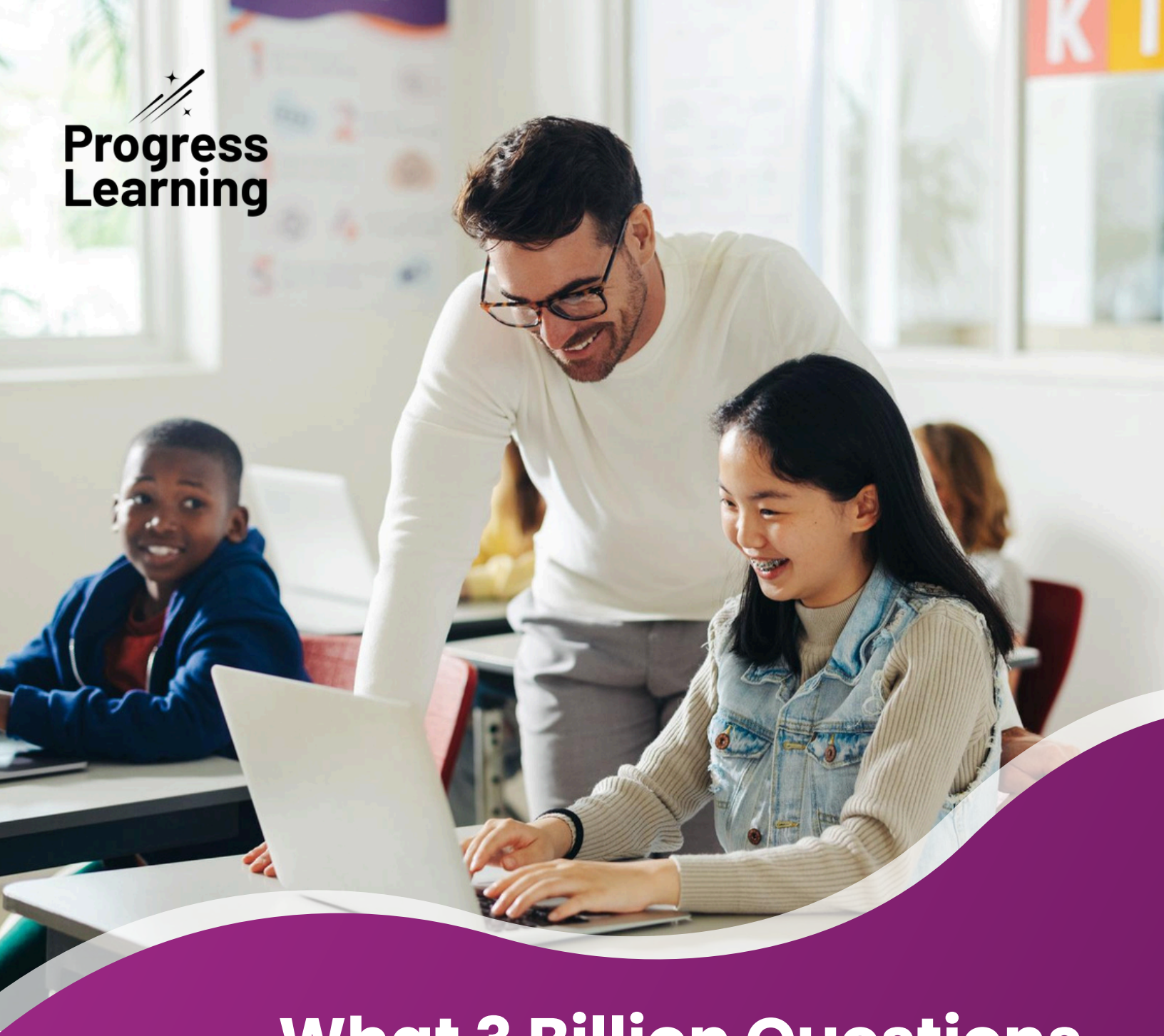
Progress Learning



What 3 Billion Questions Tell Us About TEIs

How Students Interact with Technology-Enhanced Items (TEIs)

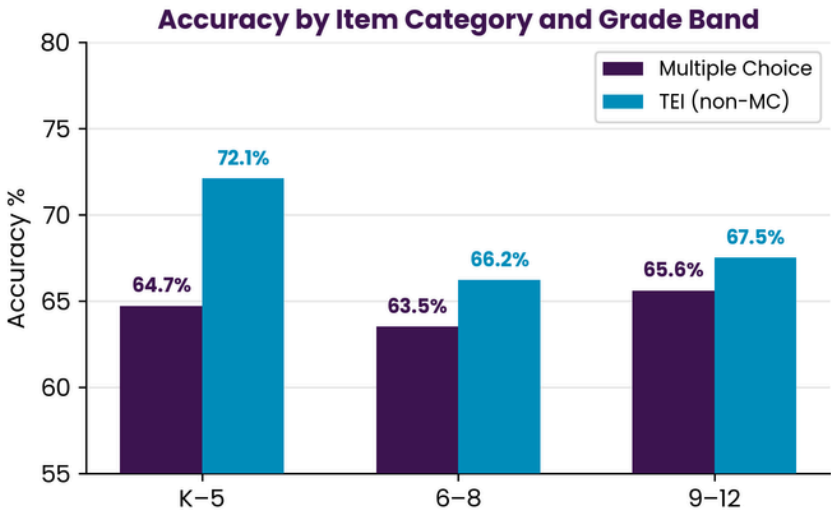
Data Range: July 1, 2022 – February 2, 2026

3.03B+	K–12	4 Subjects	25
Questions Analyzed	All Grade Levels	Math, ELA, Science, & Social Studies	Item Types Tracked

Are TEIs Harder Than Multiple Choice? It Depends How You Look at It.

