

# Content proximity spring 2022 pilot study



# Introduction

NWEA® has introduced a new item-selection algorithm into the MAP® Growth™ assessments that will be made available to districts in 22 states and for international schools starting in the 2023-24 school year (read more about which states in this NWEA Connection article: [Enhanced item-selection algorithm for select MAP Growth tests](#)). The goal of this new approach is to improve the content validity of the assessments while retaining the ability for the test to adapt off-grade and meet students where they are in their learning.

NWEA conducted a pilot study using spring 2022 data to evaluate this new item-selection algorithm. This pilot study included an examination of the comparability of scores from tests that leverage this new algorithm with traditional MAP Growth assessments, and it reviewed evidence of test content validity and score reliability for these updated assessments.

The updated MAP Growth assessments will continue to adapt off-grade when needed to deliver items of suitable difficulty for a student. However, this adaptation will be done in such a way that test events will be more closely aligned with grade-level content, especially for students exhibiting typical performance for a grade. The stronger preference for grade-level content means that the content on the updated test will more closely match the subject matter students have an opportunity to learn in school. Subsequently, MAP Growth scores should allow for better connections to curriculum materials and resources and produce scores that are more highly correlated with end-of-year summative tests.

## Content validity

One of the intended outcomes of this new item-selection algorithm is improved content validity, which should be evident in the three different ways outlined below. The pilot study provides evidence in support of each of these points:

<b>Intended outcomes</b>	<b>Pilot study results</b>
The assessments for most students should predominately include on-grade content.	Students taking the updated assessments saw an increase in on-grade items.
It will be more likely that a student sees items closer to his or her grade level rather than distal grades.	Items closer to students' grade were more common than those further away.
Very low- and high-achieving students will have more off-grade items (with low-achieving students seeing below-grade items, and vice versa) on their assessments.	Low- and high-achieving students (the top and bottom 10% of achievement respectively) generally saw items from more grades than the middle 80% of students.

# Reliability

Scores on the updated MAP Growth assessments retained a high level of reliability consistent with the traditional MAP Growth assessment. For example:

- In math, reliability estimates on the updated assessment ranged from 0.93 in kindergarten to 0.97 in several other grades. Reliability estimates on the traditional MAP Growth assessment range from 0.94 to 0.97.
- In reading, reliability estimates were nearly identical between the updated and the traditional MAP Growth assessments, ranging from 0.93 to 0.97 across all grades.

Taken with the content validity information presented above, this means the new item-selection algorithm contributed to increased content validity without compromising on the reliability of the assessment.

# Score comparability

The introduction of this new item-selection algorithm contributed to score differences in math, but with no differences observed in scores in reading.

In math, average scores for students taking the updated assessment were consistently higher than the average scores for students taking the traditional MAP Growth assessment, and these average differences increased as student grade-level increased. The overall difference was approximately 2–3 RIT points, with raw (unstandardized) differences ranging from less than 1 RIT point for students in grade 2 to over 6 RIT points for students in grade 6.

In reading, the difference in average scores for students across both assessment versions were minimal, with the largest grade-level mean difference between student groups estimated as less than 1 point.

# Conclusion

The introduction of the new item-selection algorithm into MAP Growth assessments was done to give greater preference to on-grade level items to improve the content validity of the assessments while retaining the ability for the test to adapt off-grade and meet students wherever they are in their learning. These changes are an evolution of the assessment that allows for better alignment to curriculum and instruction while still adapting to meet students at their achievement level.

A key finding of the pilot study on these updated assessments showed that content validity was enhanced in both math and reading, with most test events containing substantially more on-grade items. Further, adaptation to items above- and below-grade level still occurred for high- and low-achieving students, respectively.

While there were no meaningful differences observed in student reading scores on these updated assessments, there were average differences observed for student math scores of approximately 2-3 RIT points, with greater differences observed for older students.

Districts that choose to administer these updated assessments should consider this score increase when interpreting their longitudinal data and when making high-stakes decisions for students, teachers, and schools, especially when weighing those score differences with the benefit of increased content validity offered with this new item-selection approach.

More details on the pilot study can be found in the [Content Proximity Spring 2022 Pilot Study Research Report](#).

## Important terminology:

### **Assessment reliability**

Do the items on the test measure the test subject in a consistent and precise manner?

### **Content validity**

- Does the test measure what we want it to measure?
- For example, we want MAP Growth to measure more of the grade level math content students are being taught as part of their core instruction.

### **New item selection algorithm**

This is the new product feature that selects what items students see in the updated MAP Growth assessments. This new item-selection algorithm was used in the pilot study.

### **Updated MAP Growth assessments**

These are the test versions that were used in the pilot study. They feature the new/enhanced item selection algorithm

### **Traditional MAP Growth assessments**

These are the MAP Growth assessments that all partners, except those in the pilot study, use. These are the tests that MAP Growth partners have used in all previous years.



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