISTICS OF SPAIN'S POPULATION?

Spain has got a **population** of approximately 49 000 000 people. Information about Spain's population is collected by the **national census** and the **municipal registers**. The national census happens once every ten years. Local councils collect information about the population of each municipality. They record this information in the municipal register.

Watch

Where are Spain's most populated areas?

SPAIN'S POPULATION DENSITY

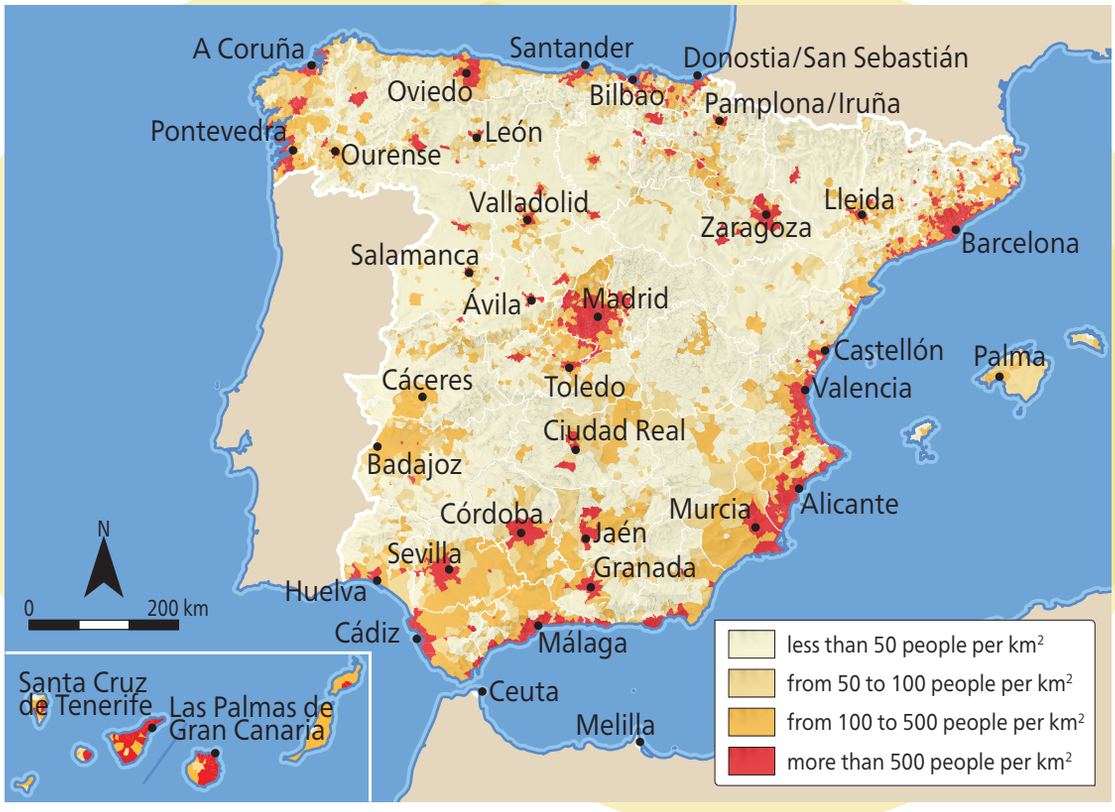
Population density is the number of people that live in an area. To calculate it, we divide the population by the area in square kilometres (km^2).

$$\frac{\text{total population}}{\text{area } (km^2)} = \text{population density}$$

Explore

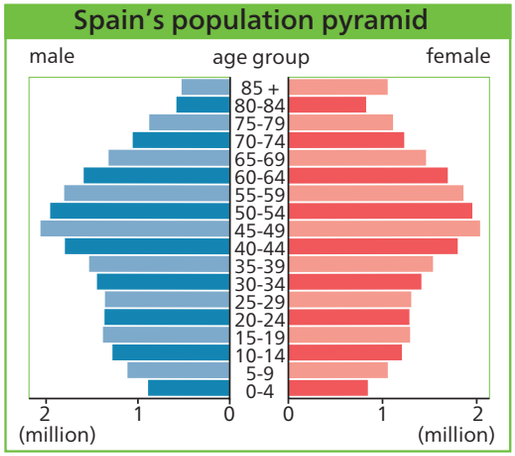
Look at the interactive map.

