PORTLAND PUBLIC SCHOOLS

Portland Public Schools
K-5 Math Adoption
Seventeen Questions and Criteria

1. What data do you have to show success of students from different backgrounds?

Research Overview

The Human Resources Research Organization (HumRRO), a nationally recognized third-party evaluator, conducted an evaluation to examine the impact of the Ready Mathematics Blended Core Curriculum on mathematics achievement for students in grades K–5. For the analysis, an outcome measure acceptable to What Works Clearinghouse was used, and baseline achievement was included as a covariate. Additionally, a sampling design that mitigates the effects of any confounding factors was employed. HumRRO's findings provide evidence that school-level participation in Ready Mathematics resulted in higher student-level achievement in mathematics, as measured by the i-Ready® Diagnostic, compared to a control group composed of similar students. The complete research for this study is available to PPS.

Study Design

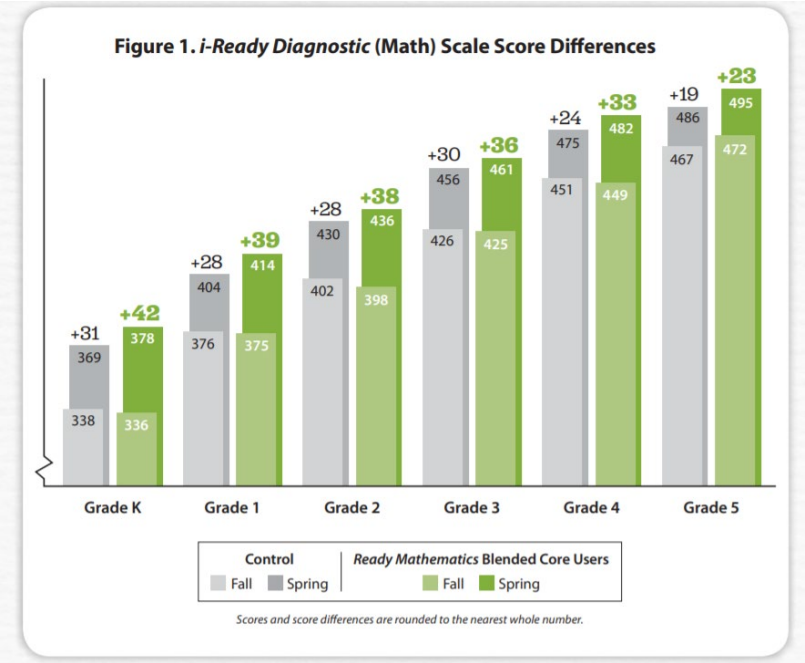
Once schools meeting the eligibility criteria for the treatment and comparison group were identified, matching was conducted to select comparable groups of schools and students. First, matching was conducted at the school level to ensure key school demographic characteristics were similar between the groups of treatment schools and control schools. Schools were matched on the following variables:

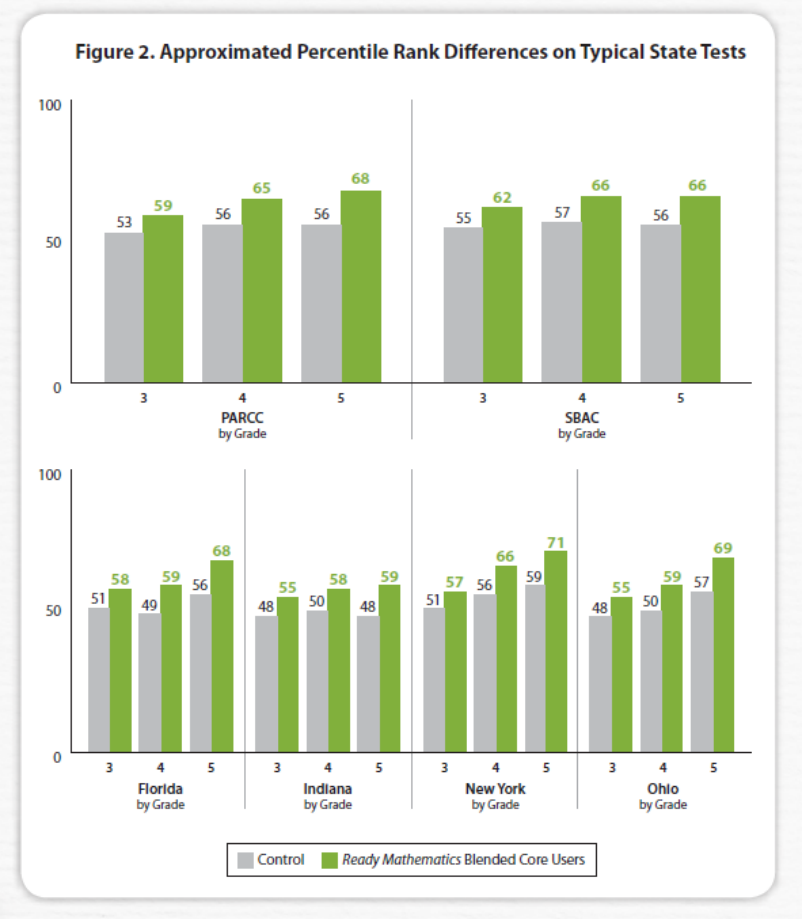
- Percentage of students eligible for free- or reduced-price lunch (FRL)
- Percentage of students with limited English proficiency (LEP)

- Percentage of students with disabilities (SWD)
- Percentage of students who identify as Caucasian and non-Caucasian

These variables were selected as they are known to be related to student achievement, and reliable data are available for public schools across the country, including all schools meeting the criteria for our sample. Baseline equivalency was successfully established for all grades. A total of 32 schools with over 9,000 students from three states made up the treatment group; these students were compared with 12,000 comparable students from across the country in the control group.

Results





Summary of Findings

HumRRO's findings suggest participation in Ready Mathematics resulted in higher student-level achievement in mathematics, as measured by the i-Ready Diagnostic, compared to a control group of students using only the Diagnostic. For students with comparable starting points, the mean mathematics achievement for the Ready Mathematics group was statistically significantly higher in all grades K–5. Moreover, the effect sizes showed additional support that students in Ready Mathematics schools benefitted from their school's adoption and implementation of the Ready Mathematics core curriculum and i-Ready Online Instruction. This study is further instructional as it yields ESSA Level 2 evidence for the Ready Mathematics program and also meets the requirements for the WWC for quasi-experimental designs

2. Is the data you have already collected generalizable to PPS?

Yes. As described above, this study included schools from across the nation with a large sample size in both the treatment (Blended Core Ready Mathematics) and comparison (i-Ready Diagnostic only) groups. The Ready Math and comparison groups were matched on key demographic variables known to be related to student achievement, including eligibility for free and reduced lunch, race, students with disabilities and students with limited English proficiency.