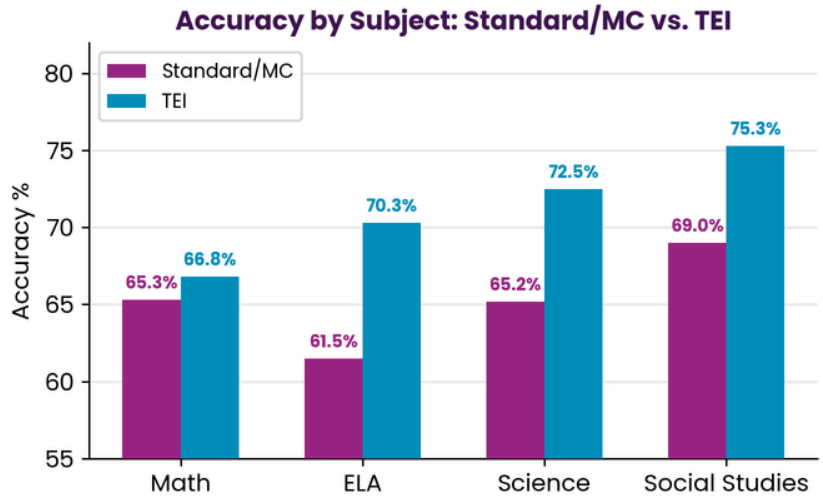
Many educators assume that technology-enhanced items are harder than multiple choice. They require more from students—dragging, sorting, constructing, selecting multiple answers—so it's natural to expect lower accuracy.

The aggregate data seems to say no. Across every grade band, students perform better on TEIs than on traditional multiple choice:



Across every grade band, students perform better on TEIs than on traditional multiple choice. The gap is largest in K–5 (+7.4pp).

MC baseline: 64.5% overall (2.68B attempts). TEI overall: 69.3% (346.9M attempts).



ELA leads with the largest TEI advantage (+8.8pp). Social Studies +6.2pp. Science +7.2pp. Math shows the smallest gap at +1.6pp.

At first glance, this looks like a clear answer: TEIs are easier. But the aggregate is hiding something important.

Why the Aggregate Is Misleading

70% of all TEI practice volume comes from just two item types: Drag & Drop (43.2%, 72.8% accuracy) and Multiselect (26.5%, 75.9% accuracy). Only 8 of 22 TEI types produce higher accuracy than MC. The other 14 are harder.

What this means for educators

The question "are TEIs harder?" doesn't have one answer. It depends on the type. A handful of commonly assigned TEI types are easier than MC. But the majority, including many on state assessments, are harder. The real value is knowing where easy practice ends and harder test-day formats begin.

Are TEIs Harder Than Multiple Choice?

Open-response types (Constructed Response, Drawing) excluded

Multiple Choice baseline accuracy: **64.5% overall**
K–5: **64.7%** | 6–8: **63.5%** | 9–12: **65.6%** | **2.68B** total attempts

