INDICATOR A4

WHAT 15-YEAR-OLDS CAN DO IN MATHEMATICS

This indicator examines the mathematics performance of 15-year-old students, drawing on 2003 data from the OECD's Programme for International Student Assessment (PISA). It describes mathematical proficiency in each country in terms of the percentage of students reaching one of six competency levels as well as in terms of the mean scores achieved by students on the overall mathematics scale and on different aspects of mathematics. It also examines the distribution of student scores within countries.

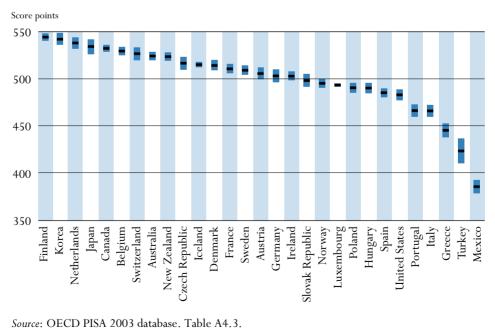
Key results

Chart A4.1. Distribution of student performance on the OECD PISA mathematics scale (2003)

The chart summarises the overall performance of 15-year-old students in different countries on the OECD PISA 2003 mathematics scale. The width of the symbols indicates the statistical uncertainty with which the mean performance was estimated.

- 95% confidence interval around the mean score
- Mean score on the mathematical literacy scale

Three OECD countries (Finland, Korea and the Netherlands) achieve statistically similar average scores that are higher than the average scores in all other OECD countries. Students' average scores in these countries – ranging from 538 points in the Netherlands to 544 points in Finland – are over one-half a proficiency level higher than the average. Eleven other countries (Australia, Belgium, Canada, Czech Republic, Denmark, France, Iceland, Japan, New Zealand, Sweden, and Switzerland) have mean scores that are above the OECD mean. Four countries (Austria, Germany, Ireland and the Slovak Republic) perform similarly to the OECD mean, and the remaining 11 countries perform below it.



StatLink: http://dx.doi.org/10.1787/564711722418

Other highlights of this indicator

- At least 7% of students in Belgium, Japan, Korea, the Netherlands and Switzerland reach the highest level of mathematics proficiency (Level 6). Furthermore, in these countries and in Canada, Finland and New Zealand, over 20% of students reach at least Level 5. In Greece, Mexico, Portugal and Turkey, however, less than 6% of students reach these two levels of proficiency.
- With the exception of Finland and Korea, all OECD countries have at least 10% of students that perform at Level 1 or below, and there are 12 countries in which this exceeds one-fifth of all students. In Mexico and Turkey, a majority of students perform only at Level 1 or below.
- In the majority of countries, the range of performance in the middle half of the students exceeds the magnitude of two proficiency levels, and in Belgium and Germany it is around 2.4 proficiency levels. This suggests that educational programmes, schools and teachers need to cope with a wide range of student knowledge and skills.

INDICATOR A4

Policy context

For much of the last century, the content of school mathematics and science curricula was dominated by the need to provide the foundations for the professional training of a small number of mathematicians, scientists and engineers. With the growing role of science, mathematics and technology in modern life, however, the objectives of personal fulfilment, employment and full participation in society increasingly require that all adults – not just those aspiring to a scientific career – be mathematically, scientifically and technologically literate.

The performance of a country's best students in mathematics and related subjects may have implications for the part a country will play in tomorrow's advanced technology sector and for its general international competitiveness. Conversely, deficiencies of students in key competency areas can have negative consequences for individuals' labour market and earnings prospects and for their capacity to participate fully in society.

Evidence and explanations

PISA starts with a concept of mathematical literacy that is concerned with the capacity of students to analyse, reason and communicate effectively as they pose, solve and interpret mathematical problems in a variety of situations involving quantitative, spatial, probabilistic or other mathematical concepts. When thinking about what mathematics might mean for individuals, one must consider both the extent to which they possess mathematical knowledge and understanding, and the extent to which they can activate their mathematical competencies to solve problems they encounter in life. PISA therefore presents students with problems mainly set in real-world situations. These are crafted in such a way that aspects of mathematics would be of genuine benefit in solving the problem. The objective of the PISA assessment is to obtain measures of the extent to which students presented with these problems can activate their mathematical knowledge and competencies to solve such problems successfully.

Proficiency in mathematics

Chart A4.2 presents an overall profile of students' proficiency on the mathematics literacy scale with the length of the coloured components of the bars showing the percentage of students proficient at each of six levels that were based on substantive considerations relating to the nature of the underlying competencies (Box A4.2). Across OECD countries, on average, 4% of students reach Level 6 (the highest level of performance), 15% reach Level 5 or higher, 34% reach Level 4 or higher, 58% reach Level 3 or higher, and 79% reach Level 2 or higher. Thirteen percent of students reach Level 1, although 8% of students across OECD countries perform below this level (Table A4.1).

Examining individual countries' performance by proficiency level shows that in Belgium, Japan, Korea, the Netherlands and Switzerland, 7% or more of students reach the highest level of proficiency. In these countries and in Canada, Finland and New Zealand, a significant proportion of students also reach Level 5 or above (over 20% in each case). In contrast, in Greece, Mexico, Portugal and Turkey, less than 6% of students reach these two levels of proficiency.

Although there is general tendency among countries with a high proportion of 15-year-old students scoring at Levels 5 and 6 to have fewer students below the lowest level of proficiency (see, *e.g.*, Korea), this is not always the case. For example, while 9% of students in Belgium perform at Level 6, 7% do not reach Level 1.

Box A4.1. What is mathematical literacy in PISA?

Mathematics in PISA focuses on the capacity of students to analyse, reason, and communicate effectively as they pose, solve and interpret mathematical problems in a variety of situations involving quantitative, spatial, probabilistic, and other mathematical concepts. It defines "mathematical literacy" as an individual's capacity to identify and understand the role that mathematics plays in the world, to make well-founded judgments, and to use and engage with mathematics in ways that meet the needs of that individual's life as a constructive, concerned, and reflective citizen. This definition focuses on the extent to which students possess mathematical knowledge and understanding and the extent to which they can activate their mathematical competencies to solve problems they encounter in life.

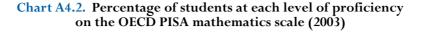
What scales are reported? PISA's assessment of mathematics is reported on an overall mathematics scale (reported here) that is comprised of four components. *Space and shape* relates to spatial and geometric phenomena and relationships, drawing on the curricular discipline of geometry. *Change and relationships* involves mathematical manifestations of change as well as functional relationships and dependency among variables; it relates most closely to algebra. *Quantity* involves numeric phenomena as well as quantitative relationships and patterns, which in turn involve familiarity with numbers, representing numbers, understanding the meaning of operations, mental arithmetic and estimating. *Uncertainty* involves probabilistic and statistical phenomena and relationships that become increasingly relevant in the information society.

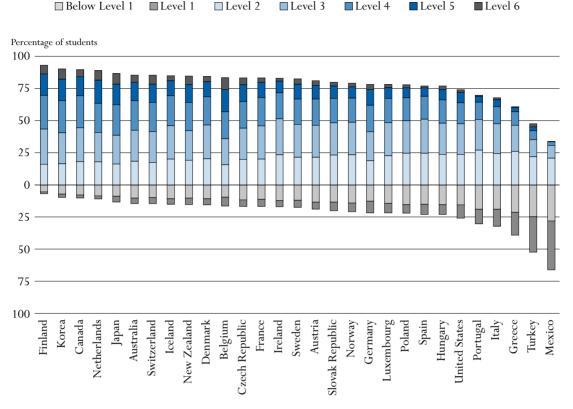
What do the scale scores mean? The scores on each scale represent degrees of proficiency along each dimension or aspect of mathematics (in this indicator, the combined scale). For example, a low score on a scale indicates that a student has more limited skills, whereas a high score indicates that a student has more advanced skills in this area.

What are proficiency levels? In an attempt to capture this progression, each of the mathematics scales is divided into six levels based on the type of knowledge and skills students need to demonstrate at a particular level. Students at a particular level are not only likely to demonstrate the knowledge and skills associated with that level but are also likely to demonstrate the proficiencies defined by lower levels. Thus, all students proficient at Level 3 are also proficient at Levels 1 and 2.

In 16 OECD countries, at least one-third of students reach Level 4 or beyond on the mathematics scale, and in nine of these countries, the percentage is over 40%. In all but five OECD countries, the percentage of students reaching Level 3 or higher is over 50%, and this extends to 77% in Finland. In all but four OECD countries, the percentage of students reaching Level 2 or higher is over 70%.

While most students in most OECD countries reach Level 2 or higher on the mathematics scale, there are a number of students performing at Level 1 or below. With the exception of Finland and Korea, all OECD countries have at least 10% of students that perform at Level 1 or below, and there are 12 countries in which this exceeds one-fifth of all students. In Mexico and Turkey, a majority of students are unable to complete tasks above Level 1 on a consistent basis.





Countries are ranked in descending order of percentage of 15-year-olds in Levels 2, 3, 4, 5 and 6. Source: OECD PISA 2003 database. Table A4.1. StatLink: http://dx.doi.org/10.1787/564711722418

Mean scores in mathematics

Another way to summarise student performance and to compare the relative standing of countries in terms of student performance is through the mean scores for students in each country. To the extent that high average performance at age 15 can be considered predictive of a highly skilled future workforce, countries with high average performance will have an important economic and social advantage. This section describes country means on the overall scale, as well as briefly describing countries' relative strengths and weakness on the four scales identified in Box A4.1. (See also Box A4.3 for an indication of how mean scores on select scales differed from the 2000 to the 2003 assessments of PISA.)

Chart A4.3 gives a summary of overall student performance in different countries on the combined mathematics scale, in terms of the mean student score, and indicates which countries perform above, at, or below the OECD average, and compares mean scores among pairs of countries. It also indicates the comparative performance of individual countries with each of the other countries.

