

# Argentina, Argentina, Australia, Austria, Belgium, Bulgaria, Brazil, Canada, Switzerland, Chile, Chi - Programme for International Student Assessment 2015

**Organisation for Economic Co-operation and Development**

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# Overview

## Identification

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ID NUMBER  
WLD\_2015\_PISA\_v01\_M

## Overview

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### ABSTRACT

The Programme for International Student Assessment (PISA) is a triennial international survey which aims to evaluate education systems worldwide by testing the skills and knowledge of 15-year-old students.

As in previous cycles, the 2015 assessment covers science, reading and mathematics, with the major focus in this cycle on scientific literacy. Financial literacy is an optional assessment, as it was in 2012. A questionnaire about students' background is distributed to all participating students. Students may also choose to complete additional questionnaires: one about their future studies/career, a second about their familiarity with information and communication technologies. School principals complete a questionnaire about the learning environment in their schools, and parents of students who sit the PISA test can choose to complete a questionnaire about the home environment. Seventy-two countries and economies, including all 35 OECD countries, participated in the PISA 2015 assessment.

### KIND OF DATA

Sample survey data [ssd]

### UNITS OF ANALYSIS

To better compare student performance internationally, PISA targets a specific age of students. PISA students are aged between 15 years 3 months and 16 years 2 months at the time of the assessment, and have completed at least 6 years of formal schooling. They can be enrolled in any type of institution, participate in full-time or part-time education, in academic or vocational programmes, and attend public or private schools or foreign schools within the country. Using this age across countries and over time allows PISA to compare consistently the knowledge and skills of individuals born in the same year who are still in school at age 15, despite the diversity of their education histories in and outside of school.

## Scope

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### NOTES

The scope of the PISA 2015 study includes the following:

- Students' family background, science, mathematics, reading, collaborative problem solving and financial literacy

Science covers:

- Bird Migration
- Running in Hot Weather
- Slope-Face Investigation
- Meteoroids and Craters
- Sustainable Fish Farming

Scientific Question Categories:

Scientific Competencies

- Explain phenomena scientifically to recognise, offer and evaluate explanations for a range of natural and technological phenomena.
- Evaluate and design scientific enquiry to describe and appraise scientific investigations and propose ways of addressing

questions scientifically.

- Interpret data and evidence scientifically to analyse and evaluate data, claims and arguments in a variety of representations and draw appropriate scientific conclusions.

#### Knowledge Categories

- Content knowledge refers to the knowledge of theories, explanatory ideas, information and facts

- Procedural knowledge refers to an understanding of how such knowledge has been derived, the knowledge about the concepts and procedures that are essential for scientific enquiry, and that underpin the collection, analysis and interpretation of scientific data.

- Epistemic knowledge refers to the nature of that knowledge, an understanding of the nature and origin of knowledge in science, and reflects students' capacity to think and engage in reasoned discourse as scientists do. Epistemic knowledge is required to understand the distinction between observations, facts, hypotheses, models and theories, but also to understand why certain procedures, such as experiments, are central to establishing knowledge in science.

#### Content Areas

- Knowledge can also be classified according to the major scientific fields to which it pertains: physical systems, living systems, and earth and space systems.

#### Context of Assessment Items

- Three context categories identify the broad areas of life in which the test problems may arise: "personal", which are contexts related to students' and families' daily lives; "local/national", which are contexts related to the community in which students live; and "global", which are contexts defined by life across the world.

## Coverage

#### GEOGRAPHIC COVERAGE

PISA 2015 covered 72 counteies (35 OECD countries and 37 partner countries and economies. All countries attempted to maximise the coverage of 15-year-olds enrolled in education in their national samples, including students enrolled in special educational institutions.

#### UNIVERSE

To provide valid estimates of student achievement, the sample of students had to be selected using established and professionally recognised principles of scientific sampling in a way that ensured representation of the full target population of 15-year-old students in the participating countries.

Furthermore, quality standards had to be maintained with respect to (i) the coverage of the PISA international target population, (ii) accuracy and precision, and (iii) the school and student response rates.

