

# Northwestern University Center for Talent Development

## Measuring Growth for Advanced Learners

**Melissa Hinshaw**  
Assessment Director  
Center for Talent Development



At Center for Talent Development (CTD), we believe giftedness is not a trait, like your eye color or fingerprint, but rather a process—a journey—that involves developing potential into achievement.

**DR. PAULA OLSZEWSKI-KUBILIUS**  
DIRECTOR, CENTER FOR TALENT DEVELOPMENT

## Center for Talent Development Mission

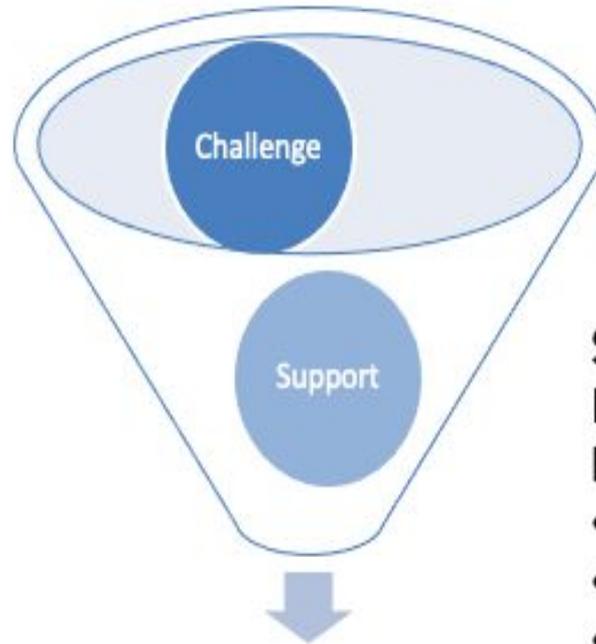
CTD exists to help young people with exceptional academic potential and demonstrated talent reach their full potential.

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# Center for Talent Development

## Challenge:

- Advanced Enrichment
- Acceleration



Talent Development

## Support:

- Psychosocial Skill Development
- Self-confidence
  - Mindsets
  - Resilience
  - Teachability

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# Outcomes for Today's Session

1. Investigate Growth Data Sets
2. Share Best Practices in Assessment of Advanced Learners
3. Understand Nuances of Growth

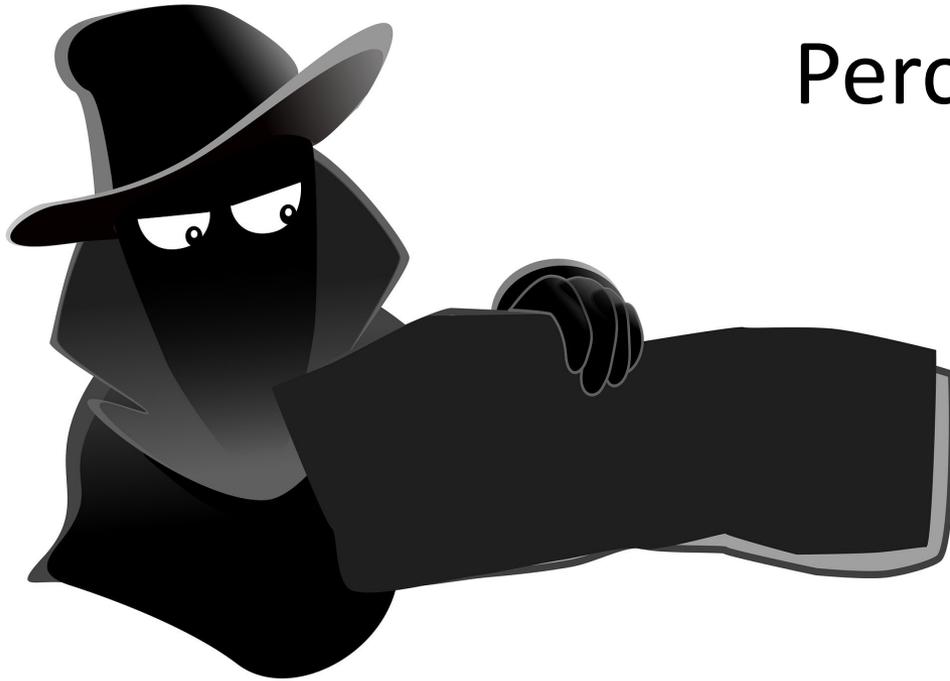
# Outcomes for Today's Session



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# Assessment

## Perception vs Reality



# Who are Advanced Learners?

- **High Achievers**
- **Gifted**
- **Talented**
- **Honors**
- **AP**

**\*Top 5-10 percent of  
your population!**



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# Who are Advanced Learners “Gifted” ... According to Texas

The state's goal for G/T students is to ensure that students who participate in G/T services demonstrate self-directed learning, thinking, research, and communication skills. G/T students develop innovative products and sophisticated performances that reflect individuality and creativity and are targeted to an audience outside the classroom.

