



3 The Tower gets a make over

As written by its designer, Gustave Eiffel, paint protects the metal of the Tower from rust.

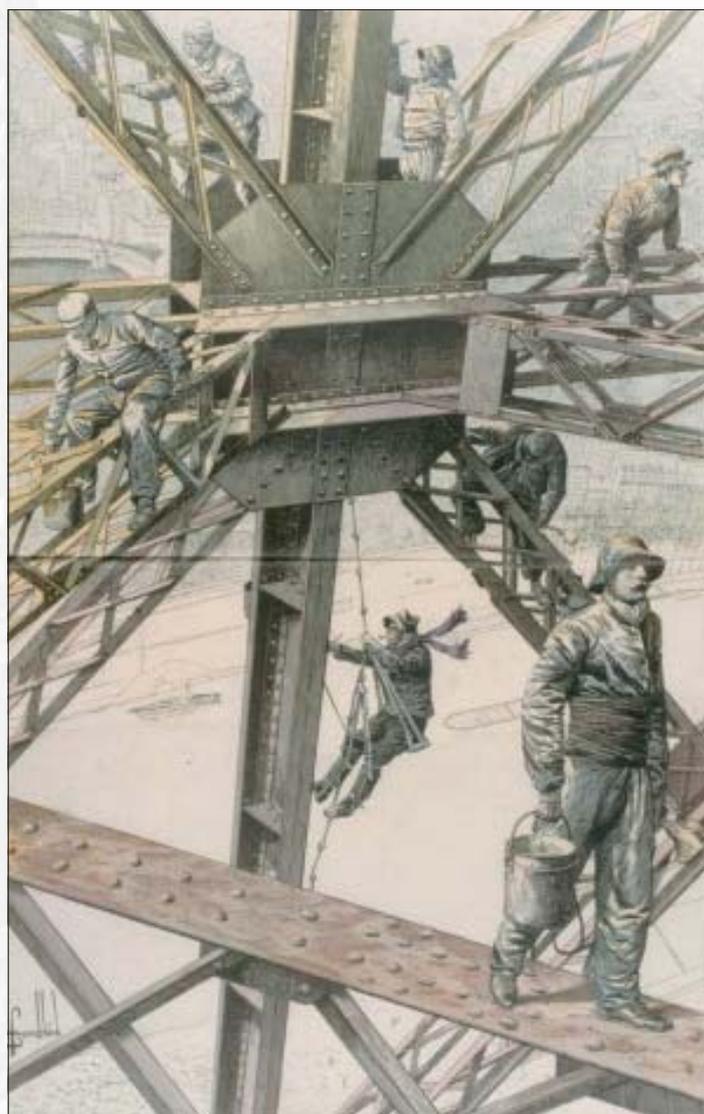
« One should assimilate the idea that paint is the essential element that protects metal and only care and maintenance can guarantee its life ».

As the Tower was being built, a coat of protective red lead paint was first applied. Then, before March 1889, the workers of Mr. Nourrisson's company applied two coats of linseed oil . In May 1889, a fourth coat of glossy brownish red paint was applied by the staff of the same company. The colour was shaded using a dark colour for the base and lighter shades upwards to the top, so that at a distance, the colour seemed to be even. The cost of the last coat amounted to 60,000 francs-gold.

In 1892, a new contractor was chosen for the first maintenance campaign of the Tower: Mr. Riviere. The original paint was washed and covered with a pigmented ocre yellow paint guaranteed for five years. At a cost of 57,000 francs-gold.



One of the Tower's painters hanging from a cable



Painting the Eiffel Tower – At a height of 230 metres



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It was then decided that the Tower would be cleaned and painted every seven years.

By 2008, the Tower had been painted eighteen times since its construction.

Its colour has also changed since its construction: originally yellowish brown, then yellow ocre, and bronze as it is today. Just like at the beginning, the colour has different shades from the base to the top so that visitors from all over the world can have the impression of an even shade all the way up.

Every painting campaign requires previous cleaning and scraping of the last coat. The figures representing the supplies match the size of the iron giant: 1,500 brushes, 5,000 scraping abrasive



Painters painting the Tower using a roll attached to the end of a brush (long brush)



disks and 60 tons of paint. To ensure the workers' safety, 50 km of safety ropes and 2 hectares of protective nets are installed.

It takes a team of 25 painters and over one year to paint all the metallic beams.

Since 1988 a video system has controlled the painting works.

The 19th campaign will start in April 2009 and will end at the end of 2010.

For the eighteenth painting campaign, from December 2001 to June 2003 a new lead free paint was used to cover the 200 000 m² of metal parts in order to respect the environment.



