

Google Arts & Culture

Learn Anywhere: Heritage on the Edge

In association with



[Moai Dispersed Along Coastal Rapa Nui, CyArk](#)

How to use this lesson plan

This plan takes you on an exciting journey with plenty of links through to amazing online content so no need to print. This lesson plan is suitable for anyone but we recommend it for ages 11 to 14. It's a lot of fun to go on this journey with parents, teachers or your friends, but it is designed so you can explore independently at your own pace. There are different types of questions to answer: can you discover, explore and invent? We think so.

Check in with your parents or teacher if you need to, but you'll need a tablet, computer or smartphone. You can do this *Learn Anywhere* Lesson on almost any device as long as you can get online and use a web browser.

There are 2 Chapters:

Chapter 1 - Rapa Nui Discovered 60 minutes

Chapter 2 - Extra Discovery 45 minutes

You'll see some helpful signs on the way:



Useful information to guide you through the lesson



Things you'll need to watch, read, learn and make things with during the lesson.



Digital activity time. Take quizzes and explore.



Estimated time to do a section of this lesson



Explore online content. Discover videos, stories, or go and look at and zoom around pictures.



Activity time. This is where you get to design, make or write something of your own.



Headphones to listen to videos and audio



3D Model for you to spin around and explore.



Things you'll need

Things that will help you during this *Learn Anywhere* lesson.



Scrap Paper



Scissors



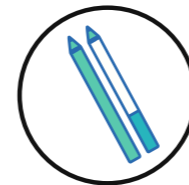
Plasticine or Modelling Clay



Notepad



Brush and Paint



Pens and Pencils



Tablet or Computer

Welcome to *Learn Anywhere: Heritage on the Edge*

In this *Learn Anywhere* lesson, you are going to learn all about heritage, how we understand it, how it is found, how it is lost, how we protect it. Discover for yourself how the famous and mysterious statues of Rapa Nui are under threat. You will investigate efforts to protect them. Hunt for facts and details about these statues. Get ready to investigate...

What will you do?

1. Go on an adventure to discover the Rapa Nui island. Who lives on it? Where did they come from? What is their heritage?
2. Discover why their heritage is important to them and why it is under threat.
3. Hunt for facts and secrets about other heritage sites under threat.
4. Design your own moai statue using digital apps, paper and pencils/pens, or make one out of modelling clay or craft materials.
5. Write about heritage that is local to you and why it should be protected.



Moai in Rapa Nui Watching the Sunset, 2019, CyArk

What will you learn?

1. What is heritage - looking at examples of four major sites around the world.
2. Why is it important?
3. What threatens it?
4. How is it being protected?
5. What is the role of local people?
6. What technology is being used and why?

After studying this lesson, you will be able to:

1. Describe and identify the different features of how climate change is affecting heritage sites.
2. Understand the difference between different heritage sites.
3. Design a moai statue and write about heritage local to you.

Vocabulary: 3D, archaeology, buildings, climate change, coastline, conservation, culture, deforestation, drone, ecocide, El Nino, emigration, erosion, heritage, history, landscape, laser-scanning, moai, Pacific Ocean, pointcloud, Polynesia, rainfall, Rapa Nui, sea levels, society, statue, storm, technology, tourism, UNESCO, World Heritage Site.

There's one more thing to know before you go on your lesson. Google Arts & Culture pictures are big. So big that you can zoom in. Explore. Sometimes right down to the chisel mark.

So you just need to click on a link, then on the Magnifying Glass symbol and zoom in with the Zoom Slider. Drag the white box around and you can explore the picture. You'll find out for yourself. Here's an example of a Google Arts & Culture picture and the zoom slider.

The diagram illustrates the zooming process on Google Arts & Culture. It consists of three main parts:

- 1. Click on the magnifying glass:** A screenshot of the Google Arts & Culture interface shows a painting of a landscape with a tree and a white box. A magnifying glass icon in the bottom right corner is highlighted with a red circle and a dashed line pointing to the first instruction box.
- 2. Use the slider to zoom in. The white box can be dragged to different parts of the picture:** A vertical zoom slider interface is shown with a white box indicating the current zoomed-in area. A hand icon with arrows indicates the slider can be moved. A dashed line connects this step to the zoomed-in detail.
- 3. Explore art works in detail. Find hidden stories:** A large, zoomed-in detail of the painting shows a group of people working in a field. A dashed line connects this detail to the third instruction box.



