

# Introduction to the National Presentation of mathematics education in France

CFEM Commission Française pour l'Enseignement des Mathématiques  
French Commission on Mathematical Instruction

Edwige Godlewski, president of CFEM

July 14th 2021, French National Day 

# What is CFEM?

CFEM **C**ommission **F**rançaise pour l'**E**nseignement des **M**athématiques  
*French Commission on Mathematical Instruction*. It is

- ★ the French sub-commission of ICMI (ICMI = **C**IE**M** in French)
- ★ in France, a common platform for all professional associations and learned societies related to mathematics and its teaching:

- ▶ Assembly of Directors of IREM: Institutes for Research in Mathematics Education (ADIREM)
- ▶ Association of Teachers: of Mathematics in Public Education (APMEP), of Scientific Preparatory Classes (UPS)
- ▶ Learned societies: Association for Research in Didactics of Mathematics (ARDM), French Society of Statistics (SFdS), Society of Applied and Industrial Mathematics (SMAI), Mathematical Society of France (SMF)
- ▶ Women and Mathematics
- ▶ Institut Henri Poincaré (IHP); MATH.en.JEANS

The Commission works in partnership with

- ▶ the French sub-commission of IMU (CNFM)
- ▶ the Ministry in charge of education, through the mathematics group of the General Inspectorate of National Education (IGÉSR)
- ▶ the Academy of Sciences (mathematics group)

Role in France, besides participating in ICMI activities: to encourage cooperation between the various actors of mathematics and its teaching, and their commitment in common actions, to promote a living teaching of mathematics, and the representation of mathematics as a living science.

CFEM is an association composed only of (at most 30) individual members, (24) delegated by the above-mentioned organizations, and of a limited number of co-opted members (among which one from Animath).

# International role

- ▶ Special links with ICMI
  - ▶ outstanding personalities: J.-P. Kahane, M. Artigue have been president of ICMI, and was/is very much involved in CFEM; L. Trouche, J.-L. Dorier have been president of CFEM and are very much involved in ICME-14 and ICMI
  - ▶ ICMI awards: Felix Klein medal to Guy Brousseau (2003) and to Michèle Artigue (2013); the Hans Freudenthal medal to Yves Chevallard (2009) (see ICMI AMOR *Awardees Multimedia Online Resources* website)  
<https://www.mathunion.org/icmi/awards/amor/awardees-units>
  - ▶ implication in ICMI studies
- ▶ A commitment to the French-speaking world: EMF (*Espace Mathématique Francophone*)
- ▶ France supports to the CANP (Capacity & Networking Project): an ICMI and IMU project, launched in collaboration with UNESCO

International role: EMF

EMF (*Espace mathématique Francophone*), an ICMI Regional Conference Born in July 2000, the World Year of Mathematics, CFEM organized the first Francophone Congress on Mathematics Education in Grenoble.

Takes place every 3 years, CFEM continues to contribute actively.

6 countries have already successively hosted this important event: France, Tunisia, Canada (Quebec), Senegal, Switzerland and Algeria (EMF2015 took place in Algiers) and again France for EMF2018 (in Paris - Gennevilliers),



next EMF was planned in Cotonou in Benin in December 2021, it has been postponed.

# International role of France: a parenthesis with Unesco

The challenges of teaching mathematics in basic education (2011): a book coordinated by Michèle Artigue



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ACCUEIL | L'EXPOSITION | THÈMES

## Pourquoi les mathématiques ?

Une exposition internationale avec le soutien de l'UNESCO

Experiencing Mathematics – A Traveling Exhibition, initiated and supported by ICMI and UNESCO, co-developed in France. Since its creation in 2004, the exhibition has welcomed more than 2.5 million visitors, in 150 cities in 40 countries and has been translated into 20 languages.

