

## WHO SAID: “PEOPLE DO NOT ENJOY MATHEMATICS” ?

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### Introduction

I would like to report about what basic teachers are doing when they are not satisfied with the mere transmissions of knowledge, when they painfully recognize that this knowledge is not expected. This knowledge needs to be desirable; and, when the will is there, one has to satisfy it, to renew it and the pupils must not be disappointed.

The study volume should integrate the real world and didactical contributions; it is really expected.

In front of the real world where pupils lack appetite for studies, teachers on the spot find out, create new ways, explore « challenging mathematics » for which we are here today.

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They know that they will find how to transmit the excitement of research, curiosity to learn, excitement to solve, only by working together.

### Some experiences

I quickly describe some experiences from France which are incentives for mathematics. I am involved in some of them.

All of these experiences are planned by « basic» teachers. They work together, for instance in Research Instituts like IREM (Institut de Recherche sur l'Enseignement des Mathématiques), absolutely necessary for the math teacher I am!

- First example: the CIJM, “International Comity for Mathematic Games”, created forty years ago to federate mathematic competitions, in schools or not, gathers nowadays 34 members.

### CIJM members

Amis des Jeux mathématiques	KANGOUROU
Association nigérienne de Jeux Mathématiques	LUDIMATHS
Association Pierre de Fermat.	Math en folies
Association Rallye Mathématique transalpin	Mathématiques Sans Frontière AQUITAINE
Association tchadienne des Jeux Mathématiques	Mathématiques Sans Frontière MIDI PYRENEE
Association tunisienne de sciences mathématiques	Rallye mathématique de SICILE
Association ukrainienne des Jeunes Mathématiciens	Rallye mathématique de POITOU CHARENTE
Compétition du Département math de l'Université de MILAN.	Rallye mathématique d'AUVERGNE
CREMA (Agadir- Maroc)	Rallye mathématique de HAUTE NORMANDIE
Culture et Art du sport (Algérie)	Rallye mathématique de SARTHE
ENS Marrakech (Maroc)	Rallye mathématique de MADAGASCAR
Fédération Française de Jeux Mathématiques	Rallye mathématique de NOUVELLE CALEDONIE
Fédération belge de Jeux Mathématiques	Rallye mathématique du NORD
Fédération italienne de Jeux Mathématiques	Rallye mathématique GANGES BOMBYX
Fédération polonaise de Jeux Mathématiques	Rallye mathématique de IREM PARIS NORD
Fédération québécoise de Jeux Mathématiques	Tournoi des VILLES
	Tournoi mathématique de Saint Michel en l'Herm
	Tournoi mathématique du Limousin.

Most of them are French but as we can see, there are some African members and others members from Europe (French speaking).

- A major activity of CIJM is to organise each year an exhibition in Paris: “Salon de la Culture et des Jeux Mathématiques”.



The seventh one took place last May in front of the Saint-Sulpice church in Paris. This four days exhibition gathers very young children and grand fathers, students and family, teachers, artists, game makers, editors...



Many events take place during this exhibition: Euromath (European math competition), conferences, mathematical movies, the “Rallye Mathématique dans Paris” and so on.

- Le “Rallye mathématique de Paris”.



It consists of a (long) walk within Paris to discover places, museums, streets or buildings, which raise mathematical history or scientific actuality.

Each team consists of four persons.

Between one and two hundred people try to solve enigmas and mathematical problems!

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## A few words about three members of CIJM

Amis des Jeux mathématiques  
Association NIGERIENNE de Jeux  
Mathématiques  
Association Pierre de Fermat.  
Association Rallye Mathématique TRANSALPIN  
Association TCHADIENNE des Jeux  
Mathématiques  
Association TUNISIENNE de Sciences  
Mathématiques  
Association UKRAINIENNE des Jeunes  
Mathématiciens  
Compétition du Département de l'Université de  
MILAN.  
CREMA (Agadir- MAROC)  
Culture et Art du sport (ALGERIE)  
ENS Marrakech (MAROC)  
**Fédération Française de Jeux Mathématiques**  
Fédération belge de Jeux Mathématiques  
Fédération italienne de Jeux Mathématiques  
Fédération polonaise de Jeux Mathématiques  
Fédération québécoise de Jeux Mathématiques

**KANGOUROU**  
LUDIMATHS  
Math en folies  
Mathématiques Sans Frontière AQUITAINE  
Mathématiques Sans Frontière MIDI PYRENEE  
Rallye mathématique de SICILE  
Rallye mathématique de POITOU CHARENTE  
Rallye mathématique d'Auvergne  
Rallye mathématique de HAUTE NORMANDIE  
**Rallye mathématique de SARTHE**  
Rallye mathématique de MADAGASCAR  
Rallye mathématique de NOUVELLE CALEDONIE  
Rallye mathématique du NORD  
Rallye mathématique GANGES BOMBYX  
Rallye mathématique de IREM PARIS NORD  
Tournoi des VILLES  
Tournoi mathématique de Saint Michel en l'Herm  
Tournoi mathématique du Limousin.

