

DACSS604\_Final



# DACSS 604 Final Project

Code ▾

AUTHOR  
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## Load Libraries

► Code

## Load the Data

### State Standards Mastery Summary

► Code

Year	Screening Window	Grade	Text Type	Reporting Category	
<chr>	<fct>	<fct>	<fct>	<fct>	►
2024-2025	Fall	5	NA	Foundational Skills	
2024-2025	Fall	5	NA	Foundational Skills	
2024-2025	Fall	5	NA	Foundational Skills	
2024-2025	Fall	5	NA	Foundational Skills	
2024-2025	Fall	5	NA	Foundational Skills	
2024-2025	Fall	5	NA	Foundational Skills	
2024-2025	Fall	5	Informational Text	Reading	
2024-2025	Fall	5	Informational Text	Reading	
2024-2025	Fall	5	Informational Text	Reading	
2024-2025	Fall	5	Informational Text	Reading	
1-10 of 537 rows   1-5 of 13 columns					
Previous 1 2 3 4 5 6 ... 54 Next					

### Growth/Demographic Summary

► Code

...1	Grade	School_Year	Assignment Type	Test 1 PR	Test 1 Benchmark Category
<dbl>	<ord>	<ord>	<fct>	<dbl>	<ord>
1	5	2023-2024	Star Math	98	At/Above Benchmark

...1	Grade	School_Year	Assignment Type	Test 1 PR	Test 1 Benchmark Category
<dbl>	<ord>	<ord>	<fct>	<dbl>	<ord>
2	5	2023-2024	Star Math	25	On Watch
3	5	2023-2024	Star Math	88	At/Above Benchmark
4	5	2023-2024	Star Math	85	At/Above Benchmark
5	5	2023-2024	Star Math	75	At/Above Benchmark
6	5	2023-2024	Star Math	31	On Watch
7	5	2023-2024	Star Math	4	Urgent Intervention
8	5	2023-2024	Star Math	85	At/Above Benchmark
9	5	2023-2024	Star Math	49	At/Above Benchmark
10	5	2023-2024	Star Math	80	At/Above Benchmark

1-10 of 1,925 rows | 1-6 of 13 columns

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## Historical Summary Data Frames

► Code

Year	Screening Window	Subject	Benchmark_Status	% Students
<fct>	<fct>	<chr>	<ord>	<dbl>
2023-2024	Spring	ELA	At/Above Benchmark	67
2023-2024	Spring	ELA	Below Benchmark	33
2023-2024	Spring	Math	At/Above Benchmark	71
2023-2024	Spring	Math	Below Benchmark	29
2024-2025	Fall	ELA	At/Above Benchmark	78
2024-2025	Fall	ELA	Below Benchmark	22
2024-2025	Fall	Math	At/Above Benchmark	77
2024-2025	Fall	Math	Below Benchmark	23
2024-2025	Winter	ELA	At/Above Benchmark	82
2024-2025	Winter	ELA	Below Benchmark	18

1-10 of 12 rows

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► Code

Year	Screening Window	Grade	Subject	Median SGP
<fct>	<fct>	<ord>	<fct>	<dbl>
2023-2024	Fall-Winter	5	ELA	63
2023-2024	Fall-Winter	5	Math	35
2023-2024	Fall-Winter	6	ELA	60
2023-2024	Fall-Winter	6	Math	50
2023-2024	Fall-Winter	7	ELA	54
2023-2024	Fall-Winter	7	Math	63
2023-2024	Fall-Winter	8	ELA	48

Year	Screening Window	Grade	Subject	Median SGP
<fct>	<fct>	<ord>	<fct>	<dbl>
2023-2024	Fall-Winter	8	Math	52
2023-2024	Fall-Winter	9	ELA	58
2023-2024	Fall-Winter	9	Math	64

1-10 of 24 rows

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RQ1:

Are Rising Tide students making progress toward our achievement accountability goal: “80% of Rising Students will test as at or above Benchmark in Reading on the Renaissance Star Reading and Star Mathematics screening assessments.?

Historical Benchmark\_Status

► Code

Statistical Test

Acheivement: Math

► Code

...1	Grade	School_Year	Assignment Type	Test 1 PR	Test 1 Benchmark Category
<dbl>	<ord>	<ord>	<fct>	<dbl>	<ord>
1	5	2023-2024	Star Math	98	At/Above Benchmark
2	5	2023-2024	Star Math	25	On Watch
3	5	2023-2024	Star Math	88	At/Above Benchmark
4	5	2023-2024	Star Math	85	At/Above Benchmark
5	5	2023-2024	Star Math	75	At/Above Benchmark
6	5	2023-2024	Star Math	31	On Watch
7	5	2023-2024	Star Math	4	Urgent Intervention
8	5	2023-2024	Star Math	85	At/Above Benchmark
9	5	2023-2024	Star Math	49	At/Above Benchmark
10	5	2023-2024	Star Math	80	At/Above Benchmark

1-10 of 961 rows | 1-6 of 14 columns

Previous123456...97Next

► Code

```
Call:
lm(formula = `Test 1 PR` ~ School_Year_Fac + IEP_Status + `504_Status` +
  Low_Income_Status, data = star_dem_math)
```

## Residuals:

	Min	1Q	Median	3Q	Max
	-59.329	-17.173	1.028	17.497	67.574

## Coefficients:

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	64.173	1.245	51.531	< 2e-16 ***
School_Year_Fac2024-2025	4.157	1.472	2.824	0.00484 **
IEP_Status1	-32.747	1.730	-18.928	< 2e-16 ***
`504_Status`1	-1.826	2.296	-0.796	0.42649
Low_Income_Status1	-6.454	1.645	-3.923	9.37e-05 ***

---

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 22.78 on 956 degrees of freedom

Multiple R-squared: 0.2929, Adjusted R-squared: 0.2899

F-statistic: 99 on 4 and 956 DF, p-value: &lt; 2.2e-16

## ► Code

[1] 8742.117

## ► Code

[1] 8771.324

## ► Code

## Acheivement: ELA

## ► Code

## Call:

lm(formula = `Test 1 PR` ~ School\_Year\_Fac + IEP\_Status, data = star\_dem\_ELA)

## Residuals:

	Min	1Q	Median	3Q	Max
	-58.281	-19.490	0.346	19.346	61.510

## Coefficients:

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	58.654	1.189	49.35	< 2e-16 ***
School_Year_Fac2024-2025	4.627	1.553	2.98	0.00296 **
IEP_Status1	-26.164	1.783	-14.67	< 2e-16 ***

---

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 24.1 on 961 degrees of freedom