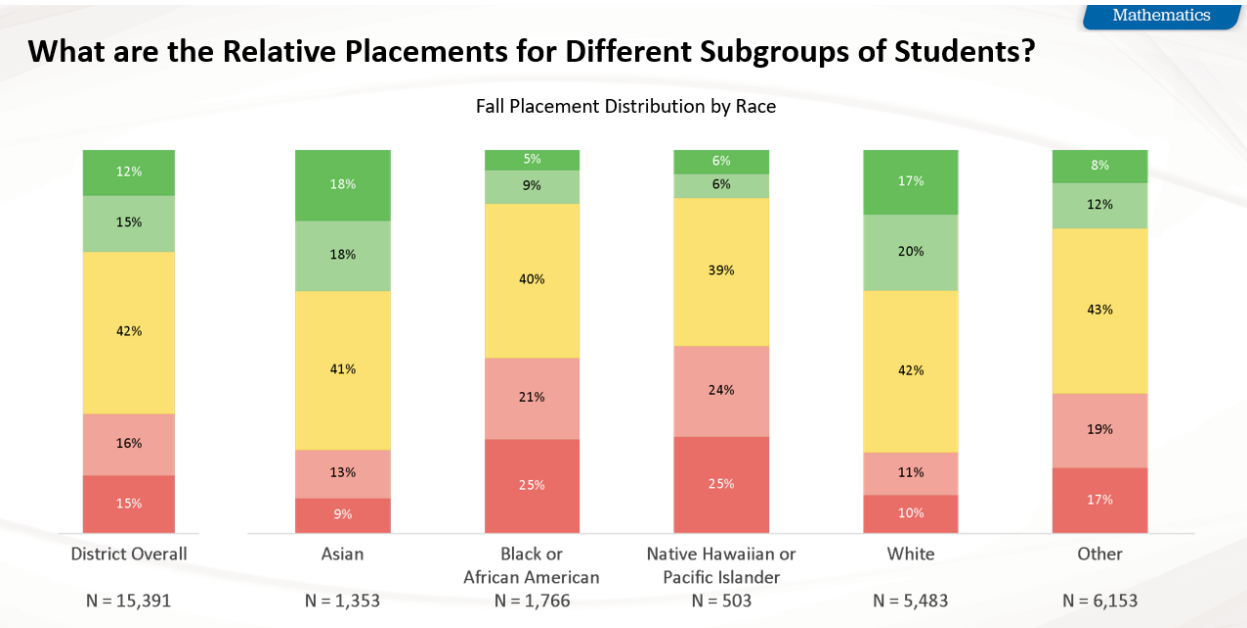
Furthermore, this study was designed to meet the required rigor of the What Works Clearinghouse 4.0 standards for quasi-experimental studies (WWC, 2017a), and to meet guidelines for a Level 2 rating for the Every Student Succeeds Act (ESSA) guidance for evidence-based research (U.S. Department of Education, 2016). This was achieved by using quasi-experimental design in which baseline equivalence was established between the treatment and comparison groups.

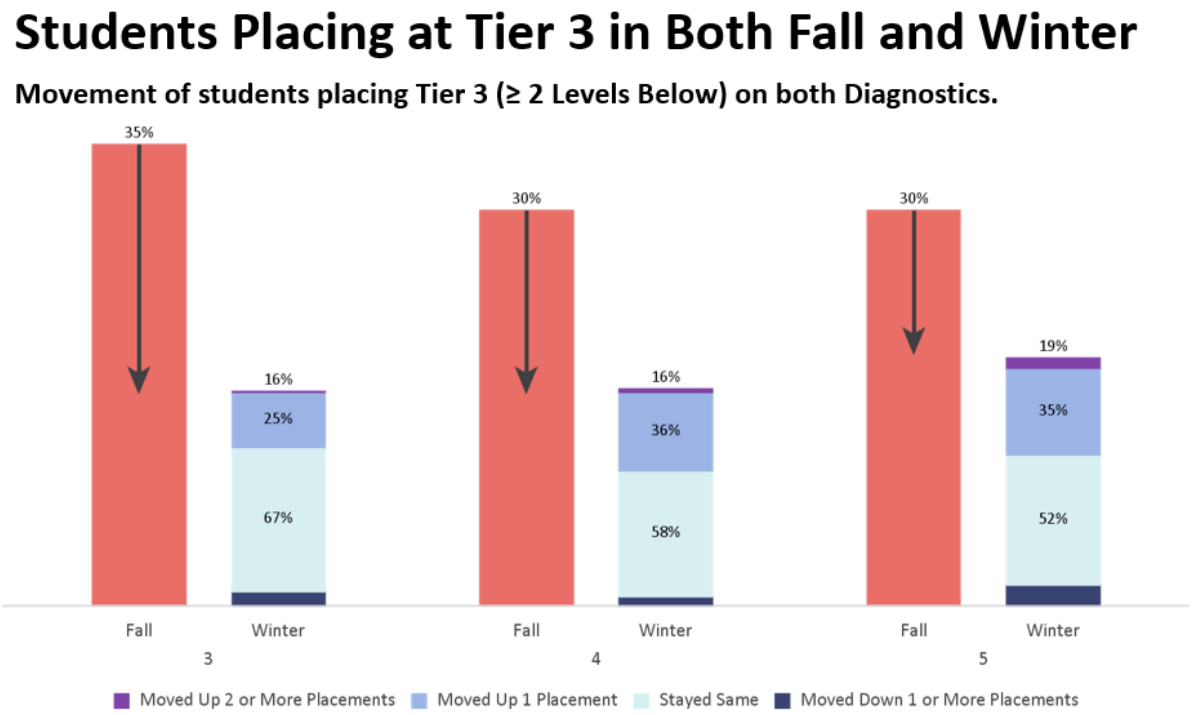
3. What data can you collect to show success of students from different backgrounds, and who are the students represented in the data representations?