Box A4.2. What can students at each proficiency level do and what scores are associated with the levels?

- Students proficient at *Level 6 (over 668 points)* can conceptualise, generalise and utilise information based on their investigations and modelling of complex problem situations. They can link different information sources and representations and flexibly translate among them. Students at this level are capable of advanced mathematical thinking and reasoning; they can apply this insight and understanding, along with a mastery of symbolic and formal mathematical operations and relationships, to new approaches and strategies for attacking novel situations. Student at this level can formulate and precisely communicate their actions and reflections regarding their findings, interpretations, arguments and the appropriateness of these to the original situations.
- Students proficient at *Level 5 (607 to 668 points)* can develop and work with models for complex situations, identifying constraints and specifying assumptions. They can select, compare and evaluate appropriate problem solving strategies for dealing with complex problems related to these models. Students at this level can work strategically using broad, well-developed thinking and reasoning skills, appropriate linked representations, symbolic and formal characterisations, and insight pertaining to these situations. They can reflect on their actions and can formulate and communicate their interpretations and reasoning.
- Students proficient at Level 4 (545 to 606 points) can work effectively with explicit models for complex concrete situations that may involve constraints or call for making assumptions. They can select and integrate different representations, including symbolic, linking them directly to aspects of real-world situations. Students at this level can utilise well-developed skills and reason flexibly, with some insight, in these contexts. They can construct and communicate explanations and arguments based on their interpretations, arguments and actions.
- Students proficient at *Level 3 (483 to 544 points)* can execute clearly described procedures, including those that require sequential decisions. They can select and apply simple problem solving strategies. Students at this level can interpret and use representations based on different information sources and reason directly from them. They can develop short communications reporting their interpretations, results and reasoning.
- Students proficient at *Level 2 (421 to 482 points)* can interpret and recognise situations in contexts that require no more than direct inference. They can extract relevant information from a single source and make use of a single representational mode. Students at this level can employ basic algorithms, formulae, procedures or conventions. They are capable of direct reasoning and making literal interpretations of the results.
- Students proficient at *Level 1 (358 to 420 points)* can answer questions involving familiar contexts where all relevant information is present and the questions are clearly defined. They are able to identify information and to carry out routine procedures according to direct instructions in explicit situations. They can perform actions that are obvious and follow immediately from the given stimuli.
- Students performing *below Level 1 (below 358 points)* are not able to show routinely the most basic type of knowledge and skills that PISA seeks to measure.

A₄

						or	ı u	Ie	U		<i>.</i>	13	A	ша	un	em	au	ics	sc	are	2 (4	200	J									
Mathem scale	atics			Finland	Korea	Netherlands	Japan	Canada	Belgium	Switzerland	Australia	New Zealand	Czech Republic	Iceland	Denmark	France	Sweden	Austria	Germany	Ireland	Slovak Republic	Norway	Luxembourg	Poland	Hungary	Spain	United States	Portugal	Italy	Greece	Turkey	Mexico
	М	lean		544		538	534	532	529	527	524	523				511		506			498		493	490	490	485	483		466		423	
			S.E.	(1.9)	(3.2)	(3.1)	(4.0)	(1.8)	(2.3)	(3.4)	(2.1)	(2.3)	(3.5)	(1.4)	(2.7)	(2.5)	(2.6)	(3.3)	(3.3)	(2.4)	(3.3)	(2.4)	(1.0)	(2.5)	(2.8)	(2.4)	(2.9)	(3.4)	(3.1)	(3.9)	(6.7)	(3.6)
Finland	54	44	(1.9)		•	•														▲												
Korea	54	42	(3.2)	•		•	•																									
Netherlands	s 53	38	(3.1)	•	•		•	٠																								
Japan	53	34	(4.0)		•	•		•	•	•																						
Canada	53	32	(1.8)	\mathbf{v}	▼	•	•		•	•																						
Belgium	52	29	(2.3)	\mathbf{v}	▼	▼	•	•		•	•	•																				
Switzerland	52	27	(3.4)	▼	▼	▼	•	•	•		•	•																				
Australia	52	24	(2.1)		▼	▼	▼		•	•		•	٠																			
New Zealan	d 52	23	(2.3)	$\mathbf{\nabla}$	▼	▼	▼	\mathbf{v}	•	•			•																			
Czech Repuł	olic 51	16	(3.5)	$\mathbf{\overline{v}}$	▼	▼	▼		•	•	•	•		٠	٠	٠	•															
Iceland		15	(1.4)		▼	▼	▼	▼	▼	▼	▼	▼	•		•	•																
Denmark	51	14	(2.7)		▼	▼	▼	▼	▼	▼	▼	▼	•	•		•	•															
France	51	11	(2.5)		▼	▼	▼	▼	▼	▼	▼	▼	•	•			•	•	•													
Sweden	50	09	(2.6)		▼	▼	▼	▼	▼	▼	▼	▼	•		•	•		•	•	•												
Austria	50	06	(3.3)	•	▼	▼	▼	▼	▼	▼	▼	▼	•	•	▼	•			•	•	•											
Germany	50	03	(3.3)		▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	•	•	•		•	•	•										
Ireland	50	03	(2.4)		▼	▼	▼	▼	▼	•	▼	▼	•	▼	▼	\mathbf{v}	•	•			•											
Slovak Repu	blic 49		(3.3)		▼	▼	▼	•	▼	▼	▼	▼	▼	•	▼		V	•	•	•		•	•	•	•							
Norway			(2.4)	•	▼	•	▼	•	•	•	•	▼	•	•		•	•	V	•	\mathbf{v}	•		•	•	•							
Luxembour			(1.0)		▼	▼	▼	•	▼	•	▼	▼	•	•	▼	•	▼		•	•	•	•		•	•							
Poland	-		(2.5)		▼	▼	▼	•	▼	•	▼	▼	•	•	▼	•	▼	▼	•	•	•	•	•		•	•	•					
Hungary			(2.8)	V	V	V	V	•	V	.	V	V	.	•	V	•	V	V		V	•	•	•	•		•	•					
Spain			(2.4)	-	•	•	•	•	•	•	•	▼	•	•	•	•	•	•	•	•	V	V	V		•		•					
United State			(2.9)						-	-		V	-							-	V		V				-					
Portugal			(3.4)			•	•	•	•	•	•	•	•	•	•	•	•	•	•	▼	•	•	•	v.	v.	v.	▼.	_	•			
Italy			(3.1)		•	•	•	▼_	▼_	▼_	•	•	▼_	▼_	•	▼_	•	•	•	•	•	▼_	•	•	▼_	•		•	-			
Greece			(3.9)		•	•		.	▼_	▼_	▼_	▼_	▼_	.	▼_	•	•	▼_	.	▼_	•	-	•		v _	•		v				
Turkey			(6.7)					•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•	•	•		V	-	
Mexico			(3.6)					▼_	•	•	•	•	•	▼_	•	•	•	•	•	▼	•	•	•		•	•	•	•	•		V	_
Range of ra			(3.0)																													
OECD .	Uppe	er r	ank	1	1	1	2	4	4	4	7	7	9	10	10	11	12	13	14	15	16	18	19	19	19	22	22	25	25	27	28	29
countries	Lowe	er r	ank	3	4	5	7	7	8	9	9	10	14	13	14	15	16	18	18	18	21	21	21	23	23	24	24	26	26	27	28	29

Chart A4.3. Multiple comparisons of mean performance on the OECD PISA mathematics scale (2003)

* Because data are based on samples, it is not possible to report exact rank order positions for countries. However, it is possible to report the range of rank order positions within which the country mean lies with 95 per cent likelihood.

Instructions:

Read across the row for a country to compare performance with the countries listed along the top of the chart. The symbols indicate whether the average performance of the country in the row is lower than that of the comparison country, higher than that of the comparison country, or if there is no statistically significant difference between the average achievement of the two countries.

Source: OECD PISA 2003 database.

StatLink: http://dx.doi.org/10.1787/564711722418

f the **V** of the of the

No statistically significant difference from comparison country Mean performance statistically significantly lower than in comparison country Statistically significantly above the OECD average

Mean performance statistically significantly higher than in comparison country

Not statistically significantly different from the OECD average Statistically significantly below the OECD average On the combined mathematics scale, Finland, Korea and the Netherlands are the best performing OECD countries. Students' average scores in these countries – ranging from 538 points in the Netherlands to 544 points in Finland – are over one-half a proficiency level higher than the OECD average. Eleven other OECD countries (Australia, Belgium, Canada, Czech Republic, Denmark, France, Iceland, Japan, New Zealand, Sweden and Switzerland) have mean scores that are above the OECD mean. Four countries (Austria, Germany, Ireland and the Slovak Republic) perform similarly to the OECD mean, and the remaining 11 OECD countries perform below it.

Table A4.2 compares the performance results in the different content areas of mathematics, allowing an assessment of the relative strengths and weaknesses of countries. Although it is not appropriate to compare numerical scale scores directly between the different content areas of mathematics, it is possible to determine the relative strengths of countries in the different content areas of mathematics, on the basis of their relative positions on the respective scales. The relative probability that a country will assume each position on each scale is determined from the country mean scores, their standard errors and the covariance between the performance scales of two domains. From this, it can be concluded, with a likelihood of 95%, whether a country would rank statistically significantly higher, not statistically differently, or statistically significantly lower in one domain than in the other domain. For details on the methods employed, see the *PISA 2003 Technical Report* (OECD, 2005c).

For some countries – most notably Greece, Italy, Korea, Mexico, Portugal, Spain and Turkey – the relative standing is similar across the four mathematics content areas. By contrast, in Austria, Canada, the Czech Republic, France, Germany, Ireland, Japan, New Zealand, Norway, the Slovak Republic and Switzerland, performance differences among the content areas are particularly large and may warrant attention in curriculum development and implementation. For additional details, see *Learning for Tomorrow's World – First Results from PISA 2003* (OECD, 2004a).

