



**Item Parameters for the TIMSS 2015 Scaled Value Mathematics Scale, Eighth Grade**

Item	Difficulty	Parameter 1	Parameter 2	Parameter 3	Item Information
20	-0.01	-0.37	-0.12	1.3710	1.0
20	0.12	-1.33201	-0.13	1.7733	1.0
20	-0.2701	-0.177	-0.2071	1.232	0.7
20	-0.077	-1.02	-0.171	1.27	0.0
20	1.03	-1.33717	-0.07	1.370	1.32
20	0.033	-1.1	-0.32	1.3023	0.
20	-0.237	-1.003	-0.771	1.0	0.
20	-0.22	-0.3	-0.170	1.333	1.17
20	-0.737	-0.7232	-0.0	1.33222	0.1

**Scale Transformation Constants for the TIMSS 2015 Scaled Value Mathematics Scale, Eighth Grade**

7.227	-97.23610, 1.5, 894.77777, 1.1/177, 834, 1.5, 894
1.232	

**Equivalence Table of Raw and Transformed Scale Scores for the TIMSS 2015 Student Value Mathematics Scale, Eighth Grade**

Raw Score	Transformed Score	Percentile Rank
0	2.03	
1	3.3377	
2	4.171	
3	5.377	
	6.7227	
	8.00170	
	9.237	
7	10.737	
	12.070	
	13.3	
10	15.02	
11	16.237	
12	17.033	
13	17.77	7.7
14	18.000	
15	19.0	
16	20.320	
17	21.727	
18	23.02	
19	24.0	
20	25.3	
21	26.73	
22	28.37	
23	29.73	10.3
24	30.127	
25	31.3713	
26	32.1	
27	33.722	

TIMSS 2015 Student Value Mathematics Scale, Eighth Grade

**Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the TIMSS 2015 Science Mathematics Scale, Eighth Grade**

Item	Cronbach's Alpha	Item-Mean	Principal Components									
			PC1	PC2	PC3	PC4	PC5	PC6	PC7	PC8	PC9	PC10
1. The Earth is a planet.	0.0	1.7	0.77	0.73	0.7	0.0	0.1	0.2	0.1	0.	0.0	
2. The Earth is a planet.	0.0	1.7	0.72	0.73	0.0	0.7	0.2	0.2	0.2	0.7	0.7	
3. The Earth is a planet.	0.1	2.	0.	0.1	0.70	0.73	0.	0.72	0.70	0.1	0.	
4. The Earth is a planet.	0.	1.2	0.71	0.	0.71	0.7	0.3	0.77	0.7	0.2	0.7	
5. The Earth is a planet.	0.	1.7	0.7	0.70	0.77	0.7	0.1	0.2	0.2	0.7	0.7	
6. The Earth is a planet.	0.0	1.7	0.	0.7	0.7	0.2	0.70	0.0	0.	0.1	0.7	
7. The Earth is a planet.	0.7	1.7	0.	0.71	0.71	0.7	0.1	0.73	0.73	0.	0.71	
8. The Earth is a planet.	0.7	1.1	0.71	0.	0.71	0.71	0.0	0.7	0.7	0.1	0.7	
9. The Earth is a planet.	0.	1.7	0.72	0.	0.73	0.77	0.7	0.0	0.7	0.	0.1	
10. The Earth is a planet.	0.1	1.7	0.	0.73	0.77	0.3	0.	0.2	0.1	0.2	0.7	
11. The Earth is a planet.	0.7	1.1	0.72	0.7	0.	0.71	0.1	0.7	0.71	0.	0.71	
12. The Earth is a planet.	0.	1.1	0.	0.	0.77	0.7	0.7	0.7	0.71	0.0	0.7	
13. The Earth is a planet.	0.7	1.1	0.	0.	0.7	0.77	0.3	0.7	0.77	0.1	0.71	
14. The Earth is a planet.	0.	1.7	0.70	0.	0.71	0.77	0.1	0.3	0.1	0.	0.7	
15. The Earth is a planet.	0.	1.7	0.71	0.3	0.	0.7	0.1	0.7	0.7	0.1	0.1	
16. The Earth is a planet.	0.	1.7	0.3	0.	0.72	0.7	0.7	0.1	0.7	0.1	0.	
17. The Earth is a planet.	0.	1.7	0.	0.71	0.7	0.7	0.7	0.7	0.7	0.70	0.77	
18. The Earth is a planet.	0.1	1.7	0.73	0.7	0.2	0.3	0.70	0.7	0.3	0.70	0.77	
19. The Earth is a planet.	0.	1.2	0.0	0.	0.77	0.0	0.0	0.77	0.1	0.3	0.0	
20. The Earth is a planet.	0.	1.7	0.	0.	0.7	0.73	0.	0.7	0.7	0.1	0.73	
21. The Earth is a planet.	0.	1.1	0.	0.	0.7	0.7	0.3	0.0	0.71	0.0	0.73	
22. The Earth is a planet.	0.	1.2	0.71	0.	0.73	0.7	0.0	0.73	0.7	0.3	0.7	
23. The Earth is a planet.	0.	1.3	0.	0.	0.7	0.77	0.1	0.7	0.77	0.72	0.7	
24. The Earth is a planet.	0.	1.2	0.70	0.70	0.73	0.7	0.1	0.0	0.7	0.1	0.71	



1. The first part of the test is a multiple-choice section. It consists of 40 questions, each with four possible answers. The questions cover a wide range of topics, including mathematics, science, and social studies. The multiple-choice section is designed to assess students' basic knowledge and understanding of the subject matter.

2. The second part of the test is a short-answer section. It consists of 10 questions that require students to provide a brief, written response. These questions are designed to assess students' ability to apply their knowledge and skills to solve problems and explain their reasoning.

3. The third part of the test is a long-answer section. It consists of 5 questions that require students to provide a detailed, written response. These questions are designed to assess students' ability to analyze complex problems, synthesize information, and communicate their findings effectively.

4. The test is scored on a scale of 0 to 1000 points. The multiple-choice section is scored automatically, while the short-answer and long-answer sections are scored by trained raters. The total score is then converted to a grade on a scale of 1 to 5.

5. The test is used to assess students' performance in mathematics, science, and social studies. It is used to identify areas where students are struggling and to provide targeted instruction and support. The test is also used to track student progress over time and to compare performance across different schools and districts.