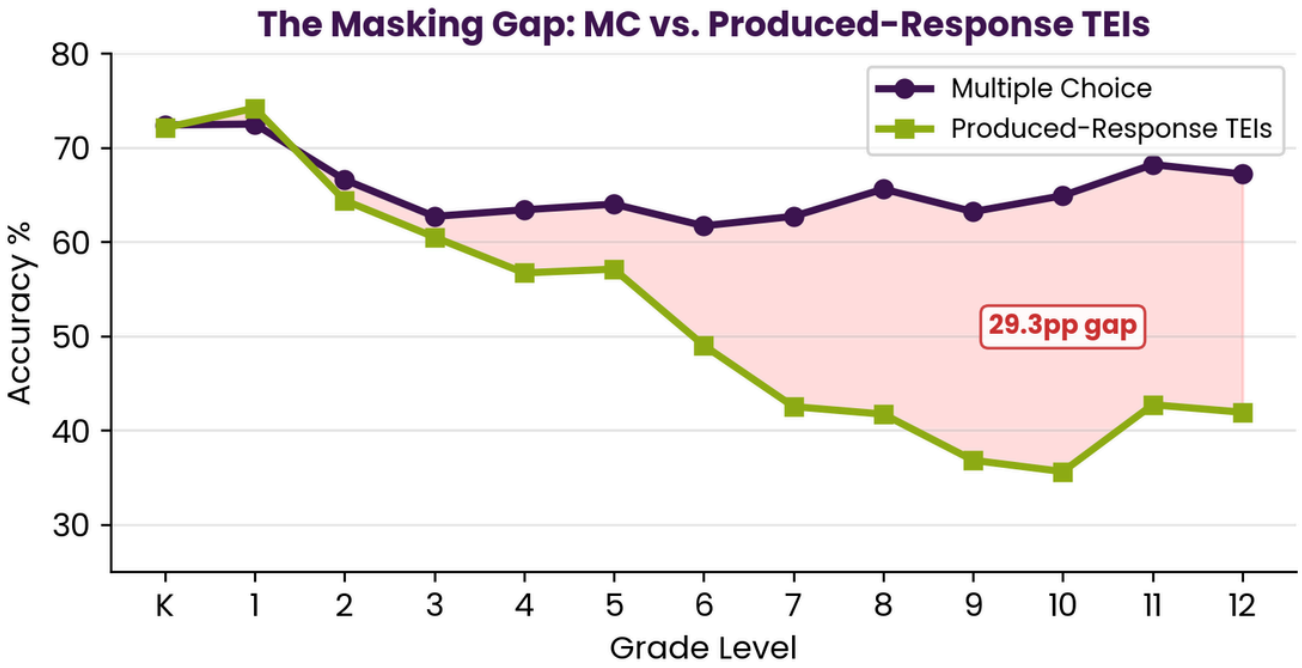
TEI Type	Accuracy	Gap vs MC	K–5	6–8	9–12	Total Attempts
Multiple Choice	64.5%	—	64.7%	63.5%	65.6%	2,682,024,709
Higher accuracy than Multiple Choice						
Image with Dropdown	76.1%	**+11.6pp**	72.6%	79.9%	76.0%	1,325,648
Multiselect	75.9%	**+11.3pp**	79.0%	72.7%	74.0%	92,051,416
True/False	75.4%	**+10.9pp**	77.6%	75.4%	73.5%	26,034
Drag & Drop	72.8%	**+8.2pp**	76.9%	69.5%	70.4%	149,972,967
Order List	68.3%	**+3.8pp**	69.5%	67.4%	65.9%	1,674,270
Match Table Grid	70.3%	**+5.8pp**	72.4%	70.2%	66.6%	5,189,555
Shading	67.7%	**+3.2pp**	68.2%	55.2%	59.6%	823,745
Hot Spot	64.9%	**+0.4pp**	68.0%	63.6%	55.7%	9,397,320
Lower accuracy than Multiple Choice						
Inline Choice	62.4%	**-2.1pp**	67.4%	58.9%	53.8%	19,588,090
Hot Text	61.0%	**-3.5pp**	61.3%	59.3%	62.1%	8,335,038
Bar Graph	60.6%	**-4.0pp**	61.6%	59.8%	35.9%	735,032
Sort List	58.8%	**-5.8pp**	60.4%	58.6%	57.9%	2,243,535
Dot Plot	58.3%	**-6.3pp**	59.6%	57.4%	42.4%	297,252
Math Text Entry	56.8%	**-7.8pp**	60.7%	48.7%	40.5%	43,663,322
Significantly lower accuracy than Multiple Choice						
Number Line	48.8%	**-15.8pp**	59.5%	37.2%	26.8%	2,961,270
Text Entry	47.6%	**-16.9pp**	54.4%	53.5%	42.0%	3,398,832
Clock Item	42.3%	**-22.2pp**	42.3%	58.2%	N/A	700,457
Histogram	37.0%	**-27.5pp**	49.3%	36.8%	36.3%	136,981
Chemistry Formula	34.0%	**-30.5pp**	N/A	21.8%	41.3%	77,246
Graphing	31.4%	**-33.1pp**	35.6%	32.6%	24.5%	4,080,823
Line Plot	23.3%	**-41.2pp**	38.0%	11.5%	7.4%	185,116
Line Graph	12.9%	**-51.6pp**	13.8%	N/A	N/A	510

Notes: "Gap vs MC" = TEI accuracy minus MC accuracy. N/A < 100 attempts. Data: July 2022 – Feb 2026.

What Multiple Choice Isn't Telling You

This is the most important pattern in the dataset.

MC accuracy barely moves across 13 grade levels (62–68%).
Meanwhile, produced-response TEIs drop from 74% in 1st grade to 36% by 10th grade.



The gap is small in early elementary (0–2pp), opens in upper elementary (6–7pp), and explodes in middle school (20–24pp). By high school, MC says 65%. Produced-response items say 36%. That's a 29pp difference.

The Practice-to-Test-Day Gap

Grade	Easy TEIs	Hard TEIs	Gap
K	80.1%	72.1%	8.0pp
3	77.2%	60.1%	17.0pp
5	74.9%	57.0%	17.9pp
8	71.5%	41.6%	29.9pp
10	70.5%	35.4%	35.1pp

The 88.5% Problem

Across 3B questions, 88.5% are MC. Students answer 7.7 MC questions for every 1 TEI.

Grade	MC Share
ELA	91.8%
Social Studies	90.6%
Science	88.2%
Math	84.9%

What this means for educators

If you're making intervention decisions based on MC-heavy benchmark data, by middle school you may be systematically underestimating the gap. That's a 20–29pp blind spot in grades 7–10.

Which TEI Types Drive Success—and Which Reveal Gaps?

Reliable Performers

A handful of TEI types produce strong accuracy everywhere they appear:

Multiselect 75.9%, 92M

Students evaluate each option independently. Highest-volume TEI type. Strong across all grade bands.