With the Ready Classroom Mathematics program, Portland Public Schools teachers and leadership will have real time and longitudinal access to K-5 student data by grade, school, race, gender, ethnicity, students in Special Education, students with economic disadvantage and English Learners.

PPS will also have its own dedicated Ready Classroom Mathematics implementation service team. The implementation team will meet with PPS leadership three times per year to review math performance and growth of all students. The student groups represented in these data reviews include students by grade, school, race, gender, ethnicity, students in Special Education, students with economic disadvantage and English Learners.

The figures below are examples of the type of data and analyses included in these data reviews and are provided from a large, urban, PNW school district using blended core Ready Classroom Mathematics





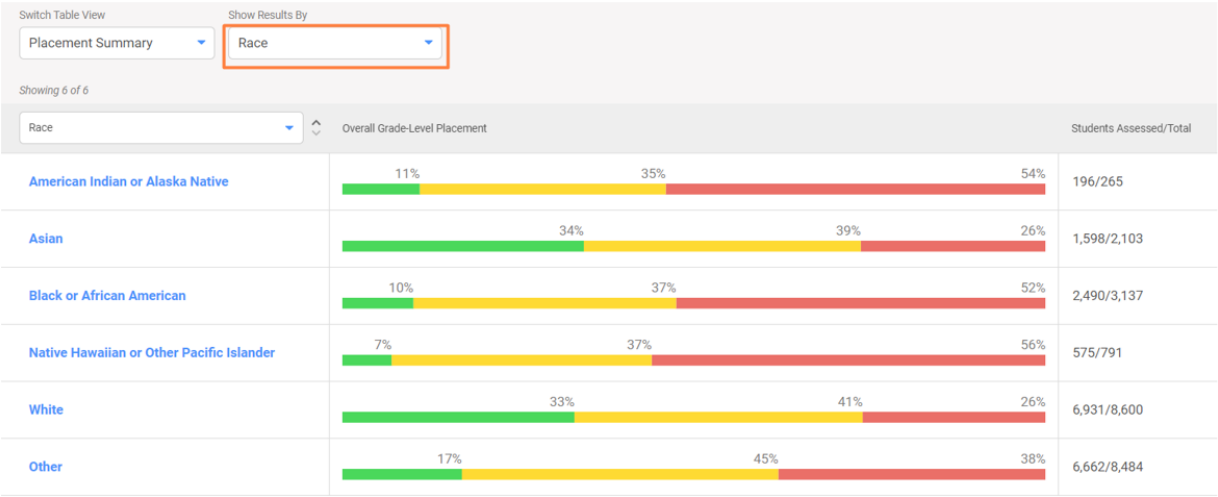
Grade	3	4	5
Students in Grade	2,099	2,150	2,168

In addition to the regularly scheduled data review meetings, Portland Public Schools will have access to review student progress and success within the i-Ready dashboard. After completion of the first diagnostic in

the fall, all students will have a typical and stretch growth goal. These goals are based on each student's chronological grade and placement level on the Diagnostic. Reports within the i-Ready dashboard provide insight into students' performance and progress towards each student's growth goals. These reports can be viewed through the same groupings and demographic filters – district, school, grade, gender, ethnicity, students in Special Education, students with economic disadvantage and English Learners.

