



Carbon

Ruins

Manchester

Key Stage 3

Quick Lesson Plan

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The lesson plan below will support your pupils to work through the process of Carbon Ruins in as little as 2 hours. You can also break up each of the steps into smaller chunks or extend them for larger projects.

This lesson plan is designed to work alongside the downloadable powerpoint: [Carbon Ruins KS3 Presentation](#). You will find links to our resources that are available for you to download either as pdf files or in word format (should you wish to edit and adapt them).

We recommend completing Carbon Ruins over at least two sessions, one to come up with objects and stories, and one to refine ideas and get them ready for submission. You will find that your pupils' ideas will keep growing after being introduced to Carbon Ruins, so having the chance to reflect and revisit the project will make for a stronger submission!

Please note that the class will need a basic understanding of climate change and related concepts: please see the [Key Stage 3 Resource Pack](#) for suggestions.

For the session, break your pupils into groups of 4-5.

Slide	Activity
1	<p>Introducing Carbon Ruins Manchester</p> <p><u>Explain:</u> The year is 2050 and Manchester Museum is putting on an exhibition called Carbon Ruins. We need your help!</p> <p>We would like you to use your extensive knowledge of The Fossil Era to select and object that helps to show how we have reached net zero carbon by learning to live more sustainably.</p> <p><i>Check that the class understand what net zero means</i></p>
2	<p>Climate Change</p> <p><u>Explain:</u> 2050 is an important year because we've reached net zero. This film describes some of the causes of climate change and its impacts now and in the future if we fail to reach zero carbon and if we continue to live unsustainably.</p> <p><i>Click on the slide to go to the film: note this opens in your browser. When the film has finished, press escape and return to the presentation.</i></p> <p><u>Explain:</u> Notice the urgency of the message to act. The actions we will need to take can be made if we learn to live more sustainably.</p> <p><u>Ask:</u> Does anyone know what sustainability means?</p>
3	<p>Sustainability</p> <p><u>Introduce the concept of sustainability:</u> All life on Earth depends on the environment. The natural resources that come from the environment include food, water, plants, and minerals.</p> <p>Sustainability is the idea that humans must interact with the environment in a way that ensures there will be enough resources left for future generations.</p>

Slide	Activity
	<p>We have produced a Sustainability activity sheet [pdf / word] to help the class to understand what sustainable actions look like.</p>
4	<p>Its about time</p> <p><u>Explain:</u> We are currently living in the Fossil Era. Starting in 1850, the Fossil Era shows how our relationship with fossil fuels has changed. The Fossil Era lasts for 200 years and is split into three different periods.</p> <p><i>Click to reveal close-up of the Great Expansion</i></p> <p><u>Explain:</u> Starting in 1850 the Great Expansion is the time when we started to dig up more and more fossil fuels.</p> <p><i>Click to reveal close-up of the Fossil Fear Years</i></p> <p><u>Explain:</u> But by 1972 people started to question our reliance on fossil fuels. There was also more and more evidence that burning fossil fuels was causing climate change.</p> <p><i>Click to reveal close-up of the Transition Years</i></p> <p><u>Explain:</u> Only in 2015 did our journey towards a fossil free society begin. The transition years were not always easy and people had to give up on old habits, but most people felt that their lives improved in the long run.</p>
5	<p>Future thinking: the world in 2050</p> <p><u>Explain:</u> We need to do some time travel and imagine that we've been transported forward into the future.</p> <p><i>Click to start the clock moving through the years...</i></p> <p><u>Explain:</u> The year 2050 is the end of the Fossil Era.</p> <p>The world in 2050 is different to when you were at school in the 2020s because we've learned how to live more sustainably and reached net zero carbon.</p> <p><i>Click to show questions</i></p> <p><u>Discuss:</u> How old are you in 2050? What is the world like in 2050? What has changed since the 2020s?</p> <p><i>The class may need some help thinking about the future but encourage them to think about what sort of world they want to be living in by 2050.</i></p> <p><i>This may or may not initially be related to sustainability or net zero carbon, but it is important for them to have the chance to imagine first. You may want to use the Me in 2050 [pdf / word] sheet to help with this</i></p>
6	<p>The task</p> <p><u>Explain:</u> In the year 2050 you all work at Manchester Museum as curators. You've been asked to use your extensive knowledge of the Fossil Era to work out what to put in a new exhibition about how we have reached net zero, called Carbon Ruins Manchester.</p> <p><u>Ask:</u> Has anyone been to a museum before? What do museums do? What do you find in museums?</p>