Drag & Drop 72.8%, 150M

The single highest-volume TEI. Students sort, label, match by dragging. Consistent across every subject.

Image with Dropdown 76.1%, 1.3M

Visual context scaffolds the response. Highest-accuracy TEI in grades 6–8 (79.9%).

Match Table Grid 70.3%, 5.2M

Pairing and matching concepts. Consistent and reliable across grade bands.

Challenging Types

Several TEI types consistently produce low accuracy:

Math Text Entry 56.8%, 43.7M

Highest-stakes challenging type. 20pp decline K–5 to 9–12. Without answer choices, difficulty compounds.

Graphing 31.4%, 4.1M

Requires constructing visual representations from scratch. Accuracy: 36% in 5th, 25% in 9th–12th.

Line Plot 23.3%, 185K

The most challenging interactive type. Accuracy drops to just 7.4% in grades 9–12.

Inline Choice 62.4%, 19.6M

13.6pp decline K–5 to 9–12. Selection within text becomes harder with complex content.

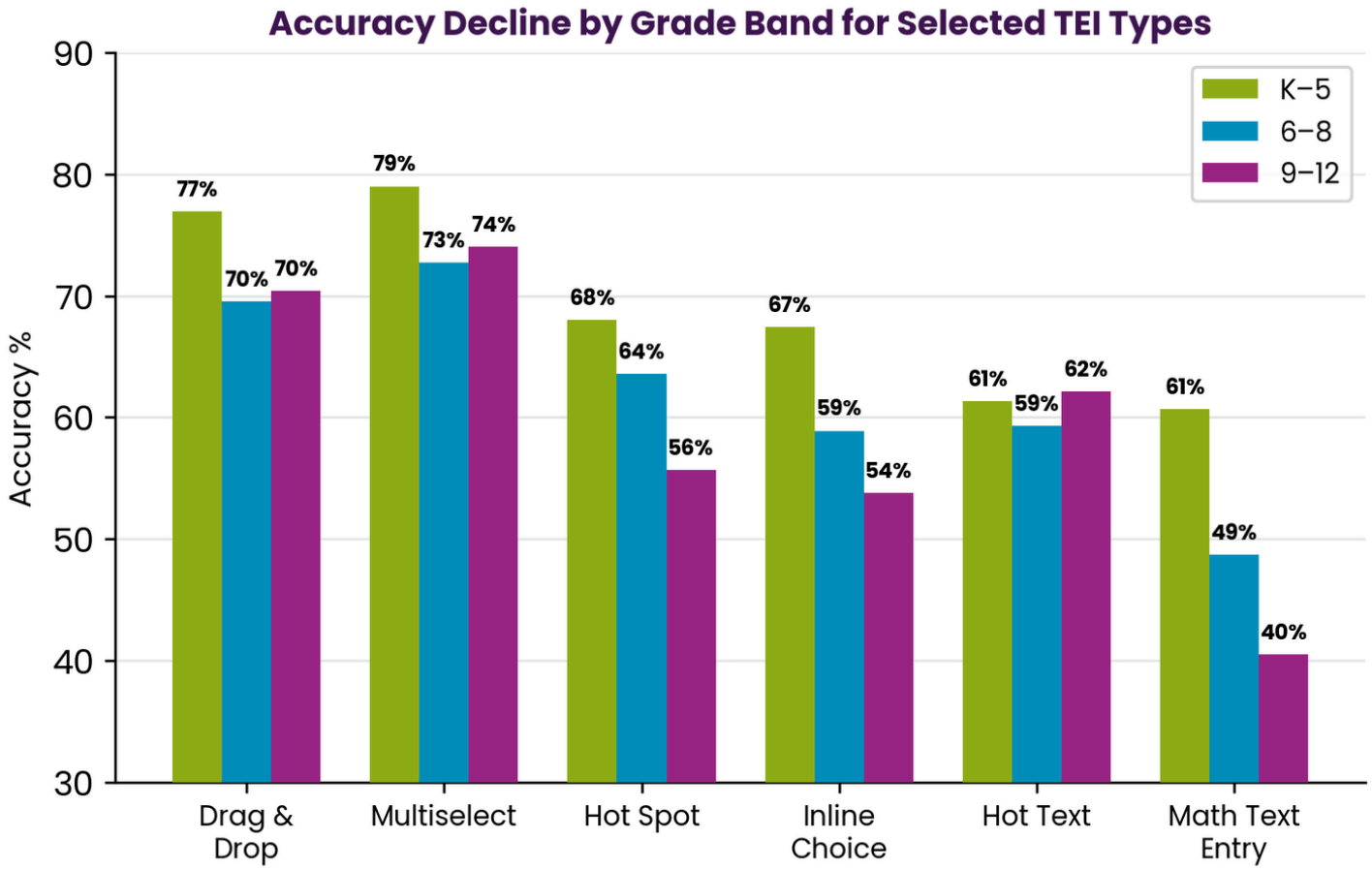
What this means for educators

Low accuracy on graphing and produced-response items signals students need more practice constructing precise answers. These item types surface learning gaps that MC can mask—that's not a weakness; it's the point.

Full definitions of all item types can be found at the end of the report

How Does TEI Performance Change as Students Get Older?