Multiple R-squared: 0.1884, Adjusted R-squared: 0.1868

F-statistic: 111.6 on 2 and 961 DF, p-value: &lt; 2.2e-16

► Code

[1] 8876.38

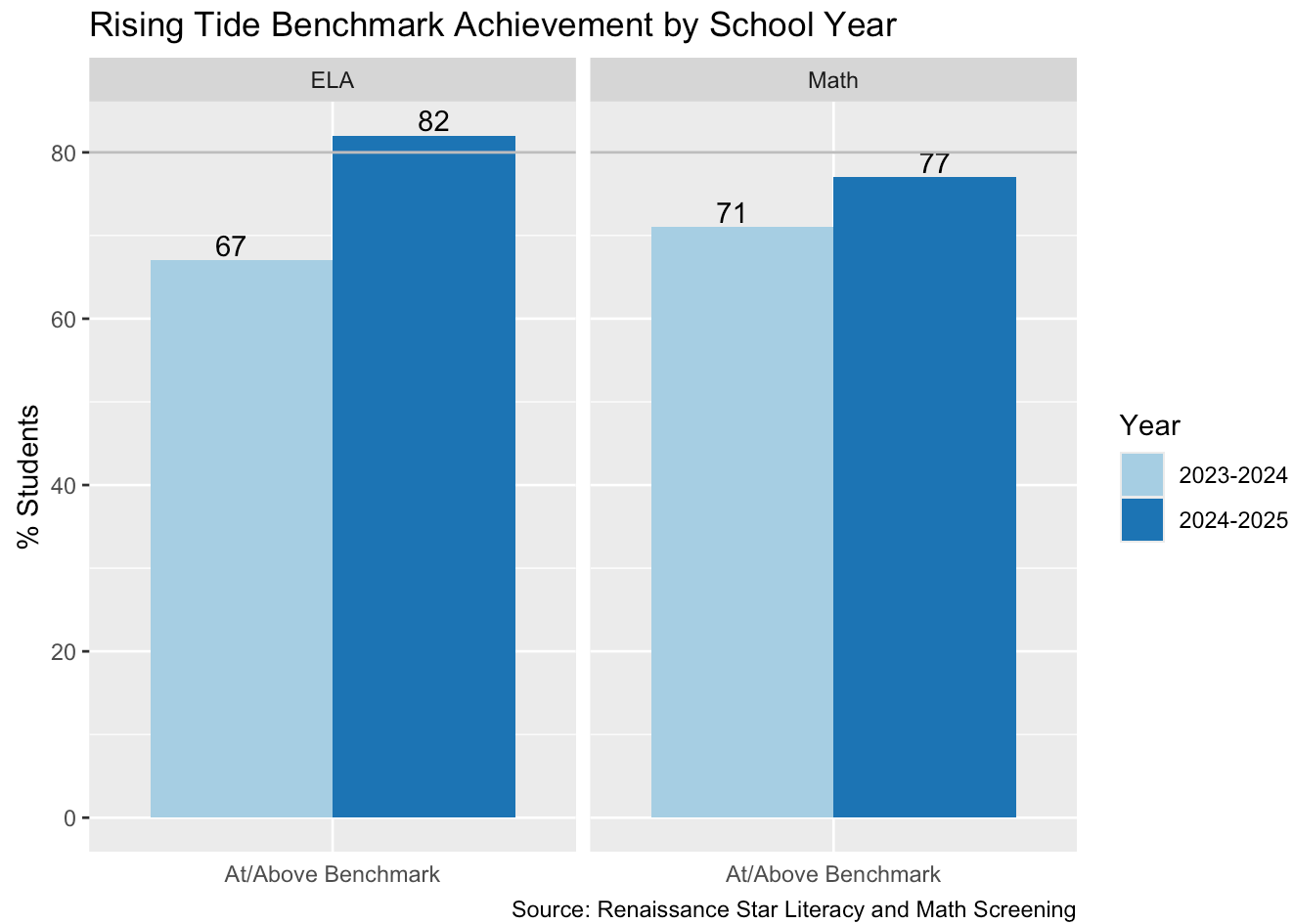
► Code

[1] 8895.864

Visual: RQ1

► Code

► Code



Subject Level Fall Winter Growth Comparison

ELA Growth

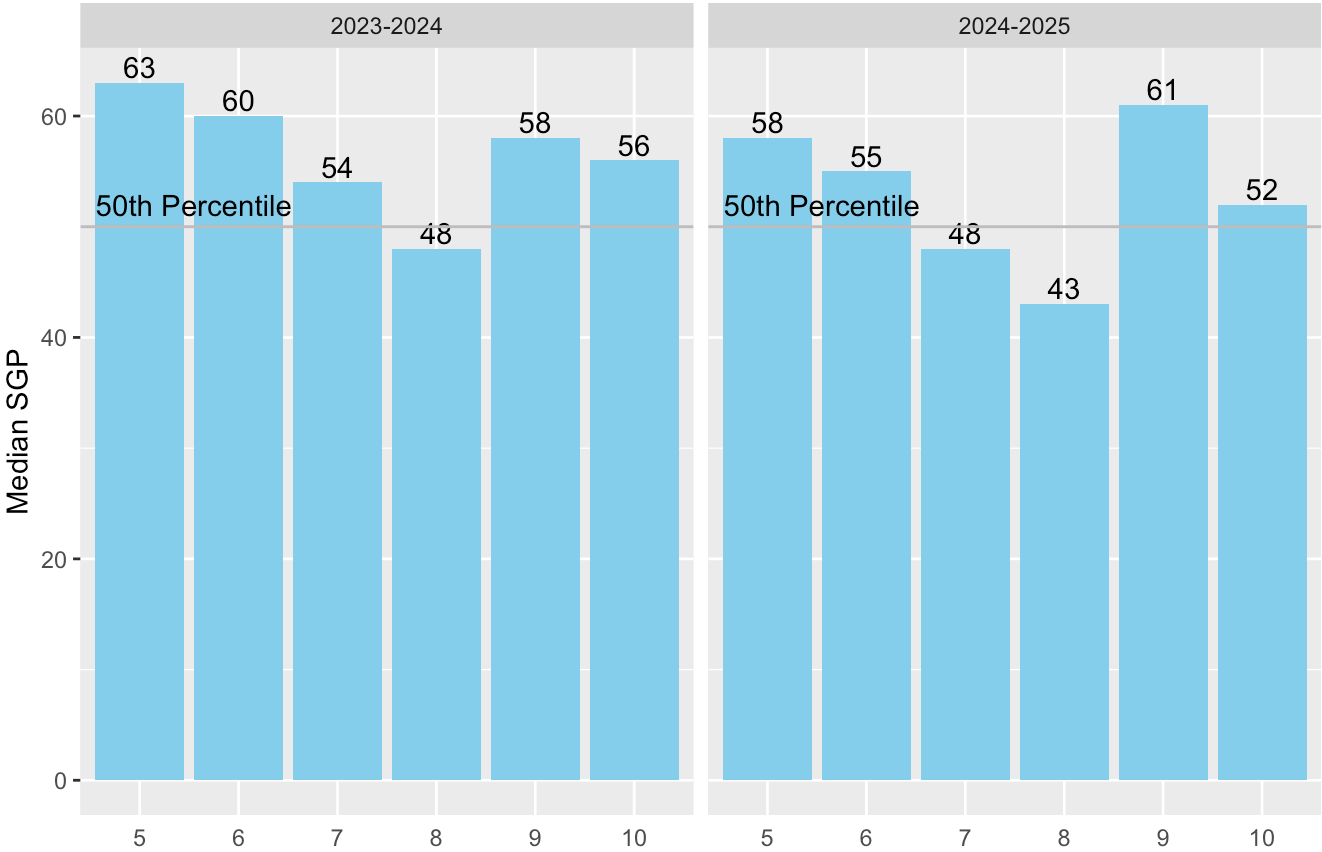
► Code

► Code

## ELA Historical Growth

- Code
- Code

Literacy Student Growth Percentile by Grade Level



Source: Renaissance Star Literacy Screening

Rising Tide Literacy Growth by Grade Level, school year 2024-2025 and 2023-2024, Renaissance Star Literacy Screening

## Math Growth

- Code
- Code
- Code
- Code

## RQ2 Grade 5 Math

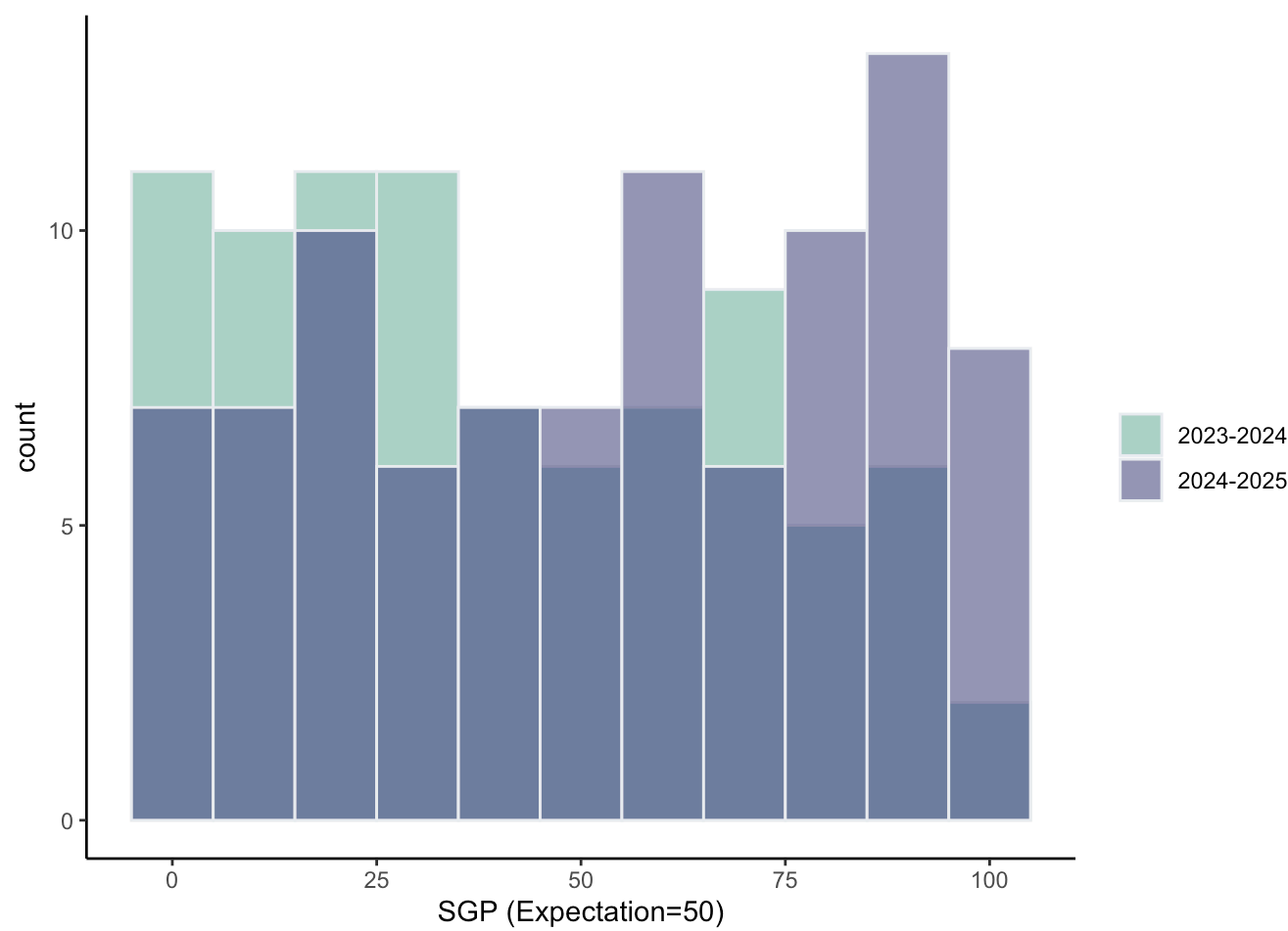
Is there a relationship between Rising Tide’s Grade 5 Mathematics curriculum initiatives and Grade 5 student growth in mathematics?