A gifted/talented student is a child or youth who performs at or shows the potential for performing at a remarkably high level of accomplishment when compared to others of the same age, experience, or environment and who

- exhibits high-performance capability in an intellectual, creative, or artistic area;
- possesses an unusual capacity for leadership; or
- excels in a specific academic field. (Texas Education Code [§29.121](#))

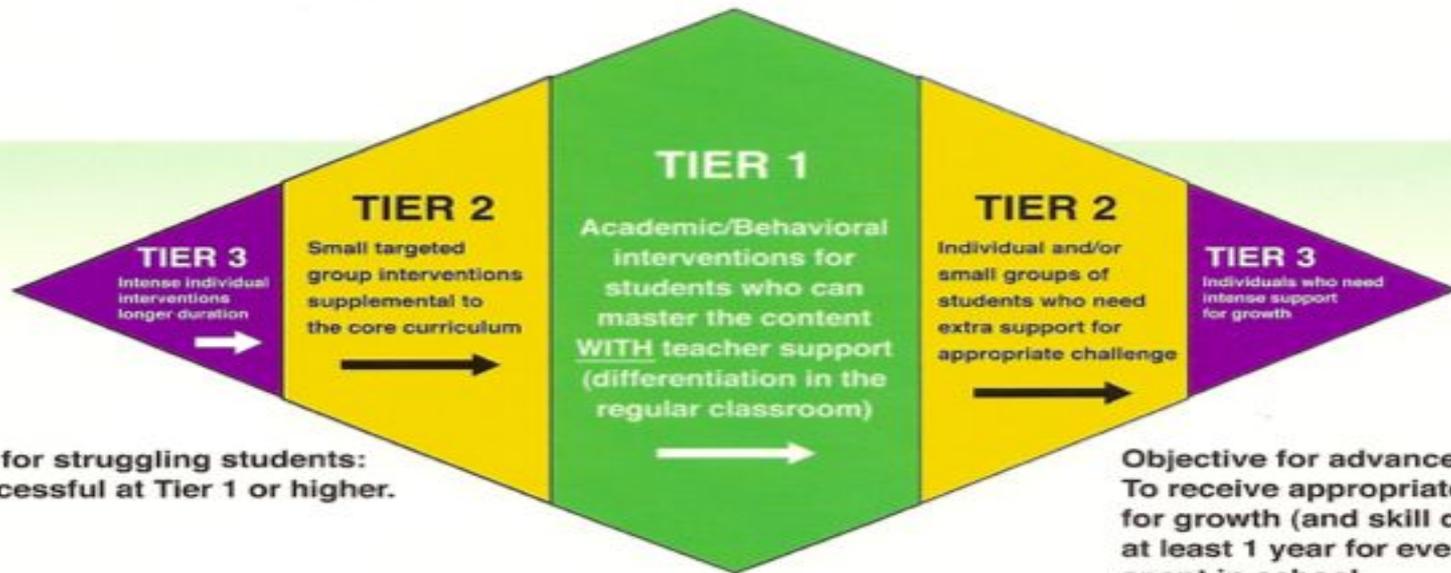
# Who are Advanced Learners?

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Specialist

General Education

Specialist



Objective for struggling students:  
To be successful at Tier 1 or higher.

Objective for advanced students:  
To receive appropriate challenge for growth (and skill development) at least 1 year for every year spent in school.

Build a continuum of services within MTSS/Rtl model.

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# Serving Advanced Learners

Do you have programs specifically for  
Advanced Learners?



If so,

- How do you identify students?
- How do you serve them?  
(Levels of Service)

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# Serving Advanced Learners

Are students aligned to services?

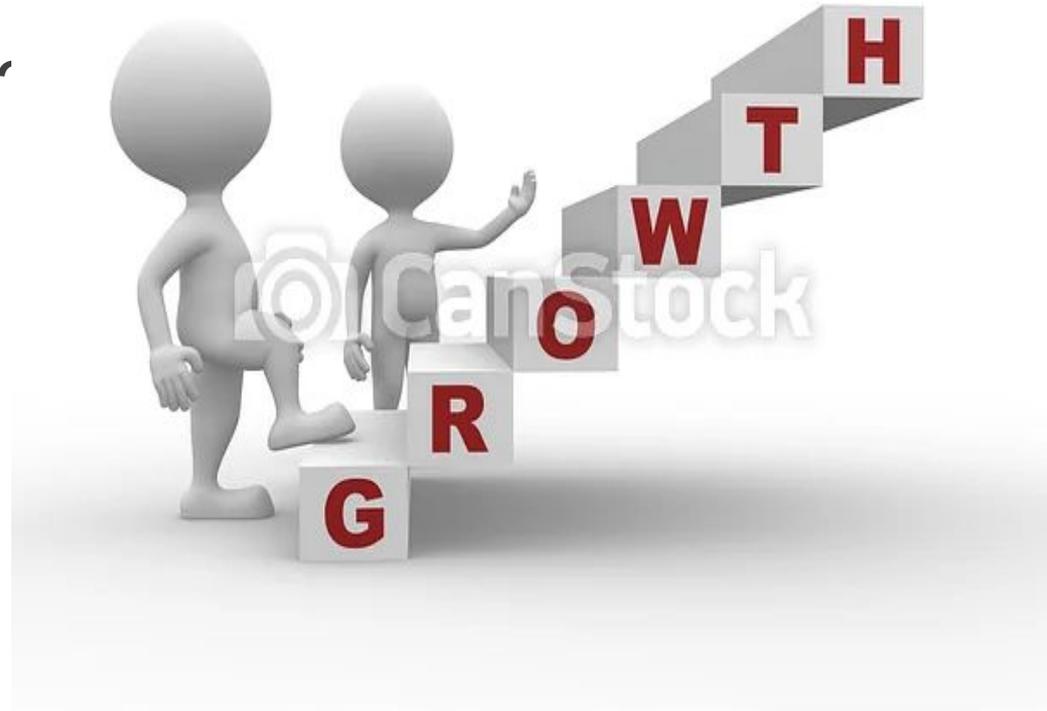


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# Serving Advanced Learners

How do you determine success of programming?

