



Science: Building Venice

Look at a picture of Venice and speculate with your class about how to build a city in the ocean. Here is a typical dialogue between teacher and students:

Q. How do you think you could “float” a city on water?

A. Prop it up on poles.

Q. Poles made of what?

A. Wood.

Q. Where do you get the wood?

A. Trees.

Fact: This is true. It is astonishing to think that the pilings for one single church used a million trees! Indeed, building Venice stripped much of Northern Italy of its trees.

Q. Where do the poles end and what holds them in place?

A. The bottom of the sea.

Q. How long would they have to be?

A. However deep the sea is.

Q. Does this ever vary?

A. Yes, with the tides.

Fact: The poles are about 30 feet long. They still function after 600 years; they are rotting only at the water line where the tide variations expose the wood to air.

Q. So we now have our poles planted in the mud. What do we put on top of them?

A. Wooden beams.

Q. And on top of the wooden beams?

A. Some kind of stone.

Fact: Right again. Look at the diagram — that “stone” is pure marble. As well as being beautiful, shiny and smooth, it is non-porous. Venice is a joy to walk on because of its marble streets. Even better, there are no cars!

Q. We now have our streets and palace dockings. What is the material used further up on the buildings? (Look at the Doge’s palace!)

A. Some kind of fancy brick.

Q. What is the disadvantage of brick?

A. It can absorb water.

Fact: A major reason for Venice sinking is that yearly floods have reached right up to the bricks of the building. They absorb water and become heavy.