National Project Managers (NPMs) might have found it necessary to reduce their coverage of the target population by excluding, for instance, a small, remote geographical region due to inaccessibility, or a language group, possibly due to political, organisational or operational reasons, or special education needs students. Areas deemed to be part of a country (for the purpose of PISA), but which were not included for sampling, although this occurred infrequently, were designated as non-covered areas. Care was taken in this regard because, when such situations did occur, the national desired target population differed from the international desired target population. In an international survey in education, the types of exclusion must be defined consistently for all participating countries and the exclusion rates have to be limited. Indeed, if a significant proportion of students were excluded, this would mean that survey results would not be representative of the entire national school system. Thus, efforts were made to ensure that exclusions, if they were necessary, were minimised according to the PISA 2015 Technical Standards (see Appendix F of the Technical Report).

## Producers and Sponsors

#### PRIMARY INVESTIGATOR(S)

Name	Affiliation
Organisation for Economic Co-operation and Development	

#### OTHER PRODUCER(S)

Name	Affiliation	Role
Australian Council for Educational Research		
Netherlands National Institute for Educational Measurement		
Service de Pédagogie Expérimentale at Université de Liège		
Westat (USA)		
Educational Testing Service (USA)		
National Institute for Educational Research (Japan)		

#### FUNDING

Name	Abbreviation	Role
Organisation for Economic Co-operation and Development	OECD	

## Metadata Production

#### METADATA PRODUCED BY

Name	Abbreviation	Affiliation	Role
Development Economics Data Group	DECDG	The World Bank	Documentation of the DDI

#### DATE OF METADATA PRODUCTION

2018-09-19

#### DDI DOCUMENT VERSION

DDI Document - Version 02 - (04/21/21)

This version is identical to DDI\_WLD\_2015\_PISA\_v01\_M\_WB but country field has been updated to capture all the countries covered by survey.

Version 01 (September 2018)

#### DDI DOCUMENT ID

DDI\_WLD\_2015\_PISA\_v02\_WB

# Sampling

## Sampling Procedure

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In all but one country, the Russian Federation, the sampling design used for the PISA assessment was a two-stage stratified sample design. The first-stage sampling units consisted of individual schools having 15-year-old students, or the possibility of having such students at the time of assessment. Schools were sampled systematically from a comprehensive national list of all PISA-eligible schools, known as the school sampling frame, with probabilities that were proportional to a measure of size. The measure of size was a function of the estimated number of PISA-eligible 15-year-old students enrolled in the school. This is referred to as systematic probability proportional to size (PPS) sampling. Prior to sampling, schools in the sampling frame were assigned to mutually exclusive groups based on school characteristics called explicit strata, formed to improve the precision of sample-based estimates.

The second-stage sampling units in countries using the two-stage design were students within sampled schools. Once schools were selected to be in the sample, a complete list of each sampled school's 15-year-old students was prepared. Each country had to set a target cluster size (TCS) of 42 students for computer-based countries and 35 for paper-based countries, although with agreement countries could use alternative values. The sample size within schools is prescribed, within limits, in the PISA Technical Standards (see Annex F of the Technical Report). From each list of students that contained more than the target cluster size, a sample of around 42 students were selected with equal probability and for lists with fewer than the target number, all students on the list were selected.

## Response Rate

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A response rate of 85% was required for initially-selected schools. If the initial school response rate fell between 65% and 85%, an acceptable school response rate could still be reached through the use of replacement schools.

An overall response rate of 80% of selected students in participating schools was required. A student who had participated in the original or follow-up cognitive sessions was considered to be a participant. A minimum student response rate of 50% within each school was required for a school to be regarded as participating: the overall student response rate was computed using only students from schools with at least a 50% student response rate. Again, weighted student response rates were used for assessing this standard.

## Weighting

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Each student was weighted by the reciprocal of his/her sample selection probability.

# Questionnaires

## Overview

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Paper-based tests were used, with assessments lasting two hours. In a range of countries and economies, an additional 40 minutes were devoted to the computer-based assessment of mathematics, reading and problem solving.

Test items were a mixture of questions requiring students to construct their own responses and multiple-choice items. The items were organised in groups based on a passage setting out a real-life situation. A total of about 390 minutes of test items were covered, with different students taking different combinations of test items.