A common assumption is that older students should outperform younger students on interactive item types. The data tells a more complicated story.



- The pattern is clear: accuracy on most TEI types declines from K–5 to 9–12. The steepest declines: Math Text Entry (-20.1pp), Inline Choice (-13.6pp), Hot Spot (-12.3pp).
- Notable exceptions: Hot Text barely changes (61.3% to 62.1%). Image with Dropdown increases from K–5 (72.6%) to 9–12 (76.0%).
- This is not about technology comfort—it's about content complexity. A 2nd grader entering "7" is solving a very different problem than a 10th grader entering an algebraic expression.

What this means for educators

Middle and high school teachers should expect lower accuracy on produced-response TEIs. These items measure deeper understanding, and the decline reflects that—not a problem with the item type itself. Incorporating these types into formative assessment cycles produces more useful data for intervention planning.

Full definitions of all item types can be found at the end of the report

What Each Subject Needs to Know

Each subject area has a distinct relationship with TEIs—different types are favored, different levels of diversity exist, and different patterns emerge.

Math
The Widest TEI Variety

20 Unique TEI types
84.9% Standard/MC share
+1.6pp TEI advantage

Top TEIs (after Standard):
- Math Text Entry: 4.4%, 57.1% acc.
- Drag & Drop: 4.3%, 75.0% acc.
- Multiselect: 3.7%, 76.6% acc.

Math TEI diversity is highest and the produced-response gap is starkest.

ELA
The Largest TEI Advantage

17 Unique TEI types
91.8% Standard/MC share
+8.8pp TEI advantage

Top TEIs (after Standard):
- Drag & Drop: 4.5%, 71.5% acc.
- Multiselect: 1.9%, 75.3% acc.
- Hot Text: 1.0%, 61.2% acc.

7 of ELA's 11 TEI types outperform MC.

Science
Strong TEI Performance

16 Unique TEI types
88.2% Standard/MC share
+7.2pp TEI advantage

Top TEIs (after Standard):
- Drag & Drop: 6.8%, 73.7% acc.
- Multiselect: 3.6%, 75.5% acc.
- Inline Choice: 69.4% (5th grade)

Classification-style interactions align naturally with science thinking.

Social Studies
Least TEI-Ready Subject

11 Unique TEI types (fewest)
90.6% Standard/MC share (highest)
+6.2pp TEI advantage

Top TEIs (after Standard):
- Drag & Drop: 4.4%, 74.3% acc.
- Multiselect: 3.2%, 79.4% acc.
- Hot Spot: 0.8%, 67.3% acc.

Highest MC share. Exposure gap is the biggest risk.

Key insight

Social Studies classrooms may require the biggest adjustment as state assessments move toward more TEI types. Increasing TEI exposure can help close the familiarity gap before test day.

Deep Dives: Science Assessment Focus

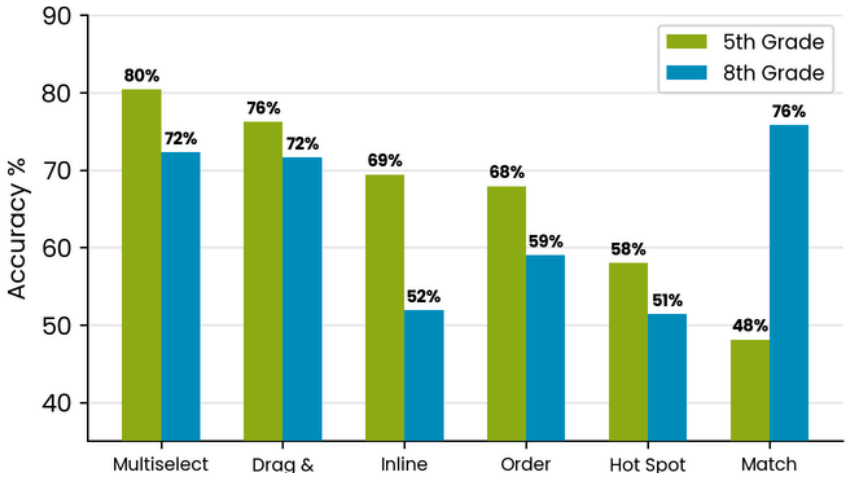
5th Grade Science

A key state testing milestone

TEI Type	Accuracy	Attempts
Multiselect	80.4%	3,675,529
Drag & Drop	76.2%	6,098,373
Inline Choice	69.4%	401,087
Order List	67.9%	133,710
Hot Text	67.8%	58,650
Multiple Choice	65.1%	123,928,673
Sort List	64.0%	73,854
Hot Spot	58.0%	853,241

TEI Type	Accuracy	Attempts
Match Table Grid	75.8%	154,329
Multiselect	72.3%	5,346,182
Drag & Drop	71.6%	12,700,845
Hot Text	70.9%	69,582
Multiple Choice	66.0%	144,428,160
Inline Choice	51.9%	871,168
Hot Spot	51.4%	430,590
Chemistry Formula	26.3%	16,902

8th Grade Science



Inline Choice drops 17pp from 5th to 8th grade as science content becomes more complex.

