

Leonardo's Structures

Secondary level Activity Sheet : Leonardo's Structures

Look at Leonardo's inventions on display. These were all designed by Leonardo between the age of 26 and 60. Most of his designs were not constructed during his lifetime; this exhibition brings them to life.

Many inventions relied on a robust structure to support the movement of forces at work.

1a. Choose two inventions to sketch. Focus on the structural frame.
What was each invention designed to do? Label inventions you are sketching.

1b. Make a detailed sketch of the structural frame supporting the invention.

Label parts that did the job of *load bearing*.

Label parts that help to *spread the load*.

What geometrical shapes can you identify in the structure? What materials was this structure made from? Does this structure remind you of anything that you use today?

2a. You will find two of Leonardo's bridges on display here.

You may find them in the **Hydraulics** section or in the **Mechanical** section.

Make a sketch of one bridge, and label which components are in **tension (T)** and which are in **compression (C)**

2b. Describe on your sketch what materials the bridges are made from.

- How were materials joined?
- Where would these materials have come from in the 1400s?

Label using arrows to indicate the direction of force that each component of the bridge is subject to.

Describe in terms of load bearing fitness and strength how the design of this bridge works.

What kind of loads do you think bridge was designed to support?

Why was Leonardo so keen to design temporary bridges?

Who commissioned these bridge designs?

3. Project focus: construct a model of one of Leonardo's bridges and test load

- More drawings can be found on website www.leonardo3.net



1 July - 1 October 2006
Book now at Waterfront City
From the Museum of Leonardo da Vinci in Italy
Leonardo da Vinci is a genius who lived in the 15th century
and whose inventions and ideas have inspired the world
of science and technology. This exhibition is a
celebration of his genius and the ideas that have
inspired the world.

THE
LEONARDO
DA VINCI
MACHINES
AN EXHIBITION OF GENIUS