

## DAY 2: Monday, 22 July

### STUDENT

- 9:30 a.m. – 12:00 a.m.  
Opening ceremony  
› Maison de la Chimie
- 12:00 a.m. – 2:00 p.m.  
Welcome cocktail  
› Maison de la Chimie
- 2:30 p.m. – 5:30 p.m.  
Guided tour of the Louvre  
Museum and the Tuileries  
garden

### MENTOR

- 9:30 a.m. – 12:00 a.m.  
Opening ceremony  
› Maison de la Chimie
- 12:00 a.m. – 1:30 p.m.  
Welcome cocktail  
› Maison de la Chimie
- 2:30 p.m. – 3:45 p.m.  
Lab inspection  
› Pierre-Gilles de Gennes  
Highschool
- 4:30 p.m. – 6:30 p.m.  
Discussion with authors of  
the experimental tasks
- from 8:00 p.m.  
Jury meeting n°1



Maison de la Chimie

### Birthday

Ali Shalanzada Azerbaidjan Student

Meteo



32°C  
sun

# making science together!

## Chemistry of painting

Until the 19<sup>th</sup> century, the ultramarine blue pigment was extracted from lapis lazuli, a semi-precious stone from Afghanistan; the extraction process was long and difficult, which made this pigment particularly expensive! Consequently, it was mainly intended for the painting of religious scenes in the illuminations of the Middle Age. The depth and intensity of its colour prompted the National Chemical Society to open a competition in 1824 to synthesize an ultramarine blue at a lower cost. The laureate was Jean-Baptiste Guimet, a French chemist from Lyon. We now know that the essential constituent of ultramarine blue is Lazurite ( $(\text{Na}, \text{Ca})_8[(\text{AlSiO}_4)_6(\text{SO}_4, \text{S}, \text{Cl})_2]$ ). What is obvious in seeing this formula is that it does not contain any copper and therefore the origin of the Lazurite colour remained a mystery... even for its inventor. It has only been known since 1970 that the colour is due to the trisulphide radical anion:  $\text{S}_3^{\bullet-}$  trapped in an aluminosilicate zeolite. If you want to observe the intense colour of the trisulfide radical anion, we recommend the famous painting: "Anthropometry of the Blue Age" from French painter Yves Klein.

## Dow, a leader in materials science

With more than 120 years of successful R&D, Dow's ambition is to be the most **innovative, customer-centric, inclusive** and **sustainable** materials science company in the world – one that is driven by world-class talent and enabled by leading products and technologies. Our core values of integrity, respect for people and protecting our planet guide each of our actions and behaviors. We are convinced that STEM are essentials to achieve this vision and as such, we are proud to partner with the 2019 IChO.



icho2019.paris

Facebook: @icho2019.paris

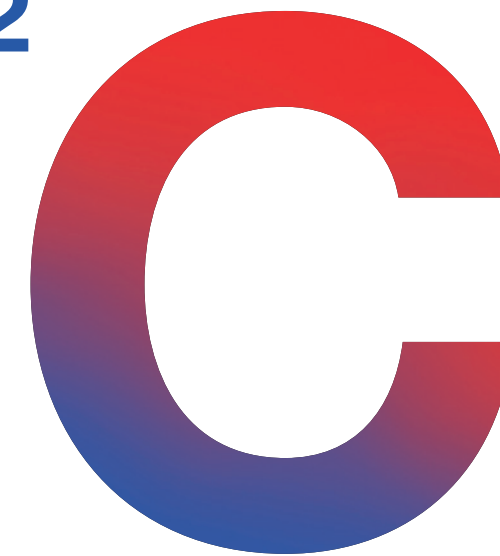
Twitter: @icho2019paris

Instagram: @icho.official



POUR L'ÉCOLE  
DE LA CONFIANCE

2



catalyzer

## Welcome to Paris!



Yesterday, all participants arrived in Paris to take part in the 51<sup>st</sup> International Chemistry Olympiad.

I<sup>T</sup> C<sup>T</sup> h<sub>1</sub> O<sub>1</sub>  
51<sup>st</sup> — International  
Chemistry Olympiad  
France — Paris — 2019



# The Louvre and Tuileries



The medieval Louvre is the work of Philip II Augustus, who built in the twelfth century a fortress with a dungeon (currently under the square court) to defend Paris. For several centuries, successive kings enlarged the Louvre castle, but it is François the 1<sup>st</sup> who, in 1527, decided to build a modern palace in the spirit of the Renaissance. From 1564, Queen Catherine de Medicis favored the construction of a new palace with a large pleasure garden: the Tuileries Gardens. Abandoned by Louis XIV in favor of Versailles, the Louvre is quickly deserted.