Spain's average population density is 97 people per km^2. Population density is higher in cities and on the coast. More than 80% of Spain's population is urban. Low population density in inland rural areas has caused **rural depopulation**. There are many abandoned villages. There also are fewer public services.



POPULATION INDICATORS

- In 2023, Spain's **birth rate** was the lowest since records began: 6.61 births per 1 000 people. The **fertility rate** was 1.2 children per woman.
- Spain's population has got **negative natural increase** because of the low birth and fertility rates.
- However, there's **real population growth** because of immigration. Spain has got **positive net migration**. Immigrants form about 12% of Spain's population.
- Spain's **life expectancy** is one of the world's highest: 83 years.



THE AGEING POPULATION

Spain has got an **ageing population**. There are more older people and fewer younger people than in the past. The shape of the **population pyramid** shows this. As a result, fewer people are working, and there is more demand for healthcare and social care.

Activities

1 **In your notebook, ANSWER the questions.**

a. Where can we find information about Spain's population?

b. Which areas of Spain have got a high population density?

c. What percentage of Spain's population is urban?

2 **LOOK at the population pyramid. Are these sentences *true* or *false*? Correct the false sentences.**

a. Spain has got more people over 40 than under 40.

b. Men have got a higher life expectancy than women.

c. The pyramid is widest in the middle.

3 **READ and WRITE *rural depopulation* or *ageing population*.**

a. Spain has got a low fertility rate and high life expectancy.

b. More people need healthcare and social care.

c. There are fewer public services in rural areas.

4 **AT HOME. FIND OUT if a member of your family moved from a rural area to an urban area.**

Listen

Which provinces has rural depopulation affected the most?

Key words

ageing population
census
municipal register
population density
rural depopulation

LANGUAGE LAB

WRITE PREDICTIONS ABOUT POPULATION GROWTH

KEY WORDS

line graph
census
refugee
ageing population
population pyramid
life expectancy

1 **In your notebook, MATCH the definitions to the words.**

a. It shows the relationship between two factors, such as population and time. → ...

b. It's the average number of years a person is expected to live. → ...

c. It's a migrant who's forced to leave their country and move to another country. → ...

d. It's a study of Spain's population that happens every ten years. → ...

e. It's a type of population with many older people and a low birth rate. → ...

f. It shows the age and gender distribution in a population. → ...

LET'S WRITE!

2 **COPY and COMPLETE the sentences with the correct form of *will* or *be going to*.**

a. I think the population of my city ... grow in the future. In my opinion, it's a great place to live.

b. Spain's fertility rate is less than 2.1 children per woman, so natural increase ... be possible in the next few years.

c. Statistics show that the number of migrants that leave their countries because of climate change ... grow.

d. Spain has got an ageing population. However, in 2100 it's possible that Spain's population pyramid ... look very different.

e. Life expectancy ... increase if people do more exercise.

3 **Use the data in the table to WRITE predictions about natural increase.**

...'s population is / isn't going to have natural increase because the fertility rate is more / less than ...

Language tip

We use ***will*** / ***be going to*** to make **predictions** about the future.

We use ***will*** for an **opinion**. We use ***be going to*** when there's evidence.

Country	Fertility rate	Country	Fertility rate	Country	Fertility rate
Spain	1.20	Ukraine	1.20	France	1.84
UK	1.61	Indonesia	2.20	Afghanistan	4.60
Egypt	2.90	South Korea	0.80	Israel	3.00

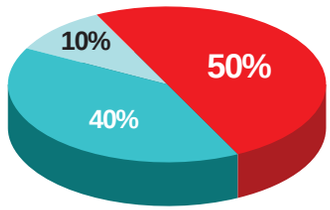
SOCIAL LAB

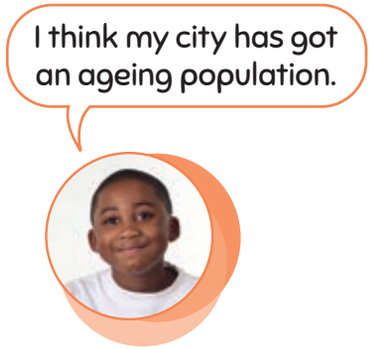
2

DRAW A POPULATION PIE CHART

This pie chart shows the population of Samuel's city by age.