<http://www.mathex.org/>



# National role of CFEM

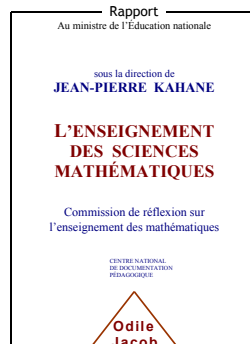
None of the associations in CFEM can represent the whole landscape of mathematics education in France. Hence, the Commission has a national role which is real though not necessarily explicitly recognized, with highs and lows:

- ▶ officially associated and present in the follow-up committee of “Stratégie Mathématiques” (Ministry in charge of Education 2014-2017)
- ▶ not represented in the Villani-Torossian commission, but present through individual members (APMEP, IREM...) and invited for consultation
- ▶ consulted by the CSP (Conseil supérieur des programmes - *Higher Council for Programs*) in 2018 and 2019
- ▶ member of the steering committee of Année des mathématiques

# Two important documents

CREM reports of the *Commission of Reflection on the Teaching of Mathematics* in 1999, chaired by

1. Jean-Pierre Kahane. Still very actual considerations on the education of teachers and their professional development and on curriculum



*21 measures for mathematics education*  
known as the Villani-Torossian Report  
Gave birth to the Mathematics Plan

2.





## A few national actions

Actions led directly by the Commission

- ▶ Forum Mathématiques Vivantes (*Living Mathematics Forum* in 2015 and 2017), with DGESCO: proposing teacher training activities and popularization actions
- ▶ Annual Colloquium on Mathematics education with ARDM

or in which the Commission was actively involved

- ▶ Année des mathématiques (Ministry and CNRS)



In particular in the Grand Forum Mathématiques Vivantes

- ▶ Zoom “Métiers” (a brochure on Careers in mathematics, computer science and statistics) with other associations and ONISEP (National Office of Educational and Vocational Information)

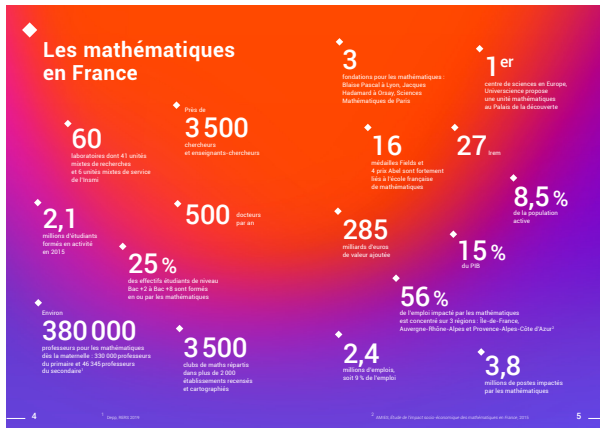
## Some other communication actions

- ▶ Publication of a Bulletin, of a monthly Newsletter, widely disseminated
- ▶ Press releases on hot topics (high school reform, educational assistants...)
- ▶ Participation to events organized by its members: Math teachers days (APMEP), invited to IREM councils, FEM (Forum Emploi Maths, *Math Job Forum*)....

# Année des mathématiques, launched in October 2019



## Some figures



NPF at ICME-14: 7th and last  
flagship action

Unfortunately came Covid19...

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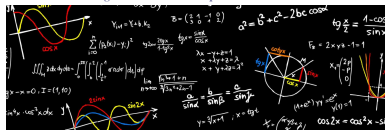


# Other recent events or actions

The community reflects on math education



Enseigner les mathématiques au XXIème siècle



*Teaching mathematics in the 21st century*

who? what? why? how? to whom?

CFEM-ARDM Colloquium: *Appropriation of mathematics and its uses in society (School, teaching and training) (2020)*, and *Recruiting mathematics teachers: what mathematical, didactic, and pedagogical knowledge and skills for primary and secondary school teachers? (April 2021)*

These editions were held remotely, with a large number of participants.

# Conclusion

A **SWOT** analysis, replaced by a **SO** conclusion! I would like to

- ▶ emphasize the dynamism and fighting spirit of the community, which the COVID pandemic did not stop
- ▶ mention the opportunity opened with Année des mathématiques: bridges are being rebuilt between teaching and research in mathematics

We think essential that collaboration between the community linked to mathematics teaching and the institution should be encouraged at all levels, and the CFEM can be one of the actors in this rapprochement

# What next?

1. Recent curricular evolutions (presented by Simon Modeste)
2. Training teachers (presented by Louise Nyssen)
3. Research in mathematics education (presented by Cécile Ouvrier-Buffet, Ghislaine Gueudet)
4. IREM: the 50-year old original network of Institutes for Research in Mathematics Education (presented by Anne Cortella)
5. Popularization and enrichment activities (presented by Stéphane Vinatier)

For each part, a quick general survey and some focus on specific points.

Presented by experts of the field, with some testimonials.

A more complete written document can be found on the website of the Commission

<http://www.cfem.asso.fr/>