



TASK 1: Structure Classifications

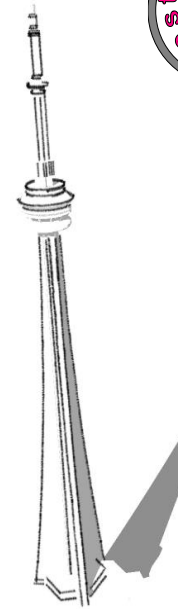
The Eiffel Tower is one of the world's most famous towers and probably the best known attraction in any city. Since its construction millions of people have climbed its stairs or used its elevators to reach the top. Cardiff is a famous and historical city. For many years Cardiff's designers and engineers have dreamt about building a tower or structure that will become even more famous than its rival in Paris.

You have been named as the designer. Draw below, a design of the tower/structure and add labels that point out each of the towers/structures attractions. A few famous towers are shown opposite - to help you develop your own ideas

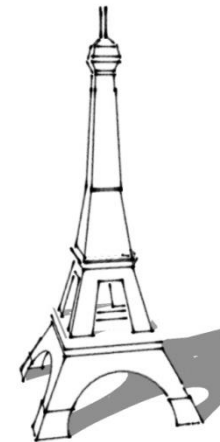


TASK 2: Structure Classifications

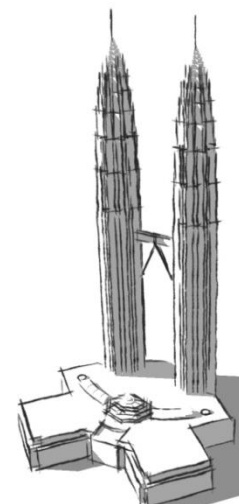
Draw and label a natural structure



Draw and label a framed structure



Draw and label a monocoque structure



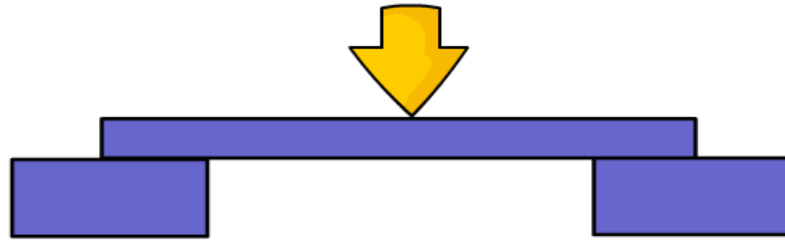
<i>SCOL</i>	<input type="text"/>	<i>A2L</i>
<i>Comment</i>		<i>MAD Target</i>

Lesson Objectives / (Nodau Dysgu)

- Pupils should be able to research and identify past and present structures
- Pupils should be able to research and identify the different classification of structures
- Pupils should be able to correctly place different structures under the correct classification

WEEK 2: Beams and Bridges:

A beam **spans** a gap and enables **loads** to be carried across. It consists of a straight **bar** or **girder** supported at both ends.

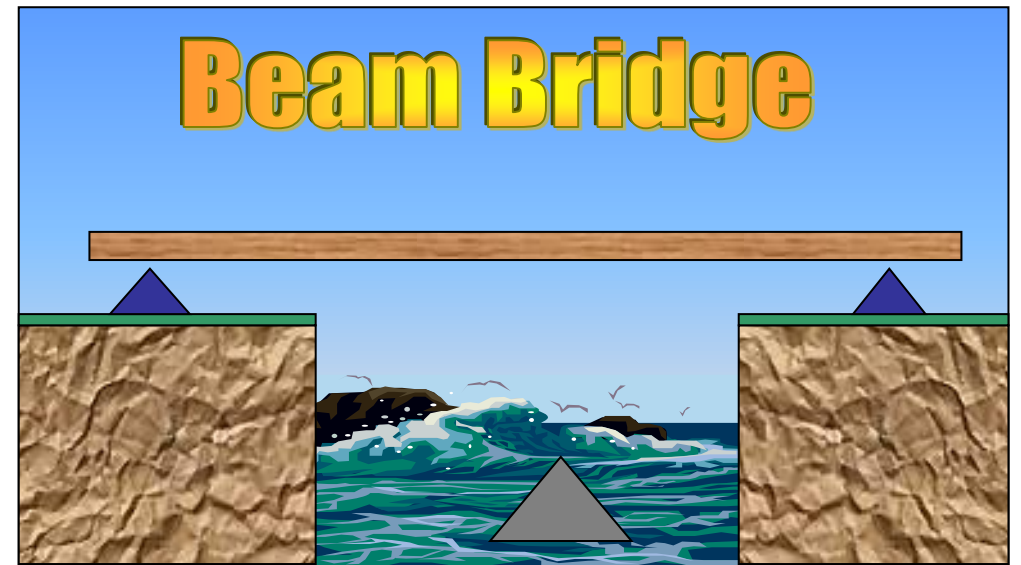


When a beam is only supported at one end, it is called a **cantilever**.



A bridge works like a complex **beam** but is made up of many parts. There are four basic types of bridge:

- beam
- arch
- cantilever
- suspension



Task 2(d): Beam Bridge

Research and draw a beam bridge below

Lesson Objectives / (Nodau Dysgu)

- Pupils should be able to research and identify the different classification of forces
- Pupils should be able to correctly place different types of forces under the correct classification
- Pupils should be able to classify forces and how they act upon structures and be able to take into account these forces when designing their car.



Task 2(e): Arch Bridge

Research and draw an arch bridge below



Arch bridges were traditionally made of stone. Small wedge stones when placed to form a semi-circle resist a great weight from above. Such arches require rigid supports to prevent the ends from spreading apart.

Task 2(f): Cantilever Bridge

Research and draw a cantilever bridge below



A Cantilever bridge projects outwards and is supported at one end.

Task 2(G): Suspension Bridge

Research and draw a suspension bridge below



A suspension bridge is one where cables (or ropes or chains) are strung across the river (or whatever the obstacle happens to be) and the deck is suspended from these cables. Modern suspension bridges have two tall towers through which the cables are strung. Thus, the towers are supporting the majority of the roadway's weight.

Task 2(h): Draw a world Famous bridge

Research and draw a world famous bridge below. What is it called? What type of bridge is it?

Lesson Objectives / (Nodau Dysgu)

- Pupils should be able to research and identify the different classification of forces
- Pupils should be able to correctly place different types of forces under the correct classification
- Pupils should be able to classify forces and how they act upon structures and be able to take into account these forces when designing their car.

