

What is PISA?

PISA (Programme for International Student Assessment) is a triennial international survey with a goal to evaluate education systems worldwide by testing the skills and knowledge of 15-year-old students in mathematics, reading and science.

The survey assesses how well 15-year-old students can analyse, reason and apply their skills and knowledge in unfamiliar settings. It also gathers background information on students, including their family background, motivation, learning environment, etc.

Each PISA cycle explores one of the subjects in more detail. PISA 2018 focused on reading literacy. The repetitive cycles allow us to draw trends and follow the developments over time. Since reading was the main focus in 2000 and 2009, it is possible to compare trends in reading.



PISA 2018 in Estonia

79 countries and economies participated in PISA 2018, testing around 600,000 students worldwide.

Estonia first participated in PISA in 2006 and has been noted as a high performing country with high levels of equity. Estonia can compare trends in reading with PISA 2009 when reading was the main focus.

In 2018, there were 12,120 PISA age students in Estonia. The PISA test was taken by 5371 students from 231 schools. 4000 students were assessed in Estonian and 1371 students in Russian.

Results

Estonian students rank highly among participating countries. The performance trends show steady growth in Reading and Mathematics and stable and high results in Science since Estonia's first participation.

In PISA 2018, **Estonian students ranked first among European countries** in all three domains of assessment. It also placed first in **Reading (523 points)** and **Science (530 points)** and third in **Mathematics (523 points)** among the OECD countries. **Estonia ranks fifth in Reading, fourth in Science and eighth in Mathematics** among all participating countries and economies.

The improvement in **Reading** performance in particular was marked at the top of the distribution. The share of top performers in Reading has increased from 6.1% in 2009 to 13.9% in 2018 (OECD

mean 8.6%). At the same time, the number of students performing below the baseline level has decreased from 13.3% in 2009 to 11.1% in 2018 (OECD mean 22.5%).

The share of top performers in Mathematics has increased to 15.5% (OECD mean 10.9%). 89.9% of Estonian students have achieved the baseline level of proficiency in Mathematics.

Estonian students have shown stable and high results in Science in all PISA cycles. 8.8% of students have not reached the baseline level (OECD mean 22%) and 12.2% are top performers (OECD mean 6.8%).

Schools with Russian as the language of instruction perform similarly to the OECD mean but show weaker results than Estonian language schools. The gap in reading is 42 points, mathematics 29 points and science 42 points.

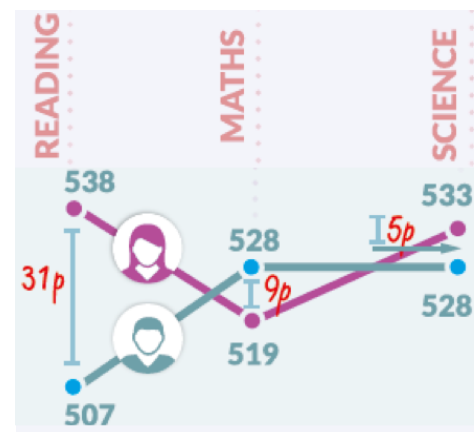
Equity

In Estonia, along with 10 countries and economies (including the OECD countries Canada, Denmark, Finland, Ireland, Japan, Korea, Norway and the United Kingdom), the average performance was higher than the OECD average, while the relationship between socio-economic status and reading performance was weaker than the OECD average.

Despite socio-economic disadvantage, 15.6% of Estonian students attain high levels of academic proficiency.

In Estonia, girls significantly outperform boys in Reading as is the case in all participating countries. The gap has decreased over several PISA cycles; however, it is still 31 points. Boys outperform girls in Mathematics by 9 points and girls show slightly better scores in Science (5 points).

In all countries, including Estonia, girls reported much greater enjoyment of reading than boys. If 44.8% of girls acknowledge that reading is one of their favourite past times, then only 17.7% of boys would say the same. If 27% of Estonian students think that reading is a waste of time, then 37.5% of boys and 17% of girls agree with that statement.



Student Wellbeing

On average, 70% of Estonian students reported being satisfied with their life (67% OECD). Between 2015 and 2018, the share of satisfied students shrunk in OECD countries by 5%. Girls, disadvantaged students and heavy internet users are less satisfied with their life. The reading scores are the highest for students who said that they are 'somehow satisfied' or 'moderately satisfied'. The worst scores are for students who responded 'not satisfied' and 'very satisfied' on their reports about life satisfaction.

