

Training course on inquiry-based science education at primary school

La main à la pâte

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Beginning by a general presentation of the national French program *La main à la pâte* (www.inrp.fr/lamap), created in 1996 to develop science education at primary school through inquiry and hands-on activities, the training course will focus on inquiry-based science teaching at primary school. It will address primary teachers and trainers through classroom simulations where participants will experiment directly hands-on approach in science teaching. These simulations will go on with analysis and reflections on such activities, and will lead towards the elaboration of a typical inquiry-based science activity for the class. The topics and experiments chosen belong to both physics and life sciences: *How to measure the wind's strength ? Where is the wind coming from ?* on the one hand and *Breeding and rearing animals in the classroom* on the other hand. Some theoretical complements will be given on inquiry-based science teaching, in relation with the activities and the interests of participants, through lectures, debates and videos.

The training course will be ensured by Alain CHOMAT and Jean-François RODES, both members of *La main à la pâte*, and will be sponsored by the European project POLLEN (www.pollen-europa.net).

TENTATIVE PLANNING

D1	<ul style="list-style-type: none">- Presentation of <i>La main à la pâte</i> and of inquiry-based science teaching.- Presentation of the training and participants.- Participants will be divided in 2 groups : G1 and G2.	<ul style="list-style-type: none">- Classroom simulation : observations and experiments.- Reflections and analysis on practices. Analyse des activités pratiquéesG1 : Physical sciencesG2 : Life sciences
D2	<ul style="list-style-type: none">- Classroom simulation : observations and experiments.- Reflections and analysis on practices. Analyse des activités pratiquéesG1 : Life sciencesG2 : Physical sciences	<ul style="list-style-type: none">- The 10 basic principles of <i>La main à la pâte</i>.- How to implement inquiry science activities in the class ?- Video analysis of a classroom activity.- Elaboration of a typical classroom activity by participants (1).
D3	<ul style="list-style-type: none">- Elaboration of a typical classroom activity by participants (2).- Presentation of the typical activity elaborated on Life sciences.	<ul style="list-style-type: none">- Presentation of the typical activity elaborated on Physics.- Writing and sciences.- Video : <i>Bikes !</i>- Debriefing. Next steps.

Teaching sciences at primary school

La main à la pâte (hands-on) is a national French program aiming at reforming and developing science and technology education at elementary school (both kindergarten and primary). It recommends that teachers implement investigative and inquiry activities with pupils, combining exploration of the world, scientific learning, experimentation and reasoning, mastery of language and argumentation, so that all children deepen their understanding of the objects and phenomena around them. Curiosity, creativity and critical spirit are the core of competencies *La main à la pâte* pretends to develop.

Launched in 1996 by Georges Charpak, Physics Nobel prize winner, with the support of the French Académie des sciences and Ministry of education, *La main à la pâte* has been in constant development since then, entering in a partnership with the National institute for pedagogical research and the École normale supérieure (Paris).

The work undertaken with the Ministry of education led to the launching, in 2000, of a national plan to renew science and technology teaching in schools, followed, in 2002, by a profound change of science teaching curricula for primary education.

A rough estimation gives a number of about 100 000 teachers (33%) actually practicing science education in France, with about 30 000 doing it in strict accordance with *La main à la pâte* recommendations, versus 3% of teachers doing science in 1996.