Students answered a background questionnaire, which took 30 minutes to complete, that sought information about themselves, their homes and their school and learning experiences. School principals were given a questionnaire, to complete in 30 minutes, that covered the school system and the learning environment. In some countries and economies, optional questionnaires were distributed to parents, who were asked to provide information on their perceptions of and involvement in their child's school, their support for learning in the home, and their child's career expectations, particularly in mathematics. Countries could choose two other optional questionnaires for students: one asked students about their familiarity with and use of information and communication technologies, and the second sought information about their education to date, including any interruptions in their schooling and whether and how they are preparing for a future career.

The PISA 2015 Science Test Questions are available in 90 other languages.

# Data Collection

## Data Collection Dates

Start	End	Cycle
2015-03	2015-08	N/A

## Data Collection Mode

Face-to-face [f2f]

## Data Collection Notes

\* Additional data files include all data for Argentina, Kazakhstan and Malaysia, and student questionnaire data for Albania. Due to issues identified during data adjudication, caution is required when analysing these data. For further information, see Annex A4 of PISA 2015 Results (Volume I): Excellence and Equity in Education (OECD, 2016).

Note: Data for student questionnaire items ST016 and ST038 will be available when the PISA 2015 Results Volume III is published in April 2017. Financial Literacy datasets will be available when the PISA 2015 Results Volume IV is published in May 2017. Collaborative Problem Solving datasets will be available when the PISA 2015 Results Volume V is published in October/November 2017.

For queries about the PISA 2015 database and associated files, contact [edu.pisa@oecd.org](mailto:edu.pisa@oecd.org).

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## Data Processing

### Data Editing

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Software specially designed for PISA facilitated data entry, detected common errors during data entry, and facilitated the process of data cleaning. Training sessions familiarised National Project Managers with these procedures.



## Data Appraisal

No content available



# Documentation

## Questionnaires

### Educational Career Questionnaire for PISA 2015 - International Option

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Title Educational Career Questionnaire for PISA 2015 - International Option  
Date 2014-11-01  
Filename CY6\_QST\_MS\_ECQ\_Final.pdf

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### ICT Familiarity Questionnaire for PISA 2015 - International Version

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Title ICT Familiarity Questionnaire for PISA 2015 - International Version  
Date 2014-11-01  
Filename CY6\_QST\_MS\_ICQ\_Final.pdf

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### Parent Questionnaire for PISA 2015 - International Version

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Title Parent Questionnaire for PISA 2015 - International Version  
Date 2014-11-01  
Filename CY6\_QST\_MS\_PaQ\_Final.pdf

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### School Questionnaire for PISA 2015 - Computer-Based Version

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Title School Questionnaire for PISA 2015 - Computer-Based Version  
Date 2014-11-01  
Filename CY6\_QST\_MS\_SCQ\_CBA\_Final.pdf

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### School Questionnaire for PISA 2015 - Paper-Based Version

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Title School Questionnaire for PISA 2015 - Paper-Based Version  
Date 2014-11-01  
Filename CY6\_QST\_MS\_SCQ\_PBA\_Final.pdf

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### Student Questionnaire for PISA 2015 - Computer-Based Version

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Title Student Questionnaire for PISA 2015 - Computer-Based Version  
Date 2014-11-01  
Filename CY6\_QST\_MS\_STQ\_CBA\_Final.pdf

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### Student Questionnaire for PISA 2015 - Paper-Based Version

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Title Student Questionnaire for PISA 2015 - Paper-Based Version  
Date 2014-11-01  
Filename CY6\_QST\_MS\_STQ\_PBA\_Final.pdf

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## **Student Questionnaire for PISA 2015 - Une Heure (UH) Booklet - Computer - Based Version**

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Title Student Questionnaire for PISA 2015 - Une Heure (UH) Booklet - Computer - Based Version  
Date 2014-11-01  
Filename CY6\_QST\_MS\_StQ\_UH\_CBA\_Final.pdf

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## **Student Questionnaire for PISA 2015 - Une Heure (UH) Booklet - Paper - Based Version**

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Title Student Questionnaire for PISA 2015 - Une Heure (UH) Booklet - Paper - Based Version  
Date 2014-11-01  
Filename CY6\_QST\_MS\_StQ\_UH\_PBA\_Final.pdf

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## **Teacher Questionnaires for PISA 2015 (International Option)**

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Title Teacher Questionnaires for PISA 2015 (International Option)  
Date 2014-11-01  
Filename CY6\_QST\_MS\_TCQ\_Final.pdf

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## **PISA 2015 Questionnaires in French (International Version)**

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Title PISA 2015 Questionnaires in French (International Version)  
Student questionnaire  
School questionnaire  
Table of contents Education career questionnaire for students (optional for countries)  
ICT familiarity questionnaire for students (optional for countries)  
Parents questionnaire (optional for countries)  
Teacher questionnaire (optional for countries)  
Filename PISA2015-FRE\_Quest.zip

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## **PISA 2015 National Questionnaire Versions**

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Title PISA 2015 National Questionnaire Versions

This archive includes national versions of PISA questionnaires administered in PISA 2015.

