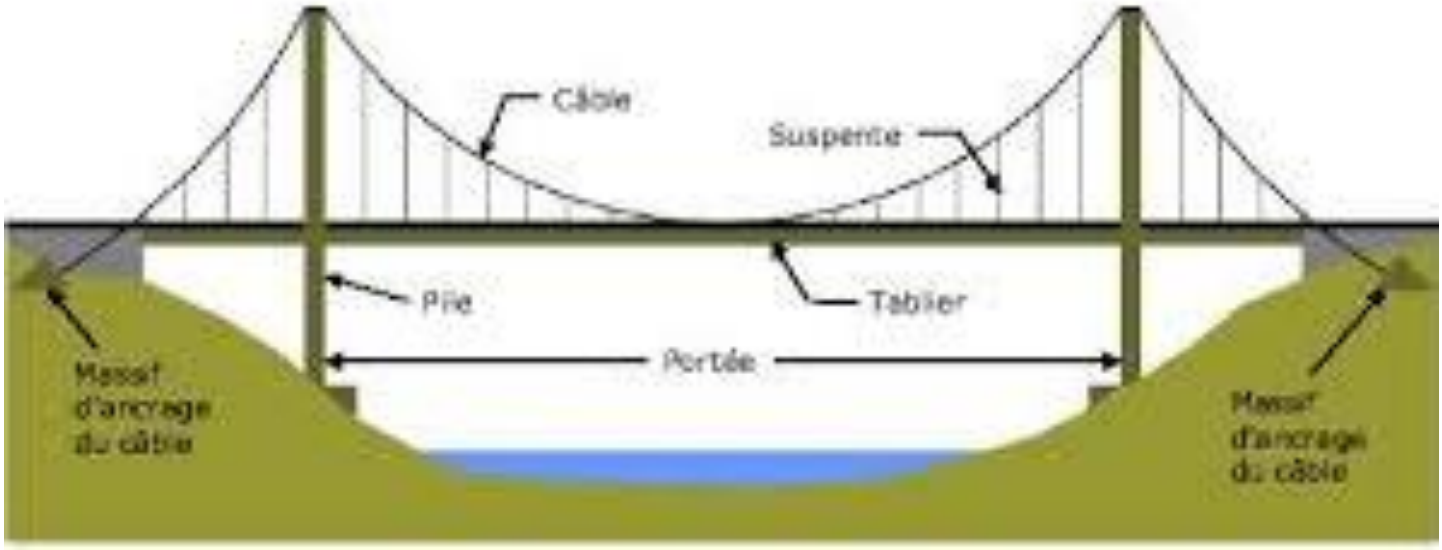
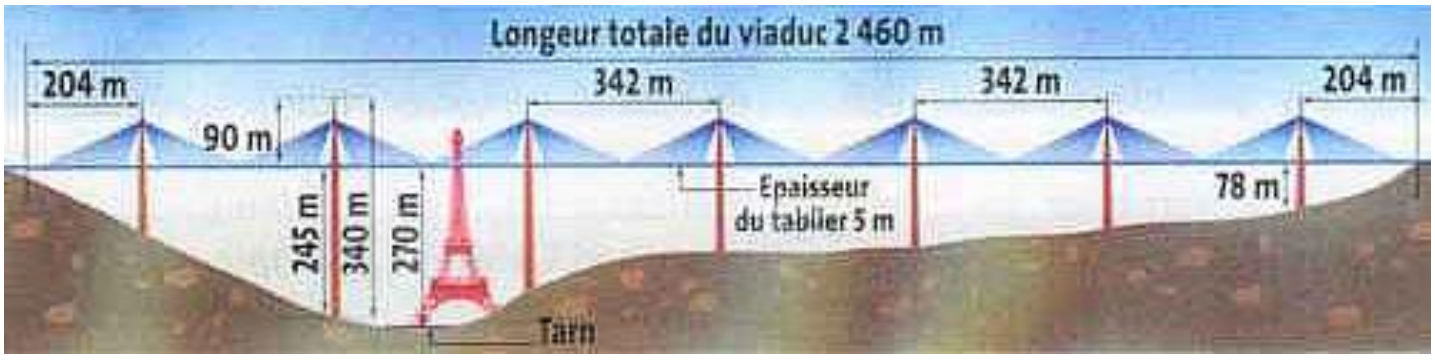
1	quand a été construit le viaduc de Millau ?
2	à quoi sert un viaduc ?
3	où se trouve le viaduc de Millau?
4	l'A75 qu'est-ce que c'est ?
5	pourquoi l'A75 est-elle née ?
6	pourquoi avait-on besoin de construire le viaduc de Millau ?
7	qui est l'architecte derrière ce monument ?
8	quel était son projet?
9	*« la manière dont nous pouvions le mieux respecter cette incroyable région de France »*