# Summary Data Frames

► Code

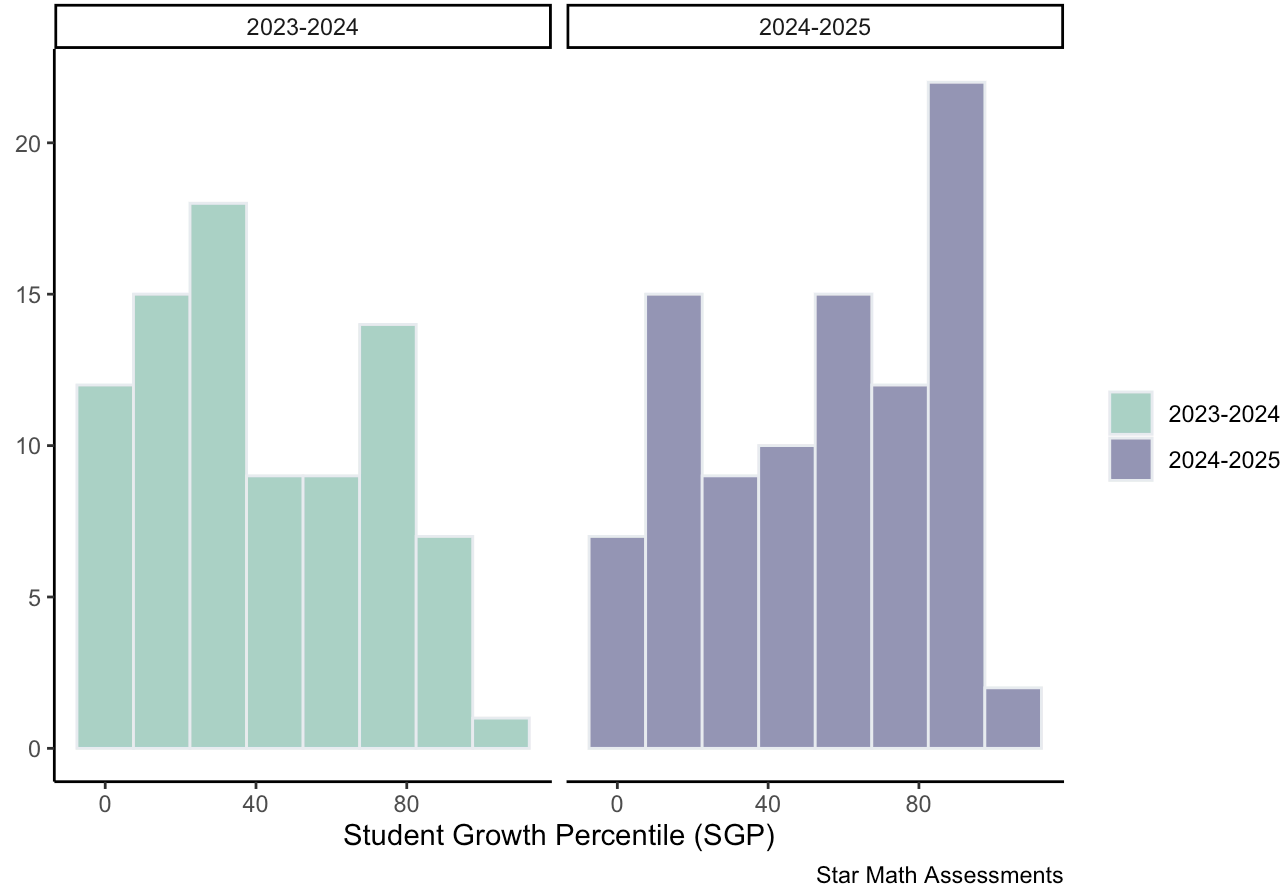
## Visual: Growth Distribution

► Code



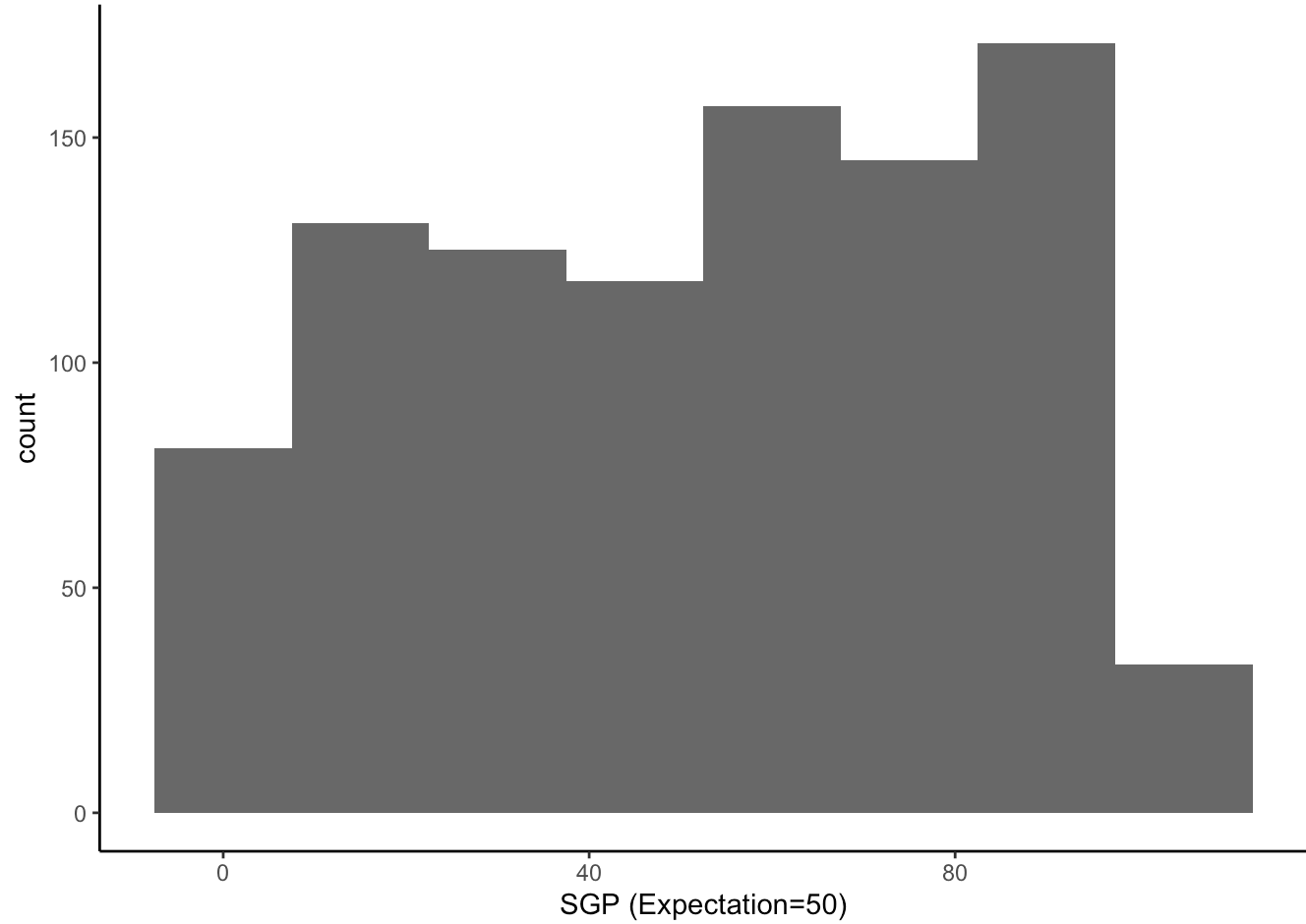
► Code

Grade 5 Student Growth Distribution



► Code





## Statistical Tests

► Code

```
Call:
lm(formula = `SGP (Expectation=50)` ~ School_Year_Factor + IEP_Status +
    Low_Income_Status + `504_Status` + `Test 1 PR`, data = G5MathHistGrowth)
```

Residuals:

Min	1Q	Median	3Q	Max
-56.13	-25.43	-0.01	27.66	53.29

Coefficients:

	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	51.06482	7.30772	6.988	5.97e-11	***
School_Year_Factor2024-2025	13.82626	4.57343	3.023	0.00289	**
IEP_Status1	-17.00046	6.14880	-2.765	0.00632	**
Low_Income_Status1	-3.28838	4.97102	-0.662	0.50918	
`504_Status`1	-0.77230	6.88859	-0.112	0.91086	
`Test 1 PR`	-0.08415	0.09742	-0.864	0.38889	

---

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 29.99 on 171 degrees of freedom  
Multiple R-squared: 0.09237, Adjusted R-squared: 0.06583  
F-statistic: 3.48 on 5 and 171 DF, p-value: 0.005071

