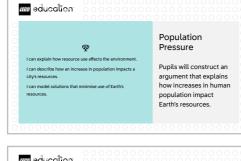
Facilitation Notes

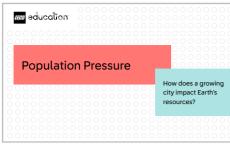
Engage © 5 min.

Introduce the context of a busy city and the many resources required to make it function.



0 | Objectives

You can introduce the pupils to the objective and learning outcomes of this lesson.



Ask pupils what they know about the growth of cities.

1 Introduction

Depending on your local context, you can reference a nearby town or city and discuss how it has grown in recent years. If more suitable, ask pupils about a major city in your region or name a well-known city such as London, New York or Tokyo. These cities have small areas of land, but have grown in population rapidly. Pupils can consider why cities grow and the possible impacts of such growth. 2 | Context Ask pupils to brainstorm activities that could be happening

What activities are happening in a city at any given moment? People, businesses and factories are all making life work in a busy system. Their activities all require resources[®]. Do they have enough for everyone?

in a city at any given moment. Emphasise that these could

be personal activities such as taking a shower or eating, as well as larger systems of activities such as transportation lines running and factories, businesses and offices working. Introduce the key vocabulary resources and ask: What resources do you use each day to live, work and play?

can be used.

Explore () 15 min.

3 | Groups and Roles Divide the pupils into groups of 4. Use the blue, red, green

In groups of 4, pupils will build a city that represents different ways resources



instructions. 4 Build and Explore This is a miniature scale model of a city. If pupils need support, you can help them identify these elements: Factory Shop

and yellow LEGO® minifigures to assign pupil roles and

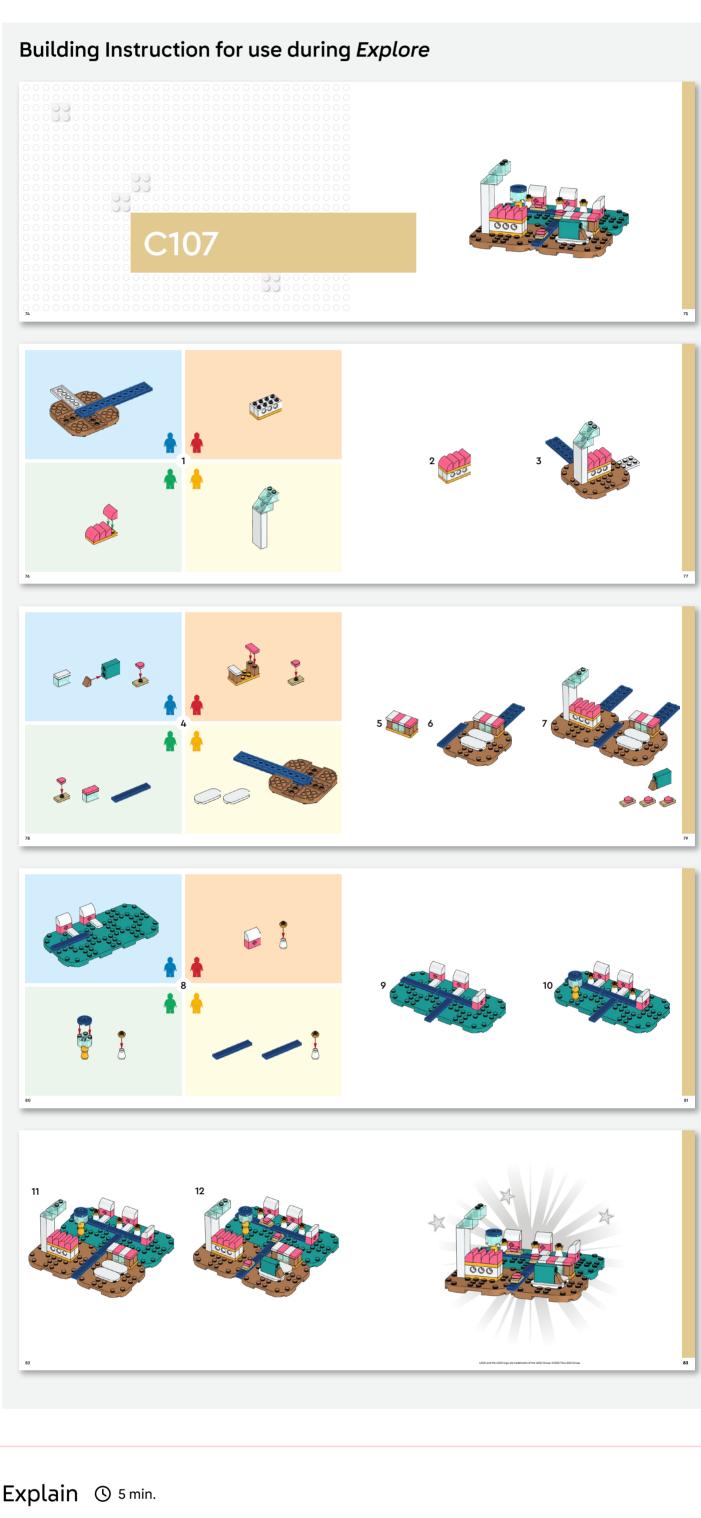
help each pupil find which part of the collaborative model they will build. They can find the corresponding blue, red, green and yellow LEGO minifigure icons in the building



