

2022 & 2023 Credit By Exam Analysis
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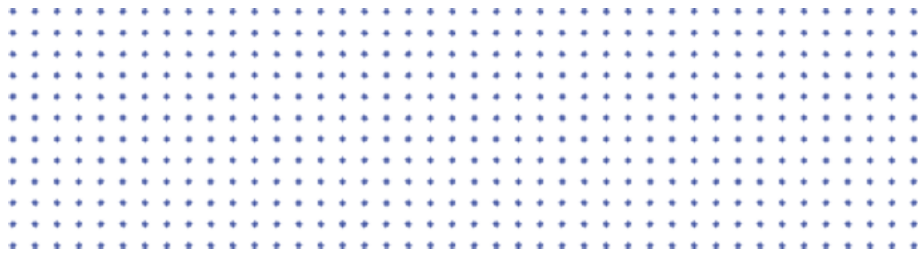


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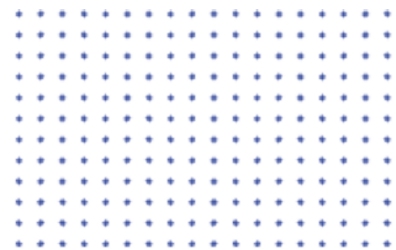
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INTRODUCTION



Northwest ISD offers math acceleration through credit-by-exam (CBE) opportunities. These exams are offered each summer. To ensure students receive their results in a timely manner, Northwest created math CBEs for fourth through eighth grades. In the year 2022, a total of 253 students engaged in these assessments, with participation slightly declining to 221 students in 2023.

Texas Administrative Code (TAC), [§74.24\(c\)\(2\)](#), provides districts the authority to create their own tests. The tests must meet the following criteria:

- Cover all accessible TEKS or the course.
- Has not been published or publicly available.
- Administered in a secure environment under standardized conditions.
- Evaluated to ensure test scores can be interpreted as indicators of what the test is intended to measure.
- Evaluated to ensure consistency of test results across testing conditions.
- District makes public an annual report.

Additionally, districts must make a public annual report for each examination that includes:

- the test development process.
- a statement certifying that the examination meets the criteria above.
- the number of students who took each examination.
- the number of students who scored 70% or above.
- the number of students who scored 80% or above; and
- the average score

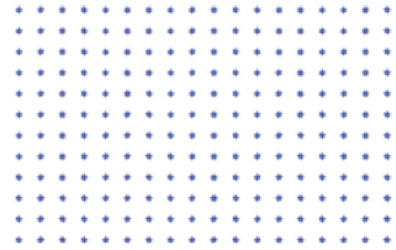
Assurances of Security and Confidentiality

Credit-by-Exams are not publicly disclosed. Questions on each exam are unique to Northwest ISD and have not been used by any other entity.

Tests are administered in standardized environments where students have up to three hours to complete the test. Students are in secure rooms and monitored under the same conditions as other standardized assessments, such as the STAAR, CogAT, and PSAT.



NISD elementary class reviewing UIL test preparation



Development Process

Northwest ISD’s Mathematics Curriculum and Instruction team led by Melayne Griffith and Jaime Garcia developed each assessment based on TEA’s TEKS blueprint documents for each grade level. Each exam is constructed and aligned with all assessable TEKS. These exams are meticulously aligned with all assessable TEKS, encompassing Readiness, Supporting, and Process standards specific to each grade level. Additionally, the team ensured that each question addresses the necessary level of rigor, depth, and complexity for demonstrating mastery at the respective grade level by referencing the language of each Student Expectation (SE).

Reliability

Reliability is a measure to ensure consistency of test results across testing conditions. Reliability answers the question “does this assessment consistently give the same results to establish reliability measures for each Credit-by-Exam (CBE), a Cronbach’s Alpha coefficient was calculated. A Cronbach’s Alpha coefficient is measured in the range of 0 to 1.0. The closer to 1.0, the more reliable. The following table explains the levels of reliability based on Cronbach’s Alpha.

<i>Cronbach’s Alpha</i>	<i>Level of Reliability</i>
<i>More than 0.90</i>	Excellent, Very Highly Reliable
<i>0.80-0.89</i>	Highly Reliable
<i>0.70-0.79</i>	Reliable
<i>0.60-0.69</i>	Questionable

0.5-0.59	Poor
Less than 0.59	Unacceptable

All reliability measures for the 2022 and 2023 school years fall within the range of reliable to very highly reliable.