Due to the growing interest in students' wellbeing, PISA asked for the first time how students feel in their lives. They were asked about positive emotions, for example, whether they feel happy, lively, joyful, cheerful and proud as well as negative ones – scared, miserable, afraid and sad. 89% of Estonian students feel happy and cheerful always or most of the time, whereas 53% are worried and 51% are often sad.

In order to explore the cognitive aspect of wellbeing, students were shown the statement:

Your intelligence is something about you that you cannot change very much.

The purpose of the exercise was to explore whether students exhibit a growth mindset i.e. to see if students believe they can improve if they put effort in themselves. 77% of Estonian students disagreed with the statement, which was the highest among participating countries (OECD mean 63%).

Estonian students experience fear of failure less than their peers in other countries.

What do Estonian students want to do in the future?

PISA asked students what level of education they would want to achieve and what sort of job they see themselves doing by the time they are thirty.

70% of Estonian students want to get higher education. 30% are interested in vocational education. The most popular jobs were ICT specialist, doctor, manager, architect or psychologist. 2% of students want to become teachers.

Estonian school

Schools in Estonia are quite similar, the variation between schools is only 16.8%. In terms of school climate, Estonian students value discipline; they are more exposed to bullying than their peers in other countries. At the same time, 89% of students disregard the act of bullying and would not join in if they witnessed it. Their sense of belonging to their school is also slightly lower than in other OECD countries and they marked their teachers as less enthusiastic than their peers did in other OECD countries.

What stands behind Estonian achievement




- Excellent job done by Estonian students, teachers and schools.
- Education is highly valued in society now as well as historically. Parents place high demands on their children and schools.
- There is almost universal access to quality early education. Over 90% of children attend a pre-school educational establishment.
- The Estonian educational system is based on equity and the comprehensive school principle. All students have equal access to education and the first streaming takes place after grade 9 at the age of 16 (end of basic school).
- Estonian schools and teachers have great autonomy. School principals have the right to hire and fire teachers and decide on needs for teacher training. Schools have the freedom to shape their own curricula following the guidelines set in the national curricula. Accountability is ensured by monitoring learning outcomes at state and school levels. The collected data helps to develop evidence-based policies.

Top ten countries in Europe in PISA 2018

	Reading		Maths		Science	
1	Estonia	523	Estonia	523	Estonia	530
2	Finland	520	Holland	519	Finland	522
3	Ireland	518	Poland	516	Poland	511
4	Poland	512	Switzerland	515	Slovenia	507

5	Sweden	506	Denmark	509	UK	505
6	UK	504	Slovenia	509	Holland	505
7	Denmark	501	Belgium	508	Germany	503
8	Norway	499	Finland	507	Sweden	499
9	Germany	498	Sweden	502	Belgium	499
10	Slovenia	495	UK	502	Denmark	487

PISA 2018 country rankings in Reading, Maths and Science

	Mean	Reading		Mean	Mathematics		Mean	Science
1	555	B-S-J-Z ¹ (China)	1	591	B-S-J-Z (China)	1	590	B-S-J-Z (China)
2	549	Singapore	2	569	Singapore	2	551	Singapore
3	525	Macau (China)	3	558	Macau (China)	3	544	Macau (China)
4	524	Hong Kong (China)	4	551	Hong Kong (China)	4	530	 Estonia
5	523	 Estonia	5	531	Taipei (China)	5	529	Japan
6	520	Canada	6	527	Japan	6	522	Finland
7	520	Finland	7	526	Korea	7	519	Korea
8	518	Ireland	8	523	 Estonia	8	518	Canada
9	514	Korea	9	519	Holland	9	517	Hong Kong (China)
10	512	Poland	10	516	Poland	10	516	Taipei (China)
11	506	Sweden	11	515	Switzerland	11	511	Poland
12	506	New Zealand	12	512	Canada	12	508	New Zealand
13	505	USA	13	509	Denmark	13	507	Slovenia
14	504	UK	14	509	Slovenia	14	505	UK
15	504	Japan	15	508	Belgium	15	503	Holland
16	503	Australia	16	507	Finland	16	503	Germany
17	503	Taipei (China)	17	502	Sweden	17	503	Australia
18	501	Denmark	18	502	UK	18	502	USA
19	499	Norway	19	501	Norway	19	499	Sweden
20	498	Germany	20	500	Germany	20	499	Belgium
21	495	Slovenia	21	500	Ireland	21	497	Czech
22	493	Belgium	22	499	Czech	22	496	Ireland
23	493	France	23	499	Austria	23	495	Switzerland
24	492	Portugal	24	496	Latvia	24	493	France
25	490	Czech	25	495	France	25	493	Denmark
26	485	Holland	26	495	Island	26	492	Portugal
27	484	Austria	27	494	New Zealand	27	490	Norway
28	484	Switzerland	28	492	Portugal	28	490	Austria
29	479	Croatia	29	491	Australia	29	487	Latvia
30	479	Latvia	30	488	Russia	30	483	Spain
31	479	Russia	31	487	Italy	31	482	Lithuania
32	-----	Spain	32	486	Slovakia	32	481	Hungary