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	<p><u>Explain:</u> Museums are places where you can go to find out about different places and times.</p> <p>Museums are full of old objects, like dinosaurs and mummies, that we don't really have anymore.</p> <p>We need you to think about what would seem old in 2050, and what we won't have in 2050 that we might have had in 2023.</p>
7	<p>What does a museum curator do? (optional)</p> <p><i>If your class is less familiar with museums and what a curator might do, you may want to use this slide to help frame the task.</i></p> <p><u>Ask:</u> Does anyone know what a museum curator does?</p> <p><u>Explain:</u> Museum curators look after museum objects. They are also the people who put together museum displays and exhibitions like this one.</p> <p><u>Ask:</u> Look at this display from Manchester Museum's new dinosaur gallery. What can you see?</p> <p><i>Encourage the group to call out any features of the display that they can see. Then work through the following eight tasks that curators do to make a display</i></p> <p><i>Click to highlight the case theme</i> Curators select the themes for displays, like this one that is all about British Dinosaurs</p> <p><i>Click to highlight objects</i> They also select which objects are displayed, like these fossil dinosaur bones</p> <p><i>Click to highlight labels</i> For each of the objects, they write short labels to identify what they are</p> <p><i>Click to highlight text panel</i> More detailed information is also provided to help visitors to understand a theme</p> <p><i>Click to highlight images</i> Curators often use images to help visitors to imagine</p> <p><i>Click to highlight story</i> And they tell stories that bring the objects and themes to life</p> <p><i>Click to highlight question</i> They may also ask questions to help visitors to think more about different themes</p> <p><i>Click to highlight case</i> And really importantly, curators are responsible for looking after objects, like this one that is displayed in a special glass case.</p> <p><u>Explain:</u> As curators for the Carbon Ruins Manchester exhibition, you will be choosing the object and working out what information is needed for visitors to understand the story it tells.</p>

Slide	Activity
8	<p>Carbon Ruins in Sweden</p> <p><u>Introduce the film:</u> This film is about the Carbon Ruins exhibition that was made in Sweden. Look out for some of the different objects that are on display and how they are used to tell a story about how life is different in 2050.</p> <p><i>Click the slide to load the film: click the play button to start the film</i></p>
9	<p>Life in 2050</p> <p><u>Explain:</u> There are lots of changes we made to reach net zero and live more sustainably in 2050. Here are some different themes to help you think about the world in 2050:</p> <ul style="list-style-type: none"> What we need and buy How we get rid of things Energy and power Travel and transport Our living world Food and water <p><u>Ask:</u> Is there anything else we should think about?</p> <p><u>Explain:</u> Imagine the world in 2050 and in your groups start to make some notes about what it's like. You may want to think about the themes on the slide, or you may have other ideas. Remember that we've reached zero carbon and have learned to live more sustainably.</p>
10	<p>Examples of change</p> <p><u>Explain:</u> Using those themes, we can start to think about how life is different in 2050, particularly focusing on the things we did back in the 2020s (when you were still at school) that were unsustainable or produced lots of carbon and how they might impact our hopes for the future</p> <p><i>Click to show image of plastic free oceans</i> In 2050 you may hope for clean plastic-free oceans <i>Click to show example</i> We may get there by changing from single use bags in the 2020s to canvas bags in 2050. Your object would be a plastic bag.</p> <p><i>Click to show recycling</i> In 2050 you may hope that we produce only recyclable waste <i>Click to show example</i> ...changing from bin bags full of unsorted rubbish to being able to recycle all waste easily. Your object would be a black bag full of rubbish</p> <p><i>Click to show clean air</i> You may hope for clean fresh air <i>Click to show example</i> Which would be achieved by changing from coal power to renewable energy. Your object would be a lump of coal</p>