Reliability	2020	2021	2022	2023
(Chron Bach Alpha)				
<i>4th Math CBE</i>	0.87	0.84	0.87	0.80
<i>5th Math CBE</i>	0.66	0.67	0.77	0.78
<i>6th Math CBE</i>	0.94	0.87	0.91	0.97
<i>7th Math CBE</i>	0.91	0.83	0.91	0.78
<i>8th Math CBE</i>	NA	0.88	0.87	0.88

Validity

Validity measures ensure that test scores accurately reflect what the test is intended to measure.

Validity addresses the question “Does this assessment measure what it’s supposed to measure?”

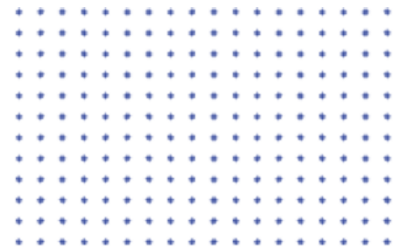
The Pearson correlation method was utilized to determine if each Credit-by-Exam (CBE) correlates with a student’s knowledge of the assessable TEKS for that grade level. A Pearson R is measured in a range from -1 to 1. A Pearson R score between -1 and 0 is correlated with an inverse relationship between the student’s knowledge and the student’s test score. A zero Pearson R score would mean there is no relationship between the student’s knowledge and the student’s test score. A Pearson R score between 0 and 1 would mean the student’s test score is a good indicator of the student’s knowledge of that content.

<i>Strength of Association</i>	<i>Positive</i>	<i>Negative</i>
<i>No correlation</i>	0.0 to 0.1	0.0 to - 0.1
<i>Low correlation</i>	0.1 to 0.3	-0.1 to -0.3
<i>Medium correlation</i>	0.3 to 0.5	-0.3 to -0.5
<i>High correlation</i>	0.5 to 0.7	-0.5 to -0.7
<i>Very high correlation</i>	0.7 to 1.0	-0.7 to -1.0

All validity measures for the 2022 and 2023 school years show positive and highly correlated to very highly correlated results. This suggests that the tests effectively measure what students know about the assessed TEKS.

<i>Validity (Pearson R Coefficient)</i>	<i>2020</i>	<i>2021</i>	<i>2022</i>	<i>2023</i>
<i>4th Math CBE</i>	0.6	0.6	0.7	0.7
<i>5th Math CBE</i>	0.5	0.5	0.8	0.7
<i>6th Math CBE</i>	0.8	0.7	0.6	0.6
<i>7th Math CBE</i>	0.7	0.5	0.6	0.5
<i>8th Math CBE</i>	NA	0.7	0.6	0.6

RESULTS



The tables below break down student group performances on each assessment:

All students, all tests:

2022 ALL Math CBE	Number tested	Number at 70% or higher	Number at 80% or higher	Number at 90% of Higher	Overall Average	Median Score	Standard Deviation
4 th Math CBE	86	32	17	3	62.9%	64.0%	17.3
5 th Math CBE	94	61	28	7	71.4%	72.0%	13.2
6 th Math CBE	15	7	3	1	66.4%	68.0%	13.8
7 th Math CBE	24	4	1	1	55.3%	59.0%	15.5
8 th Math CBE	34	13	8	1	64.3%	62.0%	16.0

2023 ALL Math CBE	Number tested	Number at 70% or higher	Number at 80% or higher	Number at 90% or Higher	Overall Average	Median Score	Standard Deviation
4 th Math CBE	48	18	6	0	64.5%	63.0%	13.8
5 th Math CBE	101	59	45	11	71.9%	72.0%	13.9
6 th Math CBE	12	6	4	1	70.2%	69.0%	12.7
7 th Math CBE	11	6	3	1	69.2%	73.0%	15.6
8 th Math CBE	49	19	12	2	63.2%	62.0%	16.7

Economically Disadvantaged

2022 Eco Dis Math CBE	Number tested	Number at 70% or higher	Number at 80% or higher	Number at 90% or Higher	Overall Average	Median Score	Standard Deviation
4 th	3	1	0	0	53.7%	57.0%	22.2
5 th	14	9	2	2	71.1%	77.0%	18.2
6 th	0	NA	NA	NA	NA	NA	NA
7 th	3	0	0	0	50.7%	52.0%	10.1
8 th	3	1	0	0	54.0%	44.0%	20.9