[A Moai Looking Out Over the Rapa Nui Landscape, 2019, CyArk](#)

Chapter 1



What's this chapter about?
Rapa Nui Discovered



What will I do?
Explore what heritage means
Discover the history of Rapa Nui
Understand the features of the moai statues on Rapa Nui
Discover the effects of climate change on Rapa Nui
Create your own moai



How long will this chapter take?
60 minutes



Aerial Image of Chan Chan, Peru, CyArk

What is heritage? And why is some of it "on the edge"?

Look around you - you may see buildings, some a few years old, some much older. Perhaps a landscape that has been farmed for hundreds, maybe thousands of years. Perhaps you can see or remember some statues around your town or city? These are all examples of heritage - stories, objects and buildings that conjure up a shared history that has built up over thousands of years.

Now look in the mirror. Did you know that your blood carries iron in it, which helps it transport oxygen from your lungs to the rest of your body? Believe it or not, that iron comes from stars that exploded, probably billions of years ago. So you are uniquely connected to the universe, our ultimate heritage.

Why is it important to understand and, where necessary, conserve our heritage? There are lots of reasons but we value our connection to our past, and learning about various cultures helps us be a good global citizen. By looking at the past we might avoid making major mistakes that were made by our ancestors and learn from their successes.

In this lesson, we'll be exploring some heritage sites and how they are being protected from the threat of global climate change.



But first click [here](#) to explore heritage on the edge



Representation of Moving the Moai, CyArk

Let's start with the mysterious statues of Rapa Nui, or Easter Island, as it's also known.

Rapa Nui is one of the most remote inhabited places in the world. The island is in the Pacific Ocean, and it is a special territory of Chile, which is over 2,000 miles away from Rapa Nui.

It is most famous for the nearly 1,000 statues, called moai, created by the early Rapa Nui people. It is believed that Rapa Nui's Polynesian inhabitants arrived sometime near 1200AD. Polynesia is a name for the area of the world within the "triangle" formed by Hawaii, New Zealand and Rapa Nui itself.

These settlers created an ingenious and adaptable society that meant they could create the enormous moai. Over time, land-clearing by the inhabitants for farming led to deforestation. Diseases brought by European explorers, raiding for slaves and emigration led to the population numbers declining.

Although Rapa Nui is often used as a cautionary tale of "ecocide", meaning "ecological suicide" where people damage the environment on which they depend for life, it is not that simple. There were many causes for the eventual collapse of the society as you'll find out via the link below.

In 1995, UNESCO named Rapa Nui a World Heritage Site, and its current population is about 7,750. But Rapa Nui is under threat again from climate change - rising sea levels and storms are eroding the coastline and the moai, which are very important to human history.



Click [here](#) to explore more about the history of Rapa Nui.



Now let's look closer at these mysterious moai. The moai are sacred to the people of Rapa Nui and considered the source of their spiritual strength. Click [here](#) to explore what the moai represent and [here](#) to hear some present day Rapa Nui people explain why they are important. Remember to unmute your device.





Now it's your turn. Click [here](#) to load an amazing 3D model of Rano Raraku, a volcanic crater used as a quarry for about 500 years, which supplied the stone for about 95% of the moai. Move the model around, go full screen, explore and look closely. What can you see? You can find other cool 3D models [here](#) and [here](#).





Rapa Nui's environment and culture are under threat from climate change.

Rising sea levels, decreasing rainfall, and more intense storms are all having a devastating effect.

Rapa Nui's moai are at the coast, making the island's heritage vulnerable to rising sea levels.

In the last 100 years, sea levels in the Pacific Ocean have risen several millimetres per year. This doesn't sound very much but it soon has an impact, with higher waves eroding the coastline and the moai. The loss of the moai to the sea would be devastating to the Rapa Nui people.

The Pacific Ocean is also cooling, by about 0.15°C per decade, affecting which creatures can live in the sea close to Rapa Nui. Rapa Nui is also particularly close to the South Pacific Ocean "garbage patch", an area of thousands of tons of plastic garbage, which contaminates the ocean.

Rapa Nui has no permanent streams or rivers for fresh water so decreasing rainfall is a great concern as it is important to agriculture. For the first time ever, the Rano Raraku lake (in the volcanic crater you explored earlier) has dried up, affecting wildlife.