The following images illustrate examples of these reports as viewed within the i-Ready dashboard. Both images are from the same urban PNW school district as mentioned above.

Diagnostic Results at Beginning of School Year



Growth Report at End of School Year

Show Results By: Race

Showing 6 of 6

Race	Annual Typical Growth: Progress (Median)	Annual Typical Growth: % Met	Annual Stretch Growth: Progress (Median)	Annual Stretch Growth: % Met	% Students with Improved Placement	Students Assessed/Total
American Indian or Alaska Native	85%	44%	52%	19%	55%	195/207
Asian	100%	52%	63%	21%	59%	1,624/1,687
Black or African American	83%	42%	50%	14%	54%	2,459/2,604
Native Hawaiian or Other Pacific Islander	85%	41%	50%	14%	56%	633/673
White	100%	50%	62%	22%	60%	7,212/7,505
Other	87%	44%	55%	17%	56%	7,237/7,530

4. What does Comprehensive DistanceLearning (CDL) look like with RCL resources?

Curriculum Associates' core mathematics curriculum combines research-based and proven resources to yield measurable gains in student learning. Our blended solution includes *Ready® Classroom Mathematics* print and digital materials for teachers and students.
Ready Classroom Mathematics supports in-person, at-home and hybrid learning settings. Educator Guidance to implement hybrid and distance learning is provided on our Teaching and Learning in 2020 site. This site contains support for:

- How to address unfinished learning
- How to teach *Ready Classroom Mathematic* virtually
- Using *Ready Classroom Mathematics* at home
- Sample schedules and family support

The components of our comprehensive blended-learning core math program include:

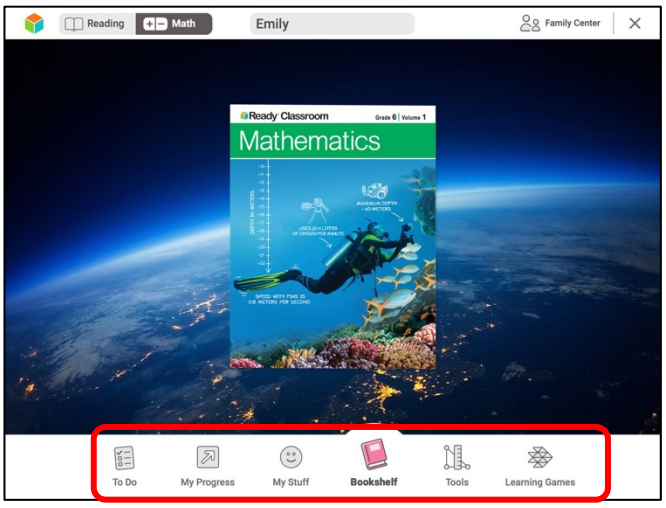
Student resources:

- ***Student Digital Experience:*** 24/7 access for students to their digital *Student Worktext* (eBook) with notetaking, text to speech, highlighting, calculator, Multilingual Glossary and Family Resource Center. Through the *Student Digital Experience*, students will also access their Interactive Practice, Digital Math Tools, Develop Session video library, Interactive Learning Games as well as digital assessments, including the *Diagnostic*.
- ***Student Worktext:*** A 2-volume consumable worktext that includes instruction and practice, Family Letters, Self- Reflection, Vocabulary Cards (Grades 1–5), Unit Review and Bilingual Glossary (English/Spanish)

Teacher resources:

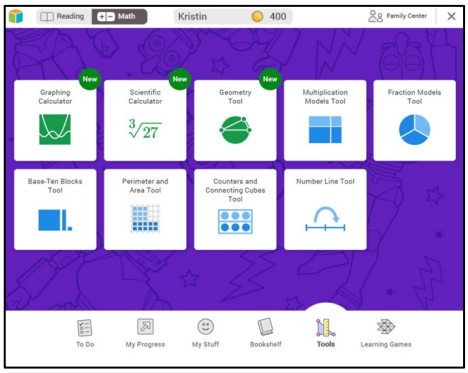
- ***Teacher Digital Experience:*** 24/7 web-based access to all instruction, differentiation, print and digital assessments and reports for *Ready Classroom Mathematics*. Within the *Teacher Digital Experience*, educators have access to all materials Grades K–8 on *Teacher Toolbox*, this online tool provides teachers with access to all K–8 *Ready Classroom Mathematics* student and teacher resources, including Interactive Tutorials, Develop Session videos, Digital Math Tools, Tools for Instruction, Math Center Games, Unit Games, Grade Level Games, Prerequisite Lessons, and Enrichment Activities.
- ***Teacher's Guide*:** The print 2-volume *Teacher's Guide* provides strong professional learning that helps educators of all levels quickly learn math background and instructional strategies. The step-by-step approach gives teachers explicit guidance in how to best teach a particular skill, including suggested language. The guide also provides think-aloud models, answer analysis, error alerts, and suggested additional activities to ensure teachers can identify and remedy students' misconceptions. The *Teacher's Guide* includes guidance to differentiate instruction to support all students to succeed.

- The **Student Digital Experience** offers online access to the print *Student Worktext* via the Bookshelf along with Learning Games, Digital Math Tools, Develop Session video library and the Family Center. The following is a short explanation of each Student Dashboard link:



- **To Do** displays a list of work to be completed
- Students can view **My Progress** to see a list of work completed this school year. In addition, students see the date of completion for completed work, as well as their scores for the Diagnostic and any assignments.
- **My Stuff** provides students the options to customize their dashboard.
- The **Bookshelf** houses the digital edition of *Student Worktext* and students have the ability to highlight, take notes, or have the pages read to them.
- The **Bookshelf** also contains Family Resources such as Family Letters (English, Spanish, Tagalog, Russian, Arabic, Mandarin, Korean, Vietnamese) and Unit Flow and Progression videos for each Unit. The videos are available in English, with closed-captioning in Spanish. These videos further support parents in understanding the mathematical strategies of each Unit, why those strategies are being used, and helps them better support student progress and achievement. For examples, see the Unit Flow and Progression videos in the beginning of the Unit sections on the *Teacher Toolbox*.

- **Digital Math Tools** support students in modeling mathematics in school or at home. The specific Digital Math Tools appropriate to a Lesson are directly accessible on the *Teacher Toolbox* in the Lesson Overview section of each Lesson. Digital Math Tools are available to all students within the Bookshelf and include:

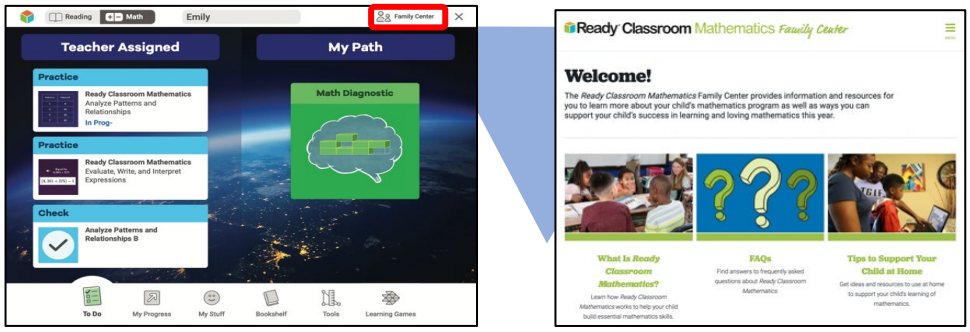


  - Desmos Graphing Calculator (6–8)
  - Desmos Scientific Calculator (6–8)
  - Desmos Geometry Tools (6–8)
  - Multiplication Models
  - Fraction Models
  - Base-Ten Blocks
  - Perimeter and Area Models
  - Counters and Connecting Cubes
  - Number Lines

