

# CityFibre 'Inspire your city'

## School Resource Pack

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## How to use this resource pack

CityFibre and the Skills Service recently launched the online challenge 'Inspire Your City' : <https://www.theskillsservice.co.uk/inspire-your-city/> - the challenge will be advertised throughout the UK. We are encouraging Primary schools, Secondary schools, and Colleges to submit entries. You may want to set the challenge as a class project or as an online activity during the lockdown period.

The resources in this pack can be used to support entries and cover the age range 7-18.

We have put together some activities and resources that you can send out to students as a stand-alone project or in support of the Challenge. Some ideas for use:

- Set up your own School Challenge and submit the winning entry, as chosen by teaching staff.
- Encourage students to complete the pack and then use their idea as an entry submission online.
- Use the resource pack as part of an existing lesson plan or project
- Get together with your Primary Feeder schools and enter a joint submission
- Encourage families to enter their own submission

**Please do not share this resource pack, or make amendments, without prior permission. However, please feel free to change the wording to suit the age groups you are working with.**

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## Background information for the 'Inspire Your City' Challenge

What is CityFibre doing in my city?

CityFibre has a £4billion investment programme underway to bring a new digital infrastructure to 8 million homes and businesses across the UK. Their full fibre networks already exist in more than 60 towns and cities. As homes and businesses are connected, they will have access to next generation, gigabit speed broadband services. Imagine downloading a full movie in about 2 minutes or a music file in less than a second!

The majority of broadband services advertised as 'fibre' today are only actually part-fibre. They use ultrafast fibre to the metal telecoms box in your street, and then switch to slow and unreliable copper cabling to your property. Full Fibre networks, however, transmit data at lightning speeds down fibre optic cables all the way into your home. With no bottle necks you can access reliable broadband packages of up to Gigabit speeds, that's 1000 Mbps! This is why connected cities are being called 'Gigabit Cities'.

Gigabit Cities will provide lightning fast digital connections to households, schools, workplaces and even traffic lights and CCTV cameras.

We have never seen these speeds before, and so, we are looking at how it can be best utilised in our cities and towns. This is where your school can take an active part...

You can read more about Gigabit Cities here: <https://www.cityfibre.com/gigabit-cities/>

There's also a YouTube video here: <https://www.youtube.com/watch?v=liCmVbHjYvM>

Here are some of the ways that full fibre broadband is being used, or could be developed throughout our cities:

- Autonomous cars
- SMART technology in the home – automated lighting, heating etc.
- Measuring the levels of Carbon Dioxide in empty properties
- Checking for cars in banned parking spaces
- Drone deliveries
- Lessons over Skype across multiple schools
- SMART Sensor packages for temperature, parking, fire doors etc.

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## Activity 1 – Smart Cities across the world

A smart city is an urban area that uses information and communication technologies (ICT) to increase operational efficiency, share information with the public and improve both the quality of government services and citizen welfare.

- **Dusseldorf** – Using SMART transportation and autonomous vehicles (Driverless cars)
- **Bilbao** – Reducing emissions and encouraging cycling
- **Helsinki** – Manufacturing sustainable textiles, using 'on demand' public transport
- **Taipei** – Smart parking sensors, wireless charging ports, SMART rubbish bins that send alerts when full
- **Auckland** – Environmental monitoring and 5G technologies
- **Copenhagen** – Environmental projects, route planning for cyclists
- **Geneva** – Free parking space information, traffic noise monitoring, sustainable energy projects
- **Oslo** – Electric buses, greener energy systems, automatic lighting in city streets
- **Zurich** – Online services for residents, citywide Wi-Fi access, electric public transport
- **Singapore** – Digital finance and logistics, monitoring systems for the elderly
- **New York** – online charging kiosks for digital devices
- **Dubai** – monitoring system for driver tiredness, autonomous police stations, Dubai-Abu Dhabi Hyperloop network

Across the world there are some amazing ideas being shared, new technologies being developed, and our global cities are changing at a fast pace.