The Tower gets a make over

Exercices

CP - CE1



French / Reading / Spelling

EDUCATIONAL OBJECTIVE

Learning the relations between letters and sounds in complex written forms such as « ein », « ien », « oin » and « ion ».

- Have the pupils read the following words.

Chien, rien, peindre, peinture, bien, terrien, teinte, enceinte, sein, canadien, magicien
Loin, moins, soin, récréation, construction, point, pion, mission, action, coin, témoin,
lion, champion, végétation.

- Draw the pictures and have them write the appropriate word under each drawing.



Un l.....



Le p.....



Un



Unt

Mathematics / Numbers and calculations

EDUCATIONAL OBJECTIVE

Solving problems relating to addition, subtraction and multiplication.

- Have the pupils solve these 3 problems.

This morning, Peter, Samir and Jo, three painters, each took 7 pots of paint from the Eiffel Tower stock. How many pots did they take in total?

Yesterday evening, there were 97 pots of paint in stock. How many are there left now?

Every day, Stephane, the painter in charge of the stairs and surrounding beams, goes up 12 steps. How many steps will he have climbed after 5 days of work?

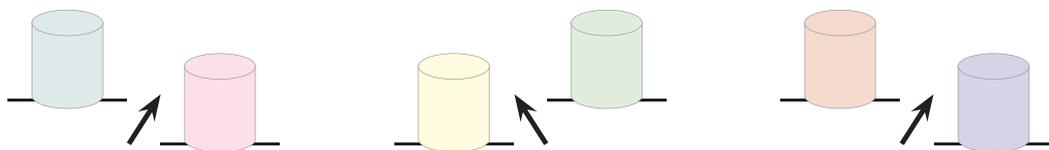
On Monday, Paul used 9 pots of paint, on Tuesday 8, on Wednesday 10, on Thursday 6 and on Friday 8. How many pots has he used this week?

Mathematics / Sizes and measurements

EDUCATIONAL OBJECTIVE

Comparing and classifying objects according to their mass.

- Have the pupils use a scale to weigh various objects found in the classroom so that they can understand that the heaviest item is on the side where the scale goes down.



Visual arts CP to CM2 / Speech

EDUCATIONAL OBJECTIVE

Imagining and expressing one's artistic sensitivity with specific tools and support.

- In the style of the Tower

When the monument was painted, in order that the colour seemed to be of an even shade it was decided to use darker paint at the bottom and a lighter shade at the top.

Ask the pupils to draw the Tower, or another monument, and then to paint it one single colour then just add some black at the base and some white at the top to make it look lighter.

Each pupil has to prepare his/her basic colour: primary or secondary colour, and then has to shade it to make it darker and lighter.

Then, display the drawings and see what they look like. Each pupil has to explain why he/she chose his/her basic colour and how he/she mixed paints to obtain darker and lighter shades.



The Tower gets a make over

Exercises

CE2 - CM1 - CM2



French / Reading / Spelling

EDUCATIONAL OBJECTIVE

Identifying the subject complement.

- Write the following sentences on the board.

Ces peintres sont des acrobates !

La Tour paraît comme neuve après une campagne de peinture.

Cet ouvrier semble voler au-dessus des poutrelles.

- Have the pupils find the verbs and the subjects and ask them to find the words that supply information about the subject.
- Have the pupils underline the subject complements found in the sentences and show them that the verbs that separate them from the subject are stative verbs.
- Reminder concerning other stative verbs: devenir, rester, avoir l'air (become, stay, seem). Show the different natures of the complements: adjective (neuve), nominal group (des acrobates), infinitive (voler).
- Have the pupils complete the sentences with complements of different natures (nouns, adjectives, infinitives).

La Tour Eiffel est

La peinture a l'air

Je deviens

Elle paraît

Mathematics / Numbers and calculations

EDUCATIONAL OBJECTIVE

Solving problems that require one or several stages.

- Have the pupils solve these 3 problems.

60 tons of paint are required in order to paint the Tower. It has already been painted 18 times. How many tons of paint were used?

The total metal area to be painted is 200,000 m². 25 painters were hired to achieve this work properly. What is the area to be covered by each painter?

The first painting campaign cost 57,000 francs-gold, while the coat of paint applied in 1889 had cost 60,000 francs-gold. What is the price difference between the two painting campaigns?

Visual Arts CP to CM2

EDUCATIONAL OBJECTIVE

Imagining and expressing one's artistic sensitivity using specific tools and support.

- Equipment
 - one copy of a painter's photo to each pupil
 - scissors and glue
 - one A4 sheet of paper per pupil
 - pencil, eraser
- Give the pupils a black and white copy and an A4 white sheet of paper.
- Have them stick the picture in the centre of the sheet, in a corner or on one side, as they wish.
- Then ask the pupils to continue the drawing using only the pencil.