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	<p><i>Click to show clean air</i> Clean fresh air could also be achieved <i>Click to show example</i> ...through private family car ownership being banned because we have better clean public transport. Your object would be the family car</p> <p><i>Click to show healthy peat bogs</i> You may wish for healthy peat bogs absorbing carbon dioxide <i>Click to show example</i> This would be about changing from peat compost to peat free compost so your object would be a bag of peat compost</p> <p><i>Click to show rainforests</i> You may hope for healthy rainforests absorbing carbon dioxide <i>Click to show example</i> Which could be achieved by using plant based meat instead of clearing rainforests for cattle to graze. Your object could be a burger.</p> <p><i>Ask students to use the Life in 2050 Comparisons [pdf / word] sheets to think about some of the changes that they hope for. Give each group two or three sheets to work on or groups may want to choose their own themes.</i></p>
11	<p>Selecting an object</p> <p><u>Explain:</u> Each group should decide on their favourite example of how the world changed by 2050. In the same way as we've just seen, think about what object might be used in a display to represent that change.</p> <p>The object will need to be something from the Fossil Era (back in 2023 when you were at school) that tells an interesting story about the change that happened to reach zero carbon and live more sustainably in 2050.</p> <p>Think about what familiar objects from today would be unusual museum pieces by the year 2050.</p> <p><i>Click to reveal two questions to help the groups to select an object.</i></p> <p><u>Explain:</u> You may or may not be able to think of an object - don't worry if you can't think of one yet or can't decide between a couple. Just focus on the change you're interested in when you answer the questions: something may come to mind as you work through the questions. The important thing is to think about what has changed because we've learned to live more sustainably.</p> <p><i>Hand out a Carbon Ruins Manchester Object Sheet [pdf / word] to each group and ask them to fill in page 1: their chosen object, what changed and why.</i></p>
12	<p>Example object</p> <p><u>Explain:</u> One example could be that in 2050 we want there to be no more plastic pollution. A lot of plastic pollution is caused by the amount of single use plastic we use.</p> <p><i>Click to show empty exhibition hall</i></p> <p><u>Ask:</u> What object might we use to represent single use plastics?</p>

Slide	Activity
	<p><i>Click to show plastic bag</i></p> <p><u>Explain:</u> We could have chosen plastic bottles, plastic straws or many other examples, but let's stick with plastic bags.</p> <p>This single use plastic bag is made of oil and dates back to 2014. As well as representing something we want to be different in the future, it is also an example of something we no longer need or buy in 2050.</p> <p><i>Click to reveal the questions</i></p> <p><u>Explain:</u> For your object or the change you are interested in, try to answer these questions. We can work through them for the plastic bag</p> <p><u>Ask:</u> Why doesn't this exist any more in 2050? <i>Answers may include: Single use bags are wasteful: the resources the bag is made of and the energy that was used to produce it are wasted if the bag is only used once. Plastic is made of oil which is a fossil fuel so plastic bags take carbon out of the ground and release it into the environment. Plastic doesn't rot away or decompose, so a lot of plastic has ended up in landfill sites, or polluting the land and oceans, causing harm to wildlife.</i></p> <p><u>Ask:</u> Why did we stop using it? <i>Suggestions may include: it's wasteful, harmful to animals (ocean plastic pollution as seen on Blue Planet 2), they may know that there is now a charge for plastic bags in shops, so they may say that people didn't want to pay for something that only worked once or twice.</i></p> <p><u>Ask:</u> What was used instead? <i>Alternatives may include: Bags made of other materials (fabric, recycled materials) that were more sturdy and lasted longer. Boxes, or maybe even people grew more of their own food so didn't need to go to the shop to buy so much food, and didn't need bags any more!</i></p> <p><u>Explain:</u> To answer these questions for your own idea, you'll need use a mixture of facts and your own ideas.</p> <p><i>Click to swap the plastic bag for a question mark: give the class some time to discuss the questions and fill in page 2 of the Carbon Ruins Manchester Object Sheet [pdf / word]</i></p>
13	<p>Story Mountain</p> <p><u>Explain:</u> Now that you have selected an object and thought about why it doesn't exist in 2050, why we stopped using it and what we used instead, we need to put together a story for the label that will tell museum visitors more about what happened.</p> <p>You can use this story mountain to help you to write a label that will tell visitors about the story your object tells about the change that happened.</p> <p><u>Talk through the process:</u></p> <ul style="list-style-type: none"> • Use the opening to introduce your object and explain its relevance in the Fossil Era • Then build up some interest by describing some of the issues or problems that made the object unsustainable and how people reacted • The turning point is where you can describe what change took place; when, how and where? How did the object fall out of use?

