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the interacademy partnership

IAP Statement on Science Education

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Must all children learn science at school?

The answer is “Yes.” Science opens young people’s minds to the wonders of the natural world; introduces them to the elegance and honesty of scientific endeavours; and equips them with cognitive and problem-solving tools that will serve them well in the future. Science brings children closer to the natural objects and phenomena that surround them; endows them with a rich understanding of our complex world; helps them practice an intelligent approach to dealing with the environment; and teaches them about the techniques and tools that societies have used to improve the human condition. As children become familiar with the universality of the laws of science, they also learn to recognize science’s ability “to create and cement together a unity for humanity.”

As citizens, science helps children develop the mental and moral predispositions to imagination, humility, rigour, curiosity, freedom and tolerance - all essential ingredients for peace and democracy.

Therefore, the InterAcademy Panel on International Issues (IAP) recommends to all national leaders that:

1. teaching of the sciences to both girls and boys begin in their primary and nursery schools. There is evidence that children, from the youngest age, are capable of building upon their natural and insatiable curiosity to develop logical and rational thought;
2. this teaching should be closely tied to the realities with which the children are confronted locally, in their natural environment and their culture, in order to facilitate continuing exchange with their family and friends;
3. this teaching should be based, to a large extent, upon models of inquiry-based pedagogy, assigning a major role to questioning by the students, leading them to develop hypotheses relating to the initial questions and, when possible, encouraging experimentation that, while simple in terms of the apparatus used, can be performed by children themselves;
4. in this manner one should avoid, as far as possible, a teaching of the sciences which is handed down vertically by a teacher enunciating facts to be learnt by heart, in favour of one which is transformed for children into an acquisition of knowledge which is horizontal, that is, which connects them with nature - inert or living - directly, at the same time involving their senses and their intelligence;

5. links should be established between teachers, via the internet, first within their own country, then internationally, taking advantage of the universal nature of the laws of science to establish a direct contact between classes in different countries on subjects of global interest (e.g. climate, ecology, geography);
6. priority should be given to the networking of schools, and that support should be given - in the same way as IAP and the International Council for Science (ICSU) work on this jointly via the website: <http://www.icsu.org/events/icsu-iap> - to efforts to develop shareable experiments and teaching tools (such as documents and experiment portfolios) to be placed in an electronic commons for all to modify and use.

We, the undersigned science academies throughout the world, members of the IAP, are convinced that, with the support of international authorities, the backing of the national ministries concerned, and the dedicated efforts of the many scientists whom they bring together, a worldwide effort in this area is within reach. This effort is potentially rich in intellectual and societal benefits.

Science Education of Children: Signatories

Latin American Academy of Sciences
 Third World Academy of Sciences
 Albanian Academy of Sciences
 National Academy of Exact, Physical and Natural Sciences, Argentina
 Australian Academy of Science
 Austrian Academy of Sciences
 Bangladesh Academy of Sciences
 The Royal Academies for Science and the Arts of Belgium
 Academy of Sciences and Arts of Bosnia and Herzegovina
 Brazilian Academy of Sciences
 Cameroon Academy of Sciences
 The Royal Society of Canada
 Academia Chilena de Ciencias
 Chinese Academy of Sciences
 Academia Sinica, China, Taiwan
 Colombian Academy of Exact, Physical and Natural Sciences
 Croatian Academy of Arts and Sciences
 Cuban Academy of Sciences
 Academy of Sciences of the Czech Republic
 Academy of Scientific Research and Technology, Egypt
 Estonian Academy of Sciences

The Delegation of the Finnish Academies of Science and Letters
 Académie des Sciences, France
 Georgian Academy of Sciences
 Union of German Academies of Sciences and Humanities
 Ghana Academy of Arts and Sciences
 Academy of Athens, Greece
 Academia de Ciencias Medicas, Fisicas y Naturales de Guatemala
 Hungarian Academy of Sciences
 Indian National Science Academy
 Indonesian Academy of Sciences
 Royal Irish Academy (Acadamh Ríoga na héireann)
 Kenya National Academy of Sciences
 Accademia Nazionale dei Lincei, Italy
 Science Council of Japan
 Royal Scientific Society of Jordan
 African Academy of Sciences
 Latvian Academy of Sciences
 Lithuanian Academy of Sciences
 Macedonian Academy of Sciences and Arts
 Akademi Sains Malaysia
 Academia Mexicana de Ciencias
 Academy of Sciences of Moldova
 Mongolian Academy of Sciences
 The Royal Netherlands Academy of Arts and Sciences
 Academy Council of the Royal Society of New Zealand
 Nigerian Academy of Sciences
 Norwegian Academy of Sciences and Letters
 Pakistan Academy of Sciences
 Palestine Academy for Science and Technology
 Academia Nacional de Ciencias del Peru
 National Academy of Science and Technology, Philippines
 Russian Academy of Sciences
 Académie des Sciences et Techniques du Sénégal
 Singapore National Academy of Sciences
 Slovak Academy of Sciences
 Slovenian Academy of Sciences and Arts
 Academy of Science of South Africa
 Royal Academy of Exact, Physical and Natural Sciences of Spain
 National Academy of Sciences, Sri Lanka
 Royal Swedish Academy of Sciences
 Council of the Swiss Scientific Academies
 Academy of Sciences, Republic of Tajikistan
 The Caribbean Academy of Sciences
 Turkish Academy of Sciences
 The Uganda National Academy of Sciences
 The Royal Society, United Kingdom
 US National Academy of Sciences
 Academia de Ciencias Físicas, Matemáticas y Naturales de Venezuela
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