

## TEACHER PANEL

### PISA 2018 SCOTLAND RESULTS

#### Purpose

1. This paper provides an overview of the PISA 2018 Scotland results. The Teacher Panel is invited to consider and to offer their reflections on the 2018 results, and on how the results can be used by and disseminated to the teaching profession.

#### Background

##### *Overview of the PISA assessments*

2. The Programme for International Student Assessment (PISA) is an assessment of 15 year-olds' skills, carried out under the auspices of the Organisation for Economic Co-operation and Development (OECD). The programme runs every three years across all OECD members and a variety of partner countries. Scotland has participated in all seven surveys since the first wave of testing in 2000.
3. Each survey cycle focuses on one of three domains: reading, mathematics and science. In 2018 the main domain was reading, with maths and science as minor domains.
4. Around 600,000 students participated in the study worldwide from 79 countries. Students undertake a computer-based assessment lasting for 2 hours. PISA 2018 was the second year in which tests were taken on a computer rather than being a written test. Questions that students answered used real life situations and are not based on the curriculum in any country.
5. The assessments are supplemented by background questionnaires. Pupils are asked about their motivations for study, attitudes to school, views on reading, and their socio-economic background. Headteachers are asked about the challenges facing their schools, organisation and factors that they believe affect their students' performance.

##### *PISA 2018 Scotland Results*

6. The survey was carried out in Scotland between 8 October and 14 December 2018. In total, **107 secondary schools** participated in the survey. **2,969 pupils** took part in assessments.
7. Scotland's scores in the 2018 PISA assessments were **above the OECD average in reading** and **similar to the OECD average in maths and science**. In the previous survey in 2015, Scotland was similar to the OECD average in reading, maths and science.

8. Scotland's own overall performance compared to 2015 **improved in reading** and was **similar in maths and science**.
9. **PISA is a sample-based survey so each figure has a degree of statistical uncertainty around it.** For example, the 2018 mean maths score is shown as 489. By using the standard errors (as published by the OECD) to calculate a confidence interval around the mean score, we can be 95% certain that the actual score is between 481 and 497. It is not possible to produce individual country rankings based on the mean score due to the above. Accordingly, reporting shows results divided into those countries whose scores are statistically significantly higher than, similar to or lower than Scotland.
10. **Much of the media focus on Scotland's results has focused on the reported fall in the average score in maths (491 to 489) and science (497 to 490).** Using the standard errors described above, the confidence intervals around these scores mean it is not possible to say whether this represents a statistically significant fall in scores, so they are described as 'similar' in the results. Reading scores increased from 493 to 504. Using the same approach as above, we can be confident that there is a statistically significant rise in reading scores. A time series of Scotland's average scores in reading, maths and science can be found in Annex 1
11. The proportion of pupils performing at highest levels of achievement ("Level 5 and above") was higher in Scotland than the OECD average in reading and similar in maths and science. The proportion of pupils performing at the lowest levels of achievement ("below Level 2") was lower in Scotland than the OECD average in reading and similar in maths and science. The PISA levels are not the same as SCQF or CfE levels.
12. The gradient and strength of relationship between performance and social background was similar to 2015. The strength of relationship between performance and social background in reading and maths was lower than the OECD average in 2018. In other words, **background has less of an influence on attainment in Scotland than across the OECD.**

#### *Student questionnaire*

13. **Pupils in Scotland were positive about their teachers**, with pupils more likely than the OECD average to report that their teachers were enthusiastic, enjoyed teaching the subject, showed interest in pupils, provided extra support when needed, and helped to improve performance.
14. Scottish students were less likely than the OECD average to answer positively to questions on **reading for enjoyment**.
15. Students in Scotland were more likely than the OECD average to have a '**growth mindset**', but were also more likely to state that a **fear of failure** affected them and had **lower life satisfaction** rates than the average.

### *School questionnaire*

16. Headteachers were asked about the challenges facing their schools, organisation and factors that they believe affect their students' performance. Headteachers in Scotland were less likely than the OECD average to state that physical infrastructure and educational material was a factor that inhibited teachers, but more likely to say that a lack of teaching and support staff were factors.

### *Teacher questionnaire*

17. In 2018, Scotland participated in the PISA Teacher Questionnaire, which was undertaken by 19 countries and economies in total. Questions asked about initial teacher education and professional development, their beliefs and attitudes, and their teaching practices. Separate questionnaires were developed for teachers of the main domain (for PISA 2018, this is teachers of English) and for other teachers in the school.

18. The teacher questionnaire took 45 minutes to complete and was sent to 30 teachers in each of the schools included in the PISA assessment. 1,445 teachers completed the questionnaire, a response rate of 51 per cent. The results from the teacher questionnaire were not included in the initial results provided by the OECD and will be analysed in a separate report in 2020.

### **Conclusion**

19. PISA offers a wealth of data and insights beyond the high level scores. Utilisation of this data can provide a greater understanding of the factors and characteristics that influence attainment and student wellbeing.