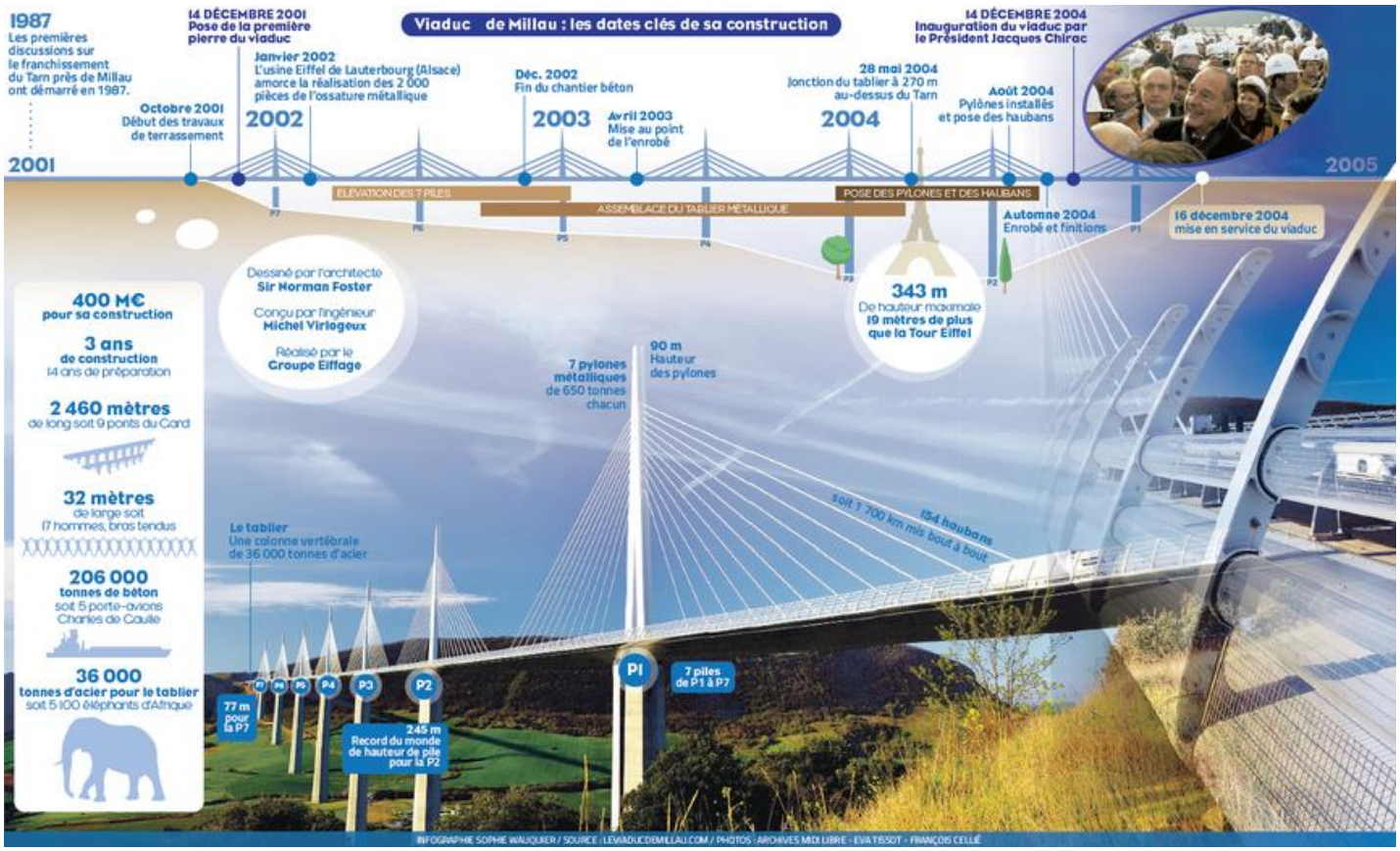
10	*sättet på vilket du pratar*
11	*sättet på vilket eleverna uppför sig*
12	*sättet på vilket Stefan reagerar bevisar att han är stressad*
13	que se passe-t-il le 16 décembre 2004 ?
14	pourquoi est-ce que c'est bien pour les automobilistes ?
15	quelles sont les dimensions de ce viaduc ?
16	combien pèse le tablier? comment est-il soutenu ?
17	combien de voitures passent sur le pont tous les jours ?
18	les gens prennent beaucoup de photos sur ce pont ? pourquoi ?