Are advanced learners growing? How do you know?



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# Achievement VS Growth

## Achievement:

- What a student knows and demonstrates
- How a student performs on an assessment (point in time)

## Growth:

- Demonstrated gains in knowledge and skill
- Movement over time on an assessment scale

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# Defining Growth

How does your state “define” growth?

How does your school system “define” growth?

How does your system **measure** growth?

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# Defining Growth

Continuous “high”  
achievement is not a  
substitute for understanding  
growth and effect of  
programming!

# Investigating Growth

## NWEA Math: Average Student Growth

Current Grade	Fall Mean	Fall SD	to Winter Mean	to Winter SD	to Spring Mean	to Spring SD	to Next Fall Mean	to Next Fall SD
K	139.56	12.45	10.57	5.15	17.54	6.63	21.95	7.80
1	160.05	12.43	10.13	5.22	16.35	6.81	15.19	7.30
2	175.04	12.98	9.03	5.11	14.38	6.54	13.30	6.51
3	188.48	13.45	7.75	4.99	12.60	6.26	11.42	6.08
4	199.55	14.40	6.50	4.98	10.96	6.24	9.66	5.90
5	209.13	15.19	5.56	5.10	9.61	6.53	5.47	6.20
6	214.75	16.12	4.81	5.04	8.13	6.38	7.24	6.29
7	220.21	17.41	3.83	4.96	6.52	6.18	6.01	5.94
8	224.92	18.94	3.20	5.27	5.38	6.93	3.73	6.82
9	226.43	19.83	2.24	5.48	3.60	7.41	2.82	7.18
10	229.07	20.23	2.14	5.46	3.35	7.37	2.54	6.90
11	231.72	20.61	1.77	5.92	2.52	8.37	1.03	7.60
12	233.02	21.60	0.30	6.09	1.18	8.75		

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# Investigating Growth

## NWEA Math: Average Cohort Growth

Current Grade	Fall		to Winter		to Spring		to Next Fall	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
K	139.56	5.43	10.57	1.30	17.54	2.38	21.95	3.06
1	159.95	5.85	10.13	1.44	16.35	2.52	15.19	2.28
2	175.04	5.79	9.03	1.30	14.38	2.27	13.30	1.74
3	188.48	5.96	7.75	1.21	12.60	2.12	11.42	1.55
4	199.55	6.67	6.50	1.16	10.96	2.02	9.66	1.40
5	209.13	7.33	5.56	1.39	9.61	2.42	5.47	1.84
6	214.75	7.80	4.81	1.28	8.13	2.24	7.24	1.78
7	220.21	8.63	3.83	1.19	6.52	2.08	6.01	1.69
8	224.92	9.70	3.20	1.38	5.38	2.42	3.73	2.04
9	226.43	9.97	2.24	1.10	3.60	1.93	2.82	1.71
10	229.07	10.24	2.14	1.16	3.35	2.02	2.54	1.72
11	231.72	10.44	1.77	1.15	2.52	2.01	1.03	1.88
12	233.02	11.14	0.30	1.23	1.18	2.15		

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# Investigating Growth

## NWEA Math-Kindergarten-Conditional Growth Distributions

Table D.1.1: Mathematics Grade K Conditional Growth Distributions

Start %ile	RIT Fall	Student Growth			RIT Fall	School Growth		
		Fall	Winter	Spring		N Fall	Fall	Winter
	<i>SD</i>	4.91	6.26	7.36	<i>SD</i>	1.28	2.24	2.88
10	123.61	12.56	20.34	25.27	132.60	11.15	18.56	23.25
15	126.66	12.18	19.80	24.64	133.94	11.04	18.36	23.00
20	129.09	11.88	19.38	24.13	134.99	10.95	18.21	22.81
25	131.17	11.62	19.01	23.70	135.90	10.87	18.08	22.64
30	133.04	11.38	18.69	23.31	136.72	10.81	17.96	22.48
35	134.77	11.17	18.38	22.95	137.47	10.74	17.85	22.34
40	136.41	10.96	18.10	22.61	138.19	10.68	17.74	22.21
45	138.00	10.76	17.82	22.27	138.88	10.63	17.64	22.08
50	139.56	10.57	17.54	21.95	139.56	10.57	17.54	21.95
55	141.13	10.37	17.27	21.62	140.24	10.51	17.44	21.82
60	142.72	10.18	16.99	21.29	140.94	10.45	17.34	21.69
65	144.36	9.97	16.70	20.95	141.65	10.40	17.24	21.56
70	146.09	9.75	16.40	20.59	142.41	10.33	17.13	21.41
75	147.96	9.52	16.07	20.20	143.22	10.26	17.01	21.26
80	150.04	9.26	15.71	19.77	144.13	10.19	16.88	21.09
85	152.46	8.96	15.29	19.26	145.19	10.10	16.72	20.89
90	155.51	8.58	14.75	18.62	146.52	9.99	16.53	20.64