2023	Number	Number	Number	Number	Overall	Median	Standard
Eco Dis	tested	at 70%	at 80%	at 90%	Average	Score	Deviation
Math		or	or	of			
CBE		higher	higher	Higher			
4 th	5	2	0	0	64.6%	64.3%	11.9
5 th	9	4	2	2	63.7%	63.0%	16.2
6 th	2	2	1	0	76.0%	76.0%	5.7
7 th	3	2	1	0	69.3%	74.0%	13.6
8 th	3	1	0	0	47.0%	50.0%	18.1

Emerging Bilingual

2022	Number	Number	Number	Number	Overall	Median	Standard
LEP		at 70%	at 80%	at 90%	Average	Score	Deviation
Math		or	or	of			
CBE		higher	higher	Higher			
4 th	5	1	0	0	66.0%	66.0%	5.1
5 th	4	4	4	1	84.8%	84.0%	3.5
6 th	1	1	1	1	92.0%	92.0%	NA
7 th	1	1	0	0	72.0%	72.0%	NA
8 th	1	1	1	1	94.0%	94.0%	NA

2023	Number	Number	Number	Number	Overall	Median	Standard
LEP		at 70%	at 80%	at 90%	Average	Score	Deviation
Math		or	or	of			
CBE		higher	higher	Higher			
4 th	2	0	0	0	48.0%	48.0%	1.4
5 th	1	0	0	0	60.0%	60.0%	NA
6 th	4	2	2	0	71.0%	73.0%	10.9
7 th	1	0	0	0	NA	NA	NA
8 th	2	1	1	1	65.0%	65.0%	41.0

Special Education

2022	Number	Number	Number	Number	Overall	Median	Standard
Special		at 70%	at 80%	at 90%	Average	Score	Deviation
Ed		or	or	of			
Math		higher	higher	Higher			
CBE							
4 th	2	0	0	0	48.0%	48.0%	17.0
5 th	2	1	1	0	68.5%	68.5%	NA
6 th	0	NA	NA	NA	NA	NA	NA
7 th	2	0	0	0	53%	53%	9.8
8 th	1	1	0	0	78.0%	78.0%	NA

2023 Special Ed Math CBE	Number	Number at 70% or higher	Number at 80% or higher	Number at 90% of Higher	Overall Average	Median Score	Standard Deviation
4 th	1	0	0	0	62	62	NA
5 th	6	4	2	0	73.8%	72.0%	10.5
6 th	0	NA	NA	NA	NA	NA	NA
7 th	0	NA	NA	NA	NA	NA	NA
8 th	3	2	0	0	61.3%	72.0%	23.9

Gifted and Talented

2022 GT Math CBE	Number	Number at 70% or higher	Number at 80% or higher	Number at 90% of Higher	Overall Average	Median Score	Standard Deviation
4 th	72	27	15	3	63.9%	64.0%	17.3
5 th	78	58	26	7	74.5%	74.0%	11.1
6 th	14	7	3	1	66.6%	68.0%	13.9
7 th	4	2	1	0	70.5%	71.0%	10.6
8 th	22	12	8	1	69.6%	71.0%	15.3

2023 GT Math CBE	Number	Number at 70% or higher	Number at 80% or higher	Number at 90% of Higher	Overall Average	Median Score	Standard Deviation
4 th	38	14	6	0	64.7%	64.0%	13.8
5 th	90	57	33	11	73.9%	74.0%	12.8
6 th	10	6	4	1	72.4%	75.0%	12.4
7 th	5	4	2	0	76.0%	74.0%	7.1
8 th	33	18	12	2	68.1%	72.0%	16.7

Race and Ethnicity

2022 4 th Grade by Race Math CBE	Number	Number at 70% or higher	Number at 80% or higher	Number at 90% of Higher	Overall Average	Median Score	Standard Deviation
Asian	9	5	4	1	75.2%	74.0%	12.0
Black	9	3	2	0	58.1%	53.0%	19.1
Hispanic	6	0	0	0	58.3%	57.0%	6.3
Two or More Races	1	0	0	0	60.0%	60.0%	NA
White	86	20	9	2	61.9%	63.0%	18.4