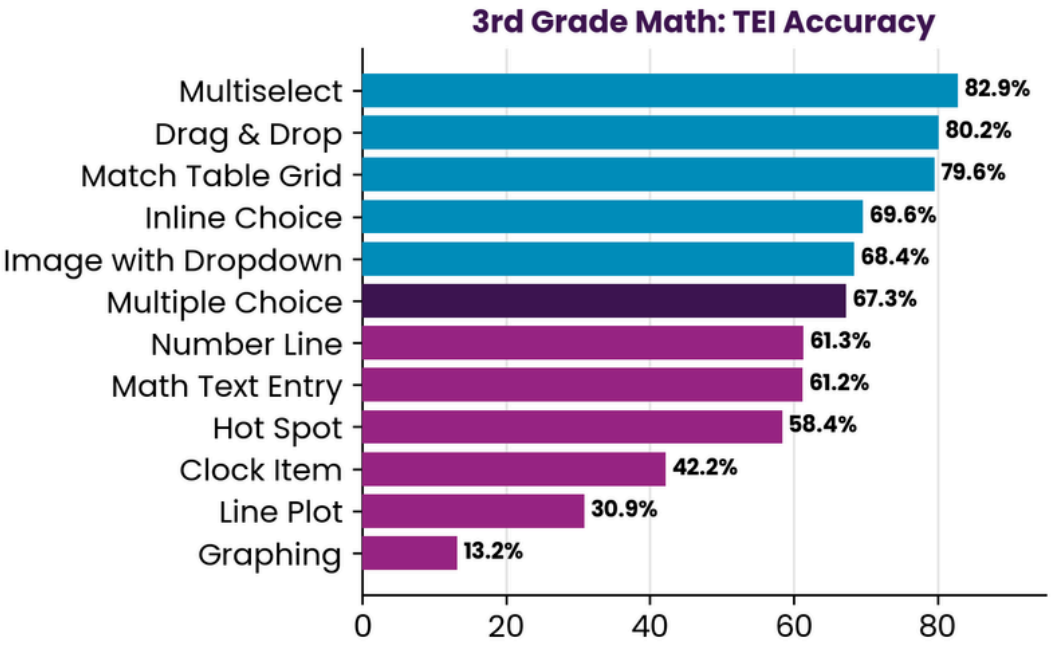
Match Table Grid rises 28pp—matching formats align with how 8th graders compare scientific properties.

Students may need more support interpreting scientific text.

Deep Dives: Key Testing Milestones

These grade/subject combinations represent the moments where state assessments carry the most weight.

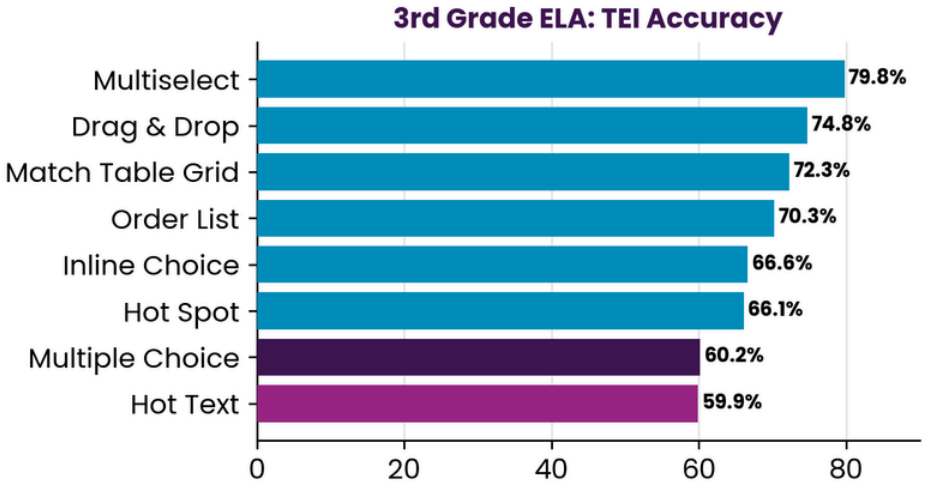
3rd Grade Math



Where 3rd graders struggle: Clock Items (42.2%), Line Plot (30.9%), and Graphing (13.2%) require students to build and interpret visual models.

What this means: TEIs help reinforce foundational skills while identifying early gaps in visual and spatial reasoning.

3rd Grade ELA



MC ranks below most TEI types at 60.2%. Six of eight TEI types outperform it, with Multiselect leading at 79.8%.

Interactive TEIs provide a clearer picture of student understanding in reading.

3rd Grade as the Inflection Point

3rd grade is where TEIs begin to clearly separate from MC:

Subject	2nd Grade TEI Adv.	2nd Grade TEI Adv.
Math	+6.5pp	+5.8pp
ELA	+10.5pp	+13.3pp
Science	+14.5pp	+17.2pp

The Bigger Picture

The shift to digital assessment is not a future event. Pennsylvania mandated online PSSA and Keystone exams starting Spring 2026, and many states already test using digital formats with TEI-heavy blueprints.