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# Investigating Growth

## NWEA Reading-Grade 1-Conditional Growth Distributions

Start %ile	RIT Last Spring	Student Growth				RIT Last Spring	School Growth			
		Fall	Winter	Spring	N Fall		Fall	Winter	Spring	N Fall
	<i>SD</i>	<i>8.10</i>		<i>7.93</i>		<i>SD</i>	<i>3.06</i>		<i>2.67</i>	
10	135.65	7.81		20.67		146.04	4.16		17.87	
15	139.15	6.69		20.05		147.56	3.74		17.78	
20	141.94	5.80		19.55		148.77	3.40		17.71	
25	144.33	5.03		19.13		149.81	3.11		17.65	
30	146.48	4.35		18.75		150.74	2.85		17.60	
35	148.47	3.71		18.39		151.60	2.61		17.55	
40	150.36	3.10		18.06		152.42	2.38		17.50	
45	152.19	2.52		17.73		153.21	2.16		17.46	
50	153.99	1.94		17.41		153.99	1.94		17.41	
55	155.79	1.37		17.09		154.77	1.73		17.37	
60	157.61	0.78		16.76		155.56	1.50		17.32	
65	159.50	0.18		16.43		156.38	1.28		17.27	
70	161.49	-0.46		16.07		157.24	1.04		17.22	
75	163.64	-1.15		15.69		158.17	0.78		17.17	
80	166.03	-1.91		15.27		159.21	0.49		17.11	
85	168.82	-2.81		14.77		160.42	0.15		17.04	
90	172.33	-3.93		14.15		161.94	-0.27		16.95	

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# Investigating Growth

## NWEA Reading-Grade 7-Conditional Growth Distributions

Start %ile	RIT Fall	Student Growth			RIT Fall	School Growth			
		Fall	Winter	Spring		N Fall	Fall	Winter	Spring
	<i>SD</i>		5.46	6.95	6.45	<i>SD</i>	1.00	1.75	1.36
10	193.04		4.48	6.32	5.56	204.89	3.12	4.57	4.57
15	197.09		4.18	5.91	5.28	206.67	3.07	4.49	4.48
20	200.31		3.93	5.58	5.06	208.09	3.04	4.43	4.41
25	203.07		3.73	5.30	4.87	209.30	3.01	4.37	4.35
30	205.54		3.54	5.04	4.70	210.39	2.98	4.33	4.30
35	207.84		3.37	4.81	4.55	211.40	2.96	4.28	4.25
40	210.02		3.20	4.59	4.40	212.36	2.93	4.24	4.20
45	212.13		3.04	4.37	4.25	213.29	2.91	4.20	4.15
50	214.20		2.89	4.16	4.11	214.20	2.89	4.16	4.11
55	216.28		2.73	3.95	3.97	215.12	2.86	4.12	4.06
60	218.39		2.57	3.73	3.82	216.04	2.84	4.08	4.02
65	220.57		2.41	3.51	3.67	217.00	2.81	4.04	3.97
70	222.86		2.23	3.27	3.52	218.01	2.79	3.99	3.92
75	225.34		2.05	3.02	3.35	219.10	2.76	3.94	3.87
80	228.10		1.84	2.74	3.16	220.32	2.73	3.89	3.81
85	231.32		1.59	2.41	2.94	221.73	2.70	3.83	3.74
90	235.37		1.29	2.00	2.66	223.52	2.65	3.75	3.65



# What are Growth Projections?

- Grade
- Starting Score
- Time (weeks of instruction)

Interim Assessment  
Growth Projections  
ARE NOT  
intended to be growth goals!

Descriptive Statistics  
Vs.  
Prescriptive Statistics

# Achievement/Growth Example

	Score	Percentile	Growth
Test 1	210	94 <sup>th</sup>	--
Test 2	216	90 <sup>th</sup>	6 pts
Test 3	218	86 <sup>th</sup>	2 pts
Test 4	221	84 <sup>th</sup>	3 pts

Growth in general is positive. However, in a case like this, when students lose “status”, or percentile points, over time it is an indicator of “under-growth”, or not keeping pace with other students who are growing at an average or better rate.

# Consider this.....

We know Advanced Learners have the ability to:

- assimilate quickly
- learn quickly
- move through content quickly
- delve deeper
- accelerate and telescope

# Thinking Beyond Proficiency

## Illinois IAR Exam Limitations:

- What does IAR tell us about growth of advanced students?
- What does IAR tell us about learning readiness of advanced students?

# Thinking Beyond Accountability

**Acceleration:** Leveled-up but not assessed-up

\*Don't want to lose the high achievers in my grade level data set!

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# Thinking Beyond Norms

## Limits of the 99th Percentile

NWEA Fall Math Achievement Percentiles

3rd grader's math score is 244

3 4 5 6 7

86	153	173	189	203	215	226	232	239	245	248	251	254	256	86
87	154	174	190	204	216	226	233	240	246	249	252	255	257	87
88	154	175	190	204	216	227	234	241	247	250	253	256	258	88
89	155	175	191	205	217	228	235	242	248	251	254	257	260	89
90	156	176	192	206	218	229	235	243	249	252	255	258	261	90
91	156	177	192	207	219	229	236	244	250	253	256	259	262	91
92	157	178	193	207	220	230	237	245	252	254	257	261	263	92
93	158	178	194	208	221	232	239	246	253	256	259	262	265	93
94	159	179	195	209	222	233	240	247	254	257	261	264	267	94
95	160	181	196	211	223	234	241	249	256	259	262	266	269	95
96	161	182	198	212	225	236	243	251	258	261	264	268	271	96
97	163	183	199	214	227	238	245	253	261	264	267	270	274	97
98	165	186	202	216	229	240	248	256	264	267	271	274	277	98
99	169	189	205	220	233	244	252	261	269	273	276	280	283	99

# Limitations of Grade-level Assessments

- **High rate of measurement error**
  - too few items difficult enough to adequately measure skills and content knowledge
- **Ceiling effects**
  - student is scoring at the top levels of the test
- **Regression toward the mean**
  - If students are scoring at the top levels of the test, the instrument cannot measure meaningful growth over time scores can stagnate or drop

# Limitations of Grade-Level Test Scores

- **Useful for** knowing whether students are mastering grade-level standards and how well the general population of one school or district is doing relative to the general populations of other schools or districts
- **They're not very useful in determining:**
  - How well gifted students are doing *relative to their potential*
  - How well gifted students are doing *relative to other gifted students*
  - Whether or not already higher achieving gifted students are continuing to grow.

