# Connecticut's Growth Model
# for the
# Smarter Balanced Summative Assessments:

# English Language Arts (ELA) and Mathematics

# Agenda

- What is growth? How is it different from achievement?

- What is Connecticut's approach to measuring growth?

- What factors are considered when establishing ambitious yet achievable targets?

- How and when will growth be incorporated into the Next Generation Accountability System for districts and schools?

# What is growth? How is it different from achievement?

**Achievement or Proficiency:**

- A one-time snapshot measurement of a student's academic performance

**Growth:**

- Change in achievement score for the same student between two or more points in time.

# Three Ways to Understand Change in Performance

**What is it?**

**How does it work?**

**Who is compared?**

**What is measured?**

**What does it offer?**

# What is Connecticut's approach to measuring growth?

- Similar to approach used with CMT growth model
- Criterion referenced
- Uses Smarter Balanced vertical scale that spans grades/years
- Preserves achievement level concept for interpretability
- Provides ambitious yet achievable individual student targets
- Expects all students to grow, including those performing in Levels 3 and 4
- Can be aggregated for group level results
- Reviewed by Connecticut Technical Advisory Committee

# What factors are considered when establishing ambitious yet achievable targets?

- Empirical:
  - What is the actual growth achieved by students performing at different segments of the vertical scale?

- Measurement Error:
  - Does the growth expectation exceed the pooled average measurement error from both year 1 and year 2 assessments?

- Time:
  - Are students on a path to higher levels of achievement in the future?

# ELA Achievement Level Ranges and Growth Targets

| Grade in Yr. 1 | Level | Level 1: Not Met | | Level 2: Approaching | | Level 3: Met | | Level 4: Exceeded | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1 - LOW | 2 - HIGH | 3 - LOW | 4 - HIGH | 5 - LOW | 6 - HIGH | 7 - LOW | 8 - HIGH |
| 3 | Range | 2114-2330 | 2331-2366 | 2367-2399 | 2400-2431 | 2432-2460 | 2461-2489 | 2490-2522 | 2523+ |
| | Target | 82 | 71 | 70 | 69 | 68 | 64 | 60 | 45/maintain |
| 4 | Range | 2131-2378 | 2379-2415 | 2416-2444 | 2445-2472 | 2473-2502 | 2503-2532 | 2533-2568 | 2569+ |
| | Target | 82 | 69 | 69 | 64 | 58 | 55 | 49 | 34/maintain |
| 5 | Range | 2201-2405 | 2406-2441 | 2442-2471 | 2472-2501 | 2502-2541 | 2542-2581 | 2582-2619 | 2620+ |
| | Target | 69 | 56 | 55 | 48 | 43 | 39 | 30 | 16/maintain |
| 6 | Range | 2210-2417 | 2418-2456 | 2457-2493 | 2494-2530 | 2531-2574 | 2575-2617 | 2618-2656 | 2657+ |
| | Target | 73 | 58 | 53 | 47 | 44 | 38 | 33 | 21/maintain |
| 7 | Range | 2258-2438 | 2439-2478 | 2479-2515 | 2516-2551 | 2552-2600 | 2601-2648 | 2649-2687 | 2688+ |
| | Target | 69 | 50 | 49 | 44 | 40 | 31 | 20 | 12/maintain |
| 8 | Range | 2288-2446 | 2447-2486 | 2487-2526 | 2527-2566 | 2567-2617 | 2618-2667 | 2668-2703 | 2709+ |