Tourism is also a threat. The number of people who live on Rapa Nui is 7,750 but in 2018, 130,000 tourists visited, placing huge strain on the island's resources.



Activity time. Can you remember similar stories on the news recently about the effects of climate change? Write 100-200 words describing what happened.



The Rapa Nui people have taken charge of efforts to conserve their home and their heritage. Click [here](#) to hear how they are using technology to do so.





Setting Up a Drone in Front of Ahu Nau Nau in Rapa Nui, 2019, CyArk

Let's have a closer look at some of the technology they use. You'll be familiar with some of it already.

Most people have cameras these days, either as a separate piece of equipment or on a smartphone. Ordinary cameras are very useful in documenting the visual look of a heritage site. Cameras can be mounted on a drone. A drone is a small machine that flies without a pilot but is controlled by someone on the ground. Drones can get very close to objects and take pictures of heritage sites that otherwise wouldn't be possible.

Heritage sites are often recorded with specialist 3D scanners which create a highly accurate and detailed 3D model of the site - you saw these earlier in the lesson. Sometimes a "pointcloud" image is created, which sounds complicated but is just another way of seeing the site. Many points of data are recorded all across a site and put on a 3D map where the data was collected. So they call it a pointcloud map or image. You'll see two of these pointclouds later.

All these techniques preserve a recording of the site in great detail. This is important for several reasons.

Firstly, it gives us a detailed understanding of the site as it is now. This means that any changes can be seen and actions taken if necessary to protect the site.

Secondly, it means that the site is accurately recorded for future generations to see, even if it is in digital form.

Thirdly, it means that people all over the world can see these sites without having to visit them. This helps us to understand different cultures from our own home and reduces the environmental impact of tourism.

Questions for Chapter 1

Let's finish this chapter with some questions. When you **Discover**, you are comprehending and remembering. When you **Explore**, you are really able to understand it and think it through. When you **Invent**, you are able to comprehend, understand, remember, analyse and do something cool with your new knowledge.

Discover:

Where is Rapa Nui island?

Explore:

Why do you think it is important that we conserve our heritage?

Invent:

Create your own moai - this can be a sketch, a digital image, or a model.





[Chan Chan, CyArk](#)

Chapter 2



What's this chapter about?
Extra Discovery



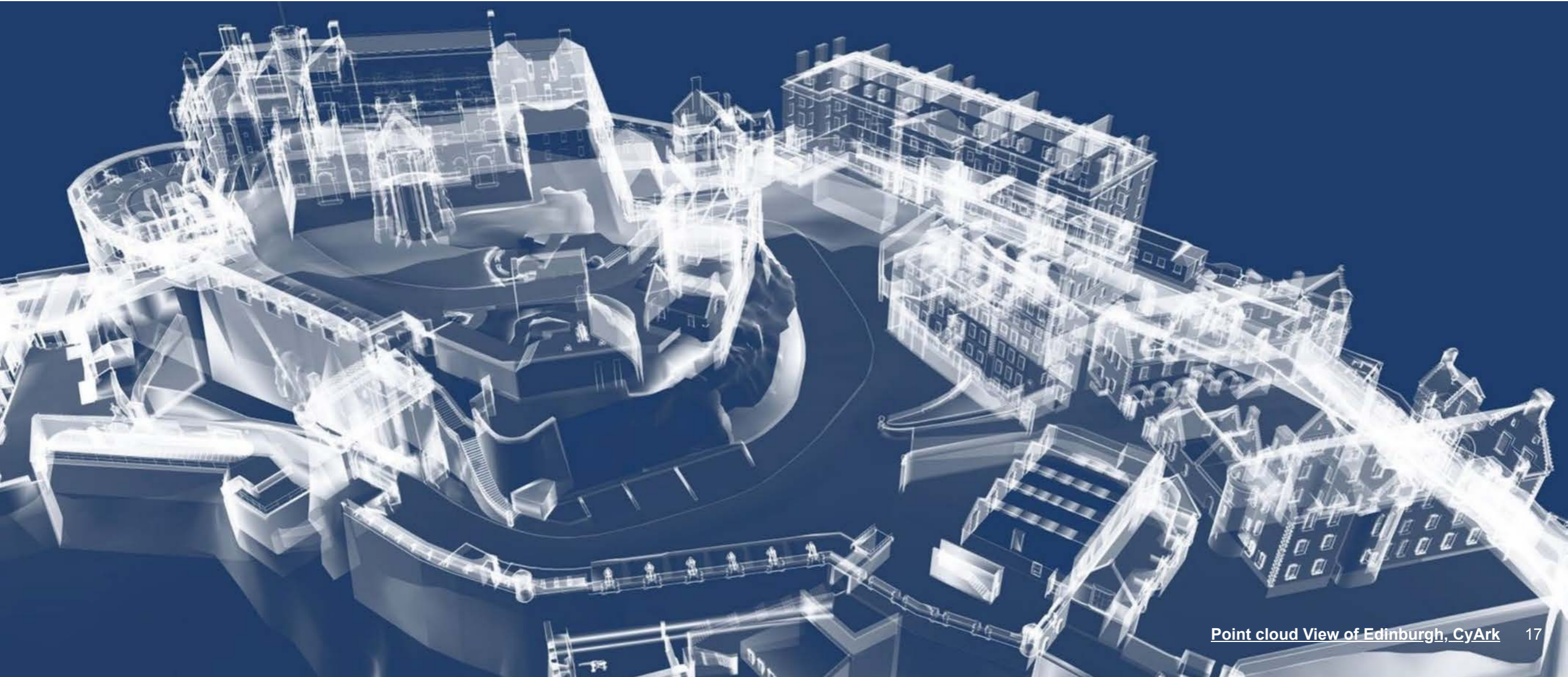
What will I do?
Explore heritage sites under threat
Understand responses to conserving heritage