To learn more about the process of translating, adapting and verifying national versions of the questionnaires, please consult Chapter 5 of the PISA 2015 Technical Report (<http://www.oecd.org/pisa/data/2015-technical-report/>)

National versions of PISA questionnaires may contain country-specific questions or questions whose answers are not published to preserve the confidentiality of respondents. The OECD cannot share the responses to these questions.

The following questionnaires are not included in this archive:

Hong Kong (China): to request access to the questionnaires for Hong Kong (China), contact Fanny WAN at [fannywan@edb.gov.hk](mailto:fannywan@edb.gov.hk) (cc [davidli@edb.gov.hk](mailto:davidli@edb.gov.hk) and [chanwingyin@edb.gov.hk](mailto:chanwingyin@edb.gov.hk))

Chinese Taipei : to request access to the questionnaires for Chinese Taipei, contact the "Taiwan International Large-Scale Study Center" at [tilssc@mail.naer.edu.tw](mailto:tilssc@mail.naer.edu.tw)

#### Description

Note on Filenames:

China:

Questionnaires in this archive whose name starts with China were used to the four PISA-participating China provinces: Beijing, Shanghai, Jiangsu and Guangdong.

Cyprus:

Note by Turkey: The information in this archive with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the "Cyprus issue".

Note by all the European Union Member States of the OECD and the European Union: The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this archive relates to the area under the effective control of the Government of the Republic of Cyprus.

FYROM:

FYROM refers to the Former Yugoslav Republic of Macedonia.

Filename PISA2015-ENG\_NatQuest.zip

## Reports

### PISA 2015 Technical Report

Title	PISA 2015 Technical Report
Description	Detailed description of the implementation of the survey.

	Download link to the full report
	Reader's Guide
	Chapter 1: Programme for International Student Assessment - an Overview
	Chapter 2: Test Design and Development
	Chapter 3: Context Questionnaire Development
	Chapter 4: Sample Design
	Chapter 5: Translation
	Chapter 6: Field Operations
	Chapter 7: Quality Control
	Chapter 8: Survey Weighting
	Chapter 9: Scaling PISA Data
	Chapter 10: Data Management Procedures
	Chapter 11: Sampling Outcomes
	Chapter 12: Scaling
	Chapter 13: Coding Reliability
	Chapter 14: Data Adjudication
Table of contents	Chapter 15: Proficiency Scale Construction
	Chapter 16: Procedures and Construct Validation of Context Questionnaire Data
	Chapter 17: Questionnaire Design and Computer-based Questionnaire Platform
	Chapter 18: Computer Platform
	Chapter 19: International Data Products
	Annexes
	Annex A: Item Pool Classification
	Annex B: Contrast Coding
	Annex C: Standard Errors of Means, Sample Sizes, School Variance Estimates and Other Sampling Outcomes
	Annex D: Mapping of ISCED
	Annex E: National Household Possessions
	Annex F: Technical Standards
	Annex G: Common Unique Item Parameters in Each Domain, by Countries and Languages
	Annex H: Scalar Metric Invariant Trend Items in Each Domain
	Annex I: PISA Contractors, Staff and Consultants
Filename	<a href="http://www.oecd.org/pisa/data/2015-technical-report/">http://www.oecd.org/pisa/data/2015-technical-report/</a>

## Other materials

## PISA Data Explorer

Title	PISA Data Explorer
Publisher(s)	OECD
Description	The Data Explorer allows you to create your own analyses and build reports from the PISA data sets.
Filename	<a href="http://pisadataexplorer.oecd.org/ide/idepisa/">http://pisadataexplorer.oecd.org/ide/idepisa/</a>