# Math Achievement Level Ranges and Growth Targets

| Grade in Yr. 1 | Level | Level 1: Not Met | | Level 2: Approaching | | Level 3: Met | | Level 4: Exceeded | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1 - LOW | 2 - HIGH | 3 - LOW | 4 - HIGH | 5 - LOW | 6 - HIGH | 7 - LOW | 8 - HIGH |
| 3 | Range | 2189-2351 | 2352-2380 | 2381-2408 | 2409-2435 | 2436-2468 | 2469-2500 | 2501-2526 | 2527+ |
| | Target | 77 | 61 | 59 | 60 | 59 | 57 | 56 | 47/maintain |
| 4 | Range | 2204-2381 | 2382-2410 | 2411-2447 | 2448-2484 | 2485-2516 | 2517-2548 | 2549-2574 | 2575+ |
| | Target | 51 | 38 | 40 | 44 | 46 | 47 | 43 | 37/maintain |
| 5 | Range | 2219-2419 | 2420-2454 | 2455-2491 | 2492-2527 | 2528-2553 | 2554-2578 | 2579-2605 | 2606+ |
| | Target | 43 | 46 | 45 | 44 | 42 | 41 | 41 | 44/maintain |
| 6 | Range | 2235-2434 | 2435-2472 | 2473-2512 | 2513-2551 | 2552-2580 | 2581-2609 | 2610-2639 | 2640+ |
| | Target | 49 | 41 | 38 | 36 | 36 | 36 | 38 | 31/maintain |
| 7 | Range | 2250-2438 | 2439-2483 | 2484-2525 | 2526-2566 | 2567-2600 | 2601-2634 | 2635-2664 | 2665+ |
| | Target | 58 | 35 | 31 | 31 | 36 | 37 | 38 | 35/maintain |
| 8 | Range | 2265-2455 | 2457-2503 | 2504-2544 | 2545-2585 | 2586-2619 | 2620-2652 | 2653-2685 | 2686+ |

