Healthy Cities Project Pack

Made by the Learning team at RIBA

With special thanks to Mint Cake, Lionheart, Tara Gbolade and Gbolade Studios, and the Harlow and Gilston Garden Town

RIBA Architecture.com

About this pack

In this pack, you will find:

a) some key information for teachers to help deliver learning activities focusing on creating environmentally friendly and 'healthy' towns and cities.
b) activities for young people to complete that will help them to learn about environmentally friendly and 'healthy' towns and cities.

Each project is broken down into 4 parts:

- Explore
- Design based on a design brief
- Make
- Evaluate

This fits with the Secondary National Curriculum format for Design Technology (DT), Science and Geography learning.

We have included Design Technology, Geography and Science curriculum aims in this project. We have listed the curriculum aims that this particular project covers at each stage.

Key information and aims

Key words – make sure you know what these words mean. Use a dictionary, the internet or an adult to help you.	Architect – someone who designs buildings. Planner- someone who designs towns and cities. Climate Change - a change in climate patterns caused by the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels. Sustainability – providing goods or services that cause little or no damage to the environment and therefore being able to last for a longer time.
Materials – what you will need to collect to do this project.	Thick card or foamboard Tape, glue and scissors Paper, pencils and pens
Skills - what you should know how to do by the end of the project. Can you show someone else how to?	I can design with the environment in mind I can communicate my ideas by drawing them I can build a 3D model based on my drawing. I can compare my work to the work of professional architects.
Knowledge – what you should know by the end of the project. Can you tell someone else about it?	I know what architects and those working in the built environment are doing to tackle the climate crisis and to create environmentally friendly towns and cities. I know about the process of working to an architectural brief. I know different ways of making towns and cities more environmentally friendly.
Extension activities – other things you can do to build on your learning	Find other examples of environmentally friendly infrastructure. Write a factfile or create a moodboard showcasing different materials, technologies and designs that create environmentally friendly towns and cities.

What the National Curriculum says young people should learn:

Explore

Geography Key Stage 3 and 4:

- understand how human and physical processes interact to influence and change landscapes, environments and the climate
- research the causes, consequences of and responses to extreme weather conditions
- learn about the spatial and temporal characteristics, of climatic change and evidence for different causes, including human activity, from the beginning of the quaternary period (2.6 million years ago) to the present day
- discover how humans use, modify and change ecosystems and environments in order to obtain food, energy, water and other resources

Science Key Stage 3 and 4 :

- understand how carbon is used in obtaining metals from metal oxides, the carbon cycle, how carbon dioxide is produced by human activity and the impact on climate
- evaluate the evidence for additional anthropogenic causes of climate change, including the correlation between change in atmospheric carbon dioxide and the concentration and consumption of fossil fuels
- describe the potential effects of increased levels of carbon dioxide and methane on the Earth's climate and how these effects may be mitigated, including the consideration of scale, risk and environmental implications
- Learn how changes in the environment may leave individuals within a species, and some entire species, less well adapted to compete successfully and reproduce, which in turn may lead to extinction

Design

Design and Technology Key stage 3 and 4

- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others
- identify and solve their own design problems and understand how to reformulate problems given to them
- develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations
- develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools

Make

Design and Technology Key stage 3 and 4

- select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture
- select from and use a wider, more complex range of materials and components, taking into account their properties
- understand that all design practices takes place within contexts which inform outcomes
- identify and understand client and user needs through the collection of primary and secondary data
- demonstrate an ability to write a design brief and specifications from their own and others' considerations of human needs, wants and interests
- investigate factors, such as environmental, social and economic challenges, in order to identify opportunities and constraints that influence the processes of designing and making
- use different design strategies, such as collaboration, user-centred design and systems thinking, to generate initial ideas and avoid design fixation

Evaluate

Design and Technology Key stage 3 and 4

- analyse the work of past and present professionals and others to develop and broaden their understanding
- investigate new and emerging technologies
- test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups
- understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists
- understand how the critical evaluation of new and emerging technologies informs design decisions; considering contemporary and potential future scenarios from different perspectives, such as ethics and the environment

Technical Knowledge

Design and Technology Key stage 3 and 4

- understand and use the properties of materials and the performance of structural elements to achieve functioning solutions
- understand the impact of new and emerging technologies on industry, enterprise, sustainability, people, culture, society and the environment, production techniques and systems
- understand the way in which the selection of materials or components is influenced by a range of factors, such as functional, aesthetic, environmental, availability, cost, social, cultural and ethical


Gilston Park Estate

Explore

This is a project about creating healthy and environmentally friendly towns and cities. Eventually you will be working as an architect and planner to re-design your neighbourhood. An architect is someone who designs buildings and places. A planner is someone who designs towns and cities.