# Above-grade-level Assessment (Talent Search)

- Using a test designed for older students with younger students
  - At least two years off level
- Minimizes measurement error
  - Items are difficult enough to adequately measure skills and content knowledge
  - Provides insight about readiness for acceleration
- Mitigates ceiling effects and minimizes regression toward the mean
  - Can show meaningful growth over time
  - Re-norms comparison group and establishes benchmarks

# Benefits of Off-Level/Above-Grade Testing

- Informs College and Career Readiness early
- Creates a talent pipeline
- Early exposure and practice on high-level testing
- Allows for differentiated assessment and instruction
- Can measure growth/effect of programming



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# Assessment Indicators

## Above-grade Assessment Practice

- These four students are all in the same advanced service program in 8th grade ELA
- They all met the base-criteria to be placed in the program
- They all scored proficient or better on their 7th Grade Proficiency exam
- They are all historically in the 90<sup>th</sup> percentile or above on interim assessments.

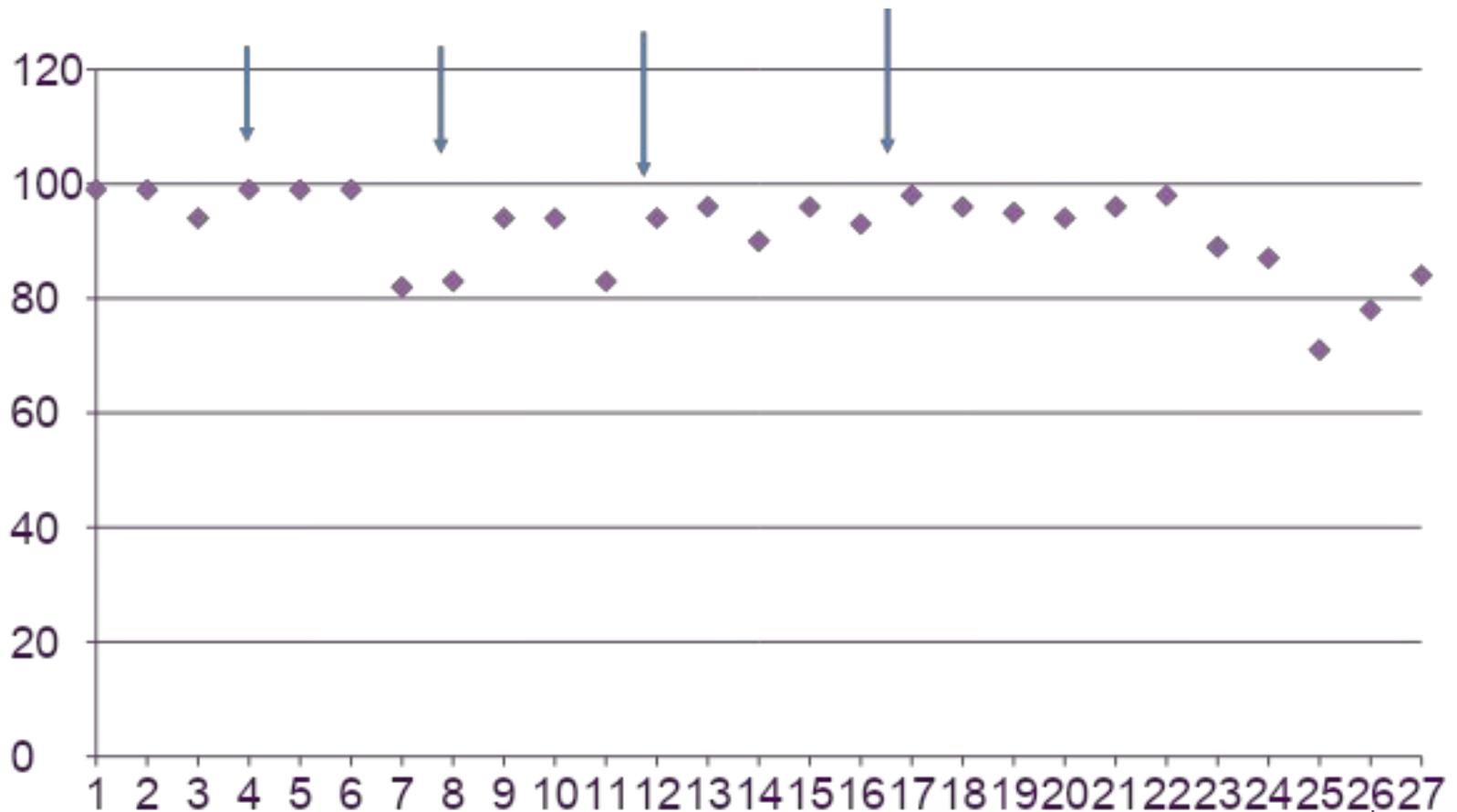


Are they all ready for the **SAME** instruction and content?