- children (0–14 years old)
- adults (15–64 years old)
- older people (65+ years old)





1 **LOOK** **at the pie chart. Is Samuel right?**

2 **CHOOSE** **a city and create a pie chart of its population by age.**

STEP 1

SEARCH for information about the population of the city you chose. What percentage of the population are children? What about adults and older people?

STEP 2

DRAW a circle for your pie chart using a compass.

STEP 3

CALCULATE the angle of each segment using this formula.

$$\frac{\text{percentage} \times 360}{100}$$

STEP 4

DRAW the sections of your pie chart using a protractor. Then WRITE what they represent and COLOUR them.

STEP 5

COMPARE your pie chart with a partner's pie chart. Are they similar or different?

TEAM PROJECT

MAKE A POSTER ABOUT MIGRATION

Many societies become multicultural thanks to the diversity of languages and traditions of migrants. Migration makes the economy stronger and leads to population growth. However, it can also cause problems. The local population doesn't always welcome migrants. The growth in population can increase demands on public services.

DISCUSS

1 **DISCUSS the questions with your classmates:**

a. What are some other advantages and disadvantages of migration?

b. Why are some people against migration?

RESEARCH

2 **LOOK at these types of migration. ANSWER the questions.**

Refugee migration

Regular migration

Irregular migration

Seasonal migration

a. Why do people leave their countries?

b. What is the most common type of migration?

COLLABORATE

3 **THINK about the difficulties migrants experience.**

a. What difficulties do you think they experience?

b. Has everyone got the same type of problems?

4 **SHARE your thoughts in a small group. CREATE a mind map to organise your ideas.**

TAKE ACTION

5 **In groups, DESIGN a poster about migration for your local council. Include this information.**

- why people migrate
- how migration can help your city or village
- how we can be welcoming
- how we can be inclusive
- how these things affect migrants

financial help | stereotypes | adaptation programmes | language barriers

6 **CREATE your poster. Highlight the most important information. You can draw it, make a collage or print it.**

SHARE

7 **SHOW your poster to the class. EXPLAIN the information about migration you have included and how we can make our society more welcoming to migrants.**

TEAM ASSESSMENT

★ **GIVE your classmates constructive feedback.**

a. Is the design clear?

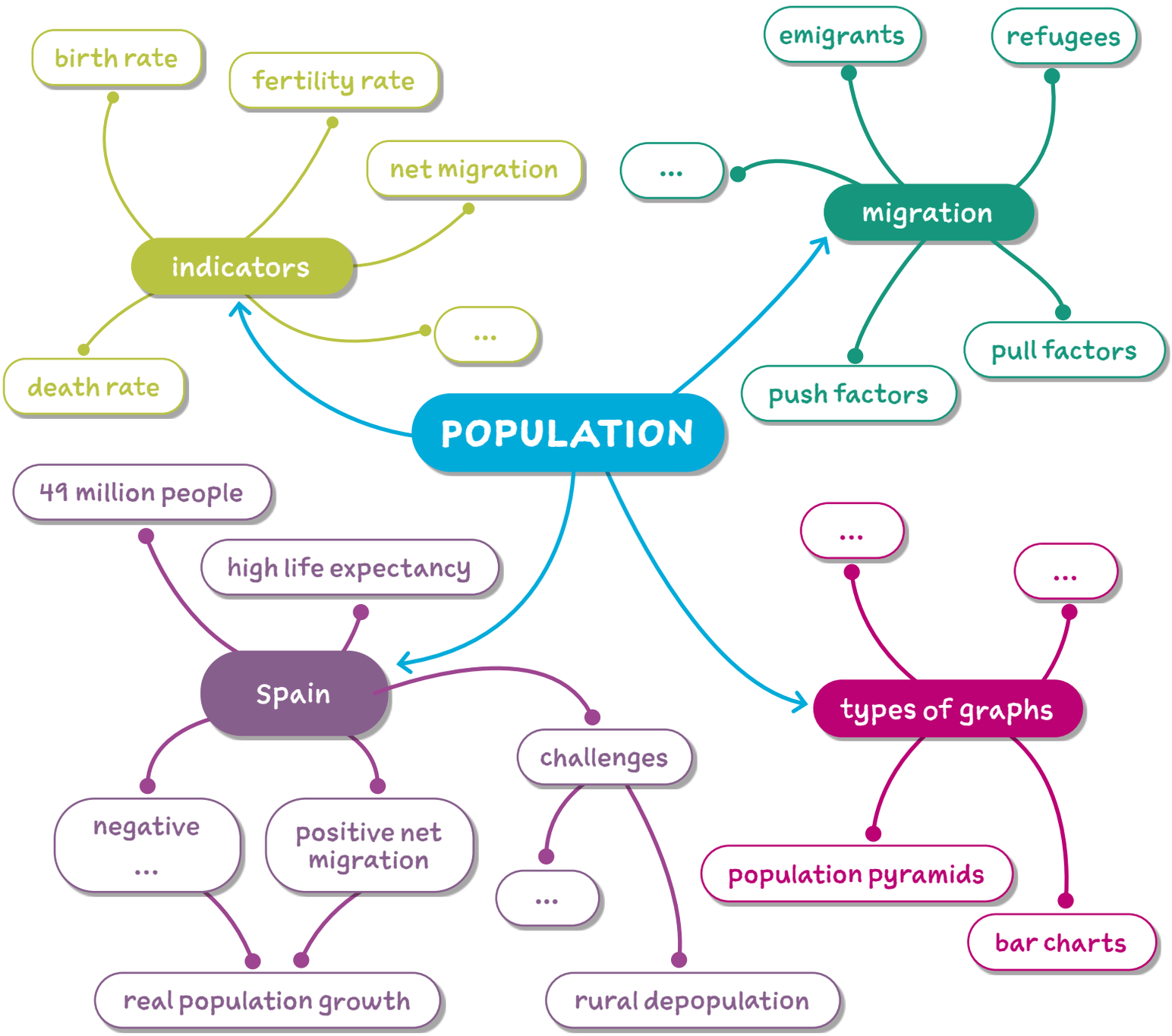
b. Is the information about migration accurate?