How long will this chapter take?
45 minutes



This is a visualisation of Edinburgh Castle in Scotland, a very different heritage site from Rapa Nui. It is at risk from increasing rain and rising groundwater. Click [here](#) to fly through the city in 3D! Why was this model created? When conserving sites, it is important to document them in great detail, just like the 3D models you saw of Rapa Nui.



And this is Chan Chan, in Peru. It was the largest city of the pre-Columbian (before Europeans appeared) era in South America, constructed around 850AD. The archaeological site covers an area of approximately 20 square kilometres. Like Edinburgh Castle, Chan Chan is vulnerable to increased rainfall, here caused by the El Niño climate cycle. This erodes the Chan Chan buildings very quickly. Click [here](#) to see how the site is being protected.





Finally, no heritage can last if it is not protected by the local communities. Bagerhat is an ancient city of mosques in Bangladesh, at constant risk of flooding and damage from salt water. It is estimated that 17% of Bangladesh will be underwater by 2050. This will have terrible consequences for the people who live there but they are determined to protect their heritage. Click [here](#) to see how the local communities are fighting back.



Questions for Chapter 2

Time for some questions. Here's a reminder of how it works. When you **Discover**, you are comprehending and remembering. When you **Explore**, you are really able to understand it and think it through. When you **Invent**, you are able to comprehend, understand, remember, analyse and do something cool with your new knowledge.

Discover:

What is the greatest threat to the mosques of Bagerhat?