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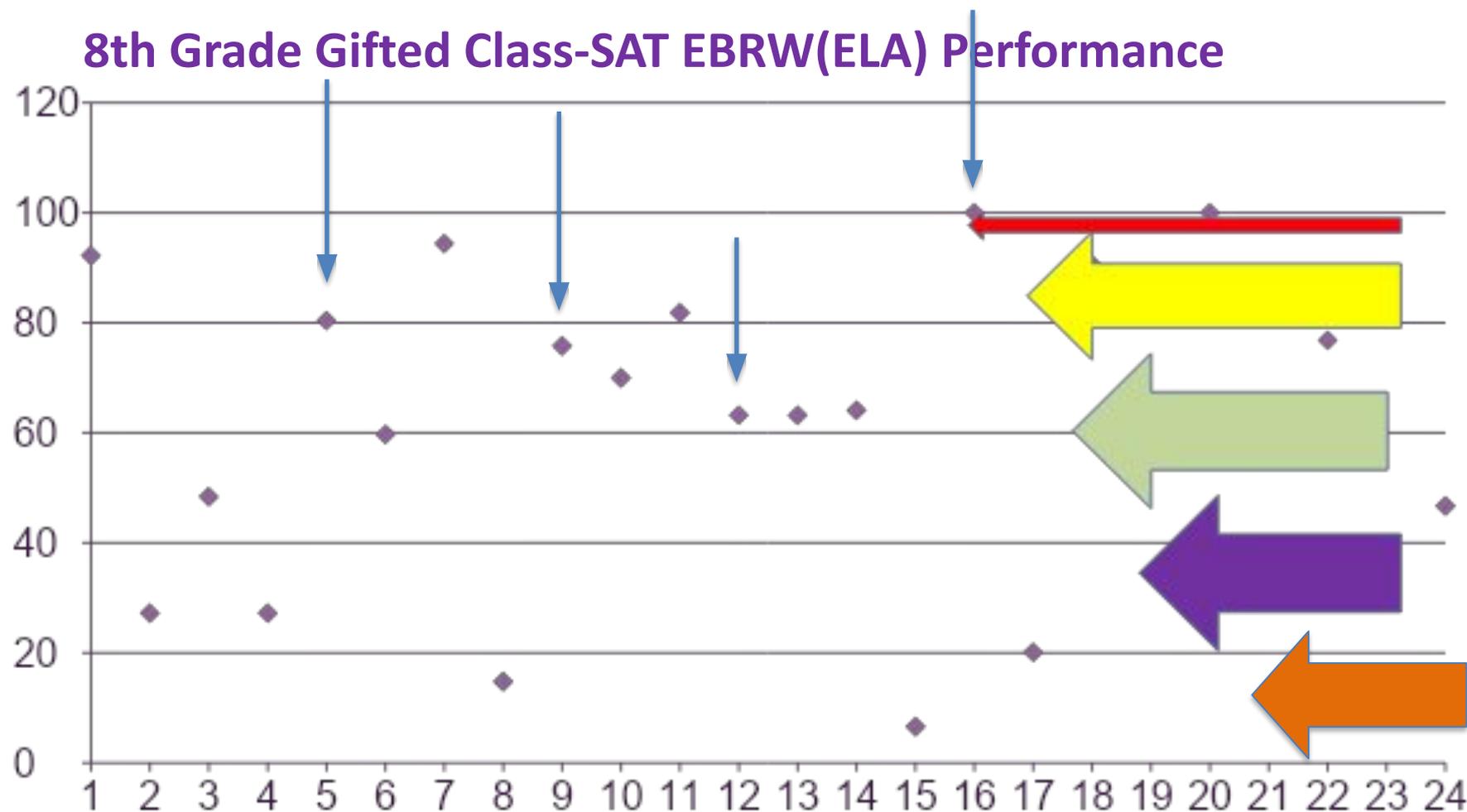
# On-Grade Assessment Indicators

## 8th Grade Gifted/Honors Class-Interim Assessment ELA Performance



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# Above-Grade Assessment Indicators



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# Testing Again/Measuring Growth

\*In 2019, the Center for Talent Development led a research study regarding students participating in Talent Search more than once as an indicator of growth.

Our team presented the study, its data and findings at the National Association of Gifted Conference in November of 2019.

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# Findings said.....

## ACT performance

1. The **no. of times** ( $\leq 3$  times) students took ACT tests were consistently, positively, and significantly associated with ACT scores overall.
2. Students' **ACT scores increased significantly** by each grade they moved up, from 6<sup>th</sup> to 9<sup>th</sup> grade.
3. Overall, females scored significantly lower than male students on ACT scores.
4. Economically disadvantaged students scored significantly lower on ACT scores overall than their more privileged peers.

## SAT performance

1. Students' SAT scores were largely increased by the **no. of times** ( $\leq 3$  times) they took the test.
2. Similar to the case on ACT, students' **SAT scores increased significantly** by each **grade level** they moved up, from 6<sup>th</sup> to 9<sup>th</sup> grade.
3. Also similar to the case on ACT, in general, **females** scored significantly lower than male students on SAT scores;
4. **Economically disadvantaged students** scored significantly lower on SAT scores than their more privileged peers overall.

