Hello. And welcome to this episode of Exploring Art History with Ian. My name is Ian McConnell. And today's lesson is about elements of Roman architecture.

As you're watching the video, feel free to pause, move forward, or rewind as many times as you feel is necessary. And as soon as you're ready, we can begin.

Today's objectives, or the things you're going to learn today, are listed below. By the end of the lesson today, you will be able to identify and define today's key terms, describe the importance of the invention of concrete historically, identify examples of Roman architecture that utilize concrete-- and I'm going to be using concrete and mortar interchangeably today-- and describe how Roman emperors commissioned public works projects as a way of gaining popularity.

Key terms, as always, are listed in yellow throughout the lesson. First key term is aqueduct-- an architectural structure built to move large quantities of water from one place to another. Concrete-- a building material made from cement and crushed stone or sand.

Masonry is stonework. Amphitheater is an open-air building with rounded edges and tiered seating that is used for entertainment. And pseudoperipteral-- appearing to have columns extending around all four sides when, in fact, some of the columns are not freestanding but, rather, attached and decorative.

The big idea for today is that the invention of concrete is one of the most important events in the history of human construction and enabled the proliferation of construction programs on a scale never before seen. And there are required artworks today, to be listed, as always, in purple. The Roman architecture that we're looking at today falls within the range of first century BC to the third century AD.

So we're looking at the Italian peninsula as well as the Roman Empire today. And the Roman Empire-- well, this map shows most-- there's a little bit of area cut off-- of the Roman Empire at its greatest expanse, under the emperor Flavian during the beginning of the second century AD. And notice how it extends well beyond the Italian peninsula.

Now, the heart of the Roman Empire, at this point, was still Rome but Roman citizens lived on three different continents. In other words, to be Roman didn't necessarily mean you were born on the Italian peninsula. In fact, in most cases, you probably weren't.
So thanks, concrete. Why do we care about you? The Romans were responsible for all sorts of lovely innovations. And in terms of construction, the invention of concrete was arguably the most important, at the very least in terms of its importance in the modern era. Just think of all the things that are made of concrete.

For the Romans though, it allowed them to create unique architectural elements like the barrel vault and building on a curve-- for example in the Colosseum. Now, the recipes vary but the traditional Roman concrete composition consisted of some combination of calcium oxide or quicklime, volcanic ash, sand, and ground pumice, which is a type of volcanic stone. In the presence of water, these basic constituents would chemically react and fuse together, eventually setting or hardening into the desired shape.

The chief benefits of concrete were that it was cheap which meant less skilled labor, it was plentiful which allowed for more construction such as new projects and renovations-- those are the kind of things that were commissioned by the emperors to gain favor with the population-- it can be poured into molds, and it's durable, and even sets underwater. Now, concrete enabled the building of structures that wouldn't have been possible with stone alone, given its limitations.

Now, rounded arches are possible with stone but only to a certain size, after which you run the risk of collapse. Large expanses like in this amazing example of a Roman aqueduct, it wouldn't have been possible with just stone. This is called the Pont Du Gard in Nimes, France. And it provided fresh water from over 30 miles away.

Now, it's a gentle decline. And it's an almost imperceptible gentle decline of 54 total feet, gradually over 30 miles, which is pretty amazing. And it's as much a mathematical marvel as it is an architectural marvel. The huge rounded arches that stretch across the river wouldn't have been possible without concrete. And the proliferation of structures like this around the empire, in addition to the technical innovations inherent to those structures, was another way of reinforcing the Roman image of power.

Now, this image is called the Maison Carree. And it's a temple that was built by the Roman military man, Marcus Agrippa, and dedicated to his friend and emperor Augustus Caesar's two adopted sons. Now, the fact that it remains in such amazing condition is due in no small part to the construction prowess of the Romans-- first of all, with their use of concrete and cut stone and the fact that it was converted into a Christian church hundreds of years later.

Now, it's beautiful now to classical Greek ideals but in a manner that really becomes entirely Roman, specifically in the combination of the freestanding colonnade surrounding the portico, which is that area in the front and its use of embedded columns for the remainder of the building. And those are just aesthetic enhancements. They don't provide any support. Also note is the use of the Corinthian style column, specifically in the outdoors, which we don't typically see in Greek architecture. In comparison to Greek structures, Roman buildings could take on more
technically complicated structures due to the use of concrete.

Now, don’t get me wrong. Greek structures like the Parthenon are true architectural marvels. But like other Greek temples, they’re really just an elaborate application of the basic post and lintel system, which is partly a consequence of the availability of materials. Cut stone has tremendous compression strength but is considerably weaker in its lateral strength. The higher you build, the more this comes into play.

However, the Roman adoption of the Etruscan Roman arch, combined with the construction qualities of concrete, resulted in a height and airiness to buildings that wasn’t possible before. Now, the famous Colosseum is an example of just that. And even though it has three levels of columns-- Tuscan on the bottom-- and Tuscan was the Roman interpretation of the Doric column-- ionic on the second level, and Corinthian on the top, these are merely aesthetic additions. They don’t actually function as load-bearing supports.

Now, architecture like the Colosseum, which was also called the Flavian Amphitheater, was started in 72 AD and was dedicated in 80 AD. It’s constructed of masonry and stone and is in Rome, Italy.

Now, architecture like this in our final example of the public Baths of Caracalla are also examples of public works that were commissioned by emperors as a way of building and/or maintaining popularity among the people. Now, the Colosseum became an arena for gladiatorial events. And the public baths served-- as the name implied-- as a place where Roman citizens could bathe, relax, and socialize-- constructed, of course, due in part, to that amazing wonder material of the Romans-- concrete.

Well, that brings us to the end of this lesson. Let’s take a look at our objectives to see how we did. Now that you’ve seen this lesson, are you able to identify and define today’s key terms? Can you describe the importance of the invention of concrete historically? Can you identify examples of Roman architecture that utilize concrete or mortar? And describe how Roman emperors commissioned public works projects as a way of gaining popularity. And once again, the big idea for today is that the invention of concrete is one of the most important events in the history of human construction and enabled the proliferation of construction programs on a scale never before seen.

So there you go. I bet you never thought concrete was so important. Well, thank you for joining me today. I’ll see you next time.