19	qu’est-ce que c’est la Course Eiffage ?
20	que se passera-t-il le 24 septembre ?
21	comparez la Tour Eiffel au viaduc de Millau
22	à quelle vitesse peut souffler le vent ?
23	combien a coûté la construction de ce pont ?
24	pourquoi le 16 octobre est-ce une date importante pour Stefan ? et pour le pont ?
25	qui a inauguré le pont et quand ?
26	combien de personnes ont participé à ce projet ?
27	combien de temps a duré la construction ?

28	*expliquez ces mots : hauban, tablier, la chaussée, un raccourci*
29	*« soit inauguré »*
30	*« en leur offrant un raccourci »*
31	*lent, ralentir, court, raccourcir, long, allonger, rallonger, mou, molle, ramollir, dur, durcir, épais, épaissir*





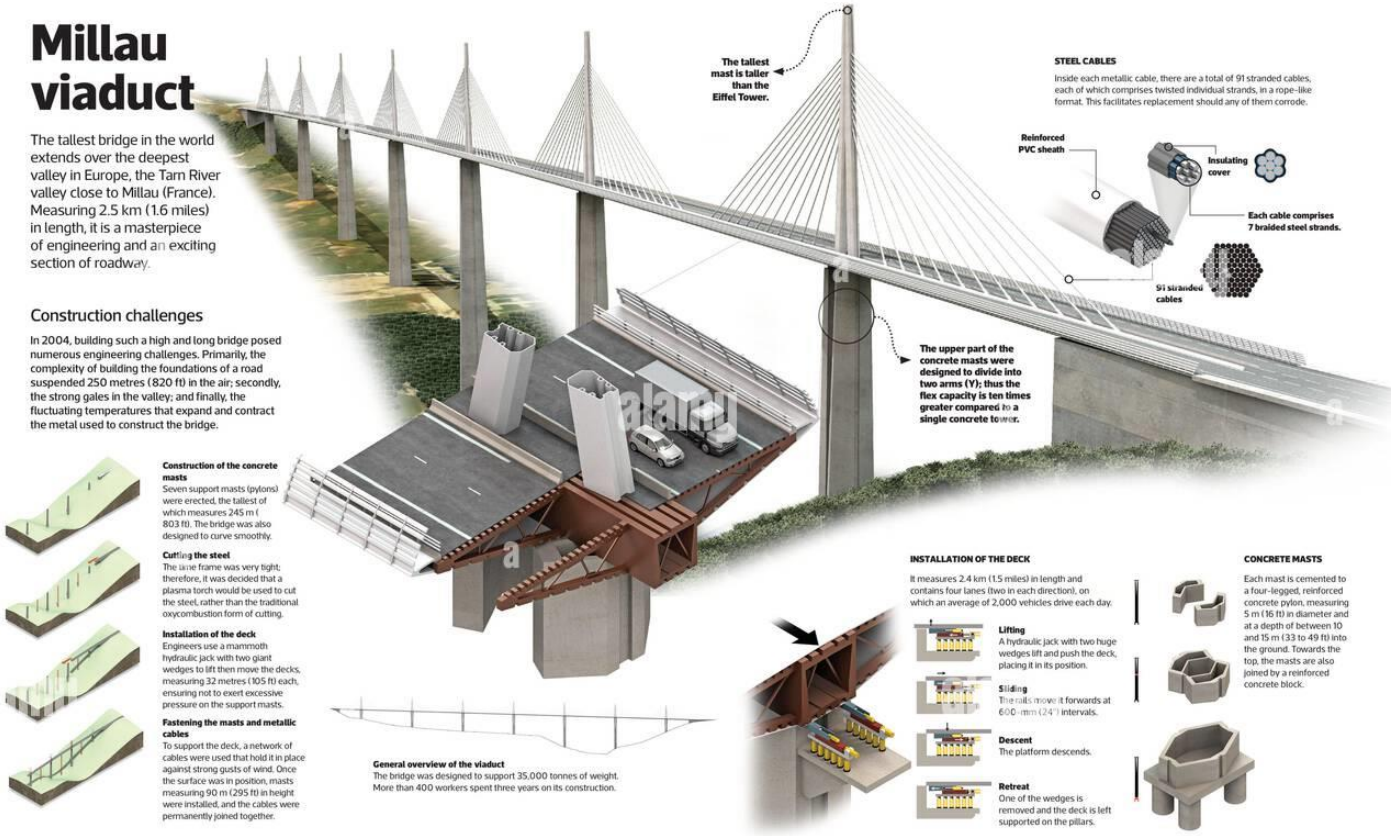


Millau viaduct

The tallest bridge in the world extends over the deepest valley in Europe, the Tarn River valley close to Millau (France). Measuring 2.5 km (1.6 miles) in length, it is a masterpiece of engineering and an exciting section of roadway.

Construction challenges

In 2004, building such a high and long bridge posed numerous engineering challenges. Primarily, the complexity of building the foundations of a road suspended 250 metres (820 ft) in the air; secondly, the strong gales in the valley; and finally, the fluctuating temperatures that expand and contract the metal used to construct the bridge.



Construction of the concrete masts
Seven support masts (pylons) were erected, the tallest of which measures 245 m (803 ft). The bridge was also designed to curve smoothly.

Cutting the steel