### **Points for discussion**

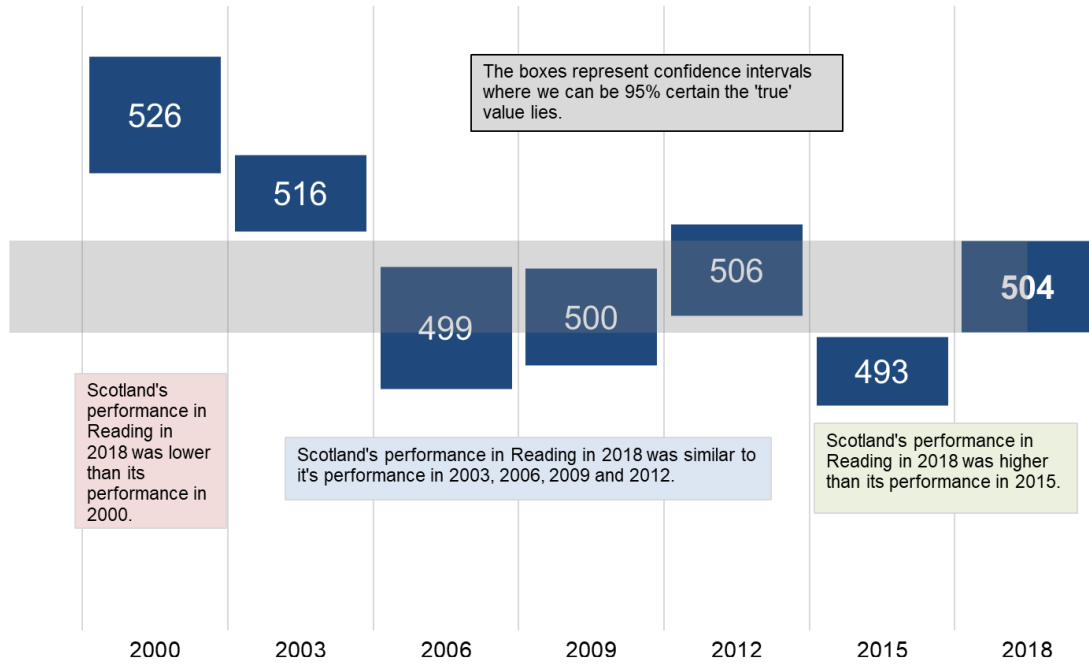
20. Teacher Panel members are invited to consider the content of this paper and offer their views on:

- the results of the PISA 2018 assessments and how they relate to their own experiences
- how the findings of the assessments can be used in schools
- the best ways of disseminating the findings to schools and practitioners

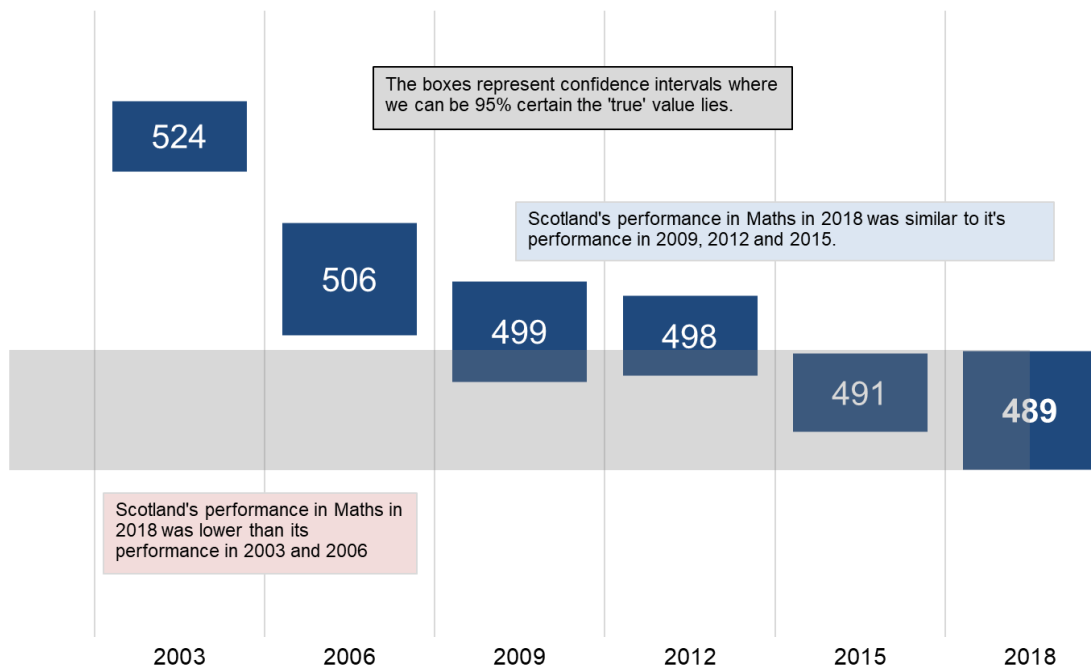
**ANNEX 1**

**PISA SCORES TIME SERIES**

**Reading in PISA – Scotland time series**



**Maths in PISA – Scotland time series**



### Science in PISA – Scotland time series