For some countries – most notably Japan – the relative standing is broadly similar in the content areas that were assessed in both 2000 and 2003, while performance is lower on the quantity and uncertainty scales that were newly introduced in 2003. While it would be wrong to conclude that mathematics performance in these countries has declined, the results do suggest that the introduction of the new content areas into the assessment shed a slightly different light on the overall performance of these countries.

Distribution of student performance

While average performance figures can provide a good indication of the overall performance of a country, they may mask significant variation in performance within countries, possibly reflecting different performance among different student groups. Thus, this section presents information on the distribution of mathematics scores, examining the range of performance within countries.

Table A4.3 shows the distribution of student performance within countries. This analysis is different from the examination of the distribution of student performance across the PISA proficiency levels discussed in the first section in the following way. Whereas the distribution of students across proficiency levels indicates the proportion of students in each country that can demonstrate a specified level of knowledge and skills, and thus compares countries on the basis of absolute benchmarks of student performance, the analysis below focuses on the relative distribution of scores, *i.e.* the gap that exists between students with the highest and the lowest levels of performance within each country. This is an important indicator of the equality of educational outcomes in mathematics.

The results show that there is wide variation in overall student performance on the combined mathematics scale within countries. The middle 90% of the population exceeds by far the range between the mean scores of the highest and lowest performing countries. In almost all OECD countries, this group includes some students proficient at Level 5 and others not proficient above Level 1 (Table A4.3).

In addition, the range of performance in the middle half of the students (*i.e.* the difference between the 75th and 25th percentiles) on the combined mathematics scale ranges from less than 120 score points in Canada, Finland, Ireland and Mexico to more than 140 score points in Belgium and Germany. In the majority of countries, this range exceeds the magnitude of two proficiency levels and in Belgium and Germany it is around 2.4 proficiency levels. In Belgium, this difference can be explained partially by the difference in performance between the Flemish and French Communities). For additional details, see *Learning for Tomorrow's World – First Results from PISA 2003* (OECD, 2004a).

Box A4.3. Differences in mathematics in PISA 2000 and PISA 2003

PISA was first administered in 2000, and thus it is possible to estimate differences in mathematics performance between PISA 2000 and PISA 2003 for the two scales that were used in the 2000 assessment: *space and shape* and *change and relationships*. However, in both cases, data should be interpreted with caution. First, since data are only available from two points in time, it is not possible to assess to what extent the observed differences are indicative of trends. Second, while the overall approach to measurement used by PISA is consistent across cycles, small refinements continue to be made, so it would not be prudent to read too much into small changes in results at this stage. Furthermore, sampling and measurement error limit the reliability of comparisons of results over time. Both types of error inevitably arise when assessments are linked through a limited number of common items over time. To account for the effects of such error, the confidence band for comparisons over time has been broadened correspondingly.

With these caveats in mind, performance on the *space and shape* scale has remained broadly similar across countries between 2000 (494 points) and 2003 (496 points), though this varies for individual countries. In four OECD countries, there were statistically significant increases on this scale, ranging from 15 points in Italy to 28 points in Belgium. On the other hand, average performance in Mexico and Iceland decreased by 18 and 15 points, respectively.

On the *change and relationships* scale, among the 25 countries for which data can be compared, the OECD average increased from 488 points in 2000 to 499 points in 2003, the largest observed difference in any areas of the PISA assessment. Again, however, there is wide variation across countries and more countries saw differences on this scale than on the *space and shape* scale. The Czech Republic and Poland both saw increases of around 30 score points (equivalent to about one-half a proficiency level); and in Belgium, Canada, Finland, Germany, Hungary, Korea, Portugal, and Spain, increases were between 13 and 22 points. There were no statistically significant increases or decreases in average scores of the remaining countries.

Source: Learning for Tomorrow's World – First Results from PISA 2003 (OECD, 2004a), Tables 2.1c, 2.1d, 2.2c and 2.2d.

Even countries with similar levels of average performance show considerable variation in the disparities of student performance. For example, Germany and Ireland both have mean scores around the OECD average, but while Ireland shows one of the narrowest distributions, the difference between the 75th and 25th percentiles in Germany is among the widest. Similarly, towards the lower end of the scale, Italy and Portugal show similar levels of average performance, but Italy shows much larger performance variation than Portugal. Among the top performing countries, Finland displays much less performance variation than Korea or the Netherlands (Table A4.3).

Finally, a comparison between the range of performance within a country and its average performance reveals that wide disparities in performance are not a necessary condition for a country to attain a high level of overall performance. For example, Canada, Denmark, Finland, Iceland and Korea all have above-average performance but below-average differences between the 75th and 25th percentiles.

Definitions and methodologies

The achievement scores are based on assessments administered in 2003 as part of the Programme for International Student Assessment (PISA) undertaken by the OECD.

The target population studied for this indicator was 15-year-old students. Operationally, this referred to students who were from 15 years and 3 (completed) months to 16 years and 2 (completed) months at the beginning of the testing period and who were enrolled in an educational institution at the secondary level, irrespective of the grade levels or type of institutions in which they were enrolled, and irrespective of whether they participated in school full-time or part-time.

Further references

For further information about PISA 2003, see Learning for Tomorrow's World – First Results from PISA 2003 (OECD, 2004a), Problem Solving for Tomorrow's World – First Measures of Cross-Curricular Competencies from PISA 2003 (OECD, 2004b) and the PISA 2003 Technical Report (OECD, 2005c). PISA data is also available on the PISA Web site: www.pisa.oecd.org.

A4

			Proficiency levels												
		(belo	Level 1 ow 358 points)	(froi to 420	rel 1 n 358) score nts)	(from to 482	vel 2 m 421 2 score nts)	(froi to 544	vel 3 n 483 score nts)	(froi to 606	vel 4 n 545 score nts)	(froi to 668	rel 5 n 607 score nts)	(abo	vel 6 ve 668 points)
		%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
ries	Australia	4.3	(0.4)	10.0	(0.5)	18.6	(0.6)	24.0	(0.7)	23.3	(0.6)	14.0	(0.5)	5.8	(0.4)
DECD countries	Austria	5.6	(0.7)	13.2	(0.8)	21.6	(0.9)	24.9	(1.1)	20.5	(0.8)	10.5	(0.9)	3.7	(0.5)
D C0	Belgium	7.2	(0.6)	9.3	(0.5)	15.9	(0.6)	20.1	(0.7)	21.0	(0.6)	17.5	(0.7)	9.0	(0.5)
DEC	Canada	2.4	(0.3)	7.7	(0.4)	18.3	(0.6)	26.2	(0.7)	25.1	(0.6)	14.8	(0.5)	5.5	(0.4)
Ũ	Czech Republic	5.0	(0.7)	11.6	(0.9)	20.1	(1.0)	24.3	(0.9)	20.8	(0.9)	12.9	(0.8)	5.3	(0.5)
	Denmark	4.7	(0.5)	10.7	(0.6)	20.6	(0.9)	26.2	(0.9)	21.9	(0.8)	11.8	(0.9)	4.1	(0.5)
	Finland	1.5	(0.2)	5.3	(0.4)	16.0	(0.6)	27.7	(0.7)	26.1	(0.9)	16.7	(0.6)	6.7	(0.5)
	France	5.6	(0.7)	11.0	(0.8)	20.2	(0.8)	25.9	(1.0)	22.1	(1.0)	11.6	(0.7)	3.5	(0.4)
	Germany	9.2	(0.8)	12.4	(0.8)	19.0	(1.1)	22.6	(0.8)	20.6	(1.0)	12.2	(0.9)	4.1	(0.5)
	Greece	17.8	(1.2)	21.2	(1.2)	26.3	(1.0)	20.2	(1.0)	10.6	(0.9)	3.4	(0.5)	0.6	(0.2)
	Hungary	7.8	(0.8)	15.2	(0.8)	23.8	(1.1)	24.3	(0.9)	18.2	(0.9)	8.2	(0.7)	2.5	(0.4)
	Iceland	4.5	(0.4)	10.5	(0.6)	20.2	(1.0)	26.1	(0.9)	23.2	(0.8)	11.7	(0.6)	3.7	(0.4)
	Ireland	4.7	(0.6)	12.1	(0.8)	23.6	(0.8)	28.0	(0.8)	20.2	(1.1)	9.1	(0.8)	2.2	(0.3)
	Italy	13.2	(1.2)	18.7	(0.9)	24.7	(1.0)	22.9	(0.8)	13.4	(0.7)	5.5	(0.4)	1.5	(0.2)
	Japan	4.7	(0.7)	8.6	(0.7)	16.3	(0.8)	22.4	(1.0)	23.6	(1.2)	16.1	(1.0)	8.2	(1.1)
	Korea	2.5	(0.3)	7.1	(0.7)	16.6	(0.8)	24.1	(1.0)	25.0	(1.1)	16.7	(0.8)	8.1	(0.9)
	Luxembourg	7.4	(0.4)	14.3	(0.6)	22.9	(0.9)	25.9	(0.8)	18.7	(0.8)	8.5	(0.6)	2.4	(0.3)
	Mexico	38.1	(1.7)	27.9	(1.0)	20.8	(0.9)	10.1	(0.8)	2.7	(0.4)	0.4	(0.1)	0.0	(0.0)
	Netherlands	2.6	(0.7)	8.4	(0.9)	18.0	(1.1)	23.0	(1.1)	22.6	(1.3)	18.2	(1.1)	7.3	(0.6)
	New Zealand	4.9	(0.4)	10.1	(0.6)	19.2	(0.7)	23.2	(0.9)	21.9	(0.8)	14.1	(0.6)	6.6	(0.4)
	Norway	6.9	(0.5)	13.9	(0.8)	23.7	(1.2)	25.2	(1.0)	18.9	(1.0)	8.7	(0.6)	2.7	(0.3)
	Poland	6.8	(0.6)	15.2	(0.8)	24.8	(0.7)	25.3	(0.9)	17.7	(0.9)	7.8	(0.5)	2.3	(0.3)
	Portugal	11.3	(1.1)	18.8	(1.0)	27.1	(1.0)	24.0	(1.0)	13.4	(0.9)	4.6	(0.5)	0.8	(0.2)
	Slovak Republic	6.7	(0.8)	13.2	(0.9)	23.5	(0.9)	24.9	(1.1)	18.9	(0.8)	9.8	(0.7)	2.9	(0.4)
	Spain	8.1	(0.7)	14.9	(0.9)	24.7	(0.8)	26.7	(1.0)	17.7	(0.6)	6.5	(0.6)	1.4	(0.2)
	Sweden	5.6	(0.5)	11.7	(0.6)	21.7	(0.8)	25.5	(0.9)	19.8	(0.8)	11.6	(0.6)	4.1	(0.5)
	Switzerland	4.9	(0.4)	9.6	(0.6)	17.5	(0.8)	24.3	(1.0)	22.5	(0.7)	14.2	(1.1)	7.0	(0.9)
	Turkey	27.7	(2.0)	24.6	(1.3)	22.1	(1.1)	13.5	(1.3)	6.8	(1.1)	3.1	(0.8)	2.4	(1.0)
	United States	10.2	(0.8)	15.5	(0.8)	23.9	(0.8)	23.8	(0.8)	16.6	(0.7)	8.1	(0.5)	2.0	(0.4)
	OECD total	11.0	(0.3)	14.6	(0.3)	21.2	(0.3)	22.4	(0.3)	17.6	(0.2)	9.6	(0.2)	3.5	(0.2)
	OECD average	8.2	(0.2)	13.2	(0.2)	21.1	(0.1)	23.7	(0.2)	19.1	(0.2)	10.6	(0.1)	4.0	(0.1)