  Adaptive **Learning Games,** which are provided on the Student Dashboard, merge gameplay and learning to provide engaging digital fluency practice across a wide range of content. The format and adaptive nature of the games provide novel ways for students to visualize different procedures and concepts. Students receive subtle and direct feedback that encourages multiple attempts. The more support students need, the more detailed the feedback. These games generate reports to support teachers in understanding students' progress towards specific skills and factors of learning such as confidence and growth mindset. Each game has numerous levels that support students at multiple grade levels and ability levels.

- The resources in the **Family Center** provide parents with information about how to access student materials, navigation, an overview of *Ready Classroom Mathematics,* and suggestions for how

they can help support their student's progress and achievement.



The *Ready Classroom Mathematics* lesson design provides strong support for hybrid learning. Students complete the opening of the lesson (Try It) remotely and can work in class or through online gatherings to discuss strategies used, analyze and critique the reasoning of others, and discuss connections between multiple strategies.

- Students can use the print *Student Worktext*, digital *Student Worktext* (eBook), digital Learning Games, and Interactive Practice to support remote learning.

- In addition to the print *Student Worktext*, teachers have access to Lesson Slides and Interactive Tutorial lessons that can be projected for students in class or during remote learning sessions.

- The Develop Session Video Library supports educators with online instruction. These instructional videos can be shared with students for distance learning, homework support, or for when students are absent or need reteaching of session concepts.

- When used with *i-Ready Personalized Instruction* (available as additional purchase), remote learning is supported with scaffolded, engaging and interactive digital lessons that allow students to work independently on personalized goals and instructional paths. These lessons can be done in school or at home.

5. What does CDL look like with these resources?

Ready Classroom Mathematics digital materials match and enhance the print materials. As stated previously, students use their Student Digital Experience to access their digital *Student Worktext*. Educator Guidance to implement distance learning is provided on our Teaching and Learning in 2020 site.

6. How do the CDL resources relate to the physical resources?

Ready Classroom Mathematics digital materials match and enhance the print materials. As stated previously, students use their Student Digital Experience to access their digital *Student Worktext*. Educator Guidance to implement distance learning is provided on our Teaching and Learning in 2020 site.

7. Walk through a lesson, focusing on student experience.

- Committee Review Members will have the opportunity to experience lessons during the K-5 presentation. There are also videos provided on the Portland Review Site showcasing lessons in action. Please visit the link below to view Ready Classroom Math Lessons.

  Ready Classroom Videos

8. How are the mathematical practices incorporated into lessons?

Standards correlations and lesson objectives are side-by-side to support teachers in seeing how objectives are visibly shaped by CCSSM cluster headings. Objectives include both Content Objectives that define what students will learn and Language Objectives that describe what students will do to show understanding.

At each grade level, the majority time is devoted to the critical areas defined by the standards and evidenced in the program's treatment of the major and supporting standards of the grade throughout the year. The program includes no extraneous topics or lessons.

The instructional materials identify and utilize the **SMPs**, and all practice standards are embedded into content instruction throughout the program. The instructional routine and lesson design allow for almost every lesson of the Student Worktext to encourage students to make sense of problems, persevere in solving them, choose appropriate tools and models to represent problem situations, explain their reasoning, and attend to precision. Other **SMPs** are highlighted in the Student Worktext appropriate to the content, with all **SMPs** being addressed multiple time

9. How are Social Emotional Learning (SEL) competencies addressed in the resources?

Social and Emotional Routine-
The Try–Discuss–Connect instructional routine provides a manageable way to deliver standards-aligned instruction that encourages students to take ownership of their learning through meaningful mathematical discourse and rigorous problems and questions. For students, the instructional routine provides a predictable framework that allows students to focus on thinking about the math while providing students with a safe environment to strengthen social and emotional skills. The consist practice of engaging students in meaningful discourse allows students opportunities to manage emotions, set and achieve personal goals and development positive relationships in a classroom community that promotes a sense of belonging.