► Code

[1] 1714.086

► Code

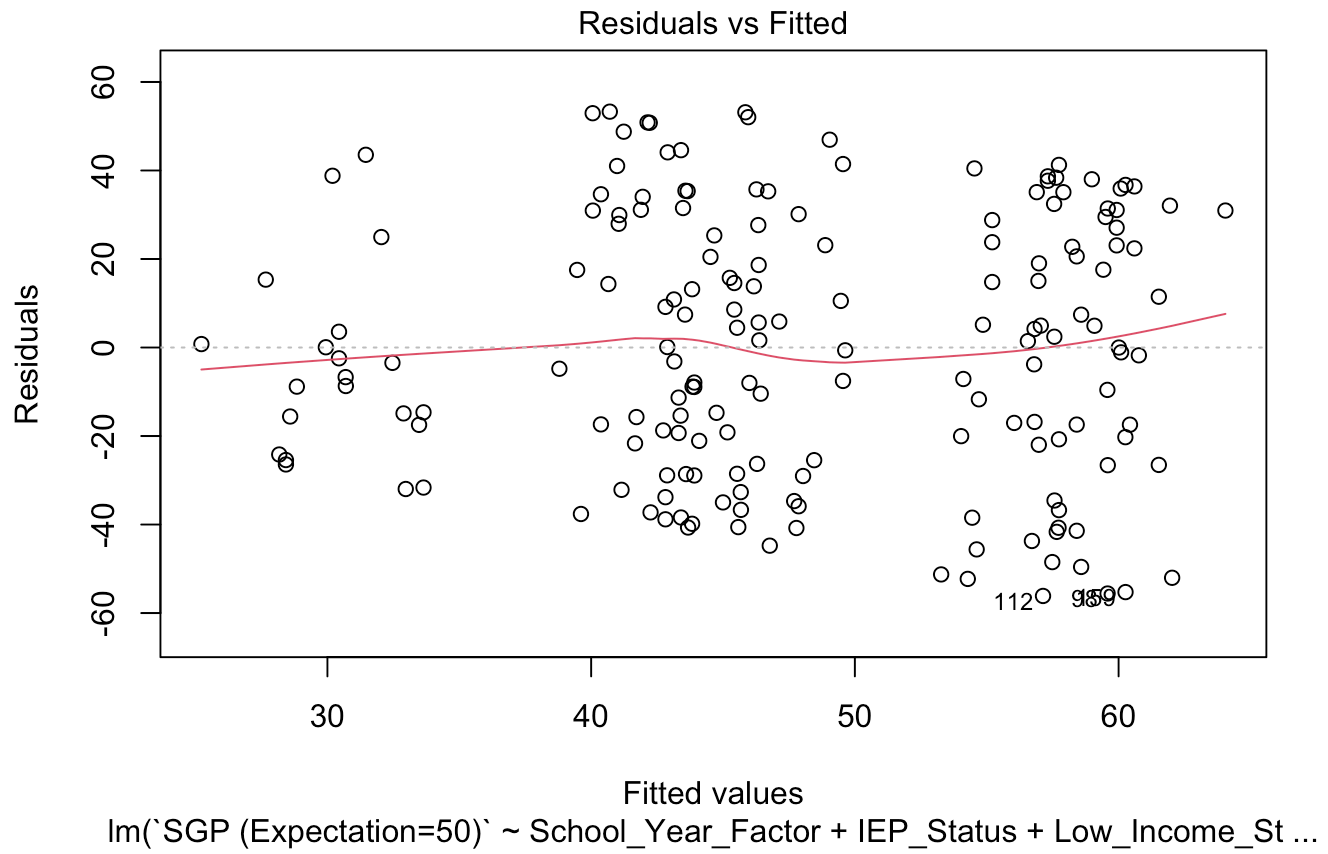
[1] 1736.319

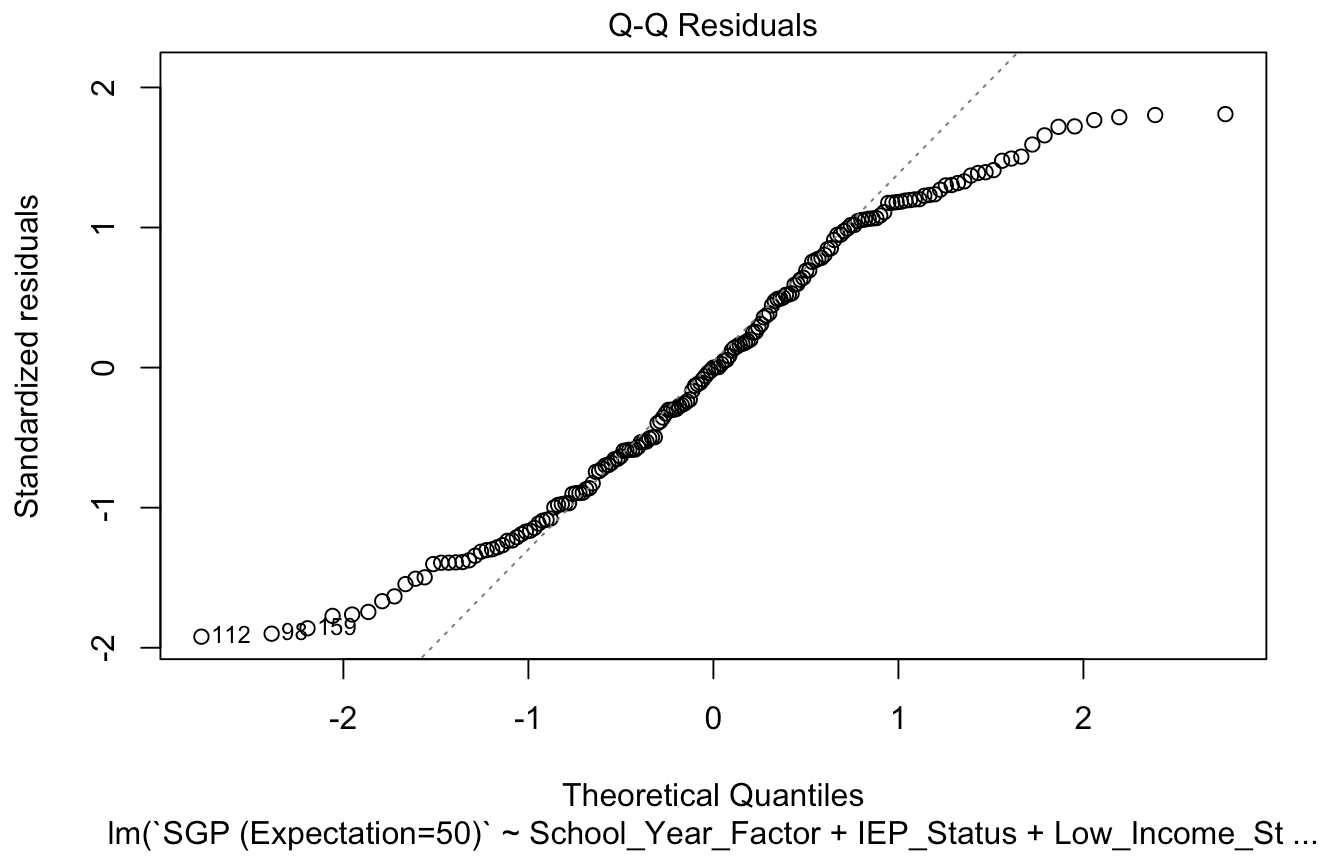
► Code

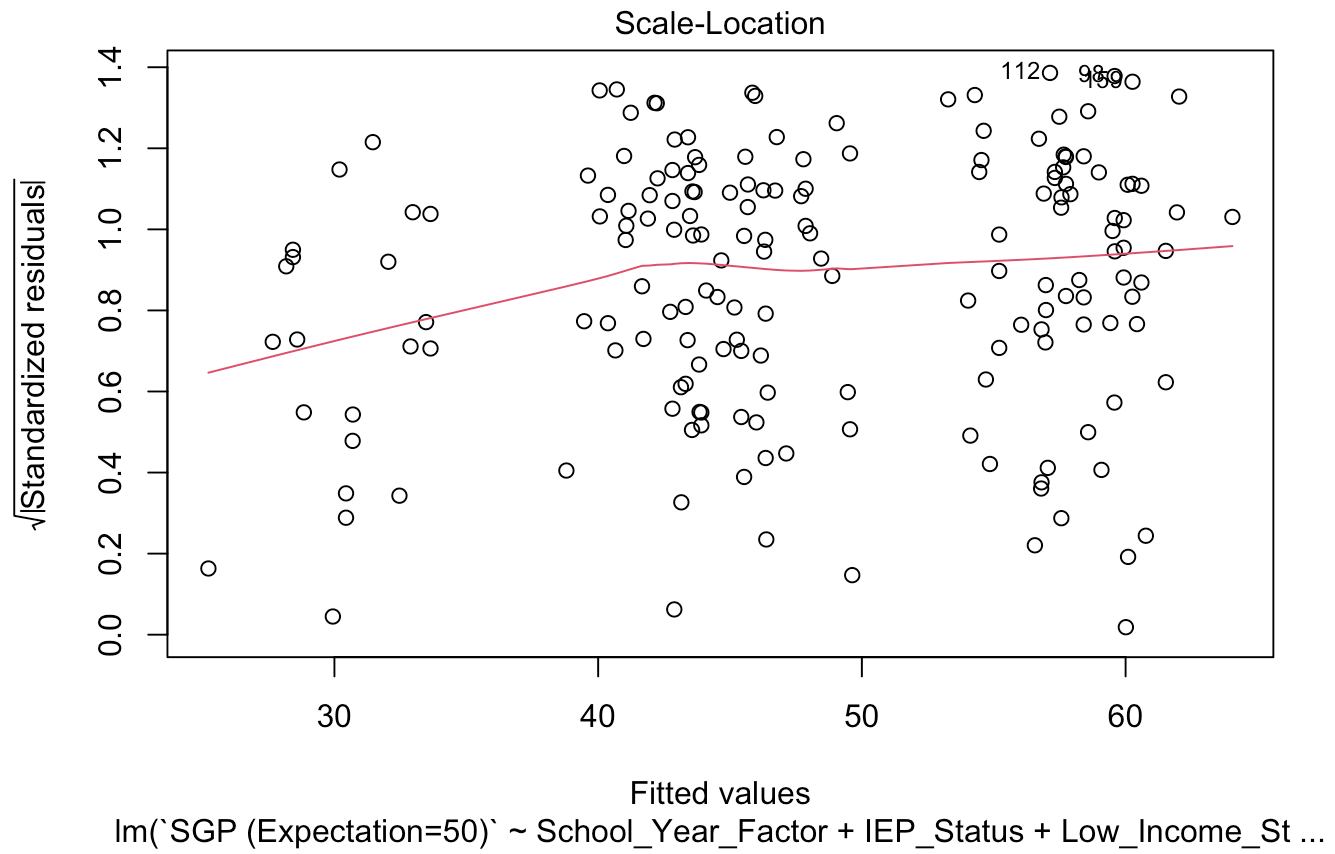
Dependent variable:	
`SGP (Expectation=50)`	
School_Year_Factor2024-2025	13.826*** (4.573)
IEP_Status1	-17.000*** (6.149)
Low_Income_Status1	-3.288 (4.971)
`504_Status`1	-0.772 (6.889)
`Test 1 PR`	-0.084 (0.097)
Constant	51.065*** (7.308)
Observations	177
R2	0.092
Adjusted R2	0.066
Residual Std. Error	29.988 (df = 171)
F Statistic	3.480*** (df = 5; 171)
Note: *p<0.1; **p<0.05; ***p<0.01	