Gbolade Design Studios was commissioned as the sustainability lead in the design of Harlow and Gilston Garden Town. Watch section four of RIBA's Building the Future film to explore how they achieved sustainability.

What factors did the architects have to consider in ensuring that Harlow and Gilston Town was a sustainable, environmentally friendly and healthy place for people to live?

Illustrations by Dovilė Čiapaitė

Explore

Watch section four of RIBA's Building the Future film about climate change and the built environment. Find the answers to the following questions.

Building new homes
What factors did the architects have to consider in ensuring that the creation of 23,000 new homes successfully contributed to the making of a healthy and environmentally friendly new town?

Green spaces
Why is it important to include, maintain and protect green spaces in towns and cities?

Pedestrianising high streets
Why is it good to have pedestrian-only high streets?

Air pollution
How can we reduce and limit air pollution in towns and cities?

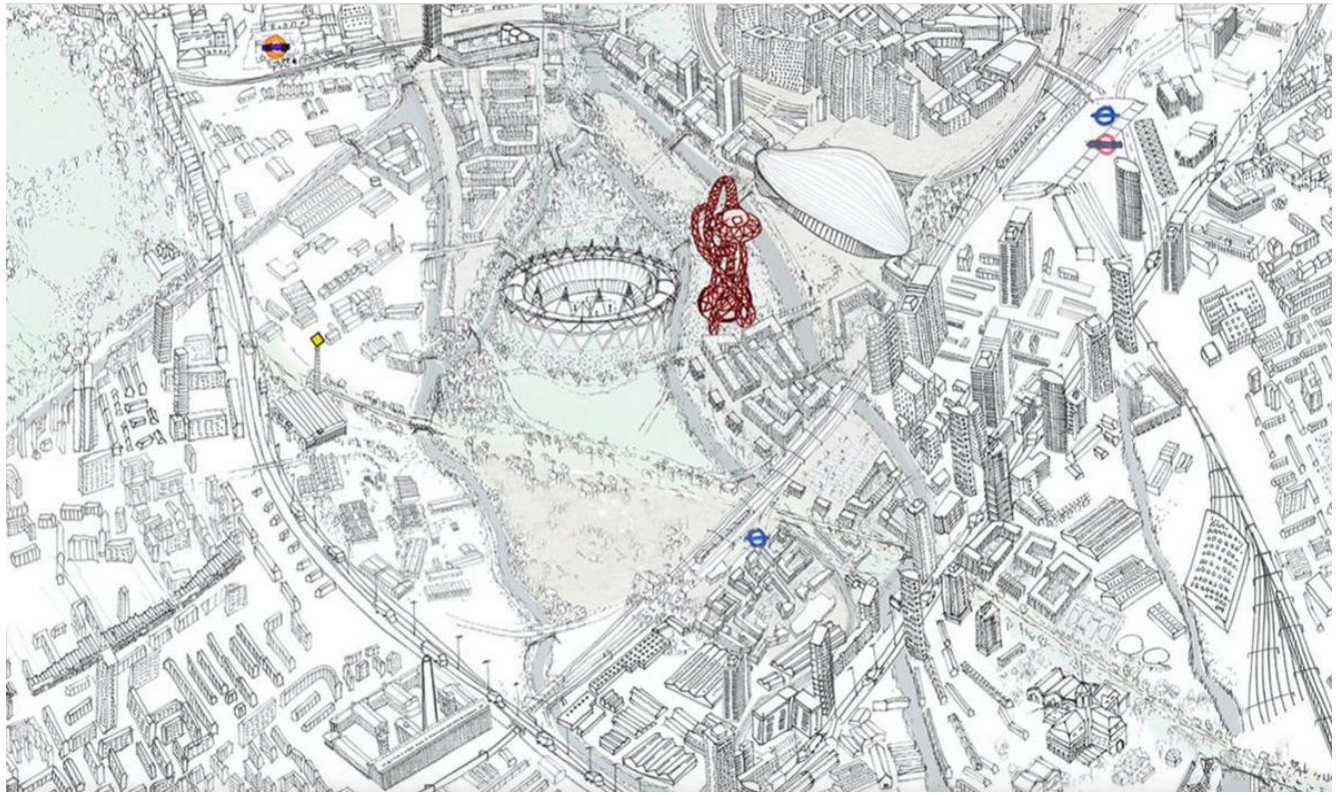
Natural surveillance
What is natural surveillance and how does it help us to feel safe in our towns and cities?