 Table A4.1.

 Percentage of students at each level of proficiency on the OECD PISA mathematics scale (2003)

Source: OECD PISA 2003 database. See Annex 3 for notes (www.oecd.org/edu/eag2006)

StatLink: http://dx.doi.org/10.1787/564711722418

		S]	Space and shape				Change and relationships				Quantity				Uncertainty			
		м	ean		dard ation	М	ean		idard ation	м	ean		dard ation	м	ean		dard ation	
		Score	S.E.	S.D.	S.E.	Score	S.E.	S.D.	S.E.	Score	S.E.	S.D.	S.E.	Score	S.E.	S.D.	S.E.	
ies	Australia	521	(2.3)	104	(1.7)	525	(2.3)	98	(1.8)	517	(2.1)	97	(1.5)	531	(2.2)	98	(1.6)	
untr	Austria	515	(3.5)	112	(1.7)	500	(3.6)	102	(1.8)	513	(3.0)	86	(1.7)	494	(3.1)	95	(1.7)	
DECD countries	Belgium	530	(2.3)	111	(1.4)	535	(2.4)	117	(1.6)	530	(2.3)	110	(1.8)	526	(2.2)	106	(1.5)	
ECI	Canada	518	(1.8)	95	(0.9)	537	(1.9)	92	(0.9)	528	(1.8)	94	(0.9)	542	(1.8)	87	(0.9)	
0	Czech Republic	527	(4.1)	119	(2.3)	515	(3.5)	100	(1.8)	528	(3.5)	98	(2.1)	500	(3.1)	91	(1.7)	
	Denmark	512	(2.8)	103	(1.6)	509	(3.0)	98	(1.8)	516	(2.6)	92	(1.6)	516	(2.8)	92	(1.6)	
	Finland	539	(2.0)	92	(1.2)	543	(2.2)	95	(1.4)	549	(1.8)	83	(1.1)	545	(2.1)	85	(1.1)	
	France	508	(3.0)	102	(2.0)	520	(2.6)	100	(2.1)	507	(2.5)	95	(1.8)	506	(2.4)	92	(1.7)	
	Germany	500	(3.3)	112	(1.9)	507	(3.7)	109	(1.7)	514	(3.4)	106	(1.9)	493	(3.3)	98	(1.7)	
	Greece	437	(3.8)	100	(1.6)	436	(4.3)	107	(1.7)	446	(4.0)	100	(1.7)	458	(3.5)	88	(1.5)	
	Hungary	479	(3.3)	109	(2.2)	495	(3.1)	99	(2.1)	496	(2.7)	95	(1.9)	489	(2.6)	86	(1.8)	
	Iceland	504	(1.5)	94	(1.5)	510	(1.4)	97	(1.2)	513	(1.5)	96	(1.3)	528	(1.5)	95	(1.4)	
	Ireland	476	(2.4)	95	(1.5)	506	(2.4)	88	(1.4)	502	(2.5)	88	(1.3)	517	(2.6)	89	(1.4)	
	Italy	470	(3.1)	109	(1.8)	452	(3.2)	103	(1.9)	475	(3.4)	106	(2.0)	463	(3.0)	95	(1.7)	
	Japan	553	(4.3)	110	(2.9)	536	(4.3)	112	(3.0)	527	(3.8)	102	(2.5)	528	(3.9)	98	(2.6)	
	Korea	552	(3.8)	117	(2.5)	548	(3.5)	100	(2.4)	537	(3.0)	90	(1.9)	538	(3.0)	89	(1.9)	
	Luxembourg	488	(1.4)	100	(1.2)	487	(1.2)	102	(1.0)	502	(1.1)	91	(1.1)	492	(1.1)	96	(1.0)	
	Mexico	382	(3.2)	87	(1.4)	364	(4.1)	99	(1.9)	394	(3.9)	95	(1.9)	390	(3.3)	80	(1.5)	
	Netherlands	526	(2.9)	94	(2.3)	551	(3.1)	94	(2.0)	528	(3.1)	97	(2.4)	549	(3.0)	90	(2.0)	
	New Zealand	525	(2.3)	106	(1.3)	526	(2.4)	103	(1.5)	511	(2.2)	99	(1.3)	532	(2.3)	99	(1.3)	
	Norway	483	(2.5)	103	(1.3)	488	(2.6)	98	(1.3)	494	(2.2)	94	(1.1)	513	(2.6)	98	(1.1)	
	Poland	490	(2.7)	107	(1.9)	484	(2.7)	100	(1.7)	492	(2.5)	89	(1.7)	494	(2.3)	85	(1.7)	
	Portugal	450	(3.4)	93	(1.7)	468	(4.0)	99	(2.2)	465	(3.5)	94	(1.8)	471	(3.4)	83	(1.8)	
	Slovak Republic	505	(4.0)	117	(2.3)	494	(3.5)	105	(2.3)	513	(3.4)	94	(2.3)	476	(3.2)	87	(1.8)	
	Spain	477	(2.6)	92	(1.4)	481	(2.8)	99	(1.4)	492	(2.5)	97	(1.3)	489	(2.4)	88	(1.4)	
	Sweden	498	(2.6)	100	(1.7)	505	(2.9)	111	(1.9)	514	(2.5)	90	(1.7)	511	(2.7)	101	(1.7)	
	Switzerland	540	(3.5)	110	(2.1)	523	(3.7)	112	(2.2)	533	(3.1)	96	(1.7)	517	(3.3)	100	(2.1)	
	Turkey	417	(6.3)	102	(5.1)	423	(7.6)	121	(5.4)	413	(6.8)	112	(5.1)	443	(6.2)	98	(5.0)	
	United States	472	(2.8)	98	(1.4)	486	(3.0)	98	(1.6)	476	(3.2)	105	(1.5)	492	(3.0)	99	(1.5)	
	OECD total	486	(1.0)	112	(0.7)	489	(1.2)	113	(0.8)	487	(1.1)	108	(0.7)	492	(1.1)	102	(0.7)	
	OECD average	496	(0.6)	110	(0.4)	499	(0.7)	109	(0.5)	501	(0.6)	102	(0.4)	502	(0.6)	99	(0.4)	

 Table A4.2.

 Mean student performance and variation on different aspects of the OECD PISA mathematics scale (2003)

Source: OECD PISA 2003 database. See Annex 3 for notes (www.oecd.org/edu/eag2006).

StatLink: http://dx.doi.org/10.1787/564711722418

A4

 Table A4.3.

 Mean score and variation in student performance on the OECD PISA mathematics scale (2003)

