



# 10 The Tower in figures

## Its weight

The Eiffel Tower weighs 10,100 tons, 7,300 tons of which represent the metallic structure.

Eiffel's engineers' calculations show that the Tower is in actual fact « light », since its pressure to the ground is equal to 4,5 kg/cm<sup>2</sup>, which corresponds to the weight of an average adult woman wearing high heel shoes.

If the Eiffel Tower were placed inside an air cylinder, its weight would not exceed that of the air contained in the cylinder.

## Its size

The four pillars, each located at one cardinal point, fit within a square measuring 125 metres side and are anchored to the concrete foundations. 30,973 m<sup>3</sup> of earth had to be excavated to cast the foundations.

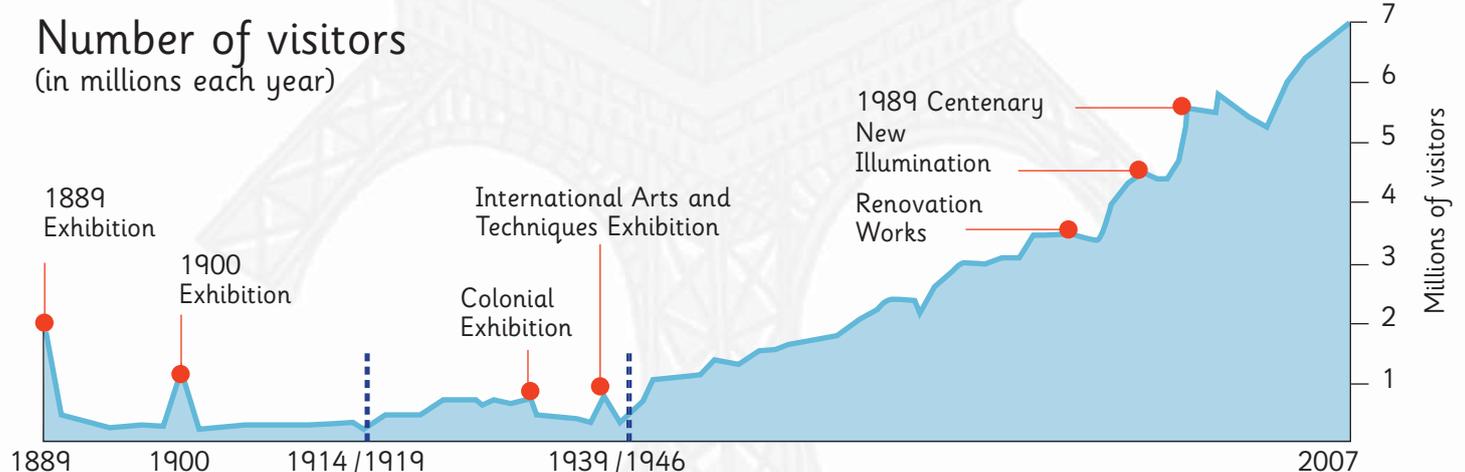
When it was inaugurated, the Tower measured 312 m, but its height was risen to 317 m in 1991 when antennas were installed, and then to 318 m in 1924 to finally reach today's height of 324 metres. The first floor is 57 m above the ground, the second one 115 m and the third 276 m.

The Tower was the tallest monument in the world until the construction of the Chrysler Building (319 m), in New York, in 1930.

## A tourist attraction

By 2007, more than 240 million visitors had visited the tourist site and millions of other visitors had admired the Tower without actually going on it. In the past, the rate of visitors was not regular. The highest number of visitors was recorded in 1889 on the occasion of the Universal Exhibition (1,953,122 visitors in 173 days, representing almost 12,000 visitors a day). It then dropped to 400,000 in 1890 and down to 150,000 in 1889 and then again rose to over one million visitors on the

occasion of the 1900 Exhibition (1,024,897). Between 1900 and 1914 the number of visitors went down again and slightly increased between the two wars particularly during the 1931 and 1937 exhibitions. From 1963, the number of visitors exceeded 2 millions. More than 5 million visitors visited the Iron Lady on the occasion of its centenary and since 2004 more than 6 million visitors have climbed the Eiffel Tower every year. In 2007, more than 7 million tickets were sold.