Collective responsibility
How can we play a role in making our towns and cities nicer places to live?

Explore

Kings Cross, London, Masterplan by Allies and Morrison

About two thirds complete, King's Cross is today one of London's most popular destinations for both businesses to locate and for people to visit. Its redevelopment was designed by architects from Allies and Morrison. The site's extraordinary history was very important in generating the form and nature of the masterplan. Historic buildings such as the Granary were dramatically transformed into the new home of a global arts university - Central St Martins. Transit sheds dating from the mid-1800s were retained to create distinctive retail spaces. Victorian gasworks were integrated into new squares and housing. Regent's Canal was also made accessible to the public again and other natural and landscape features, such as the Camley Street Nature Reserve, were incorporated into the overall masterplan. Read more here.



Queen Elizabeth Olympic Park, London, Masterplan by Allies and Morrison

The Olympic and Legacy Masterplans, created by architects from Allies and Morrison, have transformed a post-industrial backwater into a valuable ecological asset and the largest park created in London in 150 years. New east-west connections and a pragmatic approach to venue design is allowing for new neighbourhoods with thousands of homes to take root. And the park will soon host the most significant collection of cultural and educational buildings to be built in Britain since the Victorian era. The scale and configuration of the park were developed principally in response to anticipated visitor numbers to the 2012 Olympic Games, up to 250,000 people per day. After the Olympics, much of the previously paved area was replaced with planting. In this way, a landscape designed initially to accommodate large numbers of visitors evolved into a beautiful, unique and sustainable park for local communities to use. Read more here.

Explore

Explore some more examples of ‘healthy cities’ and environmentally friendly masterplanning on the internet:

Greenwich Peninsular Village

Bhartiya City Masterplan

Letchworth Garden City

Holloway

Now take a walk round your local neighbourhood and make notes on:

Building materials and techniques that are good or bad for the environment

Spaces and buildings you would like to improve or change

Spaces and buildings you like and why

How people travel though spaces and access buildings

How spaces and buildings are used and who uses them

Design

In this project you are working as an architect to redesign your local neighbourhood to make it more environmentally friendly, healthy, welcoming, safe, inclusive and accessible for everyone.

Look back on the notes you made during your walk round your neighbourhood and use your observations to select areas and spaces to redesign.

What spaces have you chosen and why?

Think about:

- How will you reduce noise, air and physical pollution in your neighbourhood?
- How will you design and build new spaces to ensure they do not contribute negatively towards climate change?
- How will you heat and power your buildings and infrastructure?
- What special environmentally friendly features will you include in your design?
- How will different people travel through and access your spaces?
- Are there any local environmental factors linked to climate change that you will need to consider when redesigning your neighbourhood?
- How will you make spaces safe and accessible to all?
- How will you improve people's sense of wellbeing in your spaces?

Design

Draw your design for your new neighbourhood in elevation.

This drawing will need to be a front elevation like the drawing on the left and it will need to be labelled. Use the box to the right or a separate sheet if you need more space.

Extension: Draw your design for your new neighbourhood in plan and section.

Extension: Draw a mini masterplan of your neighbourhood to showcase how it links to the rest of your town and city in a sustainable way.

Draw and label your neighbourhood here:

Make

Look at your drawings of your new neighbourhood and consider how you can transform your drawings into three dimensional architectural models.

Think about the materials you can use – strong card or foamboard is really good for a base and paper and masking tape is great for experimenting with construction techniques.

How can you cut or join your materials to make the shapes you will need to make a 3D version of your school? This short film will give you some great ideas for creating three dimensional building shapes.

Photos copyright of Maria-Alejandra Huicho

3D building ideas by RIBA Learning

Evaluate

Look at your designs and your 3D model.

Explain what you did in the project (think about what you were asked to do and how you did it):

Can you see any similarities or differences to any of the architecture you looked at whilst you were at the Explore stage of the project?

Does your design fit the brief: is your neighbourhood healthy and environmentally friendly and why?

Would you change or improve anything?

Extension:
Ask other people to give you feedback! Is there anything they can suggest to improve your design? Make the changes to improve your design.