				Stan	dard	Percentiles											
		М	ean		ation	51	th	10)th	25	th	75	th	90	th	95	ith
		Score	S.E.	S.D.	S.E.	Score	S.E.	Score	S.E.	Score	S.E.	Score	S.E.	Score	S.E.	Score	S.E.
ies	Australia	524	(2.1)	95	(1.5)	364	(4.4)	399	(3.4)	460	(2.7)	592	(2.5)	645	(3.0)	676	(3.5)
untr	Austria	506	(3.3)	93	(1.7)	353	(6.6)	384	(4.4)	439	(4.0)	571	(4.2)	626	(4.0)	658	(5.0)
DECD countries	Belgium	529	(2.3)	110	(1.8)	334	(6.5)	381	(4.6)	456	(3.4)	611	(2.5)	664	(2.4)	693	(2.4)
DEC	Canada	533	(1.8)	87	(1.0)	386	(3.1)	419	(2.5)	474	(2.2)	593	(2.1)	644	(2.6)	673	(3.4)
Ŭ	Czech Republic	517	(3.5)	96	(1.9)	358	(6.2)	392	(5.7)	449	(4.5)	584	(4.0)	641	(4.3)	672	(4.9)
	Denmark	514	(2.7)	91	(1.4)	361	(4.4)	396	(4.5)	453	(3.7)	578	(3.1)	632	(3.7)	662	(4.7)
	Finland	544	(1.9)	84	(1.1)	406	(3.8)	438	(2.8)	488	(2.2)	603	(2.3)	652	(2.8)	680	(3.1)
	France	511	(2.5)	92	(1.8)	352	(6.0)	389	(5.6)	449	(3.7)	575	(3.0)	628	(3.6)	656	(3.5)
	Germany	503	(3.3)	103	(1.8)	324	(6.1)	363	(5.6)	432	(4.7)	578	(3.5)	632	(3.5)	662	(3.6)
	Greece	445	(3.9)	94	(1.8)	288	(5.4)	324	(5.1)	382	(4.6)	508	(4.3)	566	(5.3)	598	(5.1)
	Hungary	490	(2.8)	94	(2.0)	335	(5.6)	370	(4.2)	426	(3.0)	556	(3.9)	611	(4.7)	644	(4.6)
	Iceland	515	(1.4)	90	(1.2)	362	(4.1)	396	(2.7)	454	(2.8)	578	(1.9)	629	(3.0)	658	(3.8)
	Ireland	503	(2.4)	85	(1.3)	360	(4.7)	393	(3.2)	445	(3.4)	562	(3.0)	614	(3.6)	641	(3.3)
	Italy	466	(3.1)	96	(1.9)	307	(6.4)	342	(5.9)	401	(4.3)	530	(3.0)	589	(3.6)	623	(3.7)
	Japan	534	(4.0)	101	(2.8)	361	(8.2)	402	(6.3)	467	(5.4)	605	(4.4)	660	(6.1)	690	(6.6)
	Korea	542	(3.2)	92	(2.1)	388	(4.6)	423	(4.5)	479	(3.7)	606	(4.2)	659	(5.4)	690	(6.8)
	Luxembourg	493	(1.0)	92	(1.0)	339	(3.9)	373	(2.7)	430	(2.2)	557	(1.9)	611	(3.2)	641	(2.7)
	Mexico	385	(3.6)	85	(1.9)	247	(5.4)	276	(4.7)	327	(4.3)	444	(4.5)	497	(4.7)	527	(5.6)
	Netherlands	538	(3.1)	93	(2.3)	385	(6.9)	415	(5.8)	471	(5.4)	608	(3.8)	657	(3.2)	684	(3.4)
	New Zealand	524	(2.3)	98	(1.2)	359	(4.1)	394	(3.9)	455	(2.9)	593	(2.2)	650	(3.2)	682	(2.9)
	Norway	495	(2.4)	92	(1.2)	344	(4.0)	376	(3.4)	433	(2.9)	560	(3.3)	614	(3.6)	645	(3.9)
	Poland	490	(2.5)	90	(1.3)	343	(5.8)	376	(3.6)	428	(3.1)	553	(2.9)	607	(3.3)	640	(3.5)
	Portugal	466	(3.4)	88	(1.7)	321	(6.3)	352	(5.3)	406	(5.0)	526	(3.5)	580	(3.3)	610	(3.7)
	Slovak Republic	498	(3.3)	93	(2.3)	342	(6.9)	379	(5.8)	436	(4.6)	565	(3.8)	619	(3.5)	648	(4.1)
	Spain	485	(2.4)	89	(1.3)	335	(5.1)	369	(3.5)	426	(3.0)	546	(3.1)	597	(3.5)	626	(3.7)
	Sweden	509	(2.6)	95	(1.8)	353	(5.3)	387	(4.4)	446	(3.0)	576	(3.2)	631	(3.8)	662	(4.8)
	Switzerland	527	(3.4)	98	(2.1)	359	(4.8)	396	(4.2)	461	(3.6)	595	(4.9)	652	(5.2)	684	(6.8)
	Turkey	423	(6.7)	105	(5.3)	270	(5.8)	300	(5.0)	351	(5.3)	485	(8.5)	560	(14.2)	614	(22.7)
	United States	483	(2.9)	95	(1.3)	323	(4.9)	357	(4.5)	418	(3.7)	550	(3.4)	607	(3.9)	638	(5.1)
	OECD total	489	(1.1)	104	(0.7)	315	(2.1)	352	(1.7)	418	(1.6)	563	(1.1)	622	(1.3)	655	(1.8)
	OECD average	500	(0.6)	100	(0.4)	332	(1.3)	369	(1.1)	432	(0.9)	571	(0.7)	628	(0.7)	660	(1.0)

Source: OECD PISA 2003 database. See Annex 3 for notes (www.oecd.org/edu/eag2006).

StatLink: http://dx.doi.org/10.1787/564711722418

References

Coulombe, S., J-F. Tremblay and **S. Marchand** (2004), *Literacy Scores, Human Capital and Growth across Fourteen OECD Countries*, Statistics Canada/Human Resources and Skills Development Canada, Ottawa.

Cosnefroy, O. and **T. Rocher** (2004), "Le redoublement au cours de la scolarité obligatoire: nouvelles analyses, mêmes constats", Éducation & formations, No. 70.

De la Fuente, A. and **A. Ciccone** (2003), *Human Capital in a Global and Knowledge-Based Economy: Final Report*, European Commission, DG Economic Affairs, Brussels.

Feinstein, et al. (2005), "The Effects of Education on Health: Concepts, Evidence and Policy Implications", paper presented at the OECD/CERI Symposium on the Social Outcomes of Learning, Copenhagen, 23-24 March 2006.

Friedman T. (2005), The World Is Flat – A Brief History of the Twenty-First Century, Farrar, Straus & Giroux, New York.

Garet, M.S. and B. Delaney (1988), "Students' Courses and Stratification", Sociology of Education, Vol. 61, pp. 61-77.

Groot, W. and **H.M. van den Brink** (2004), "The Health Effects of Education: Survey and Meta-Analysis", SCHOLAR Working Paper 50/04, Department of Economics, University of Amsterdam, Amsterdam.

Grossman, M. and R. Kaestner (1997), "Effects of Education on Health" in J.R. Behrman and N. Stacey (eds.), *The Social Benefits of Education*, The University of Michigan Press, Ann Arbor, Michigan.

Hammond, C. (2002), "Learning to be Healthy", Brief No. RCB07, Institute of Education, London.

Jackson, G. (1975), "The Research Evidence on the Effects of Grade Retention", *Review of Educational Research*, Vol. 45, pp. 613-635.

Jimerson, S.R. (2001), "Meta-Analysis of Grade Retention Research: Implications for Practice in the 21st century", *School Psychological Review*, Vol. 30, No. 3, pp. 420-437.

Kelo, M., U. Teichler and B. Wächter (eds.) (2005), "EURODATA: Student Mobility in European Higher Education", Verlags and Mediengesellschaft, Bonn, 2005.

Krueger, A.B. and **M. Lindhal** (2001), "Education and Growth: Why and for Whom?", *Journal of Economic Literature*, Vol. 39, No. 4, American Economic Association, Nashville Tennessee, pp. 1101-1136.

Lucas, S.R. (2001), "Effectively Maintained Inequality: Education Transitions, Track Mobility, and Social Background Effects", *American Journal of Sociology*, Vol. 106, pp. 1642-1690.

Ministry of Education of China, Department of Planning (2006), "Essential Statistics of Education in China", Chinese Ministry of Education, Beijing.

The Nuffield Foundation (2004), "Time Trends in Adolescent Well-Being", 2004 Seminars on Children and Families: Evidence and Implications, The Nuffield Foundation, London.

OECD (Organisation for Economic Co-operation and Development) (2001a), *The New Economy: Beyond the Hype*, OECD, Paris.

OECD (2001b), Education at Glance: OECD Indicators - 2001 Edition, OECD, Paris.

OECD (2003a), Education at Glance: OECD Indicators - 2003 Edition, OECD, Paris.

OECD (2003b), The Sources of Economic Growth in OECD Countries, OECD, Paris.

OECD (2004a), Learning for Tomorrow's World – First Results from PISA 2003, OECD, Paris.

OECD (2004b), Problem Solving for Tomorrow's World – First Measures of Cross-Curricular Competencies from PISA 2003, OECD, Paris.

OECD (2004c), Education at Glance: OECD Indicators – 2004 Edition, OECD, Paris.

OECD (2004d), Internationalisation and Trade in Higher Education: Opportunities and Challenges, OECD, Paris.

OECD (2005a), Trends in International Migration – 2004 Edition, OECD, Paris.

OECD (2005b) School Factors Related to Quality and Equity, OECD, Paris.

OECD (2005c), PISA 2003 Technical Report, OECD, Paris.

OECD (2005d), Education at Glance: OECD Indicators - 2005 Edition, OECD, Paris.

OECD (2005e), Are Students Ready for a Technology-RichWorld? What PISA Studies Tell Us, OECD, Paris.

Ready, D.D., V.L. Lee and K.G. Welner (2004), "Educational Equity and School Structure: School Size, Overcrowding, and Schools-within-Schools", *Teachers College Record*, Vol. 10, No. 106, pp. 1989-2014.

Rudd, R.E., B.A. Moeykens and T.C. Colton (1999), "Health and Literacy: A Review of Medical and Public Health Literature", in J. Comings., B. Garners and C. Smith. (eds.), *Annual Review of Adult Learning and Literacy*, Jossey-Bass, New York.

Schleicher, A. (2006) "The Economics of Knowledge: Why Education Is Key for Europe's Success", Lisbon Council Policy Brief, The Lisbon Council absl, Brussels.

Schleicher, A. and K. Tremblay (2006), "Dragons, Elephants and Tigers: Adjusting to the New Global reality", in *Challenge Europe*, European Policy Centre, Brussels.

Sianesi, B. and J. Van Reenan (2003), "The Returns to Education: Macroeconomics", *The Journal of Economic Surveys*, Vol. 17, No. 2, Blackwell Publishing Ltd., Oxford, pp. 157-200.

Tremblay, K. (2005) "Academic Mobility and Immigration", *Journal of Studies in International Education*, Vol. 9, No. 3, Association for Studies in International Education, Thousands Oaks, pp. 1-34.