The lane frame was very tight; therefore, it was decided that a plasma torch would be used to cut the steel, rather than the traditional oxycombustion form of cutting.

Installation of the deck
Engineers use a mammoth hydraulic jack with two giant wedges to lift then move the decks, measuring 32 metres (105 ft) each, ensuring not to exert excessive pressure on the support masts.

Fastening the masts and metallic cables
To support the deck, a network of cables were used that hold it in place against strong gusts of wind. Once the surface was in position, masts measuring 90 m (295 ft) in height were installed, and the cables were permanently joined together.

General overview of the viaduct
The bridge was designed to support 35,000 tonnes of weight. More than 400 workers spent three years on its construction.

INSTALLATION OF THE DECK
It measures 2.4 km (1.5 miles) in length and contains four lanes (two in each direction), on which an average of 2,000 vehicles drive each day.

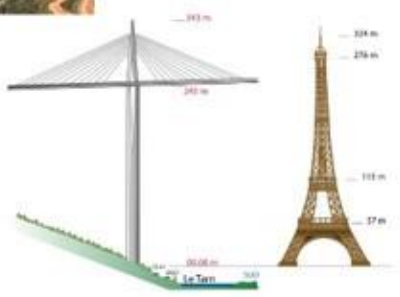
Lifting
A hydraulic jack with two huge wedges lift and push the deck, placing it in its position.

Sliding
The rails move it forwards at 600-mm (24") intervals.

Descent
The platform descends.

Retreat
One of the wedges is removed and the deck is left supported on the pillars.

CONCRETE MASTS
Each mast is cemented to a four-legged, reinforced concrete pylon, measuring 5 m (16 ft) in diameter and at a depth of between 10 and 15 m (33 to 49 ft) into the ground. Towards the top, the masts are also joined by a reinforced concrete block.



Le viaduc de Millau (Aveyron)

Années de construction : 2001 - 2004