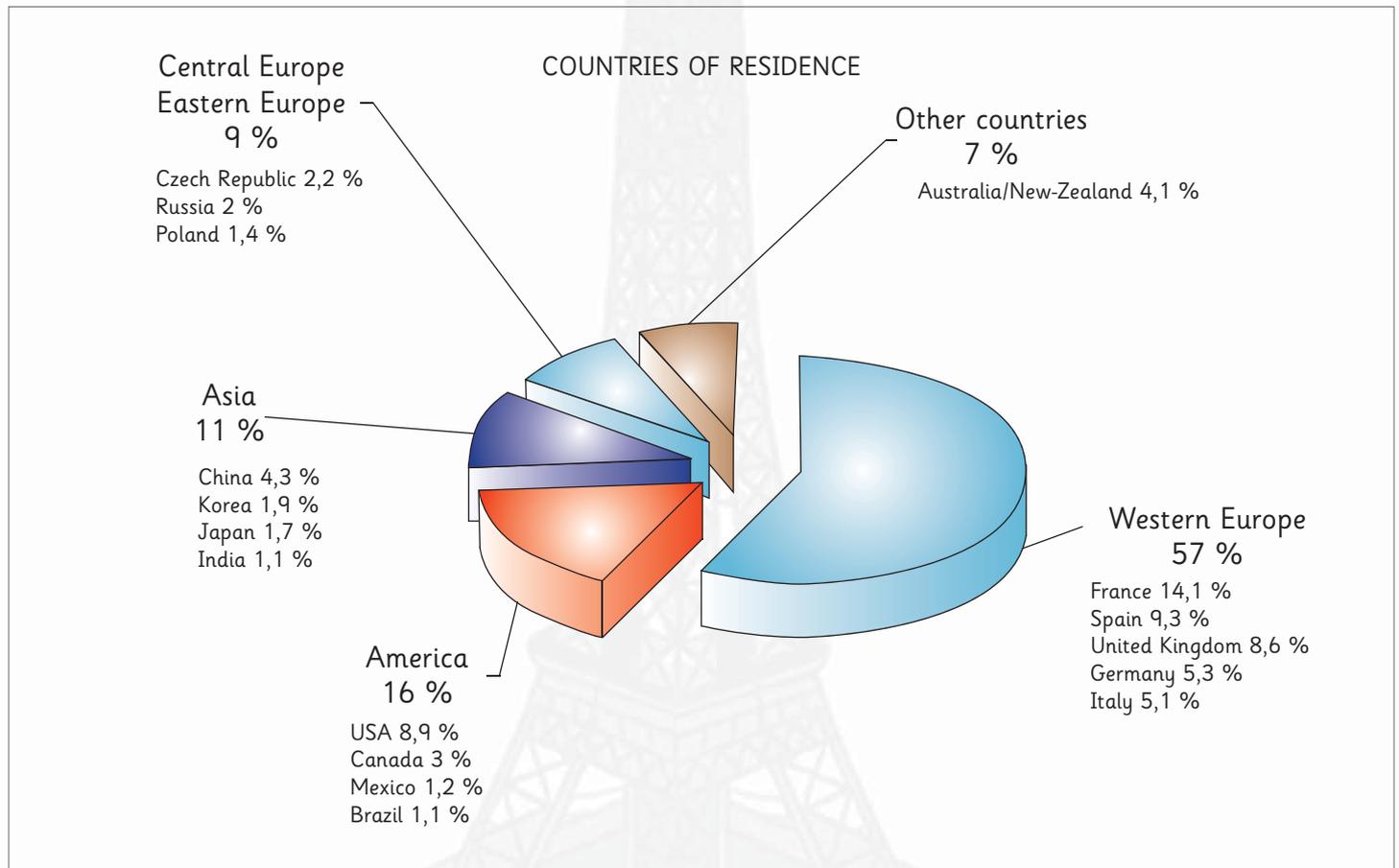


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Originally, the Tower's life expectancy had been set at 20 years, but today, it still remains the most visited fee-paying monument in the world.

As shown in the diagram below, tourists come from all over the world. (Study made in 2004)



## The Eiffel Tower « factory »

The site is open to the public 365 days a year and requires a large and skilled staff to welcome visitors.

The reception staff is polyglot in order to provide the best possible service to all tourists wherever they may come from. Cashiers sell 2 tons of tickets printed every year to validate admission.

The technical staff is responsible for the maintenance of the Iron Lady and includes mechanics, electricians, plumbers, painters, locksmiths, carpenters, data processing experts and cleaning personnel. Every year, these people use 4 tons of rags and wrapping paper, 10,000 units of maintenance products,

400 liters of cleaning products, 25,000 garbage bags and 60,000 m<sup>3</sup> of drinking water.