# Student Growth Example

## PSAT

Student Name: Arac Emilian #200223361  
Administration Date: 1/19/2019  
Registration Grade: 4

1050

Composite  
Score

98.5

Percentile

## PSAT

Student Name: Arac Emilian #200223361  
Administration Date: 1/18/2020  
Registration Grade: 5  
NUMATS Registration ID #100357018

1330

Composite  
Score

99.9

Percentile

## SAT

Student Name: Arac Emilian #200223361  
Administration Date: 5/8/2021  
Registration Grade: 6

1430

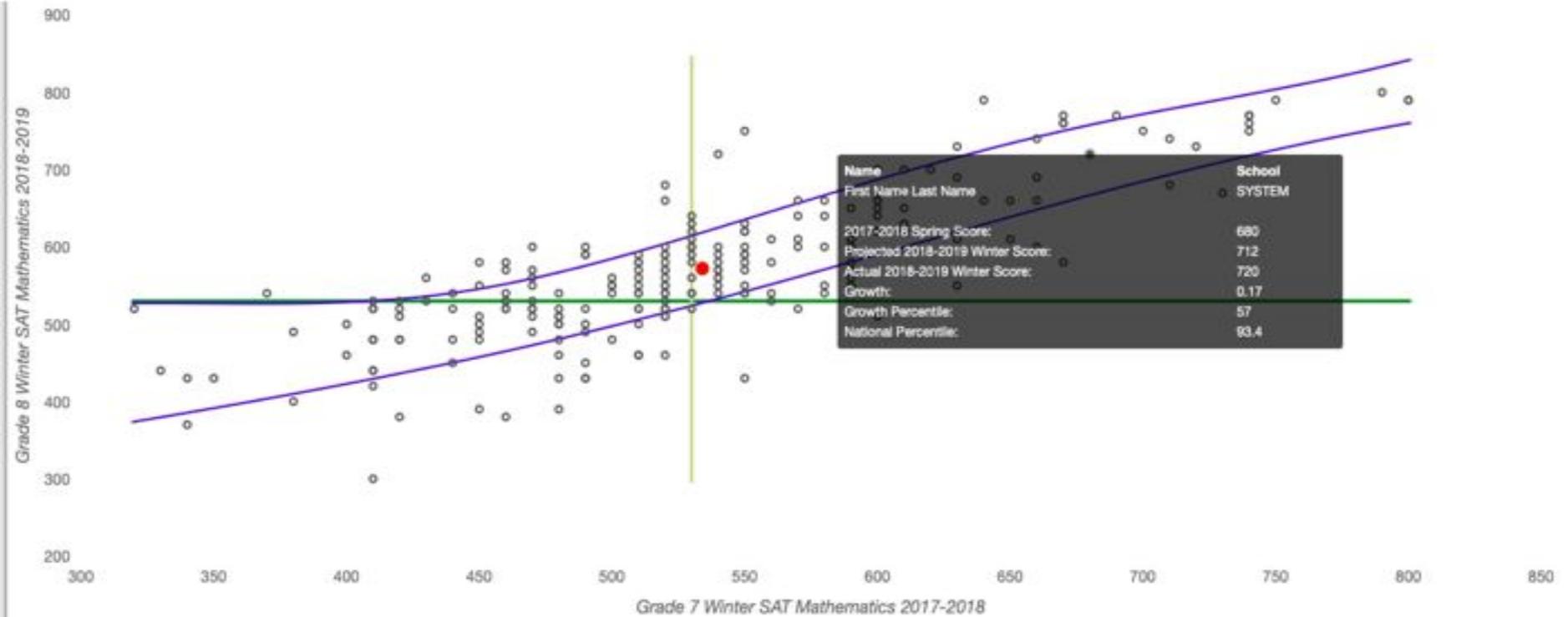
Composite  
Score

99.5

Percentile

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# CTD Above-Grade Level Growth Modeling



Modeling created by the ECRA Group

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# How Effective are Your Advanced Learner Programs?

Do you track performance over time?

Do you know student success rates?

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*“One of the great mistakes is to judge policies and programs by their intentions rather than their results”*

*- Milton Friedman*

# Why *don't* gifted education programs get evaluated?

- Programs are often considered supplemental or are at-risk financially.
  - Avoid attention or providing ammunition for cutting gifted programming
- Services are assumed to be good because the students like them and perform well vs. most other students on traditional measures.
- Evaluation is uncomfortable, even if we know it's an important practice.
- Evaluation takes time and resources that are scarce.