c. Was their explanation easy to understand?

MIND MAP

1 In your notebook, **COPY** and **COMPLETE** the mind map.

immigrants | life expectancy | line graphs | natural increase | pie charts | ageing population

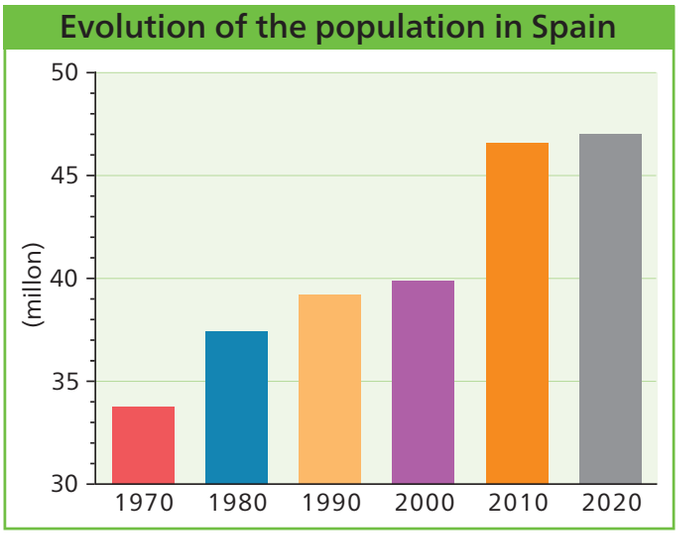


GLOSSARY

ageing population: a population with many older people and fewer young people.

average: amount calculated by adding all the numbers in a group together and then dividing them by the number of things in that group.

bar chart: graph that represents information using parallel rectangles.



birth rate: number of babies born in a year per 1 000 people in the population.

census: official study of the population that happens every ten years.

death rate: number of people that die in a year per 1 000 people in the population.

demography: the study of population.

emigrant: person who leaves their country to live in another country.

fertility rate: average number of children a woman is expected to have.

immigrant: person who arrives to a new country to live there.

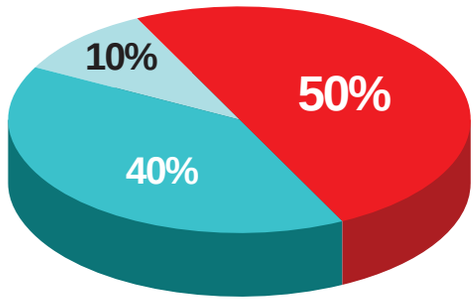
life expectancy: average number of years a person is expected to live.

line graph: graph that uses a line to show the relationship between two factors.

migration: movement of people from one place of residence to another.

municipal register: record of the inhabitants of a municipality.