During the French revolution, the Louvre is preserved despite being a symbol of the monarchy to accommodate the treasures confiscated to the clergy. Napoleon III decided to organize the 1855 Universal Exhibition in Paris and asked that the Louvre's building was completed. But in 1871, a fire destroyed the Tuileries and the north wing of the Louvre: the new republican government rebuilt the Louvre and gave it its current form. Finally, in 1989, François Mitterrand added the famous and at the time controversial glass pyramid, which now leads to the National Museum.

# If Paris were told to us in a few words



The tribe of Parisii settled in the 3<sup>rd</sup> century BC on the island of the city, fortified it and called it Lutetia. During the barbarian invasions Clovis seized Paris and made it the capital of the kingdom of the Franks. The strategic position of Paris, between fluvial and land trade, will greatly enrich and develop the city throughout the Middle Ages. It became the richest city in Europe, as evidenced by the Notre Dame Cathedral and the Holy Chapel built under Louis IX. Louis XIII created new fortifications to allow the city to expand: new districts replaced the countryside, but the structures of the city were still those of the Middle Ages and Paris became an overpopulated and unhealthy city. During the French Second Empire, Paris was transformed and given its current aspect, Napoleon III entrusting Georges Haussmann with the direction of the New Paris building from 1853 to 1869. Paris was relatively spared by the two world wars destructions, which preserved a unique and coherent architectural ensemble making Paris – according to the French – the most beautiful city in the world.

# Periodic ID card of the day

## 53 . Iodine

Discovery: 1811  
by B.Courtois (Paris, France)  
Family: Halogen  
Period: 5<sup>th</sup>

53

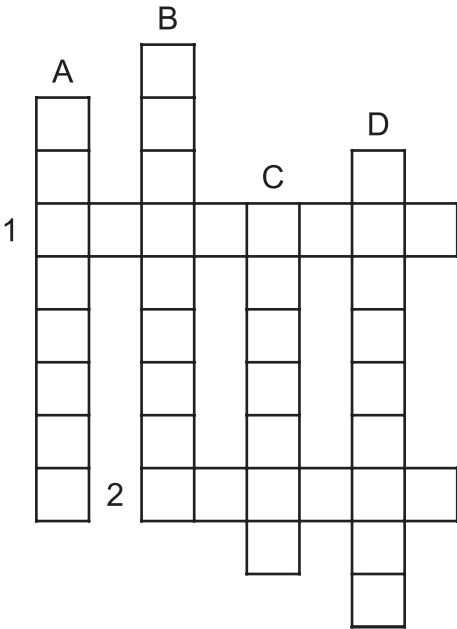
126.90

IODINE

### A few of its properties

Iodine is mostly found as I<sup>-</sup> or IO<sub>3</sub><sup>-</sup> and I<sub>2</sub>, a bright black solid that easily sublimates into a violet gas. Iodide ions are essential for the synthesis and functioning of thyroid hormones. Lack of iodine is the leading cause of mental retardation in the world. Natural iodide tablets are used to saturate the thyroid gland in the event of a nuclear accident. In aqueous solutions, iodine compounds are used as contrast agents in medical imaging. Iodine is also used as a catalyst in the industrial production of acetic acid and some polymers.

# Game of the day



### The names of some elements

- A) derived from the latin name of Paris, was also named Cassiopeium when discovered
- B) the heaviest element in the table formally named in 2016 by UIPAC
- C) so famous that a valley bears its name
- D) previously named Glucine because of the sweet taste of its salts
- 1) previously named Wolfram as you can see from its symbol
- 2) derived from the daughter of Tantalus because of its similarity with Tantalum

# Vocabulary

	
Bienvenue !	Welcome!
Bonjour	Hello
Bonsoir	Good evening
S'il vous plait / s'il te plait	Please
Merci	Thanks
De rien	You're welcome
Au revoir	Goodbye

# Arrivals in Paris!



Arrivals at Roissy-Charles de Gaulle airport and heading to Paris Center!



Students gave their phone away for the competition. They will get them back at the Reunion party, on Friday 26 July!



Students and guides are meeting and getting to know each other!



Students are arriving at their accommodation, at the CIS Paris Kellermann.