By the Numbers

3.03B+

Total questions analyzed

25

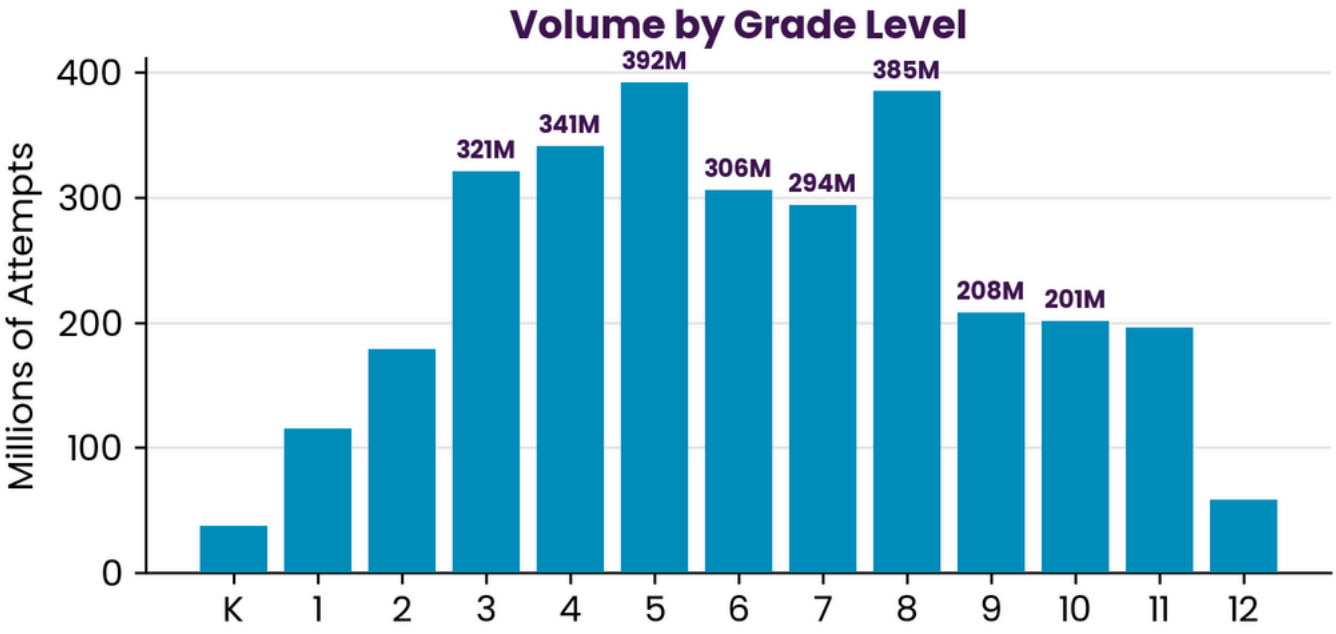
Total item types

K–12

All grade levels

3.5 Years

Jul 2022 – Feb 2026



This data shows that the relationship between TEIs and student performance is more nuanced than "harder" or "easier." A few commonly assigned TEI types produce higher accuracy than MC, but the majority are harder, and the hardest types reveal gaps that MC simply cannot surface.

Big Picture Takeaways

These recommendations are grounded in what the data shows—specific responses to 3 billion student interactions.

Chief Academic Officers & Curriculum Directors

The aggregate data says TEIs outperform MC, but that headline is driven by a few high-volume, easy types. Type by type, 14 of 22 TEI formats are harder than MC. MC can obscure true levels of understanding, and that masking effect grows as students advance. By middle school, the gap is 20+ percentage points. Use a wider variety of TEI types more frequently for a more accurate picture of mastery.

Math Specialists & Coaches

Math has the widest TEI variety and the most dramatic accuracy declines on produced-response items. Math Text Entry averages 57% overall but drops to 36% by 10th grade. Graphing averages 32%. Incorporating these types into formative assessment cycles produces more honest data about where students can construct solutions vs. relying on answer elimination.

ELA Specialists & Literacy Coaches

ELA shows the largest TEI advantage of any subject (+8.8pp). Interactive text-based formats appear to be genuinely better assessments of reading comprehension than standard MC. In 3rd grade, Multiselect hits 79.8% compared to 60.2% for MC. If your benchmarks are MC-only, you may be underestimating what students can demonstrate.

Science Department Heads

Multiselect (75.5%), Drag & Drop (73.7%), and Match Table Grid (67.2%) all significantly outperform MC (65.2%) in Science. But watch the 5th-to-8th grade transition: Inline Choice drops 17pp as scientific text gets more complex.

Assessment Coordinators & Testing Directors

Low accuracy on Graphing (31%) or Math Text Entry (57%) is by design. Accuracy of 25–40% on graphing items is normal. Build a baseline understanding of expected TEI performance so campus leaders can interpret summative results accurately.