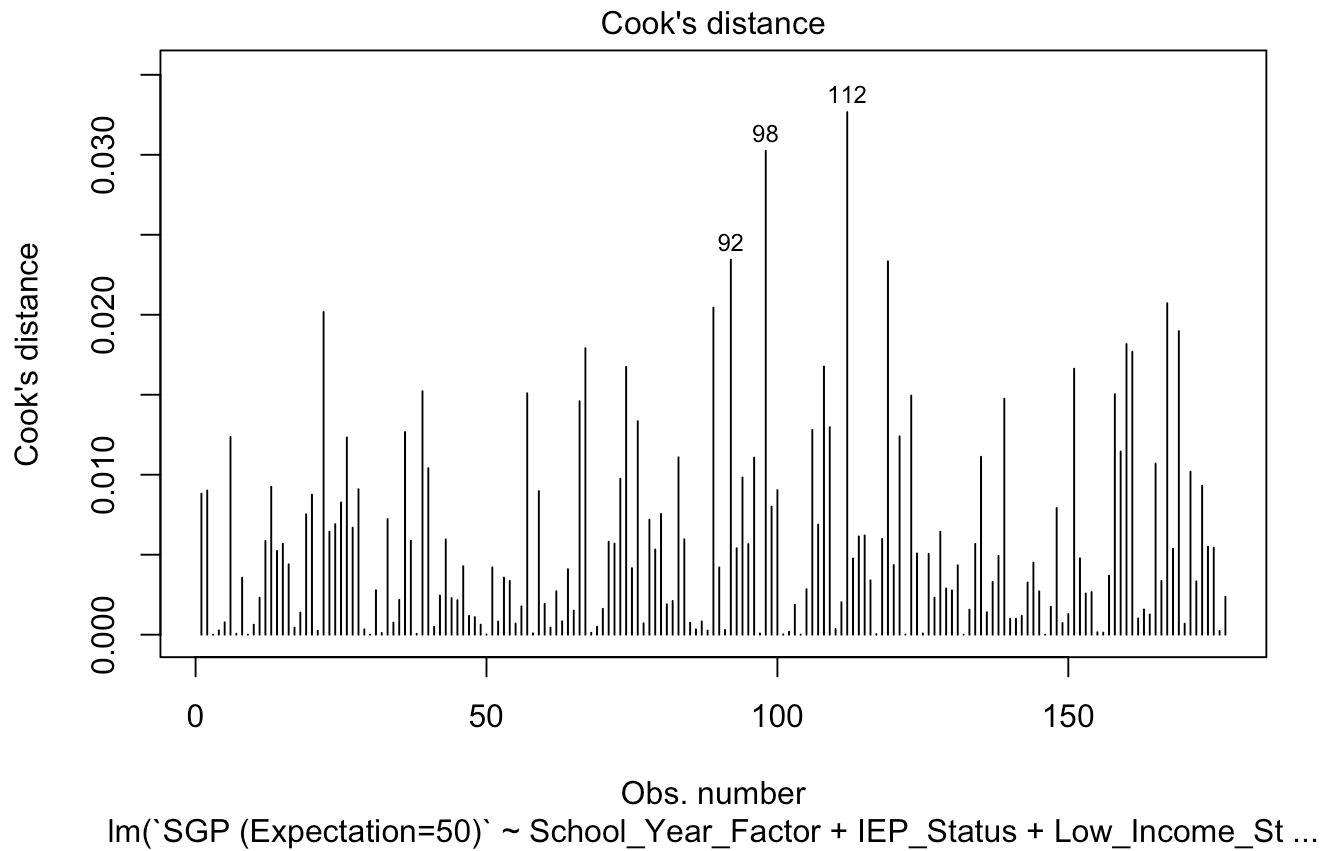
Diagnosing Model Fit

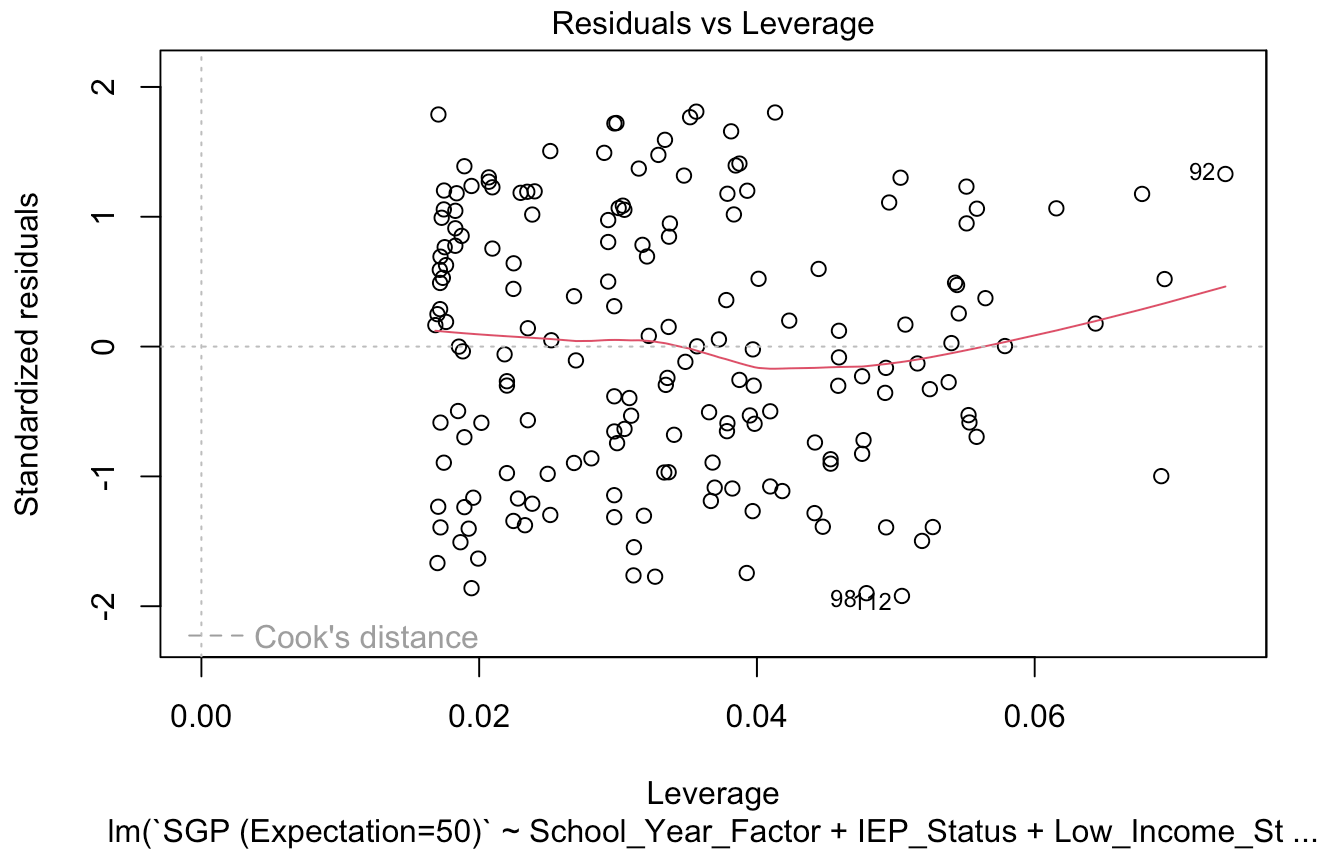
► Code

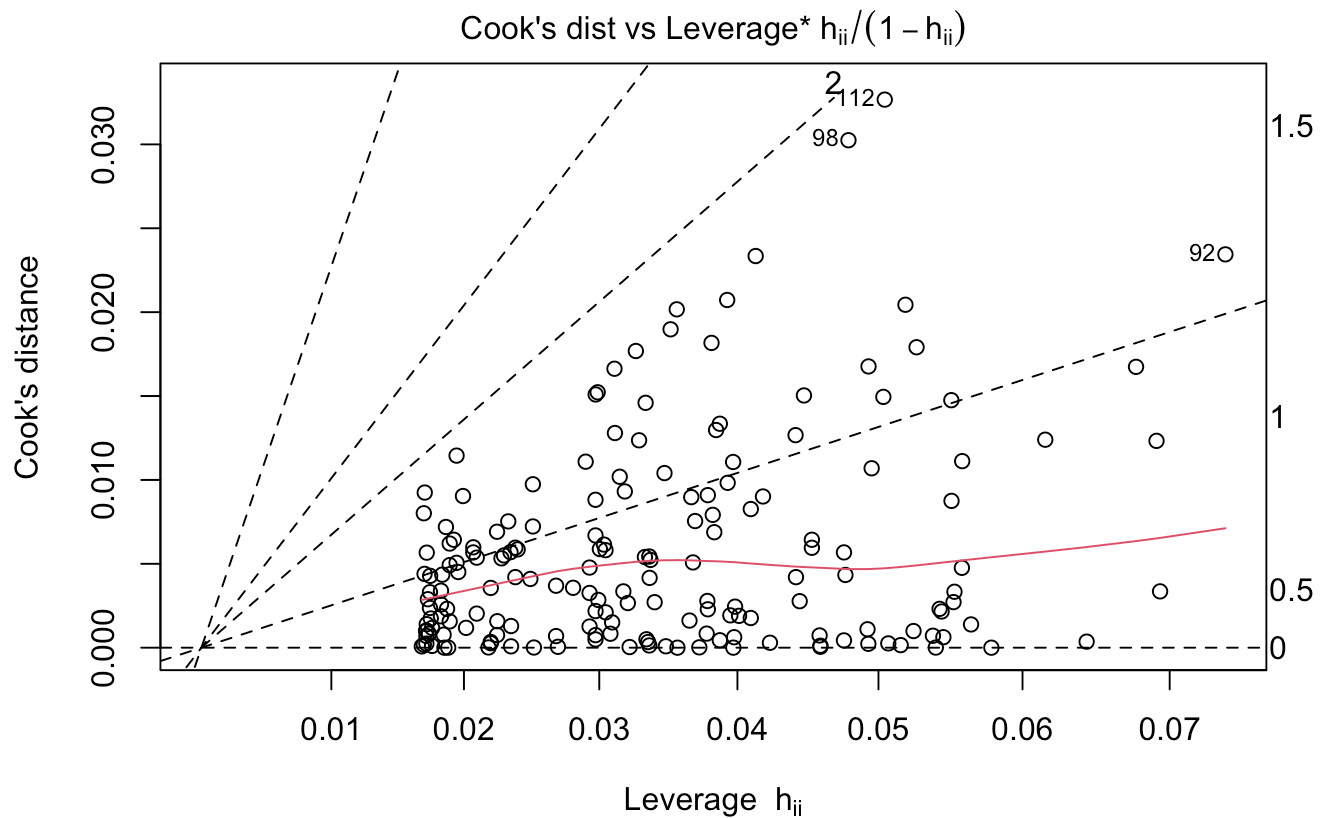












► Code

```
[1] 0.02234637
```

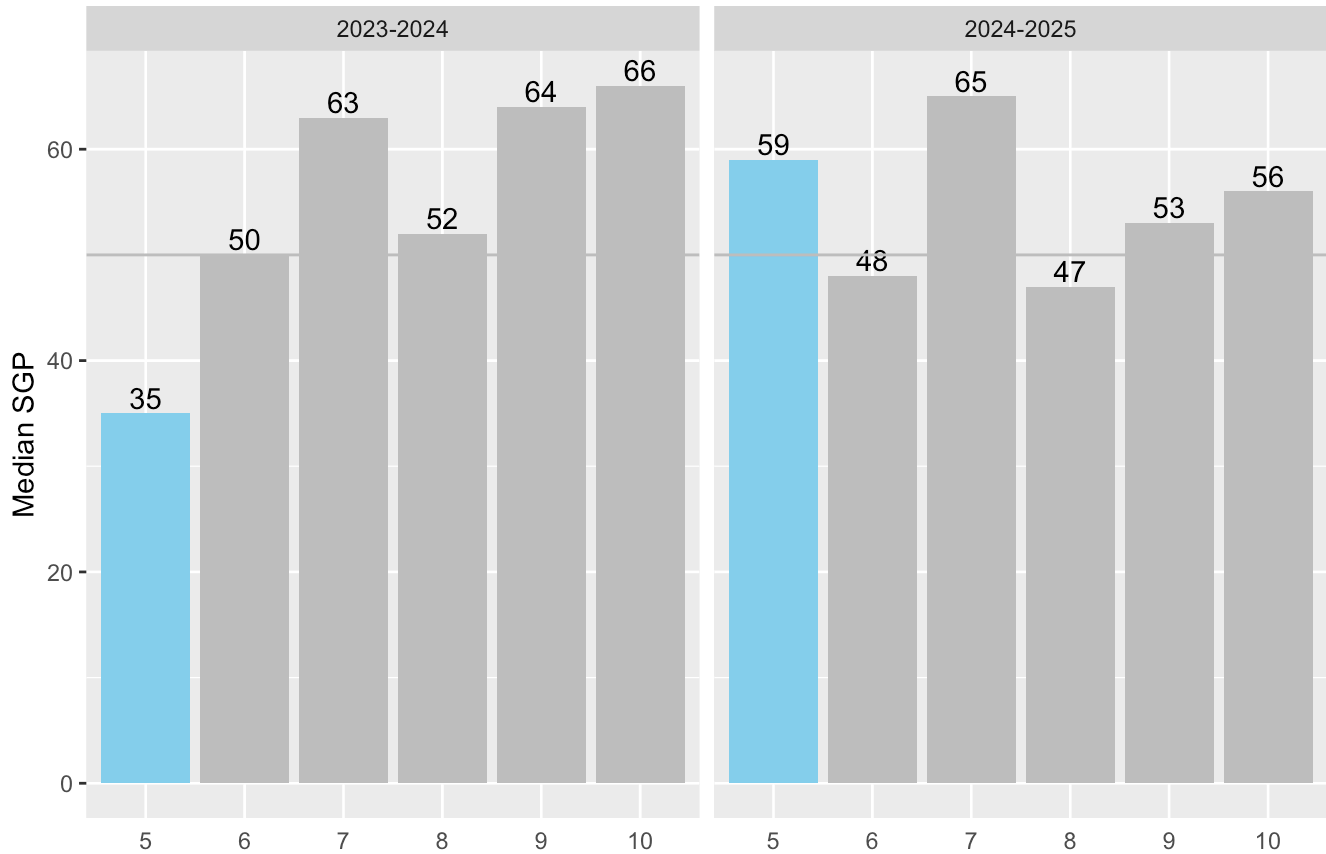
## Visual G5 Math Growth

► Code

► Code



Math Student Growth Percentile by Grade Level

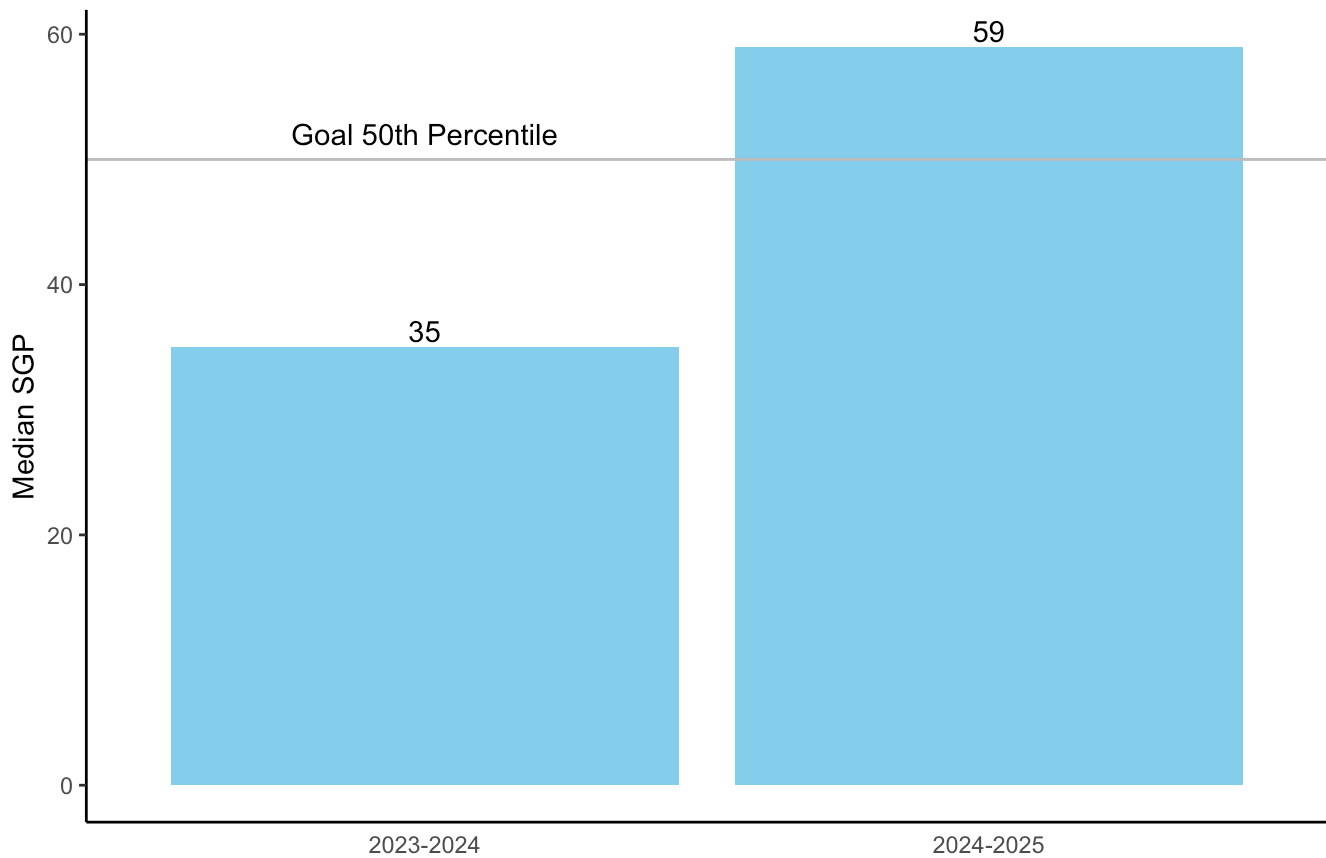


Source: Renaissance Star Math Screening

Rising Tide Math Growth by Grade Level, school year 2024-2025 and 2023-2024, Renaissance Star Math Screening

- Code
- Code

Improvement in Grade 5 Student Growth Percentile

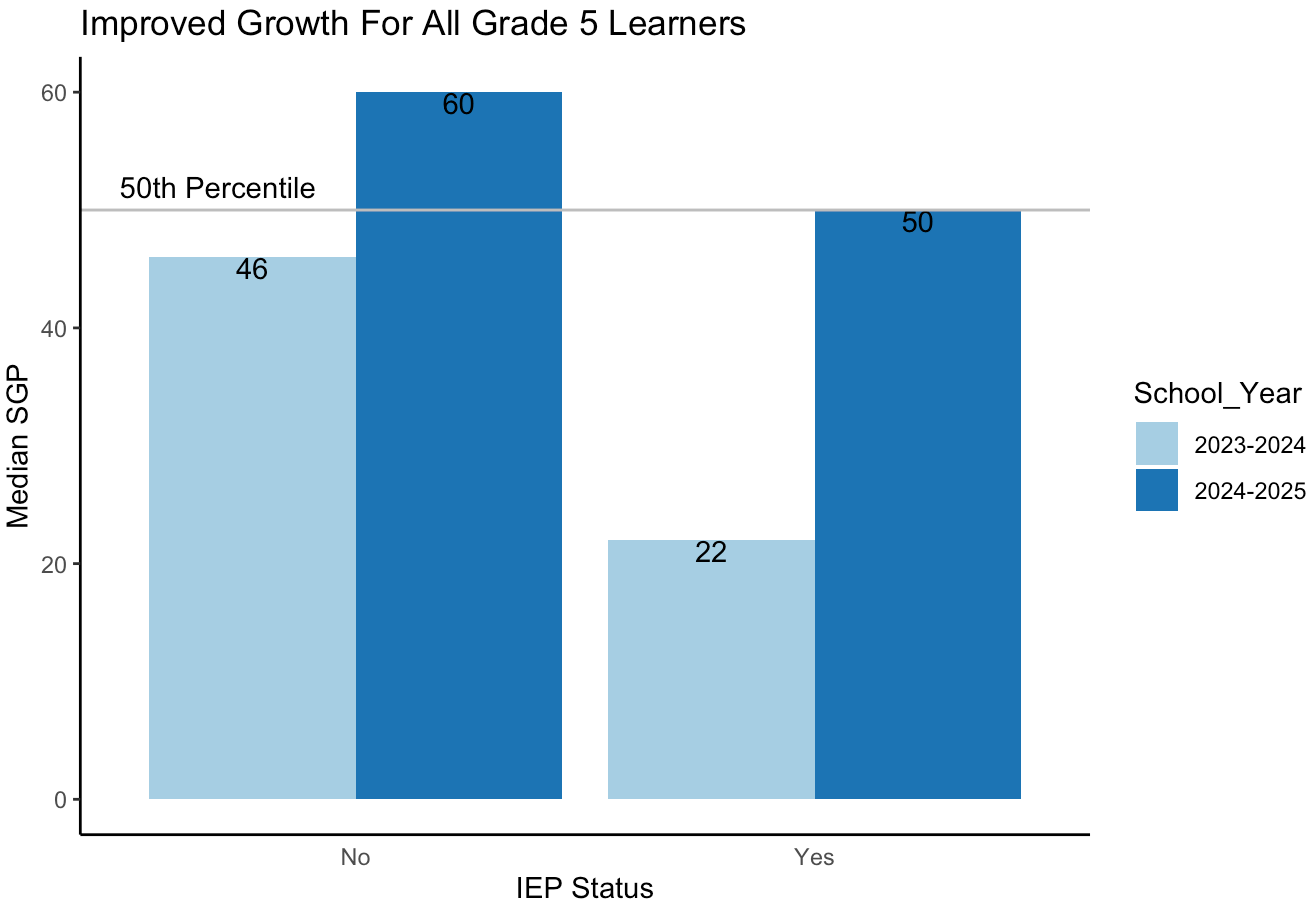


Source: Renaissance Star Math Screening

Rising Tide Grade 5 Math Growth by school year 2024-2025 and 2023-2024, Renaissance Star Math Screening

Visual G5 IEP Growth

- Code
- Code