# Is Your Data “Good”?

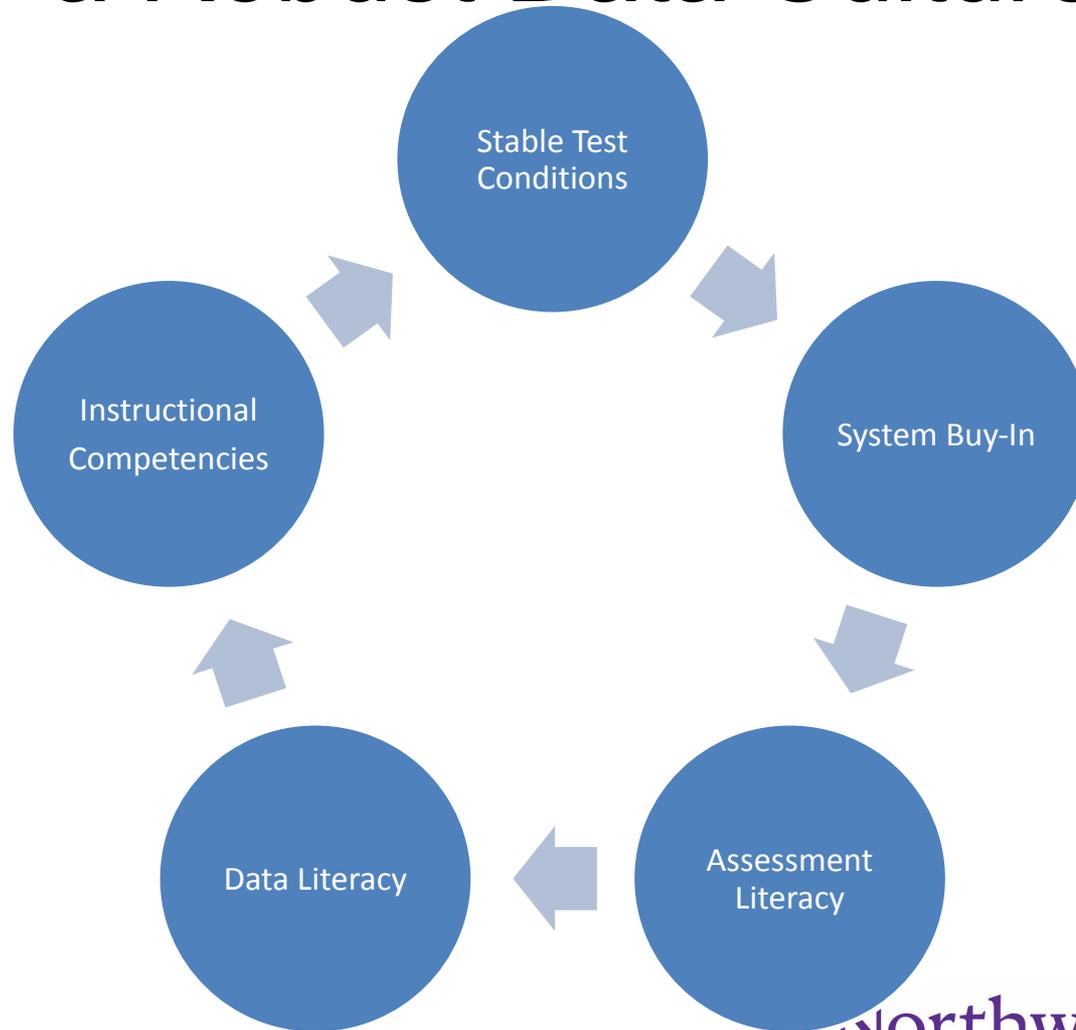
Measuring achievement and growth are only as good as your data!



How do you ensure you have **QUALITY** data for decision making?

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# Ensuring Quality Data Through a Robust Data Culture



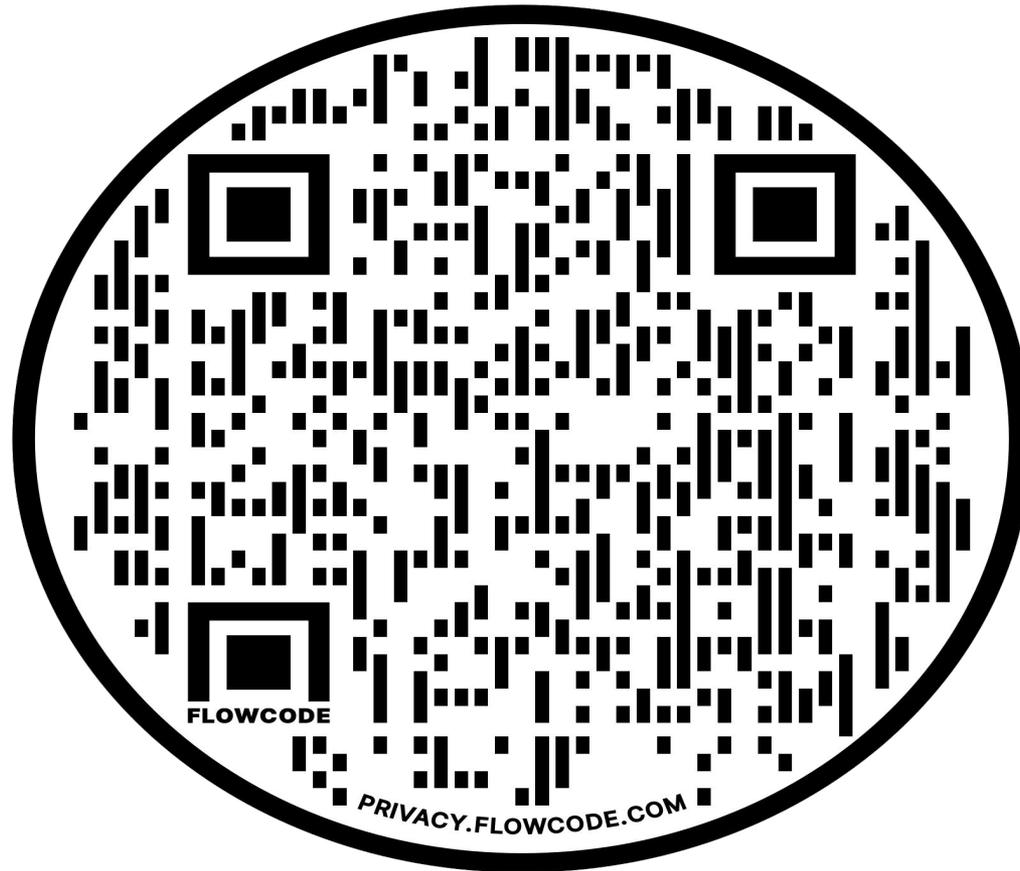
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# Wrapping Up: Burning Questions



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# Wrapping Up: Staying Connected



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[CTD Assessment Webpage](#)

2021-2022 Assessment Guide can be downloaded [here](#)

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