¹ B-Beijing, S-Shanghai, J-Jingsu, G-Guangdong (Hiina)

33	476	Italy	33	483	Luxembourg	33	478	Russia
34	476	Hungary	34	481	Spain	34	477	Luxembourg
35	476	Lithuania	35	481	Lithuania	35	475	Island
36	474	Island	36	481	Hungary	36	472	Croatia
37	474	Belorussia	37	478	USA	37	471	Belorussia
38	470	Israel	38	472	Belorussia	38	469	Ukraine
39	470	Luxembourg	39	472	Malta	39	468	Turkey
40	466	Ukraine	40	464	Croatia	40	468	Italy
41	466	Turkey	41	463	Israel	41	464	Slovakia
42	458	Slovakia	42	454	Turkey	42	462	Israel
43	457	Greece	43	453	Ukraine	43	457	Malta
44	452	Chile	44	451	Greece	44	452	Greece
45	448	Malta	45	451	Cypruss	45	444	Chile
46	439	Serbia	46	448	Serbia	46	440	Serbia
47	432	UAE	47	440	Malaysia	47	439	Cypruss
48	428	Rumania	48	437	Albania	48	438	Malaysia
49	427	Uruguay	49	436	Bulgaria	49	434	UAE
50	426	Costa Rica	50	435	UAE	50	431	Brunei
51	424	Cypruss	51	430	Brunei	51	429	Jordan
52	424	Moldova	52	430	Rumania	52	428	Moldova
53	421	Montenegro	53	430	Montenegro	53	426	Thailand
54	420	Mexico	54	423	Kazakhstan	54	426	Uruguay
55	420	Bulgaria	55	421	Moldova	55	426	Rumania
56	419	Jordan	56	420	Baku (Azerbaijan)	56	424	Bulgaria
57	415	Malaysia	57	419	Thailand	57	419	Mexico
58	413	Brazil	58	418	Uruguay	58	419	Qatar
59	412	Colombia	59	417	Chile	59	417	Albania
60	408	Brunei	60	414	Qatar	60	416	Costa Rica
61	407	Qatar	61	409	Mexico	61	415	Montenegro
62	405	Albania	62	406	Bosnia and Herzegovina	62	413	Colombia
63	403	Bosnia and Herzegovina	63	402	Costa Rica	63	413	Northern-Macedonia
64	402	Argentina	64	400	Peru	64	404	Peru
65	401	Peru	65	400	Jordan	65	404	Argentina
66	399	Saudi Arabia	66	398	Georgia	66	404	Brazil
67	393	Thailand	67	394	Northern-Macedonia	67	398	Bosnia and Herzegovina
68	393	Northern-Macedonia	68	393	Libya	68	398	Baku (Azerbaijan)
69	389	Baku (Azerbaijan)	69	391	Colombia	69	397	Kazakhstan
70	387	Kazakhstan	70	384	Brazil	70	396	Indonesia
71	380	Georgia	71	379	Argentina	71	386	Saudi Arabia
72	377	Panama	72	379	Indonesia	72	384	Libya
73	371	Indonesia	73	373	Saudi Arabia	73	383	Georgia
74	359	Morocco	74	368	Morocco	74	377	Morocco
75	353	Libya	75	366	Kosovo	75	365	Kosovo
76	353	Kosovo	76	353	Panama	76	365	Panama

77	342	Dominican Republic	77	353	Philippines	77	357	Philippines
78	340	Philippines	78	325	Dominican Republic	78	336	Dominican Republic

Notes:

Statistically significantly above the OECD average

Not statistically significantly different from the OECD average

Statistically significantly below the OECD average

Source: OECD, PISA 2018 database