Rising Tide Grade 5 Math Growth by disability status (IEP) and school year 2024-2025 and 2023-2024, Renaissance Star Math Screening

### RQ 3: ELA State Standards Mastery

Is there a relationship between the text type of a literacy standard (informational vs. literature) and Rising Tide High School students’ mastery of the standard?

##Visual: Distribution ELA Standards Mastery

► Code

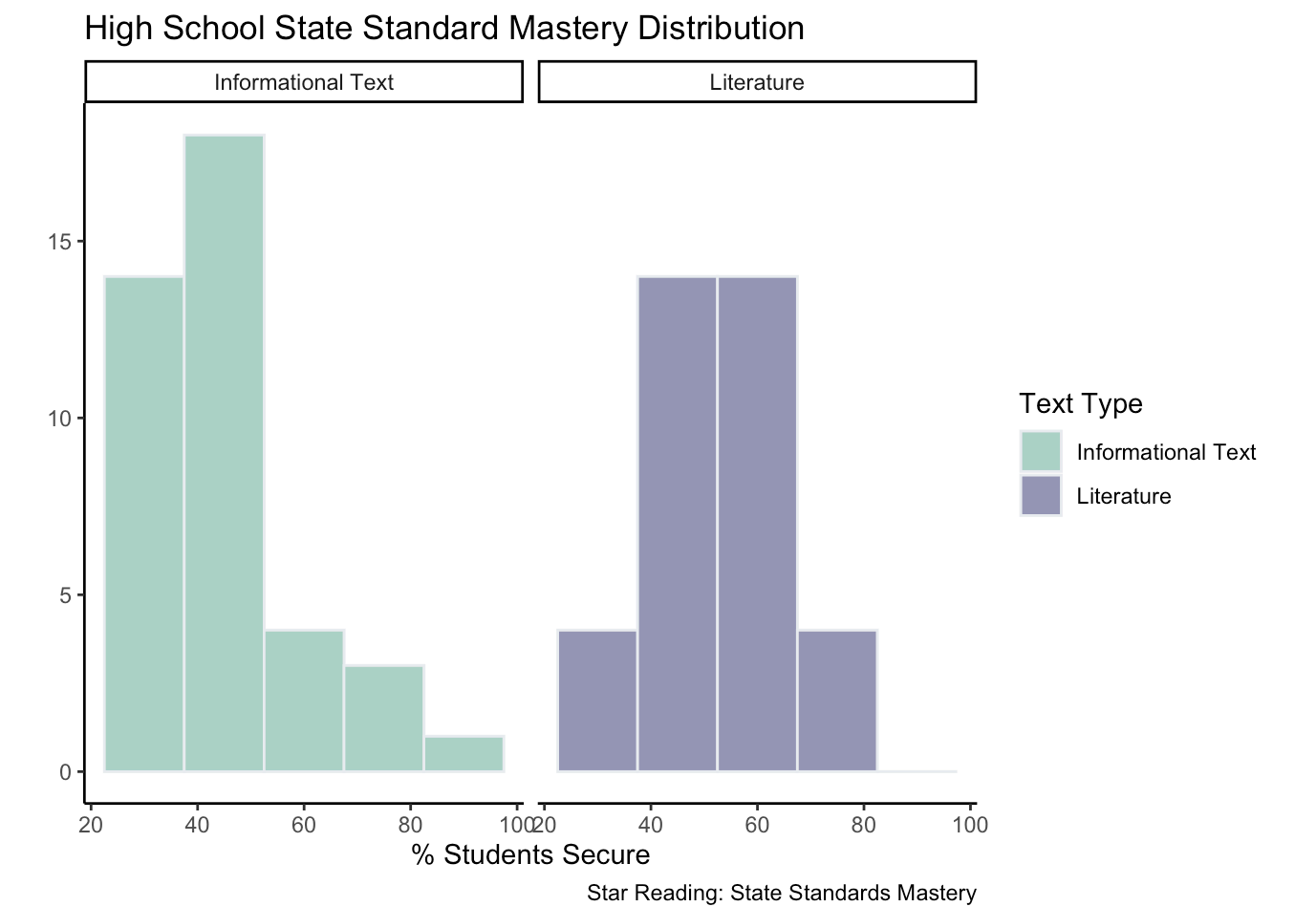
Year<chr>	Screening Window<fct>	Grade<fct>	Text Type<fct>	Reporting Category<fct>
2024-2025	Fall	9	Informational Text	Reading
2024-2025	Fall	9	Informational Text	Reading
2024-2025	Fall	9	Informational Text	Reading
2024-2025	Fall	9	Informational Text	Reading
2024-2025	Fall	9	Informational Text	Reading
2024-2025	Fall	9	Informational Text	Reading
2024-2025	Fall	9	Informational Text	Reading
2024-2025	Fall	9	Informational Text	Reading