**Activity – Pick ONE city from the list above, research the SMART technology that is being used and how it is enhancing the lives of the people who live there. Write a short article about the technology that inspired you the most.**

**What ONE discovery from your research would you want to see in YOUR city, town or village and why?**

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## Activity 2 – Robots and drones

Robots and drones are used across the world in a huge number of ways. On the table below you will see the name of a robot or a drone. Look up each one using the internet and write down what it is used for. Which one is your favourite?

<b>PEPPER THE ROBOT</b>	
<b>BELLABOT</b>	
<b>SPOT ROBOT DOG</b>	
<b>ATLAS ROBOT</b>	
<b>DA VINCI SYSTEM</b>	
<b>THE DELFLY NIMBLE</b>	
<b>GOOGLE WING DRONE</b>	
<b>AMAZON DRONE</b>	

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### Activity 3 – Living with technology

Broadband services across Gigabit Cities will be lightning fast and reliable with speeds of 1000 Megabits or 1 Gigabit per second. That means, with a full fibre connection to your home, you can download an entire movie in around 2 minutes or a music file in less than a second. Downloading your favourite games will take no time at all and you won't get any buffering either. Not every home has this yet but CityFibre is working hard to provide the connections across the UK.

Technology can be used in various ways across a city, things like real-time crime mapping and virtual medical appointments are happening right now.

<b>WEATHER SYSTEMS</b>	<b>EDUCATION</b>
<b>TRAFFIC MANAGEMENT</b>	<b>WORKPLACES</b>
<b>SENSORS</b>	<b>PUBLIC TRANSPORT</b>
<b>ENERGY AND WATER</b>	<b>INFORMATION FOR RESIDENTS</b>
<b>LEISURE ACTIVITIES</b>	<b>COMMUNITY ACTIVITY</b>
<b>HOUSING</b>	<b>HEALTH</b>

#### **Activity – answer the following questions**

- What is a Megabit?
- What is a Gigabit?
- Explore the CityFibre Gigabit City Map using this link: <https://www.cityfibre.com/gigabit-cities/>
- What is the name of the office worker in the CityFibre city who uses Skype for meetings?
- What activities did Graham do at school once they got connected to full fibre broadband?
- What is the name of the Rushton's cat?
- Thinking about your city, town or village, and using the topics in the table above as a guide – how could technology improve where you live? How could it enhance your life or the lives others?
- Most ideas come from fixing a problem – what city problems could we fix by using technology?
- How can we connect our physical world to our digital world?

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### Activity 4 – Scavenger hunt

Use the CityFibre website and a search engine to find the one word answers <https://www.cityfibre.com/>

TAKE THE FIRST LETTER OF EACH ANSWER. WHAT DOES IT SPELL OUT?

QUESTION	ANSWER
WHAT TYPE OF TECHNOLOGY IS A VIRTUAL REALITY HEADSET?	
NAME A POPULAR STREAMING SITE PEOPLE USE FOR MOVIES THAT BEGINS WITH THE LETTER 'N'	
NAME A GIGABIT CITY IN SCOTLAND THAT BEGINS WITH THE LETTER 'S'	
WHAT IS THE NAME OF THE WORLD'S FIRST SOCIAL SEMI-HUMANOID ROBOT?	
A FULL FIBRE NETWORK THAT RUNS THROUGHOUT A CITY IS CALLED A DIGITAL - ----- WHAT'S THE WORD?	
WHAT TYPE OF ENGINEERING COVERS AUTOMATION THAT BEGINS WITH THE LETTER 'R'?	
PETERBOROUGH IS CURRENTLY WORKING TOWARDS BEING THE UK'S ----- CAPITAL – WHAT'S THE WORD?	
WHICH CITY WAS THE SITE OF CITYFIBRE'S FIRST CITY-WIDE FULL FIBRE INFRASTRUCTURE PROJECT?	
CITYFIBRE'S FULL FIBRE BROADBAND USES THE FASTEST FIBRE ----- CABLES – WHAT'S THE WORD?	
CAMBRIDGE WAS THE FIRST CITY IN THE UK TO TAKE PART IN THE ----- DATA PROJECT – WHAT'S THE WORD?	
WHAT IS THE FIRST NAME OF THE CITYFIBRE CITY MANAGER FOR PETERBOROUGH AND CAMBRIDGE?	
WHICH STORE IN MILTON KEYNES HAS BEEN USING ROBOTS TO DELIVER SHOPPING?	
CAMBRIDGE'S CITY-WIDE SENSOR NETWORK IS PART OF THE ----- CITY PLATFORM – WHAT'S THE WORD?	
NAME THE AMERICAN COMPANY THAT MAKES ELECTRIC CARS THAT BEGINS WITH THE LETTER 'T'	
HAVE WE ALREADY GOT DRIVERLESS (AUTONOMOUS) TRACTORS BEING USED IN THE UK?	