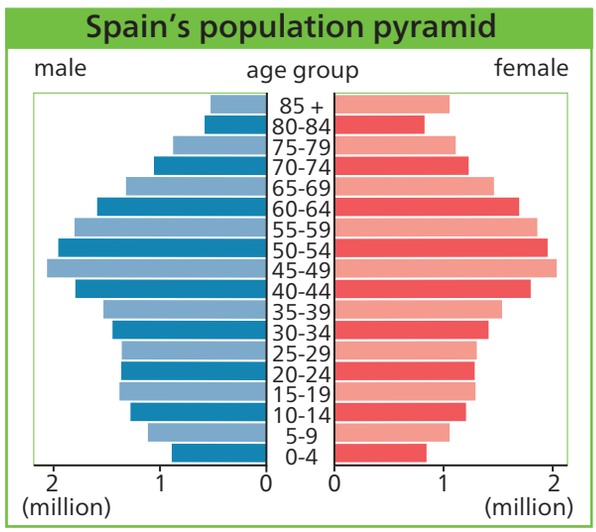
pie chart: circular graph that shows percentages or parts of a whole.



population density: the number of people that live in a square kilometre of an area.

population: total number of people living in a place.

population pyramid: graph that shows the age and gender distribution of a population.



refugee: person who is forced to leave their country for reasons they can't control.

rural depopulation: decrease in the number of people that live in rural areas.

Review

1 **In your notebook, EXPLAIN the difference between these concepts.**

a. birth rate / fertility rate

b. natural increase / real population growth

c. push factors / pull factors

2 **DECIDE which population indicators these figures refer to.**

a. 2.1 children per woman

b. 97 people per km²

c. 6.62 births per 1 000 people

d. 49 million people

e. 8.7 deaths per 1 000 people

f. 84 years

3 **COPY and COMPLETE the sentences.**

density | refugee | charts | migration

a. Pie ... are very useful to present information about population groups.

b. ... is a factor that causes population change.

c. Spain's average population ... is 97 people per km².

d. Temporary settlements for involuntary migrants are called ... camps.

4 **ANSWER these questions about graphs.**

a. What type of graph can we use to compare data from different places?

b. Why are population graphs useful for the government?

c. What does the shape of a population pyramid tell us?

d. What type of graph can we use to see the size of a group?

5 **LOOK at the map and ANSWER the questions.**

a. What autonomous communities have got the highest population density?

b. Which autonomous communities experience rural depopulation?

c. Has your autonomous community got a high population density?

6 **EXPLAIN which type of graph you can use to represent these data.**

a. Spain's net migration, 1960–2024

b. % of population older than 65 years by autonomous community, 2024

c. main countries of origin of Spain's immigrant population

7 **COPY and COMPLETE.**

real population growth | population | area (km²)

a. $\text{natural increase} = \frac{\text{births} - \text{deaths}}{\ldots} \times 100$

b. ... = natural increase + net migration

c. $\text{population density} = \frac{\text{population}}{\ldots}$

8 **MATCH these populations with what they need.**

adaptation programmes

better healthcare | repopulation schemes

a. a population with more older people

b. a population with a lot of newly arrived migrants

c. an abandoned village

9 **LOOK at the photos. Which characteristics of Spain's population do they show?**

APPLY

10 **LOOK at the table showing the population of a village. ANSWER the questions.**

a. What's happening to the population?

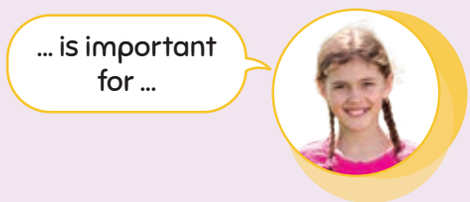
b. What do you expect the population to be in 2026 and 2027?

c. What do you think will happen to public services in this village?

Year	Population
2019	4 500
2020	4 000
2021	3 500
2022	3 000
2023	2 500
2024	2 000
2025	1 500

11 **The local council has got some ideas on how to reduce the effects of rural depopulation. LOOK at the ideas with a partner. DISCUSS how they can help.**

attracting more immigrants | increasing rural tourism | improving Internet access



Class Quiz

Do the Class Quiz.

SELF-ASSESSMENT

★ **Reflect on your learning and complete in your notebook.**

a. Now I know that ...

b. I want to learn more about ...

c. I need to get better at ...