Year	Screening Window	Grade	Text Type	Reporting Category
<chr>	<fct>	<fct>	<fct>	<fct>
2024-2025	Fall	9	Informational Text	Reading
2024-2025	Fall	9	Informational Text	Reading

1-10 of 114 rows | 1-5 of 13 columns

Previous123456...12Next

► Code



## Statistical Tests

► Code

```
Call:
lm(formula = `% Secure` ~ (`Text Type` + `Screening Window` +
  Domain), data = ELA_Standards)

Residuals:
    Min       1Q   Median       3Q      Max
-40.934  -8.667   2.097   8.740  34.360

Coefficients:
```

	Estimate	Std. Error	t value
(Intercept)	47.593	1.932	24.631
`Text Type`Literature	4.294	1.707	2.515
`Screening Window`Winter	6.658	1.698	3.920
DomainIntegration of Knowledge and Ideas	4.310	2.248	1.917
DomainKey Ideas and Details	2.458	2.137	1.150
DomainRange of Reading and Level of Text Complexity	-4.611	3.022	-1.526

Pr(&gt;|t|)

(Intercept)	< 2e-16 ***
`Text Type`Literature	0.012609 *
`Screening Window`Winter	0.000118 ***
DomainIntegration of Knowledge and Ideas	0.056484 .
DomainKey Ideas and Details	0.251263
DomainRange of Reading and Level of Text Complexity	0.128519

---

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 12.82 on 222 degrees of freedom

(309 observations deleted due to missingness)

Multiple R-squared: 0.121, Adjusted R-squared: 0.1012

F-statistic: 6.11 on 5 and 222 DF, p-value: 2.523e-05

► Code

Call:

```
lm(formula = `% Secure` ~ (`Text Type` + `Screening Window` +
  Domain), data = HS_ELA_Standards)
```

Residuals:

Min	1Q	Median	3Q	Max
-28.378	-8.155	-1.182	7.971	40.030

Coefficients:

	Estimate	Std. Error	t value
(Intercept)	39.314	3.175	12.382
`Text Type`Literature	8.840	2.806	3.151
`Screening Window`Winter	4.947	2.791	1.773
DomainIntegration of Knowledge and Ideas	7.276	3.694	1.970
DomainKey Ideas and Details	1.708	3.512	0.486
DomainRange of Reading and Level of Text Complexity	3.417	4.967	0.688

Pr(&gt;|t|)

(Intercept)	<2e-16 ***
`Text Type`Literature	0.0024 **
`Screening Window`Winter	0.0806 .
DomainIntegration of Knowledge and Ideas	0.0528 .
DomainKey Ideas and Details	0.6282
DomainRange of Reading and Level of Text Complexity	0.4938

---

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 12.17 on 70 degrees of freedom  
 (38 observations deleted due to missingness)  
 Multiple R-squared: 0.1886, Adjusted R-squared: 0.1307  
 F-statistic: 3.255 on 5 and 70 DF, p-value: 0.01063

► Code

[1] 603.2177

► Code

[1] 619.5328

► Code

=====	
	Dependent variable:
	-----
	`% Secure`
-----	
`Text Type`Literature	4.294** (1.707)
`Screening Window`Winter	6.658*** (1.698)
DomainIntegration of Knowledge and Ideas	4.310* (2.248)
DomainKey Ideas and Details	2.458 (2.137)
DomainRange of Reading and Level of Text Complexity	-4.611 (3.022)
Constant	47.593*** (1.932)
-----	
Observations	228
R2	0.121
Adjusted R2	0.101
Residual Std. Error	12.823 (df = 222)
F Statistic	6.110*** (df = 5; 222)
=====	
Note:	*p<0.1; **p<0.05; ***p<0.01

► Code

=====	
	Dependent variable:

---

`% Secure`

---

`Text Type` Literature	8.840*** (2.806)
`Screening Window` Winter	4.947* (2.791)
Domain Integration of Knowledge and Ideas	7.276* (3.694)
Domain Key Ideas and Details	1.708 (3.512)
Domain Range of Reading and Level of Text Complexity	3.417 (4.967)
Constant	39.314*** (3.175)

---

Observations	76
R <sup>2</sup>	0.189
Adjusted R <sup>2</sup>	0.131
Residual Std. Error	12.166 (df = 70)
F Statistic	3.255** (df = 5; 70)

---

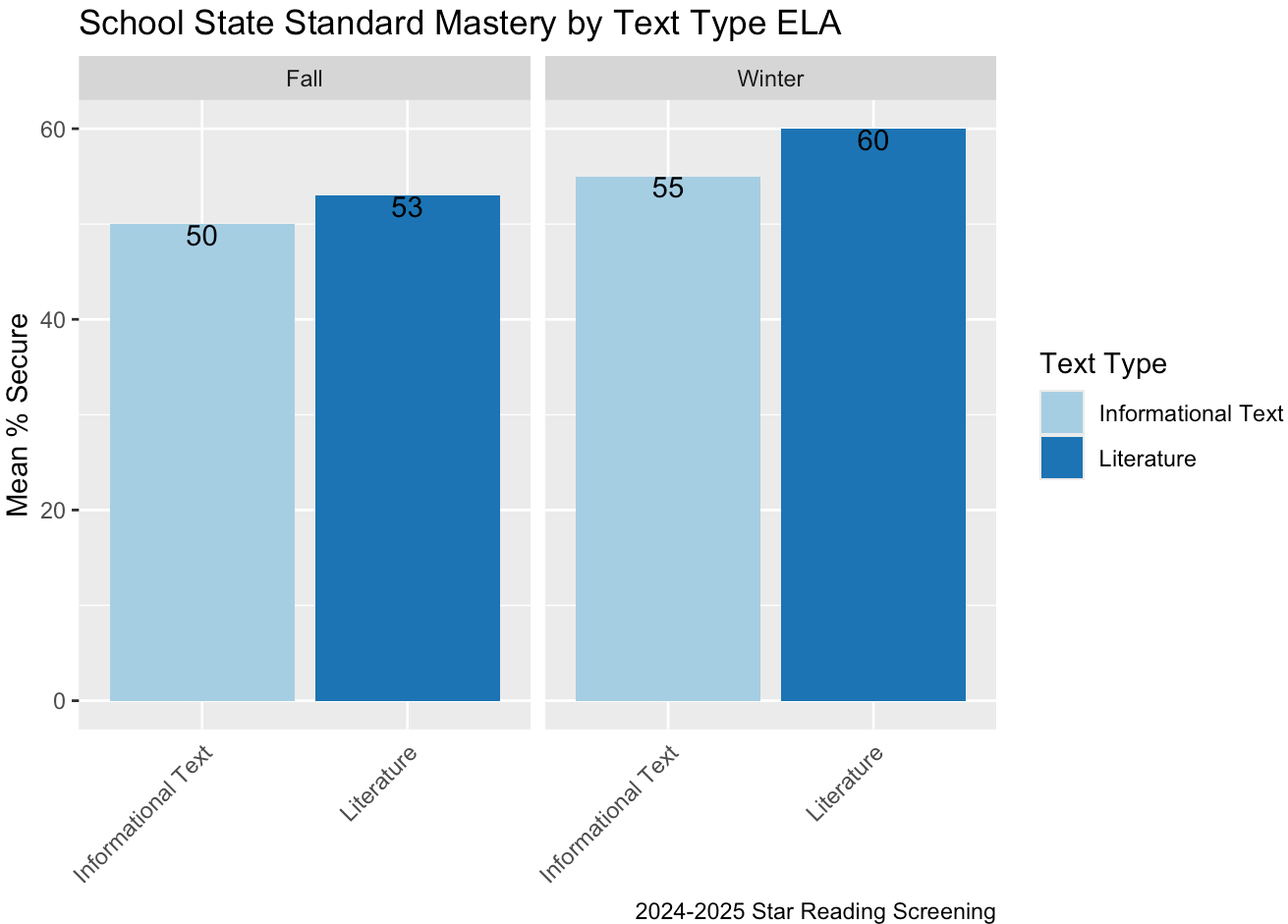
Note: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