APPENDIX

Full Accuracy Tables by Grade Band

K–5 Accuracy by TEI Type

TEI Type	Questions Answered	Correct Answers	% Correct
Multiselect	42,423,221	33,524,499	79.02%
True/False	5,931	4,604	77.63%
Drag & Drop	61,867,952	47,605,863	76.95%
Image with Dropdown	647,538	470,213	72.62%
Match Table Grid	1,821,569	1,319,702	72.45%
Order List	901,274	626,390	69.50%
Shading	791,397	540,071	68.24%
Hot Spot	4,483,665	3,051,106	68.05%
Inline Choice	10,124,118	6,826,069	67.42%
Multiple Choice	1,219,113,618	789,291,726	64.74%
Bar Graph	409,799	252,469	61.61%
Hot Text	5,746,224	3,524,585	61.34%
Math Text Entry	31,018,039	18,818,480	60.67%
Sort List	459,487	277,746	60.45%
Dot Plot	122,964	73,230	59.55%
Number Line	1,559,666	928,390	59.52%
Text Entry	938,511	510,255	54.37%
Histogram†	2,503	1,234	49.30%
Clock Item	699,824	295,986	42.29%
Line Plot	89,783	34,088	37.97%
Graphing	880,547	313,392	35.59%
Line Graph†	465	64	13.76%

APPENDIX

Full Accuracy Tables (continued)

6–8 Accuracy by TEI Type

TEI Type	Questions Answered	Correct Answers	% Correct
Image with Dropdown	589,318	470,851	79.90%
True/False	13,026	9,820	75.39%
Multiselect	30,861,329	22,427,608	72.67%
Match Table Grid	2,413,249	1,692,999	70.15%
Drag & Drop	51,400,384	35,711,284	69.48%
Order List	508,185	342,521	67.40%
Hot Spot	3,918,999	2,493,278	63.62%
Multiple Choice	869,486,797	552,328,309	63.52%
Bar Graph	317,009	189,715	59.85%
Hot Text	1,745,280	1,034,479	59.27%
Inline Choice	6,039,363	3,555,691	58.88%
Sort List	1,025,910	601,535	58.63%
Clock Item†	612	356	58.17%
Dot Plot	174,052	99,894	57.39%
Shading	32,202	17,784	55.23%
Text Entry	650,016	347,794	53.51%
Math Text Entry	10,211,581	4,972,497	48.69%
Number Line	1,341,161	499,472	37.24%
Histogram	126,741	46,696	36.84%
Graphing	2,261,498	738,067	32.64%
Chemistry Formula	28,794	6,265	21.76%
Line Plot	49,692	5,725	11.52%
Line Graph†	45	2	4.44%

APPENDIX

Full Accuracy Tables (continued)

9–12 Accuracy by TEI Type

TEI Type	Questions Answered	Correct Answers	% Correct
Image with Dropdown	88,792	67,523	76.05%
Multiselect	18,766,866	13,895,262	74.04%
True/False	7,077	5,205	73.55%
Drag & Drop	36,704,631	25,830,353	70.37%
Match Table Grid	954,737	635,780	66.59%
Order List	264,811	174,484	65.89%
Multiple Choice	593,424,294	389,212,308	65.59%
Hot Text	843,534	524,214	62.14%
Shading†	146	87	59.59%
Sort List	758,138	438,978	57.90%
Hot Spot	994,656	554,477	55.75%
Inline Choice	3,424,609	1,843,519	53.83%
Dot Plot†	236	100	42.37%
Text Entry	1,810,305	760,097	41.99%
Chemistry Formula	48,452	20,023	41.33%
Math Text Entry	2,433,702	986,354	40.53%
Histogram	7,737	2,807	36.28%
Bar Graph	8,224	2,956	35.94%
Clock Item†	21	7	33.33%
Number Line	60,443	16,197	26.80%
Graphing	938,778	230,181	24.52%
Line Plot	45,641	3,358	7.36%

Glossary of All 25 Item Types

The following table lists all technology-enhanced item types tracked in this report.

Item Type	Description	Notes
Bar Chart / Bar Graph	Drag mouse to create a bar chart based on data	
Chemistry Formula	Open response with ability to add specific chemistry symbols	
Clock Item	Manipulate hands of a clock with the mouse	
Constructed Response / Essay	Write an extended response to a prompt	*Excluded from accuracy comparisons*
Dot Plot	Drag to increase the number of dots to create a chart	
Drag & Drop / Image with D&D	Drag options to label, sort, classify, or complete an image or layout	
Drawing	Use pencil, line, and other tools to draw images	*Excluded from accuracy comparisons*
Graphing	Plot points and create lines on a Cartesian plane	
Histogram	Drag bars with a mouse to create a histogram	
Hot Spot / Hotspot	Clicking to choose certain parts of an image	
Hot Text / Token Highlight	Clicking to choose certain words in a sentence	
Image with Dropdown	Select from options in a dropdown corresponding to images	
Inline Choice	Selecting from options embedded within text or statements	

Glossary of All 25 Item Types

Item Type	Description	Notes
Line Chart / Line Graph	Create a chart by plotting points and connecting them	
Line Plot	Drag to increase the number of X's to create a chart	
Match Table Grid / Match List	Drag items to match them with items on a list or grid	
Math Text Entry / Cloze Math	Enter text or numbers into a field to solve math questions	
Multiple Choice / Standard	A standard multiple choice question with 4 choices	*Baseline for TEI comparisons*
Multiselect / Multiple Response	Select multiple options from a list of options	
Number Line	Drag options to places on a number line or select ray direction/length	
Order List	Drag to rearrange the order of a list of options	
Shading	Select sections of a chart to shade them in	
Sort List	Drag to arrange options in the correct order	
Text Entry / Short Text	Write a short response to a prompt	
True/False	Choose whether a statement is true or false	

Constructed Response and Drawing are open-response types excluded from accuracy analysis. Multiple Choice is the baseline for all comparisons.