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## Activity 5 – The challenge

You have looked at Gigabit Cities, SMART Cities, robots and drones.

You have identified problems that are in our city and now it is time to fix them!

**'Inspire Your City'** by designing a product or a service that fixes one of the problems you have identified. You can focus on one theme such as health or you can cover more than one.

Your product or service must be something that helps others or helps the city itself. The only limit is your imagination!

Things to think about:

- A business name and a logo – does it show off what you want to do?
- Who is your product or service for?
- What does it do?
- How will it help other people or how will it help the city?

You can draw your idea or write about it or both. You might want to make a short video describing your idea.

Get your family involved and you can all work on this together....

When you have your idea ready you can enter our online challenge at <https://www.theskillsservice.co.uk/inspire-your-city/>

You could help your school to win up to £500 worth of tech vouchers to buy equipment!

We also have individual prizes so check out the web page for more information.

**An adult needs to enter your submission so if you're not 18 please ask your teacher or a family member to do this for you.**

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## Useful links

CityFibre – Explore a Gigabit City	<a href="https://www.cityfibre.com/gigabit-cities/">https://www.cityfibre.com/gigabit-cities/</a>
Solving Urban Problems using Technology	<a href="https://youtu.be/nnyRZotnPSU">https://youtu.be/nnyRZotnPSU</a>
The tech empowering the less able in cities	<a href="https://youtu.be/QjQy3XT_aPU">https://youtu.be/QjQy3XT_aPU</a>
Cool things drones are being used for	<a href="https://www.bbc.co.uk/newsround/44329206">https://www.bbc.co.uk/newsround/44329206</a>
CityFibre’s construction process	<a href="https://www.youtube.com/watch?v=CH9FYx1zOLg">https://www.youtube.com/watch?v=CH9FYx1zOLg</a>
CityFibre’s Gigabit City overview	<a href="https://www.youtube.com/watch?v=z7e9VutUiOs">https://www.youtube.com/watch?v=z7e9VutUiOs</a>
Best SMART Cities in the UK	<a href="https://www.computerworld.com/article/3412328/best-smart-cities-in-the-uk.html">https://www.computerworld.com/article/3412328/best-smart-cities-in-the-uk.html</a>
‘Inspire Your City’ Challenge Page	<a href="https://www.theskillsservice.co.uk/inspire-your-city/">https://www.theskillsservice.co.uk/inspire-your-city/</a>
‘Inspire Your City’ Twitter Feed	<a href="https://twitter.com/InspireYourCity">https://twitter.com/InspireYourCity</a>
Career information for Robotics/Automation <a href="#">path/automation-robotics-engineering</a>	<a href="https://www.allaboutcareers.com/careers/career-">https://www.allaboutcareers.com/careers/career-</a>
Travelling to work in 2050 <a href="#">look-like-in-2050</a>	<a href="https://spectra.mhi.com/what-your-commute-will-">https://spectra.mhi.com/what-your-commute-will-</a>
Urban Data Project – Cambridge <a href="#">places/smart-cambridge/sensor-deployments/urban-data-project/</a>	<a href="https://www.connectingcambridgeshire.co.uk/smart-">https://www.connectingcambridgeshire.co.uk/smart-</a>
Starship Delivery Robots – Milton Keynes	<a href="https://youtu.be/AbQN-a2d1s0">https://youtu.be/AbQN-a2d1s0</a>
Areas of Innovation <a href="#">smart-city-initiatives/</a>	<a href="https://www.nesta.org.uk/feature/10-people-centred-">https://www.nesta.org.uk/feature/10-people-centred-</a>

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