

Arch Bridge Script

	Visuals	Audio
1.	Images and/or video footage of various Roman stone arch bridges.	Narrator: "Wherever they could, the Romans constructed their bridges out of stone. Though stone is more difficult to work with than wood, it's stronger, needs far less maintenance, and is an excellent material for building arches."
2.	Narrator/host standing in front of an arch bridge and drawing a post and beam-type bridge to show the alternative. Include close-up of the sketch in progress. Roman bridges at low angle to emphasize space under the arches	Narrator: "Now, what's special about an arch? Well, just look at the alternative. The simplest way to span a river or valley is with a simple post and beam arrangement—vertical wooden posts set fairly close together to support a horizontal roadway. By building stone arches like the ones behind me, the Romans were able to span the same and even greater distances, while minimizing the number of obstacles to the river's flow and to ship traffic."
3.	Narrator/host in front of the bridge, starting to sketch.	Narrator: "But what keeps an arch from falling down? The answer is its shape and the weight of the bridge above it."
4.	Dissolve to animation of stones placed into arch, held in place by a wooden form, and eventually locked with a keystone.	Narrator or engineering expert: "Wedge-shaped stones are laid side-to-side in a semi-circle. They are initially kept in place by a wooden form until they are locked together at the top with a keystone."
5.	Animation continues: Elephant lands on top of bridge and bridge starting to bulge outward at the sides, eventually crumbling.	Narrator or engineering expert: "By itself, a stone arch can support very little. And if you add weight to the top, the sides will start pushing outward and crumble."

	Visuals	Audio
6.	<p>Animation continues: Stones are placed around arch. Because it is supported at the sides, it maintains its shape and doesn't collapse.</p>	<p>Narrator: "So the Romans placed stones around the arch to counteract this outward thrust."</p>
7.	<p>Animation continues: Elephant jumps on top of arch, pressing stones together. Stone arch becomes part of a bridge with elephant on top.</p> <p>Dissolve to image or video of an actual arch bridge built by the Romans.</p>	<p>Narrator: "Now, the weight at the top serves to press the individual stone arch stones together making the entire arch rigid and capable of supporting very heavy loads. This pressing action is called compression, a force stone bridges handle very well."</p>

* This document represents a sample script that might have been written for this video. This resource was adapted from *Building Big: "Bridges."*

Copyright 2009 WGBH Educational Foundation. All Rights Reserved.