The Tower is also equipped with a security station and cameras are installed across the entire monument. 800 supervision spots and nearly 200 extinguishers guarantee safety in case of fire.

Postal services and staff, souvenir shops and their sales persons, restaurants and their cooks, waiters and majordomos are also at the disposal of all the visitors who may wish to buy souvenirs or have a meal.



## The Tower in figures

Exercices

CP - CE1



### French / Reading / Grammar

#### EDUCATIONAL OBJECTIVE

Identifying nouns and articles.

La Tour représente un véritable défi, c'est la première fois que l'on construit un monument aussi haut. Elle est constituée d'une base qui repose sur des piliers appuyés chacun sur un bloc de béton. Les pièces métalliques sont assemblées avec les rivets.

- Have the pupils read the text and underline the nouns in blue.  
« Tour, défi, fois, monument, base, piliers, bloc, béton, pièces, rivets ».
- Have the pupils find the words that precede the nouns, and then have them delete the pronouns and adjectives so that only articles remain: la, un, la, un, une, des, les, les.
- Explain the differences to recognize the gender and number and complete the following table.

Singular		Plural	
masculine	feminine	masculine	feminine

- Tell the pupils that in the plural form, the article remains unchanged for masculine and feminine nouns (les).
  - Have the pupils seek other articles in other texts and have them draw up a similar list.
  - Have the pupils complete the following list using articles « un » « une » or « des ».
- |                 |                  |                   |                 |
|-----------------|------------------|-------------------|-----------------|
| ..... visiteur  | ..... visiteurs  | ..... ascenseurs  | ..... ascenseur |
| ..... visites   | ..... visite     | ..... tour        | ..... tours     |
| ..... monument  | ..... monuments  | ..... étage       | ..... étages    |
| ..... tickets   | ..... ascenseurs | ..... restaurant  | ..... boutiques |
| ..... boutique  | ..... ticket     | ..... extincteurs | ..... tour      |
| ..... touristes | ..... cuisiniers | ..... touriste    | ..... étages    |
- Have the pupils place the following numbers (relating to the Tower) on the line.

### Mathematics / Numbers and calculations

#### EDUCATIONAL OBJECTIVE

Reading and placing numbers along a graduated straight line, comparing them, classifying them, framing them.

312 – 318 – 324 – 58 – 116 – 276



- Have them arrange these numbers from the smallest to the largest.
- Have them arrange these numbers from the largest to the smallest.
- Have them complete with > or < or = .

$$300 + 10 + 2 \dots\dots 312$$

$$50 + 8 \dots\dots 60$$

$$300 + 10 + 7 \dots\dots 312$$

$$100 + 10 + 6 \dots\dots 300$$

$$300 + 20 + 4 \dots\dots 330$$



## The Tower in figures

### Exercises

CE2 - CM1 - CM2



## Mathematics / Numbers and calculations

### EDUCATIONAL OBJECTIVE

Comparing, classifying, framing large numbers.

- Have the pupils arrange these numbers in an increasing order.

25 000 – 60 000 – 400 – 500 – 10 000 – 200 – 365 (CE2)

4,183 857 – 400,000 – 1,953,122 – 150,000 – 1,024,897 – 800,000 – 4,668,468 – 5,580,363 (CM)

- The use of a table can help the pupils classify the numbers.

Millions			Thousands			Units		
c	d	u	c	d	u	c	d	u

- These numbers, that correspond to the various levels of the Tower, can also be used for calculations with decimal numbers (additions and subtractions in CM1-CM2)

## Geography

### EDUCATIONAL OBJECTIVE

Tourism, reading and understanding diagrams and tables.

- DIAGRAM REPRESENTING THE RATE OF VISITORS TO THE TOWER

- Understand how to read the diagram and what the X-axis (horizontal line) and the Y-axis (vertical line) correspond to: years and number of visitors in millions.

- Ask the pupils to find the « peaks » of number of visitors, the slacks, and the general trend.

- Tell them to find to what periods correspond the bold yellow lines (periods of war during which the Tower was closed to the public).

- Find the years when the number of visitors exceeded 1 million, 5 million.

- PIE CHART REPRESENTING THE ORIGIN OF THE TOURISTS

- Explain the diagram to the pupils (compare with fractions for pupils of CM1-CM2).

- Tell the pupils to find the origin of the « groups of visitors » (use a world map) and compare with the following column type diagram.