## PISA 2015 Assessment and Analytical Framework

Title	PISA 2015 Assessment and Analytical Framework
Description	The theory underlying the PISA surveys – what they aim to achieve and how they are developed – including background questionnaires completed by students, school principals and parents.
Table of contents	<p>Foreword</p> <p>What is PISA?</p> <p>PISA 2015 Science Framework</p> <p>PISA 2015 Reading Framework</p> <p>PISA 2015 Mathematics Framework</p> <p>PISA 2015 Financial Literacy Framework</p> <p>PISA 2015 Context Questionnaires Framework</p> <p>PISA 2015 collaborative problem-solving framework</p> <p>ANNEXES2 CHAPTERS AVAILABLECollapse</p> <p>PISA 2015 Background questionnaires</p> <p>PISA 2015 Expert groups</p>
Filename	<a href="http://www.oecd.org/education/pisa-2015-assessment-and-analytical-framework-9789264281820-en.htm">http://www.oecd.org/education/pisa-2015-assessment-and-analytical-framework-9789264281820-en.htm</a>

## Survey Implementation Tools

Title	Survey Implementation Tools
Description	Documents for Bidders: Field trial materials, translation manuals and technical guidelines used to carry out the surveys.
Table of contents	<p>PISA 2015 Translator's Guide</p> <p>PISA 2015 Translation Editors Manual</p> <p>PISA 2015 Field Trial Sampling Guidelines</p> <p>PISA 2012 Main Study Sampling Guidelines</p> <p>PISA 2015 Field Trial Materials Preparation Manual</p> <p>Beyond PISA 2015: A Longer-term Strategy of PISA</p> <p>PISA 2015 Integrated Design</p> <p>PISA 2015 Computer Platform</p> <p>PISA 2015 Technical Standards</p> <p>PISA 2015 Item Submission Guidelines</p> <p>Assessing Global Education</p> <p>PISA 2015 Student Delivery System Manual</p>
Filename	SurveyImplementationTools.zip

## PISA Data Analysis Manual: SPSS and SAS, Second Edition

Title	PISA Data Analysis Manual: SPSS and SAS, Second Edition
Publisher(s)	OECD
Description	<p>These two publications are essential tools for researchers, as they provide all the information required to understand the PISA databases and perform analyses in accordance with the complex methodologies used to collect and process the data. They include detailed information on how to analyse the PISA data, enabling researchers to both reproduce the initial results and to undertake further analyses. In addition to the inclusion of the necessary techniques, the manuals also include a detailed account of the PISA 2006 database.</p> <p>These publications are a revision of the PISA 2003 Data Analysis Manual (OECD, 2005). The chapters in the manuals are expanded to cover various analytical issues in PISA in general, while applying examples from all available PISA surveys – PISA 2000, PISA 2003 and PISA 2006.</p> <p>The publications include:</p> <p>Introductory chapters explaining the statistical theories and concepts required to analyse the PISA data, including full chapters on how to apply replicate weights and undertake analyses using plausible values; Worked examples providing full syntax in SPSS®/SAS®; and Comprehensive description of the OECD PISA 2006 international database.</p>
Table of contents	<p>Table of contents</p> <p>Usefulness of PISA Data for Policy Makers, Researchers and Experts on Methodology</p> <p>Exploratory Analysis Procedures</p> <p>Sample Weights</p> <p>Replicate Weights</p> <p>The Rasch Model</p> <p>Plausible Values</p> <p>Computation of Standard Errors</p> <p>Analyses with Plausible Values</p> <p>Use of Proficiency Levels</p> <p>Analyses with School-Level Variables</p> <p>Standard Error on a Difference</p> <p>OECD Total and OECD Average</p> <p>Trends</p> <p>Studying the Relationship between Student Performance and Indices Derived from Contextual Questionnaires</p> <p>Multilevel Analyses</p> <p>PISA and Policy Relevance – Three Examples of Analyses</p> <p>SPSS® Macro; SAS® Macro</p> <p>Appendices</p>
Filename	<a href="http://www.oecd.org/pisa/pisaproducts/pisadataanalysismanualspssandsassecondedition.htm">http://www.oecd.org/pisa/pisaproducts/pisadataanalysismanualspssandsassecondedition.htm</a>

## Rescaled Indices for Trend Analysis

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Title Rescaled Indices for Trend Analysis

Filename trend\_escs\_SPSS.zip

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