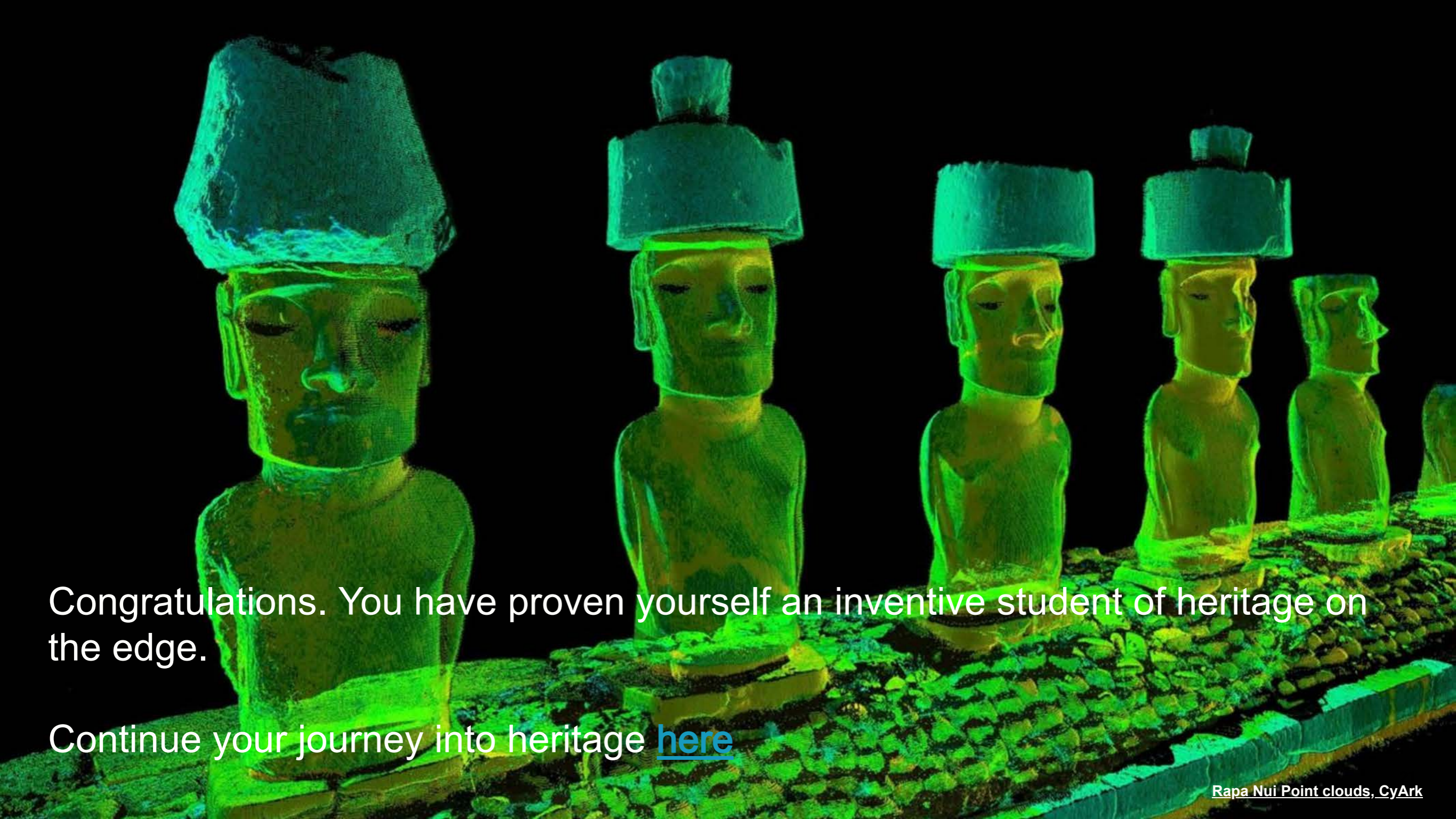
Explore:

How has the El Nino climate cycle affected the city of Chan Chan?

Invent:

What heritage local to you would you like to protect and why? Write 100-200 words about what it is, and why it deserves protection.





Congratulations. You have proven yourself an inventive student of heritage on the edge.

Continue your journey into heritage [here](#)

Answers to all the questions

Chapter 1

Discover: Where is Rapa Nui Island?

Answer: The Pacific Ocean. Bonus marks for knowing what Polynesia means. Answers may vary.

Explore: Why do you think it is important that we conserve our heritage?

Answers may vary but should include reference to a shared sense of history and culture.

Invent: Create your own moai.

Answers may vary but should demonstrate art and design techniques.

Activity: Can you remember similar stories on the news recently about the effects of climate change? Write 100-200 words describing what happened.

Answers can include any relevant story but could include deforestation in the Amazon, erosion of the coastline around Europe, the Americas and the UK, caused by rising sea levels. Flooding. Depletion of fish stocks caused by over fishing. Sea creatures including sea birds, seals and dolphins all trapped in plastic waste.

Chapter 2

Discover: What is the greatest threat to the mosques of Bagerhat?

Answer: the increasing salinity of soil and water is damaging the buildings.

Explore: How has the El Nino climate cycle affected the city of Chan Chan?

Answer: It brings heavy rainfall, eroding the structures of Chan Chan which were not built for that kind of climate.

Invent: What heritage local to you would you like to protect and why? Write 100-200 words about what it is, and why it deserves protection.

Answers may vary but should be personal and local, referring to the themes in the lesson plan.