## Visual Mastery by Text Type

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### SchoolWide

► Code

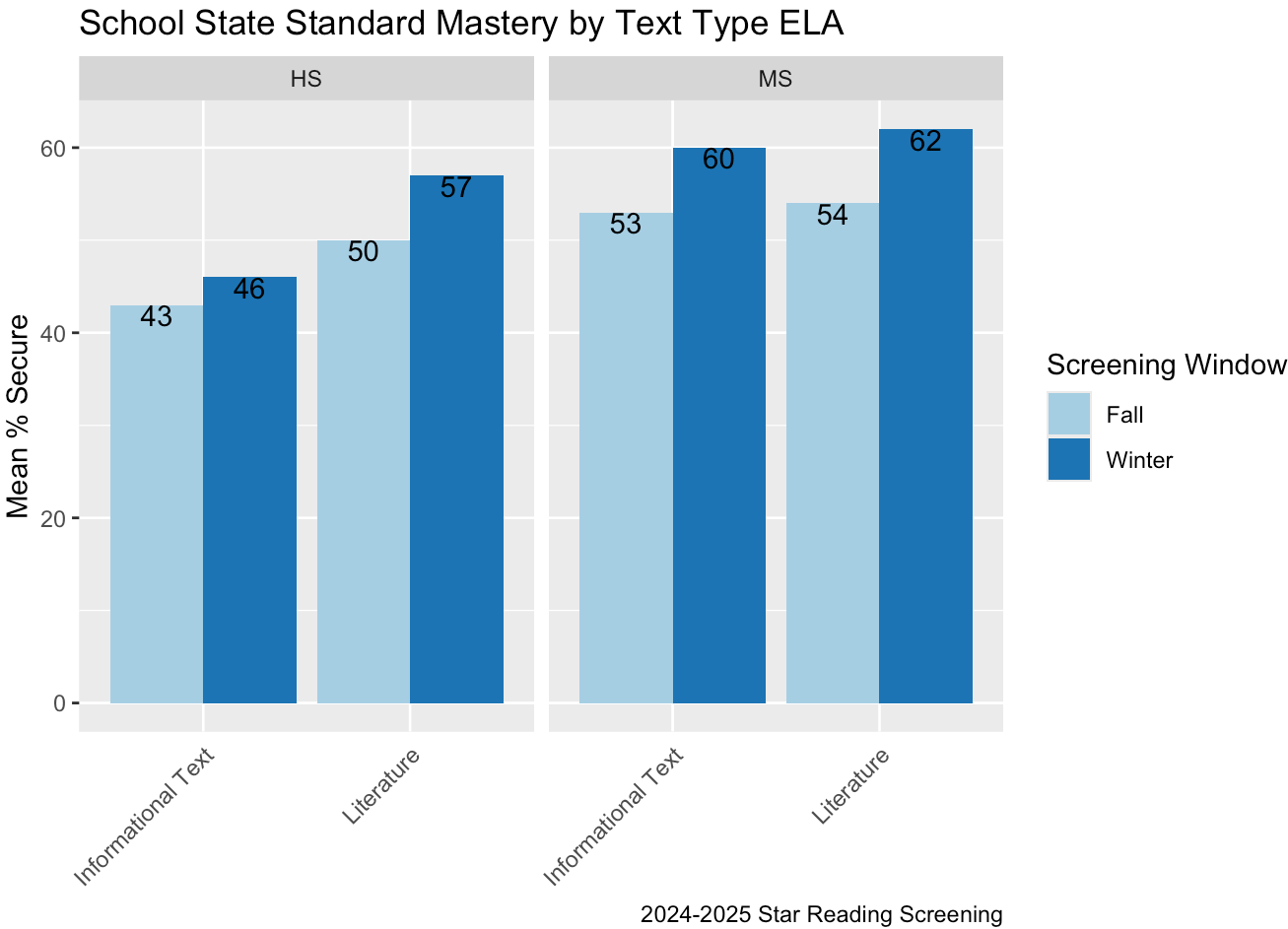


► Code

**MS vs. HS**

► Code

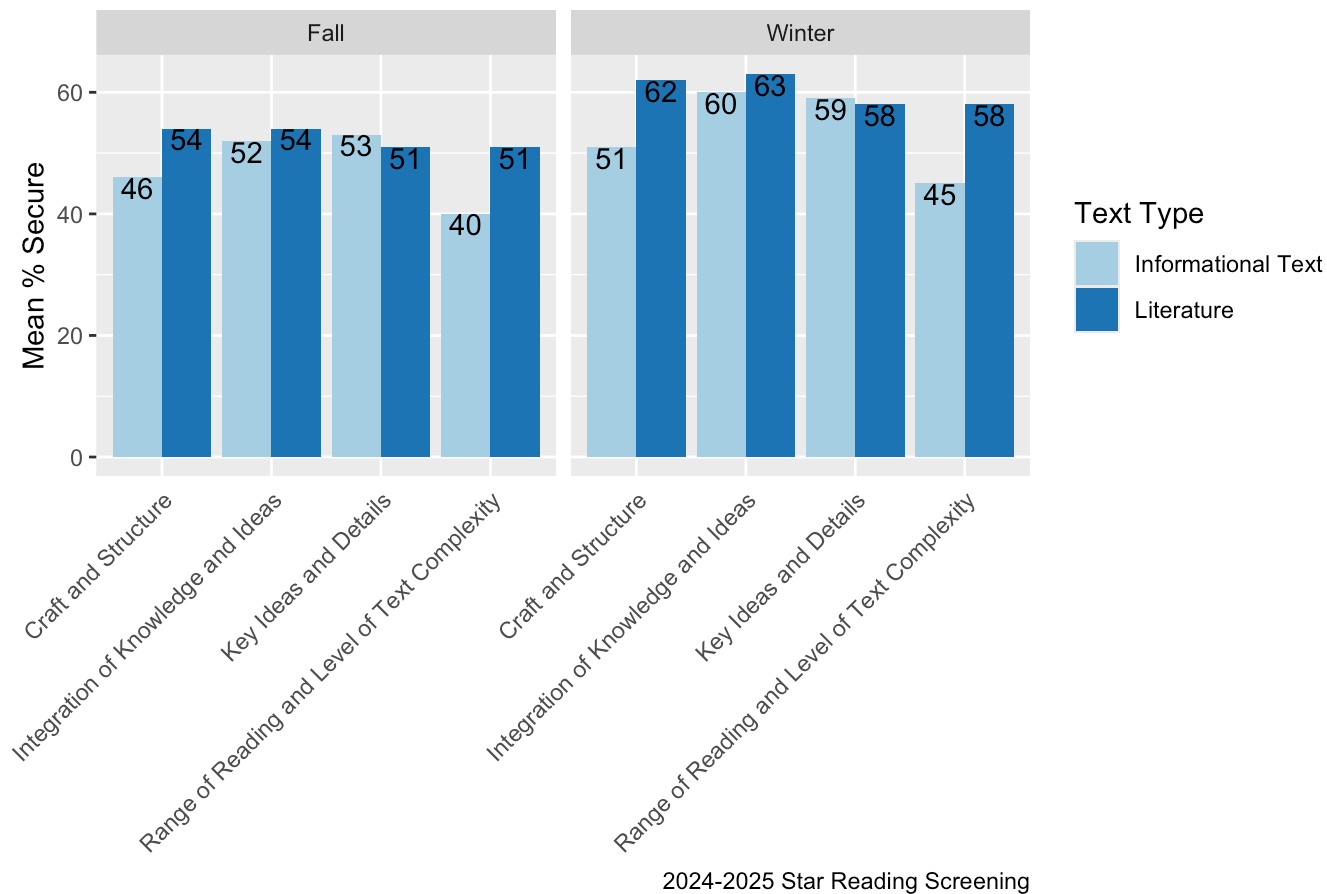




By Domain Cluster

► Code

School State Standard Mastery by Text Type ELA



Visual: HS Informational Text vs. Literature Comparison

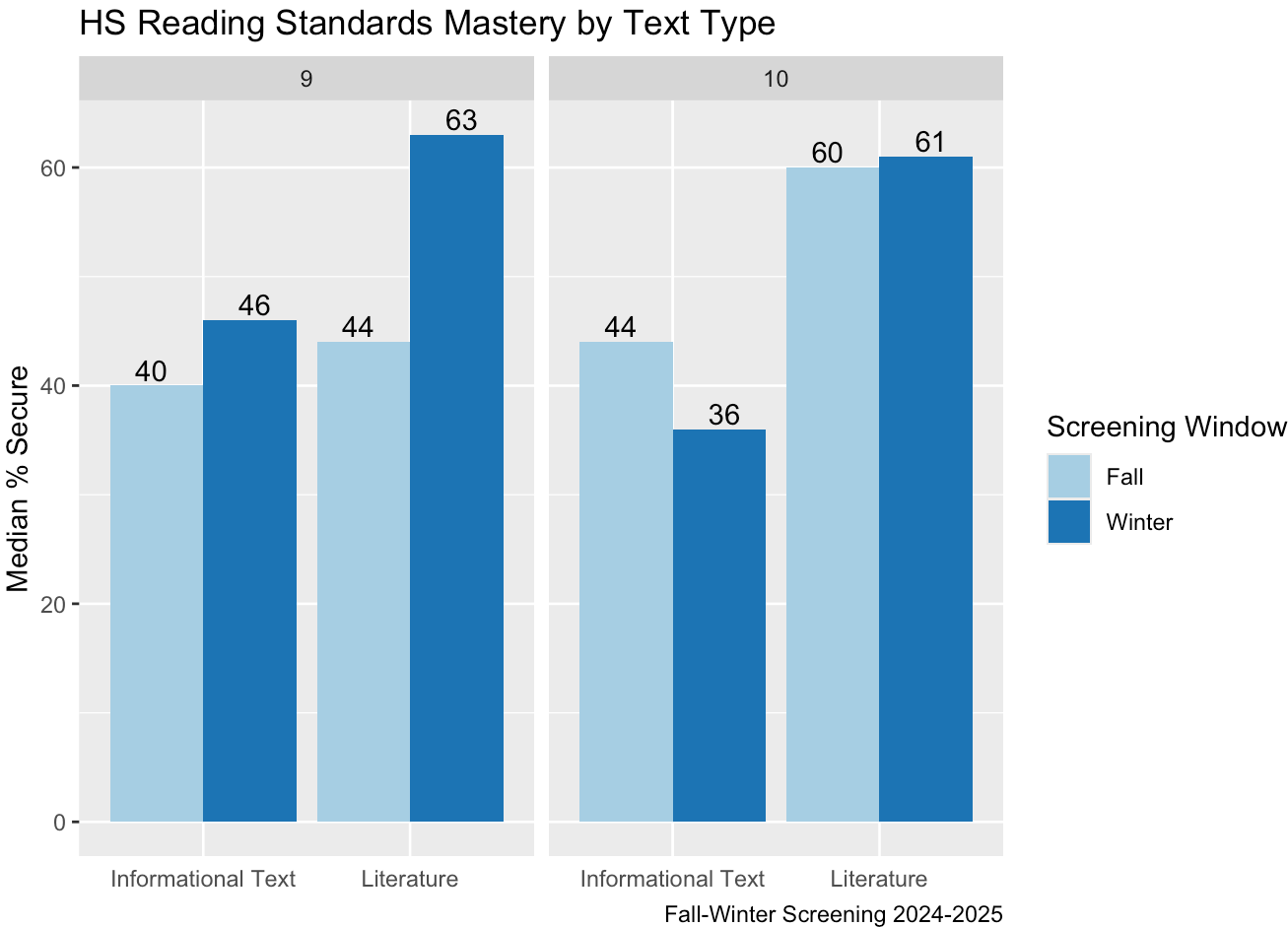
► Code

Year	Screening Window	Grade	Text Type	Reporting Category
<chr>	<fct>	<fct>	<fct>	<fct>
2024-2025	Fall	5	NA	Foundational Skills
2024-2025	Fall	5	NA	Foundational Skills
2024-2025	Fall	5	NA	Foundational Skills
2024-2025	Fall	5	NA	Foundational Skills
2024-2025	Fall	5	NA	Foundational Skills
2024-2025	Fall	5	Informational Text	Reading
2024-2025	Fall	5	Informational Text	Reading
2024-2025	Fall	5	Informational Text	Reading
2024-2025	Fall	5	Informational Text	Reading

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► Code



## Visual: MS Informational Text vs. Literature Mastery: Fall-Winter

► Code

MS Reading Standards Mastery by Text Type