**Kangourou**, is certainly the largest school competition in the world: nearly 3 000 000 students. André Deledicq was awarded, two years ago, the ERDÖS Price, which recognized the quality of this lucid, but serious, mathematic activity.

**FFJM** (French federation of mathematical games) organizes a national and international championship, “to develop mathematics through games, to lead pedagogy toward problems and to share the pleasure of research”. Also, FFJM organizes summer universities.

**Rallye mathématique de la Sarthe**, a smaller organisation but that I know very well! And I think it is an example of what we can do “at the base”!  
313 classrooms in 40 middle-schools (50% of all those of Sarthe):  
- Two steps, one hour each, in classrooms (December and March);  
- A meeting for 18 finalist classes: 10 outdoor workshops. It is a festival day of mathematics (June).



## Rallye mathématique de la Sarthe

For pupils, we aim at:

- providing a dynamical project to the mathematic course: both pupils and their teacher commit themselves in this annual competition ; they have to discuss together about this decision.
- providing opportunities for the group to work together, to plan a long research, too long for a single pupil.
- training for argumentation and debate : only one answer is expected and pupils need to discuss, to argue, to discover proofs, examples and counterexample.

For teachers, we aim at:

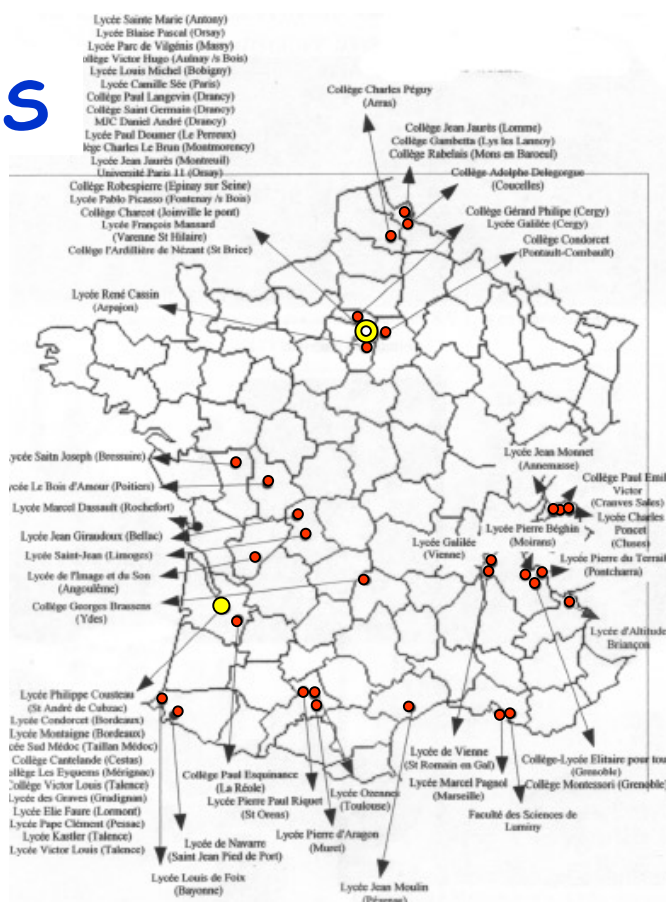
- providing a dynamical project in mathematic teaching
- helping to find new activities: now a database of exercises is available on the website.
- changing the glance towards students: the teacher has to be only an observer ; he looks at the group ; he looks at each pupil.

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- Finally, I would like to talk about an experience which is not a competition but is, in my mind, an important, inventive and fabulous idea: MATH.en.JEANS.

## MATH.en.JEANS

To make the students  
to feel the pleasure of  
research



MATH.en.JEANS is not really young: 17 years old! The main aim is to lead students toward the pleasure of research. A MATH.en.JEANS team consists of two groups of pupils (for instance from two neighbouring middle or high schools) working with a professional mathematician; during the whole school year they discuss together in order to solve a problem proposed by the researcher and chosen by them. They must publish their results and participate in the final congress.

Last school year, seventy French schools were involved in this activity supported by the CNRS (Centre National pour la Recherche Scientifique) and the Minister of Education.

<http://mathenjeans.free.fr>

<http://www.cijm.org>

<http://sarthe.cijm.org>

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