2023 4th	Number	Number	Number	Number	Overall	Median	Standard
Grade		at 70%	at 80%	at 90%	Average	Score	Deviation
by Race		or	or	of			
Math		higher	higher	Higher			
CBE							
Asian	5	3	3	0	69.4%	81.0%	20.7
Black	3	0	0	0	49.0%	47.0%	3.5
Hispanic	10	5	1	0	67.9%	69.0%	14.4
Two or More Races	3	2	1	0	70.7%	74.0%	16.3
White	27	8	3	0	63.6%	62.0%	12.1

2022 5th	Number	Number	Number	Number	Overall	Median	Standard
Grade		at 70%	at 80%	at 90%	Average	Score	Deviation
by Race		or	or	of			
Math		higher	higher	Higher			
CBE							
Asian	8	5	3	1	71.7%	70.0%	14.3
Black	3	1	1	1	67.7%	65.0%	22.1
Hispanic	12	7	4	0	66.8%	70.0%	14.5
White	71	48	20	5	69.7%	70.0%	15.8

2023 5th	Number	Number	Number	Number	Overall	Median	Standard
Grade		at 70%	at 80%	at 90%	Average	Score	Deviation
by Race		or	or	of			
Math		higher	higher	Higher			
CBE							
Asian	20	15	14	8	81.0%	86.0%	13.6
Black	9	6	4	1	75.7%	79.0%	18.2
Hispanic	11	3	1	0	61.6%	65.0%	11.6
Two or More Races	4	3	3	0	70.8%	83.5%	27.3
White	57	32	11	1	69.7%	70.0%	10.7

2022 6th	Number	Number	Number	Number	Overall	Median	Standard
Grade		at 70%	at 80%	at 90%	Average	Score	Deviation
Math		or	or	of			
CBE		higher	higher	Higher			
Asian	2	2	1	1	84.0%	84.0%	8.5
Black	3	0	0	0	54.0%	58.0%	8.7
Hispanic	1	0	0	0	52.0%	52.0%	NA
White	8	5	2	0	70.0%	70.0%	10.2

2023 6 th Grade Math CBE	Number	Number at 70% or higher	Number at 80% or higher	Number at 90% or Higher	Overall Average	Median Score	Standard Deviation
Asian	2	2	1	0	76.0%	76.0%	8.9
Black	2	0	0	0	59.0%	59.0%	9.9
Hispanic	3	2	1	0	74.7%	78.0%	7.6
White	5	2	2	1	69.6%	60.0%	17.0

2022 7 th Grade Math CBE	Number	Number at 70% or higher	Number at 80% or higher	Number at 90% or Higher	Overall Average	Median Score	Standard Deviation
Asian	2	1	0	0	64.0%	64.0%	17.0
Black	2	0	0	0	55.0%	55.0%	7.1
Hispanic	5	0	0	0	45.2%	40.0%	19.1
White	13	3	1	0	58.2%	60.0%	15.4

2023 7 th Grade Math CBE	Number	Number at 70% or higher	Number at 80% or higher	Number at 90% or Higher	Overall Average	Median Score	Standard Deviation
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		or	or	of			
Math							
CBE		higher	higher	Higher			
Asian	3	2	1	1	68.0%	74.0%	25.5
Black	2	0	0	0	54.0%	54.0%	0.0
Hispanic	1	0	0	0	NA	NA	NA
White	4	4	2	0	78.0%	77.0%	6.3

2022 8th	Number	Number	Number	Number	Overall	Median	Standard
Grade		at 70%	at 80%	at 90%	Average	Score	Deviation
Math		or	or	of			
CBE		higher	higher	Higher			
Asian	6	2	1	1	65.3%	63.0%	16.5
Black	7	2	1	0	57.4%	50.0%	14.9
Hispanic	5	2	1	0	63.2%	62.0%	13.3
Two or More	1	1	1	0	84.0%	84.0%	NA
White	14	6	4	0	64.5%	62.0%	17.0

2023 8 th Grade Math CBE	Number	Number at 70% or higher	Number at 80% or higher	Number at 90% or Higher	Overall Average	Median Score	Standard Deviation
Asian	12	5	3	2	64.3%	64.0%	19.5
Black	7	2	1	0	57.4%	50.0%	14.9
Hispanic	8	3	2	0	62.3%	63.0%	11.7
Two or More	1	1	1	0	NA	NA	NA
White	21	8	5	0	62.8%	62.0%	17.7