United States National Science Board (2003), *The Science and EngineeringWorkforce – Realizing America's Potential*, National Science Foundation, Washington, D.C.

Wösmann, L. (2003), "Specifying Human Capital", *Journal of Economic Surveys*, Vol. 17, No. 3, Blackwell Publishing Ltd., Oxford, pp. 239-270.

Zhen G. (2006), "First Results from a Survey on Chinese Students' Learning Time", Shanghai Jiao Tong University mimeo.

Contributors to this Publication

Many people have contributed to the development of this publication. The following lists the names of the country representatives, researchers and experts who have actively taken part in the preparatory work leading to the publication of *Education at a Glance – OECD Indicators 2006*. The OECD wishes to thank them all for their valuable efforts.

National Co-ordinators

Mr. Brendan O'REILLY (Australia) Mr. Mark NEMET (Austria) M. Dominique BARTHÉLÉMY (Belgium) Ms. Maddy BOLLEN (Belgium) Ms. Oroslinda Maria GOULART (Brazil) Mr. Atilio PIZARRO (Chile) Mr. Lubomir MARTINEC (Czech Republic) Mr. KenTHOMASSEN (Denmark) Ms. Sylvia KIMMEL (Estonia) Mr. Matti KYRÖ (Finland) M. Claude SAUVAGEOT (France) Ms. Barbara MEYER-WYK (Germany) Ms. Evelyn OBELE (Germany) Mr. Gregory KAFETZOPOULOS (Greece) Ms. Judit KÁDÁR-FÜLÖP (Hungary) Ms. Margrét HARÐARDÓTTIR (Iceland) Mr. Pat MAC SITRIC (Ireland) Mr. Yosef GIDANIAN (Israel) Mr. Antonio Giunta LA SPADA (Italy)

Mr. Kenji SAKUMA (Japan) Ms. Chun-Ran PARK (Korea) M. Jérôme LEVY (Luxembourg) Mr. Rafael FREYRE MARTINEZ (Mexico) Mr. Marcel SMITS VAN WAESBERGHE (Netherlands) Mr. David LAMBIE (New Zealand) Mr. Kjetil MÅSEIDE (Norway) Mr. Jerzy WISNIEWSKI (Poland) Mr. João Trocado MATA (Portugal) Mr. Mark AGRANOVITCH (Russian Federation) Mr. Vladimir POKOJNY (Slovak Republic) Mrs. Helga KOCEVAR (Slovenia) Mrs. Carmen MAESTRO MARTIN (Spain) Mr. Dan ANDERSSON (Sweden) Ms. Dominique Simone RYCHEN (Switzerland) Mr. Ibrahim Z. KARABIYIK (Turkey) Ms. Janice ROSS (United Kingdom) Ms. Valena White PLISKO (United States)

Technical Group on Education Statistics and Indicators

Mr. Brendan O'REILLY (Australia) Mr. Adrian PAWSEY (Australia) Ms. Sabine MARTINSCHITZ (Austria) Mr. Wolfgang PAULI (Austria) Ms. Ann VAN DRIESSCHE (Belgium) Mr. Philippe DIEU (Belgium) Ms. Nathalie JAUNIAUX (Belgium) Mr. Liës FEYEN (Belgium) Mr. Guy STOFFELEN (Belgium) Mr. Raymond VAN DE SIJPE (Belgium) Mr. Johan VERMEIREN (Belgium) Ms. Carmilva FLORES (Brazil) Ms. Vanessa NESPOLI DE OLIVEIRA (Brazil) Ms. Lynn BARR-TELFORD (Canada) Mr. Jean-Claude BOUSQUET (Canada) Mr. Eduardo CORREA (Chile) Mr. Cesar MUÑOZ HERNANDEZ (Chile)

Mr. Vladimir HULIK (Czech Republic) Ms. Michaela KLENHOVÁ (Czech Republic) Mr. Felix KOSCHIN (Czech Republic) Mr. Leo JENSEN (Denmark) Mr. Ken THOMASSEN (Denmark) Ms. Birgitta ANDRÉN (EUROSTAT) Mr. Pascal SCHMIDT (EUROSTAT) Mr. Timo ERTOLA (Finland) Mr. Miikka PAAJAVUORI (Finland) Mr. MikaTUONONEN (Finland) Mr. Matti VAISANEN (Finland) Mr. Jean-Michel DURR (France) Ms. Michèle JACQUOT (France) Ms. Christine RAGOUCY (France) Mr. Heinz-Werner HETMEIER (Germany) Ms. Kirsten OTTO (Germany) Mr. Alexander RENNER (Germany)

Mr. Ingo RUSS (Germany) Ms. Vassilia ANDREADAKI (Greece) Mr. Angelos KARAGIANNIS (Greece) Mr. Konstantinos STOUKAS (Greece) Ms. Judit KOZMA-LUKÁCS (Hungary) Mr. László LIMBACHER (Hungary) Ms. Judit LUKÁCS (Hungary) Ms. Asta URBANCIC (Iceland) Ms. Mary DUNNE (Ireland) Mr. Muiris O'CONNOR (Ireland) Mr. Yosef GIDANIAN (Israel) Ms. Dalia SPRINZAK (Israel) Ms. Gemma DE SANCTIS (Italy) Ms. Giuliana MATTEOCCI (Italy) Ms. Maria Pia SORVILLO (Italy) Mr. Paolo TURCHETTI (Italy) Ms. Nozomi HARAGUCHI (Japan) Ms. Midori MIYATA (Japan) Mr. Tokuo OGATA (Japan) Mr. Satoshi TAKAHASHI (Japan) Mr. Jérôme LEVY (Luxembourg) Ms. Manon UNSEN (Luxembourg) Mr. David VALLADO (Luxembourg) Ms. ErikaVALLE BUTZE (Mexico) Mr. Marcel A.M. SMITSVAN WAESBERGHE (Netherlands) Mr. Dick TAKKENBERG (Netherlands) Ms. Pauline THOOLEN (Netherlands) Mr. Paul GINI (New Zealand) Ms. Marie ARNEBERG (Norway)

Network A on Educational Outcomes

Lead Country: United States Network Leader: Mr. Eugene OWEN Ms. Wendy WHITHAM (Australia) Mrs. Helene BABEL (Austria) Mr. Jürgen HORSCHINEGG (Austria) Mrs. Christiane BLONDIN (Belgium) Mr. Luc VAN DE POELE (Belgium) Ms. Oroslinda Maria GOULART (Brazil) Mr. Don HOIUM (Canada) Ms. Tamara KNIGHTON (Canada) Mr. Jerry MUSSIO (Canada) Mr. Lubomir MARTINEC (Czech Republic) Ms. Pavla ZIELENIECOVA (Czech Republic) Mr. Joern SKOVSGAARD (Denmark) Mr. Aki TORNBERG (Finland) Mr. Thierry ROCHER (France) Ms. Evelyn OBELE (Germany) Ms. Kirsten OTTO (Germany) Mr. Botho PRIEBE (Germany) Mr. Panyotis KAZANTZIS (Greece) Ms. Zsuzsa HAMORI-VACZY (Hungary) Mr. Julius K. BJORNSSON (Iceland) Mr. Gerry SHIEL (Ireland)

Ms. Birgitta BØHN (Norway) Mr. Kjetil DIGRE (Norway) Mr. Geir NYGARD (Norway) Mr. Terje RISBERG (Norway) Ms. Alina BARAN (Poland) Ms. Anna NOWOZYNSKA (Poland) Mr. Jose PAREDES (Portugal) Mr. João PEREIRA DE MATOS (Portugal) Ms. Natalia KOVALEVA (Russian Federation) Mr. Mark AGRANOVITCH (Russian Federation) Ms. Alzbeta FERENCICOVÀ (Slovak Republic) Mr. Vladimir POKJNY (Slovak Republic) Ms. Elena REBROSOVA (Slovak Republic) Ms. Helga KOCEVAR (Slovenia) Ms. Tatjana SKRBEC (Slovenia) Mr. Fernando CELESTINO REY (Spain) Mr. Eduardo DE LA FUENTE (Spain) Mr. Jesus IBANEZ MILLA (Spain) Ms. Karin ARVEMO-NOTSTRAND (Sweden) Mr. Henrik ENGSTROM (Sweden) Ms. Christina SANDSTROM (Sweden) Ms. Katrin HOLENSTEIN (Switzerland) Ms. Nilgün DURAN (Turkey) Ms. Alison KENNEDY (UNESCO) Mr. Steve HEWITT (United Kingdom) Mr. Steve LEMAN (United Kingdom) Ms. Mary Ann FOX (United States) Ms. Catherine FREEMAN (United States)

Mrs. Anna Maria CAPUTO (Italy) Mr. Ryo WATANABE (Japan) Ms. Mee-Kyeong LEE (Korea) Ms. Iris BLANKE (Luxembourg) Mr. Felipe MARTINEZ RIZO (Mexico) Dr. Jules L. PESCHAR (Netherlands) Dr. Paul VAN OIJEN (Netherlands) Ms. Lynne WHITNEY (New Zealand) Ms. Anne-Berit KAVLI (Norway) Ms. Glória RAMALHO (Portugal) Mr. Vladislav ROSA (Slovak Republic) Ms. Mar GONZALEZ GARCIA (Spain) Mr. Ramon PAJARES BOX (Spain) Ms. Anna BARKLUND (Sweden) Ms. Anita WESTER (Sweden) Mr. Erich RAMSEIER (Switzerland) Mr. Sevki KARACA (Turkey) Mr. Jason TARSH (United Kingdom) Ms. Marit GRANHEIM (United States) Mr. Jay MOSKOWITZ (United States) Ms. Elois SCOTT (United States) Ms. Maria STEPHENS (United States)

Mr. Thomas SNYDER (United States)

