



Foreword

The OECD Programme for International Student Assessment (PISA), created in 1997, represents a commitment by the governments of OECD member countries to monitor the outcomes of education systems in terms of student achievement, within a common internationally agreed framework. PISA is a collaborative effort, bringing together scientific expertise from the participating countries and steered jointly by their governments on the basis of shared, policy-driven interests. Participating countries take responsibility for the project at the policy level. Experts from participating countries also serve on working groups that are charged with linking the PISA policy objectives with the best available substantive and technical expertise in the field of internationally comparative assessment. Through involvement in these expert groups, countries ensure that the PISA assessment instruments are internationally valid and take into account the cultural and curricular context of OECD member countries. They also have strong measurement properties, and place an emphasis on authenticity and educational validity. PISA 2012 represents a continuation of the data strategy adopted in 1997 by OECD countries. As in 2003, mathematical literacy is the focus of the PISA 2012 survey. The framework for assessing mathematics was fully revised for the PISA 2012 assessment and introduces three new mathematical processes that form the basis of developments in the reporting of PISA mathematics outcomes. A computer-based assessment of mathematics was also included in the 2012 cycle. The framework for assessing science was revised for PISA 2006 while the framework for assessing reading was revised for PISA 2009. Both of these frameworks remained unchanged in PISA 2012. The analytic framework that formed the basis of the development of the various questionnaire instruments was also redeveloped for PISA 2012.

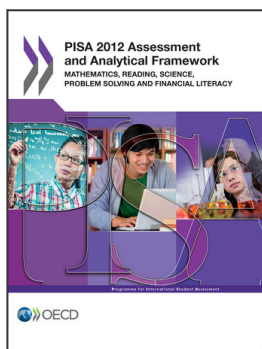
Additions to the PISA 2012 assessment include a computer-based assessment of problem solving and an assessment of financial literacy. In 2003, problem solving became an assessment domain in PISA but was not reintroduced in the PISA 2006 and 2009 cycles. However, a new framework was devised for problem solving in PISA 2012 and additional assessment methodologies were implemented, allowing for the real-time capture of students' capabilities. In particular, the PISA 2012 assessment of problem solving was computer-based, and interactivity of the student with the problem is a central feature of the assessment. Financial literacy was included for the first time in the PISA assessment. Its framework provides a common language for discussion about financial literacy, a working definition of the domain, an articulated plan for developing items, and defines the relevant content, processes and contexts for the assessment of 15-year-old students in this domain.

This publication presents the guiding principles of the PISA 2012 assessment, which are described in terms of the skills students need to acquire, the processes that need to be performed and the settings in which knowledge and skills are applied. Further, it illustrates the assessment domains with a range of sample tasks.

The framework development for mathematics was undertaken jointly by the Australian Council for Educational Research (ACER), and Achieve, Inc., a USA-based educational development organisation. The framework development for all other cognitive domains, as well as the context questionnaire, was undertaken by the Australian Council for Educational Research.

The frameworks were developed by the expert panels, with the guidance of Raymond Adams, Barry McCrae, Petra Lietz, Juliette Mendelovits, Dara Ramalingam and Ross Turner from ACER. The mathematics expert group was chaired by Kaye Stacey from the University of Melbourne. The problem solving expert group was chaired by Joachim Funke from the University of Heidelberg. The reading expert group was chaired by Irwin Kirsch of Educational Testing Service in the United States of America. The science expert group was chaired by Rodger Bybee, formerly of the Biological Science Curriculum Study in the United States. The financial literacy expert group was chaired by Annamaria Lusardi of The George Washington University School of Business, in the United States of America. The questionnaire expert group was chaired by Eckhard Klieme of the German Institute for International Educational Research (DIPF) in Germany. The members of the expert groups are listed in Annex B of this publication. The frameworks have also been reviewed by expert panels in each of the participating countries. The chapters were drafted by the respective expert groups under the direction of their chairs. The publication was prepared by the OECD Secretariat, principally by Michael Davidson, Sophie Vayssettes, Pablo Zoido, Giannina Rech, Elisabeth Villoutreix, Marilyn Achiron and Elizabeth Del Bourgo.

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