# Hypothetical Example
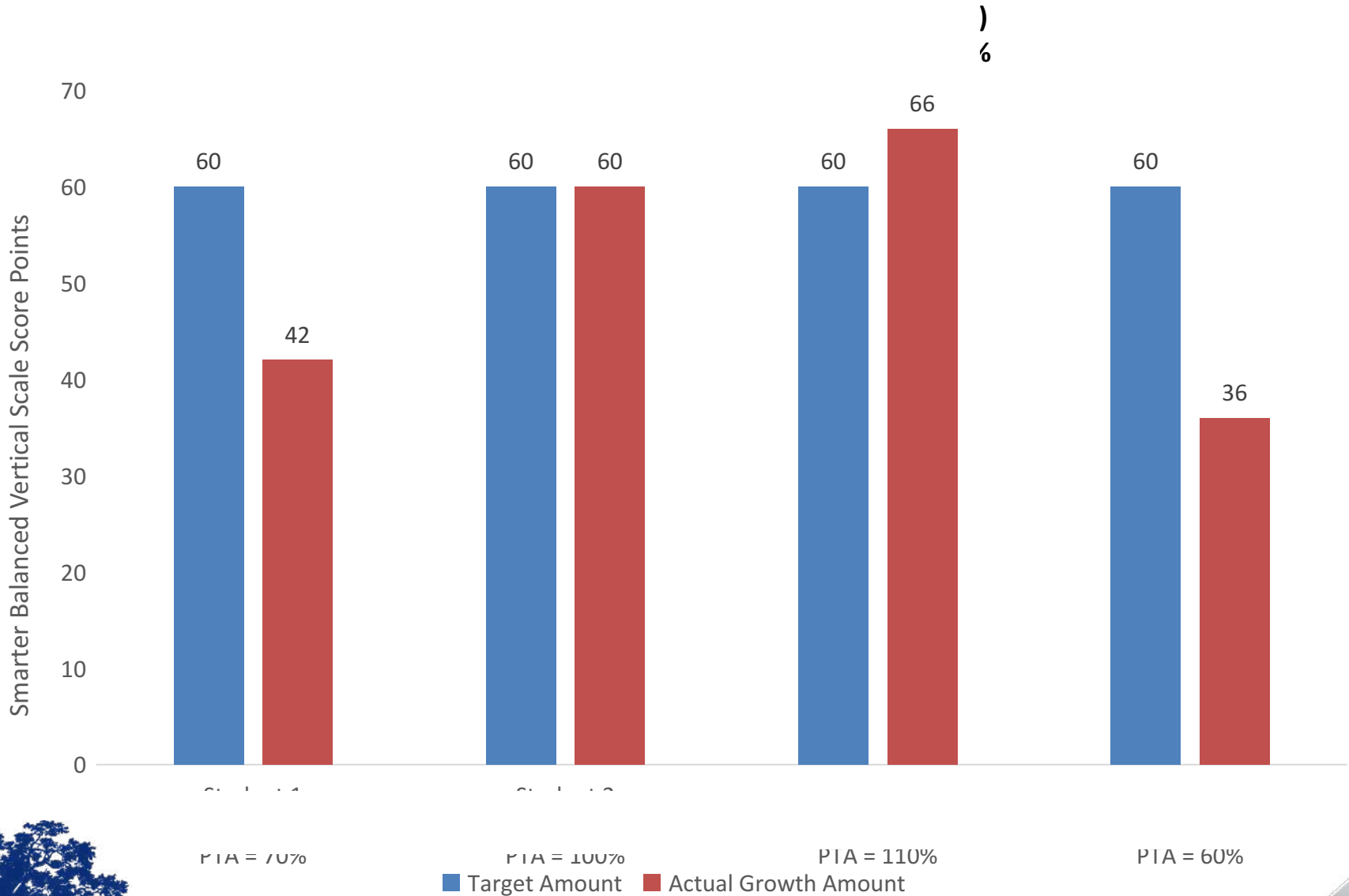
# Two Aggregate Outcome Metrics

|  | Growth Rate | Percentage of Target Achieved |
|---|---|---|
| Measure? | Percentage of students meeting their respective growth target | Average percentage of growth target achieved for all students |
| Precision? | Binary (yes/no), less precise | Based on scale score, more precise |
| Continuous? | No. Students *nearly* meeting target will be deemed *not* meeting target | Yes. Students get "credit" for any growth up to *and* beyond the target |
| Interpretability? | Simple to understand | More nuanced |
| Uses? | Reporting only | Reporting and district/school accountability |

# How *and* when will growth be incorporated into the Next Generation Accountability System?

- Growth (Indicator 2) will be added to the system starting with the 2015-16 results.
- As with achievement, Growth (Indicator 2) points are awarded for All Students *and* High Needs groups.
- The points for Achievement (Indicator 1) will be halved for any school with Growth results.
- Growth will carry slightly more weight in the model than Achievement.
- In light of the discontinuance of the ELA Performance Task in February 2016, the rescored 2014-15 ELA scores that were based on the Computer-Adaptive Test (CAT) only will be used as the ELA baseline for an apples-to-apples comparison.

# What about other factors like poverty, language ability, or disability?

- The CSDE is <u>not</u> using a value-added approach to adjust targets or evaluate growth relative to some preconceived expectation based on student characteristics of what a student can achieve or how much he/she can grow.

- The CSDE is <u>not</u> setting different targets for different students. All students at a prior achievement range will have the same growth amount expectation.

# Not All Growth Models are Value-Added

- *The terms "growth model" and "value-added" are often used interchangeably. But Value-Added is only one of several types of models that measure student growth. It is also the only model designed to determine which aspect of schooling (e.g., school, teacher, education program) is responsible for a students' growth*. ([Center for Public Education](#)).

- *Value-added models are focused on the effects of teachers and leaders... on student score gains. They address whether students grew more or less than expected*. (O'Malley, McClarty, Magda, and Burling, 2011)

# Summary

- **Criterion referenced**: does not depend on how others do
- **Continuous**: all growth counts; no golden bands
- **Familiar**: similar to approach used with CMT
- **Transparent**: easily replicable; no "black-box" adjustments
- **Collaborative**: transparency allows for conversation/reflection
- **Fair**: excludes "partial-year" students
- **Achievable**: based on actual growth of Connecticut students
- **Ambitious**: encourages growth above target