Network B on Education and Socio-economic Outcomes

Lead country: Sweden Network Leader: Mr. Dan ANDERSSON Ms. Oon Ying CHIN (Australia) Mr. Brendan O'REILLY (Australia) Mr. Mark NÉMET (Austria) Ms. Ariane BAYE (Belgium) Ms. Isabelle ERAUW (Belgium) Ms. Oroslinda Maria GOULART (Brazil) Mr. Patrice DE BROUCKER (Canada) Ms. Shannon DELBRIDGE (Canada) Ms. Zuzana POLAKOVA (Czech Republic) Mr. Steffen BANG (Denmark) Ms. Irja BLOMOVIST (Finland) Ms. Aila REPO (Finland) Ms. Pascale POULET-COULIBANDO (France) Ms. Christiane KRÜGER-HEMMER (Germany) Mr. Nikolaos BILALIS (Greece) Mr. Evangelos INTZIDIS (Greece) Ms. Éva TÓT (Hungary) Ms. Asta URBANCIC (Iceland) Mr. Philip O'CONNELL (Ireland) Mrs. Paola UNGARO (Italy) Ms. Ikuko ARIMATSU (Japan)

Ms. Jihee CHOI (Korea) Mr. Jérôme LEVY (Luxembourg) Mme. Astrid SCHORN (Luxembourg) Mr. Roy TJOA (Netherlands) Mr. Johan VAN DER VALK (Netherlands) Mr. Marcel SMITS VAN WAESBERGHE (Netherlands) Ms. Cheryl REMINGTON (New Zealand) Mr. Erik Dahl (Norway) Ms. Anne Brit UDAHL (Norway) Mr. Terje RISBERG (Norway) Ms. Malgorzata CHOJNICKA (Poland) Mr. Jorge BARATA (Portugal) Ms. Raquel ÁLVAREZ-ESTEBAN (Spain) Mr. Dan ANDERSSON (Sweden) Ms. Anna JÖNSSON (Sweden) Mr. Kenny PETERSSON (Sweden) Mr. Russell SCHMIEDER (Sweden) Ms. Anna BORKOWSKY (Switzerland) Mr. Ali PANAL (Turkey) Mr. David MCPHEE (United Kingdom) Mr. Stephen LEMAN (United Kingdom) Ms. Lisa HUDSON (United States) Mr. Dan SHERMAN (United States)

Network C on School Features and Processes

Lead Country: Netherlands Network Leader: Mr. Jaap SCHEERENS Mr. Lars STAHRE (Australia) Mr. Christian KRENTHALLER (Austria) Mr. Philippe DELOOZ (Belgium) Ms. Ann VAN DRIESSCHE (Belgium) Mr. Peter VAN PETEGEM (Belgium) Ms. Maria Aparecida CHAGAS FERREIRA (Brazil) Ms. Oroslinda Maria GOULART (Brazil) Ms. Nelly MCEWEN (Canada) Ms. Michaela KLENHOVA (Czech Republic) Mr. Lubomir MARTINEC (Czech Republic) Ms. Pavlina STASTNOVA (Czech Republic) Mr. Jørgen Balling RASMUSSEN (Denmark) Ms. Maria HRABINSKA (European Commission) Mr. Hannu-Pekka LAPPALAINEN (Finland) Mrs. Dominique ALLAIN (France) Mr. Gerd MÖLLER (Germany) Mr. Vassilios CHARISMIADIS (Greece) Ms. Anna IMRE (Hungary) Mr. Pat MAC SITRIC (Ireland)

Mrs. Caterina VEGLIONE (Italy) Ms. Sung Eun KIM (Korea) Mme Astrid SCHORN (Luxembourg) Mr. Jean-Claude FANDEL (Luxembourg) Ms. Erika VALLE BUTZE (Mexico) Ms. Maria HENDRIKS (Netherlands) Mr. Marcel SMITS VAN WAESBERGHE (Netherlands) Mr. Paul GINI (New Zealand) Ms. Bodhild BAASLAND (Norway) Mr. Jerzy CHODNICKI (Poland) Ms. Maria DO CARMO CLIMACO (Portugal) Mr. Helder GUERREIRO (Portugal) Mr. Ignacio ÁLVAREZ PERALTA (Spain) Ms. Ulla LINDQVIST (Sweden) Mrs. Annika HAGLUND (Sweden) Mr. Eugen STOCKER (Switzerland) Ms. Nilgün DURAN (Turkey) Ms. Alison KENNEDY (UNESCO) Mr. Jason TARSH (United Kingdom) Mr. Joel SHERMAN (United States) Mrs. Kerry GRUBER (United States)

Others contributors to this publication

Mr. Donald HIRSCH (Consultant) Ms. Tracey STRANGE (Editor) Ms. Fung-Kwan TAM (Layout)

Related OECD Publications

Where Immigrant Students Succeed: A Comparative Review of Performance and Engagement in PISA 2003 ISBN 92-64-02360-7

Are Students Ready for a Technology-Rich World?:What PISA Studies Tell Us ISBN 92-64-03608-3

Learning for Tomorrow's World – First Results from PISA 2003 (2004) ISBN 92-64-00724-5

Problem Solving for Tomorrow's World – First Measures of Cross-Curricular Competencies from PISA 2003 (2004) ISBN 92-64-00642-7

From Education to Work: A Difficult Transition for Young Adults with Low Levels of Education (2005) ISBN 92-64-00918-3

Education Policy Analysis 2005 (Forthcoming) ISBN 92-64-02269-4

OECD Handbook for Internationally Comparative Education Statistics: Concepts, Standards, Definitions and Classifications (2004) ISBN 92-64-10410-0

Completing the Foundation for Lifelong Learning: An OECD Survey of Upper Secondary Schools (2004) ISBN 92-64-10372-4

OECD Survey of Upper Secondary Schools: Technical Report (2004) ISBN 92-64-10572-7

Internationalisation and Trade in Higher Education: Opportunities and Challenges (2004) ISBN 96-64-01504-3

Classifying Educational Programmes: Manual for ISCED-97 Implementation in OECD Countries (1999) ISBN 92-64-17037-5

OECD publications can be browsed or purchased at the OECD Online Bookshop (www.oecdbookshop.org).

TABLE OF CONTENTS

			Name of the indicator in the 2005 edition
Foreword		. 3	
Editorial		13	
Introduction		19	
Reader's Guid	l e 2	23	
CHAPTER A	THE OUTPUT OF EDUCATIONAL INSTITUTIONS	7	
T 1º 4 A1	AND THE IMPACT OF LEARNING		
	Educational attainment of the adult population 22 Educational attainment: adult population (2004)		A1
	Population that has attained at least upper secondary education (2004)		
Table A1, 3a	Population that has attained tertiary education (2004)		
	Distribution of population aged 35 -to-64 with tertiary type $5A/6$		
	qualifications by country (2004 and projected to 2014)4	10	
Table A1.5	Educational attainment expressed in average number of years in formal education (2004)	+1	
Indicator A2	Current upper secondary graduation rates4	+2	A2
Table A2.1	Upper secondary graduation rates (2004)		
Table A2.2	Post-secondary non-tertiary graduation rates (2004)4	19	
Indicator A3	Current tertiary graduation and survival rates	50	A3
Table A3.1	Tertiary graduation rates (2000, 2004)		
Table A3.2	Survival rates in tertiary education (2004)		
Indicator A4	What 15-year-olds can do in mathematics	50	A4
Table A4.1	Percentage of students at each level of proficiency		
	on the OECD PISA mathematics scale (2003)	70	
Table A4.2	Mean student performance and variation on different aspects	- 4	
Table A4.3	of the OECD PISA mathematics scale (2003)	/1	
Table A4.3	Mean score and variation in student performance on the OECD PISA mathematics scale (2003)	72	
- 1		~	
Indicator A5	Between- and within-school variation in the mathematics	74	AC
Table A.5.1	performance of 15-year-olds	·+	A6
fuble fig.f	performance on the OECD PISA mathematics scale (2003)	30	
Indicator A6	Fifteen-year-old students who perform at the lowest levels		
Indicator Au	of proficiency in mathematics (2003)	32	
Table A6.1	Odds ratios of the likelihood of students with the lowest		
	socio-economic status to be lowest mathematics performers relativ	ve	
	to the likelihood of students with the highest socio-economic statu		
	to be lowest mathematics peformers (2003)	¥1	

TABLE OF CONTENTS

Name of
the indicator
in the
2005 edition

Table A6.2	Reading performance of lowest mathematics	
T.I.I. A.C. 2	performers (2003)	
Table A6.3	1 0	
	performers (2003)	
Indicator A7	Institutional differentiation, socio-economic status and	
	15-year-old students' mathematics performance (2003)	
Table A7.1	Institutional differentiation, variance in mathematics	
	performance, and economic, social	
	and cultural status (ESCS), (2003)102	
Indicator A8	Labour force participation by level of	
	educational attainment	A8
Table A8, 1a	Employment rates and educational attainment,	
lubic 110, 1u	by gender (2004)	
Table A8 2a	Unemployment rates and educational attainment,	
Table 110.2a	by gender (2004)114	
Table 48 3a	Trends in employment rates, by educational attainment	
Table A0. Ja	(1991-2004)	
Table 18 1a	Trends in unemployment rates, by educational attainment	
Table A0.+a	(1991-2004)	
	(1991-200+)	
Indicator A9	The returns to education: education and earnings	A9
Table A9.1a	Relative earnings of the population with income from	
	employment (2004 or latest available year)	
Table A9.1b	Differences in earnings between females and males	
	(2004 or latest available year)137	
Table A9.2a	Trends in relative earnings: adult population (1997-2004)138	
	Trends in differences in earnings between females and males	
	(1997-2004)	
Table A9.4a	Distribution of the 25-to-64-year-old population,	
	by level of earnings and educational attainment	
	(2004 or latest available year)141	
Table A9.4b	•	
	and educational attainment (2004 or latest available year)	
Table A9.4c	Distribution of the 25-to-64-year-old females by level of earnings	
	and educational attainment (2004 or latest available year)	
Table A9.5	Private internal rates of return for an individual obtaining an	
	upper secondary or post-secondary non-tertiary education,	
	ISCED 3/4 (2003)	
Table A9-6	Private internal rates of return for an individual obtaining	
Tuble 119.0	a university-level degree, ISCED 5/6 (2003)	
Table A9.7		
14010119.1	an upper secondary or post-secondary non-tertiary education,	
	ISCED 3/4 (2003)	
Table A 9 8	Public internal rates of return for an individual obtaining	
10010112.0		
	a university-level degree, ISCED 5/6 (2003)151	