Cars

Water tower

 Truck delivering goods from the factory to other parts of the city Three houses



each activity.

What are all the

the busy city? How does this impact

the environment?

different activities happening in this city? What resources are

needed to keep these activities working for

• How can we group resource use together? (For example, trucks and cars are both using fuel.) Encourage pupils to identify patterns in resources.

and water.)

Pupils will discuss what is happening in the city and the resources required for

5 | Share

brainstorming:

You can prompt pupils' thinking with questions and

cooling their home and using electricity.)

Guide pupils in connecting an increase in population

to an increase in resources consumed and therefore to

you can lead brainstorming before groups start to build. For example, groups can try to solve specific resource problems, such as needing more fuel for trucks and cars.

Solar cells or panels on the factory and homes

You can also suggest some solution ideas:

• A public transportation system

impacts on the greater environment. If pupils need support,

What are all the components included in the model?

• List or display some ideas. What resources are being

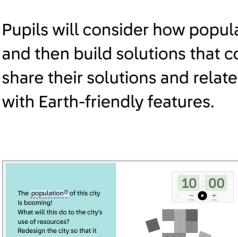
What are some that might be unseen? (For example,

people living in the houses are using water, heating and

used for these activities? (For example, fuel, electricity

Elaborate (15 min. Pupils will consider how population growth will impact resource use in the city and then build solutions that conserve those resources. Afterwards, pupils will share their solutions and relate this experience to real-life examples of cities

6 Build



following:

• Pupils can describe how an increase in population impacts use of Earth's resources and the environment. • Pupils can model solutions to minimise resource use as a population increases. Pupils can explain how their solutions conserve Earth's resources, even as the population increases.

Discuss how the two photographs show resource

increase in resources consumed.

• Pupils can connect an increase in population to an

shows how space can be used efficiently for businesses as well as the parking needs of a growing population. The outside of the building supports plant life, which cleans the

conservation in city settings. The electric bike rental system

air and supports biodiversity in the area.

Evaluate © 5 min.

Explain what

as populations increase. What impact can this have on Earth's resources?

happens to resource use

of resources as populations increase. 9 Show What You Know You can ask pupils to write answers in their exercise books

or use other methods established in your classroom.



10 | Clean Up

conserves Earth's resources and continues to function for the growing number of

city. How do your

changes impact

the resources used by the larger

population?

 Wind turbines to create sustainable energy Urban or rooftop gardens • Rainwater collection systems 7 | Share Your Build Present your new To check pupil understanding, you can look for the

enables people to avoid or minimise using cars and fueldependent vehicles to get around. The multi-storey carpark

8 | In Real Life

An optional evaluative prompt asks pupils to explain what happens to the use

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