Slide	Activity
	<ul style="list-style-type: none"> Finally, in the resolution, you can describe what life in 2050 is like without the object: has it been replaced, was it really needed in the first place, do people miss it? <p>As well as your notes, you may want to carry out some research to find any facts you want to include in your story.</p> <p>Give the groups some time to discuss their story and ask them to use page 3 of the Carbon Ruins Manchester Object Sheet [pdf / word] to create their story</p>
14	<p>Expand (optional)</p> <p><i>If the class is struggling to work through this process, you may find it useful to use this slide to illustrate the process using the plastic bag example.</i></p> <p><u>Explain:</u> Let's return to the bag, made in 2014 that would no longer be used or needed in 2050: remember that the bag represents plastic pollution that has stopped being a problem by 2050.</p> <p><i>Click to show the bag.</i></p> <p><u>Ask:</u> What might you include in the opening to say what the object is and how it was used?</p> <p><i>Click to show summary of the opening for the bag</i></p> <p><u>Explain:</u> It's a plastic bag, used to carry shopping during the Fossil Era. Plastic bags used to be given away for free.</p> <p><u>Ask:</u> For the build up, why are plastic bags unsustainable and what might have happened to make the object less common?</p> <p><i>Click to show the build up for the bag</i></p> <p><u>Explain:</u> For the bag, we know they're unsustainable because they are made of oil, and they take hundreds of years to decompose. The Blue Planet 2 documentary was really important in raising awareness of how harmful bags were to wildlife.</p> <p><u>Ask:</u> For the turning point, what change might have taken place so that bags fell out of use?</p> <p><i>Click to show the turning point for the bag</i></p> <p><u>Explain:</u> For the bag the government introduced a 5p bag tax in 2015 and then doubled it to 10p in 2021. As a result, people started to question whether they wanted to spend money on something harmful to wildlife, that the only used once or twice.</p> <p><u>Ask:</u> Finally, what might life be like without the bag and did something else replace it?</p> <p><i>Click to show the resolution for the bag</i></p> <p><u>Explain:</u> For the bag, life hasn't stopped without these bags. People just use canvas ones instead - this probably took another 5 years after the 10p tax so perhaps we could say that it happened by 2027.</p>

Slide	Activity
15	<p>Selecting the object to submit</p> <p><u>Explain:</u> We are only allowed to submit one object for the whole group so we will need to all vote for our favourite object and story. Each group will need to put together a really good argument for their object to be the one that is submitted.</p> <p><i>Click to show the questions</i></p> <p><u>Explain:</u> You will need to decide how you do this - it may just be one person or you might all want to be involved. You will need to pitch your object to the class. Tell them what the object is, the story it tells about how we have reached zero carbon in 2050 and learned to live more sustainably, and why it's the most important object to have in the exhibit.</p> <p><i>You may want to set a time limit for each group to present their pitch, and will need to give each group some time to work out how they will pitch the object. Ask them to use page 4 of the Carbon Ruins Manchester Object Sheet to help them to structure their pitch. It's up to you how you want to make a decision, but options include:</i></p> <p><i>A blind vote by the class</i> <i>Teacher selects the best object</i> <i>Group voting and feedback</i></p> <p><i>To help decide on the winner, we've produced a set of Score cards [pdf] and a Score sheet [pdf / word] that you may want to use for the judging process.</i></p> <p><i>Click to remove the object pitch instructions: the groups may want to present their pitch standing in front of this slide</i></p>
16	<p>Writing the label</p> <p><i>Once you've decided on the object you want to submit, you will need to put together the text for the label and find an image to submit alongside it.</i></p> <p><i>Click to show image</i></p> <p><u>Explain:</u> Our object submission will need an image – this could be a drawing, a photograph or an image found online</p> <p><i>Click to show the label</i></p> <p><u>Explain:</u> We also need to submit a label</p> <p><i>Click to highlight object name</i></p> <p><u>Explain:</u> The label includes the object name – what it is</p> <p><i>Click to highlight facts</i></p> <p><u>Explain:</u> It also shows any relevant facts about the object</p> <p><i>Click to highlight the story</i></p> <p><u>Explain:</u> And it also contains the story that the object tells</p> <p><i>We've produced a Carbon Ruins poster [pdf / word] to use as a template for the label. Note that because images will appear on the Carbon Ruins virtual exhibition alongside your label, please also make sure to keep a note of the source of your image as we will need to credit any images that are used.</i></p>

To submit your object, go to the [Carbon Ruins, Manchester site submission page](#). You will be asked to enter the following information:

- School name
- Year group or group name: please ensure that you include the key stage level of your group and either your class or group name (particularly important if there will be multiple submissions from your school).
- Teacher's contact name
- Email
- Submit your text: please ensure you include all of the information you have produced for the label, including the object name and story (either type the text directly into the box or paste it in).
- Upload your object image: please note that the maximum file size is 99mb. If your image is a drawing, you may want to scan or photograph it. For images obtained online, please include the image source / link in the text box above.