		Name of the indicator in the 2005 edition
Indicator A10	The returns to education: links between education,	
	economic growth and social outcomes152	A10
	Impact of demographic trends on education provision160 Demographic trends between 2005 and 2015 and indicative impact on educational expenditure, student enrolments and graduate numbers	
CHAPTER B	FINANCIAL AND HUMAN RESOURCES INVESTED IN EDUCATION 167	
Indicator B1	Educational expenditure per student	B1
	Annual expenditure on educational institutions per student for all services (2003)	
Table B1.1b	Annual expenditure on educational institutions per student	
	for all services, by type of programme (2003)187	
	Annual expenditure per student on core services, ancillary services and R&D (2003)	
Table B1.2	Distribution of expenditure (as a percentage) on educational institutions compared to number of students enrolled	
Table B1.3a	at each level of education (2003)	
Table B1.3b	secondary studies (2003)	
Table B1.4	over the average duration of tertiary studies (2003)	
Table B1.5	Change in expenditure on educational institutions for all services per student relative to different factors, by level of education (1995, 2003)	
Indicator B2	Expenditure on educational institutions relative to Gross Domestic Product194	B2
Table B2.1a	Expenditure on educational institutions as a percentage of GDP, for all levels of education (1995, 2000, 2003)205	D2
Table B2.1b	Expenditure on educational institutions as a percentage of GDP, by level of education (1995, 2000, 2003)	
Table B2.1c	Expenditure on educational institutions as a percentage of GDP, by level of education (2003)	
Table B2.2	Change in expenditure on educational institutions (1995, 2003)	
Table B2.3	Change in expenditure on educational institutions (1995, 2000, 2001, 2002, 2003)	
Indicator B3	Public and private investment in educational institutions210	B3
Table B3.1	Relative proportions of public and private expenditure on educational institutions for all levels of education	63
	(1995, 2003)	

		Name of the indicator in the 2005 edition
Table B3.2a	Relative proportions of public and private expenditure on educational institutions, as a percentage, by level of education (1995, 2003)	
Table B3.2b		
Table B3.3	Trends in relative proportions of public expenditure on educational institutions, for tertiary education (1995, 2000, 2001, 2002, 2003)	
Indicator B4 Table B4.1 Table B4.2	Total public expenditure on education222Total public expenditure on education (1995, 2003)228Distribution of total public expenditure on education (2003)229	B4
Indicator B5	Tuition fees charged by tertiary institutions and support	DF
Table B5.1	for students and households through public subsidies	B5
Table B5.2	educational institutions (school year 2003-2004)	
Indicator B6	Expenditure in institutions by service category and	
Table B6.1	by resource category	B6
Table B6.2	Expenditure on educational institutions by resource category and level of education (2003)	
CHAPTER C	ACCESS TO EDUCATION, PARTICIPATION AND PROGRESSION 255	
Indicator C1	Enrolment in education from primary education	
Table C1 1	to adult life	C1
	Education expectancy (2004)	
	Transition characteristics from age 15 to 20,	
	by level of education (2004)	
Indicator C2	Participation in secondary and tertiary education	C2
Table C2.1	Entry rates into tertiary education and age distribution	
	of new entrants (2004)	
Table C2.2	Expected years in tertiary education and changes	
Table C2 3	in tertiary enrolment (2004)	
Table C2.3	Students in tertiary education by type of institution or mode of study (2004)	
Table C2.4	Students in primary and secondary education by type of	
• •	institution or mode of study (2004)	
Table C2.5	Upper secondary enrolment patterns (2004)	

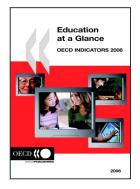
Name of the indicator in the 2005 edition

Indicator C3	Student mobility and foreign students in tertiary education	C3
Table C3.1	Student mobility and foreign students in tertiary education	US
Table C3.2	(2000, 2004)	
Table C3.3	education, by country of origin (2004)	
	by country of destination (2004)	
	education, by level and type of tertiary education (2004)	
Table C3.5	Distribution of international and foreign students in tertiary education, by field of education (2004)	
Table C3.6	Trends in the number of foreign students enrolled outside their country of origin (2000 to 2004)	
Table C3.7	Percentage of tertiary qualifications awarded to international and foreign students, by type of tertiary education (2004)	
Indicator C4	Education and work status of the youth population	C4
Table C4.1a	Expected years in education and not in education for 15-to-29-year-olds (2004)	
Table C4.2a	Percentage of the youth population in education	
Table C4.3	and not in education (2004)	
Table C4.4a	and unemployed (2004)	
	in education and not in education (1995-2004)	
Indicator C5	Participation in adult learning	C6
Table C5.1a	Participation rate and expected number of hours in non-formal job-related education and training, by level of educational	
	attainment (2003)	
Table C5.1b	Expected number of hours in non-formal job-related education	
	and training, by age group and labour force status (2003)	
	Expected number of hours in non-formal job-related education and training, by level of educational attainment (2003)	
CHAPTER D	THE LEARNING ENVIRONMENT AND ORGANISATION OF SCHOOLS 347	
Indicator D1	Total intended instruction time for students in primary	
	and secondary education	D1
Table D1.1	Compulsory and intended instruction time in public institutions (2004)	DI
Table D1.2a	Instruction time per subject as a percentage of total	
Table D1.2b	compulsory instruction time for 9-to-11-year-olds (2004)	
	compulsory instruction time for 12-to-14-year-olds (2004)358	

			Name of the indicator in the 2005 edition
Indicator D2	Class size and ratio of students to teaching staff	360	D2
Table D2.1	Average class size, by type of institution and level		
	of education (2004)	370	
Table D2.2	Ratio of students to teaching staff in educational		
	institutions (2004)	371	
Table D2.3	Ratio of students to teaching staff by type of institution (2004)	372	
Indicator D3	Teachers' salaries	374	D3
Table D3.1	Teachers' salaries (2004)	384	
	Adjustments to base salary for teachers		
	in public institutions (2004)	386	
Table D3.2b	Adjustments to base salary for teachers in public institutions		
	made by school principal (2004)	388	
Table D3.2c	Adjustments to base salary for teachers in public institutions		
	made by local or regional authority (2004)	390	
Table D3.2d			
	made by the national authority (2004)		
Table D3.3	Change in teachers' salaries (1996 and 2004)		
Indicator D4	Teaching time and teachers' working time	396	D4
Table D4.1	Organisation of teachers' working time (2004)		Di
Indicator D5	Access to and use of ICT		
Table D5.1	Various ICT resources in secondary schools and percentage		
	of various types of computers in schools (2003)	414	
Table D5-2	Percentage of students in secondary schools whose principals		
Tuble D3.2	report that instruction is hindered by a shortage		
	of ICT resources (2003)	415	
Table D5.3			
Table D3.5	school or other places, by frequency of use (2003)		
	school of other places, by frequency of use (2005)	1 /	
ANNEX 1	Characteristics of Educational Systems	419	
Table X1.1a		420	
Table X1.1b	Typical graduation ages in post-secondary non-tertiary		
	education		
Table X1.1c	Typical graduation ages in tertiary education	422	
Table X1.2a	School year and financial year used for the calculation		
	of indicators	423	
Table X1.2b	School year and financial year used for the calculation		
	of indicators	424	
Table X1.3	Summary of completion requirements		
	for upper secondary (ISCED 3) programmes	425	
ANNEX 2	Reference Statistics	429	
	Overview of the economic context using basic variables		
10010 112.1	(reference period: calendar year 2003, 2003 current prices)	430	
Table X2-2	Basic reference statistics		
14010 112,2	(reference period: calendar year 2003, 2003 current prices)	431	

Name of the indicator in the 2005 edition

Table X2.3	Basic reference statistics	
	(reference period: calendar year 1995, 1995 current prices)432	
Table X2.4	Annual expenditure on educational institutions per student	
	for all services (2003)	
Table X2.5	Annual expenditure on educational institutions per student	
	for all services (2003)	
Table X2.6a	Reference statistics used in the calculation of	
	teachers' salaries, by level of education (1996, 2004)435	
Table X2.6b	Reference statistics used in the calculation of teachers' salaries	
	(1996, 2003)	
Table X2.6c	Teachers' salaries (2004)	
ANNEX 3 (Sou	urces, Methods and Technical Notes)441	
References		
Contributors	to this Publication	
Related OECE	Publications	



From: Education at a Glance 2006 OECD Indicators

Access the complete publication at: https://doi.org/10.1787/eag-2006-en

Please cite this chapter as:

OECD (2006), "What 15-year-olds Can Do in Mathematics", in *Education at a Glance 2006: OECD Indicators*, OECD Publishing, Paris.

DOI: https://doi.org/10.1787/eag-2006-5-en

This work is published under the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of OECD member countries.

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgment of OECD as source and copyright owner is given. All requests for public or commercial use and translation rights should be submitted to rights@oecd.org. Requests for permission to photocopy portions of this material for public or commercial use shall be addressed directly to the Copyright Clearance Center (CCC) at info@copyright.com or the Centre français d'exploitation du droit de copie (CFC) at contact@cfcopies.com.