10. Is there explicit teacher guidance on supporting students to demonstrate mathematical practices?

We developed the scope and sequence through a process of research that encompassed learning progressions and unpacking documents, as well as information concerning specifications on fluency, Major Work of the grade, Standards of Mathematical Practices and DOK levels.

The instructional materials identify and utilize the **SMPs**, and all practice standards are embedded into content instruction throughout the program. The instructional routine and lesson design allow for almost every lesson of the Student Worktext to encourage students to make sense of problems, persevere in solving them, choose appropriate tools and models to represent problem situations, explain their reasoning, and attend to precision. Other SMPs are highlighted in the Student Worktext as appropriate to the content, with all SMPs being addressed multiple times.

11. What is the Lexile level of student facing materials?

Title	Copyright	ISBN	Lexile	Lexile Display
Ready Classroom Mathematics, National Edition, Student Worktext – Grade K	2020	9781495780301	210	210L
Ready Classroom Mathematics, National Edition, Student Worktext – Grade 1	2020	9781495780325	360	360L
Ready Classroom Mathematics, National Edition, Student Worktext – Grade 2	2020	9781495780349	560	560L
Ready Classroom Mathematics,National Edition, Student Worktext – Grade 3	2020	9781495780363	650	650L
Ready Classroom Mathematics, National Edition, Student Worktext – Grade 4	2020	9781495780387	690	690L
Ready Classroom Mathematics, National Edition, Student Worktext – Grade 5	2020	9781495780400	740	740L

Title	Copyright	ISBN	Lexile	Lexile Display
Ready Classroom Mathematics Grade 6 Student Worktext	2021	9781728012988	780	780L
Ready Classroom Mathematics Grade 7 Student Worktext	2021	9781728013008	770	770L
Ready Classroom Mathematics Grade 8 Student Worktext	2021	9781728013022	770	770L

12. What does technology integration look like? How can applications be integrated with these resources?

Ready Classroom Mathematics supports educators using Learning Management Systems (LMS) by providing easy access to the platform (*i-Ready*) with Single Sign-On (SSO) through leading district login portals and options for digital sharing of resources from Teacher Toolbox through LMS platforms. Over the course of this school year, we will be working to add additional supports that will make it easier for educators and students to access both the *i-Ready* platform and instructional resources from the Teacher Toolbox.

Collaboration through LMS

Learning Management Systems (LMS) allow educators to gather materials of their class and communicate assignments and actions that they want students to engage with. LMS also offer grading tools and communication tools for students to collaborate with each other as part of projects, assignments, or the regular work of the class. Please see our LMS Support document**:** *Ready Classroom Mathematics* and LMS. Additionally, these video walk-throughs demonstrate how educators use i-Ready with their specific LMS:

- Using Schoology with i-Ready
- Using Canvas with i-Ready
- Using Google Classroom with i-Ready

Uploading content to an LMS

- **Currently:** Educators can share student-facing PDFs and slides from Teacher Toolbox directly with students through their LMS. See our *Ready Classroom Mathematics* grades K–5 EdReports Enhanced Reports with Key Technology documentation, this is also the same for grades 6–8.
- **Coming Soon:** Fillable PDFs to allow for students to fill in responses in select instances are being developed. They will be available back to school 2021. Until then, students can use LMS resources to draw and write on assigned PDFs and submit them to their teachers.

LMS Integration
There are three ways in which *Ready Classroom Mathematics* materials on *i-Ready Connect* can be integrated with a Learning Management System:

- **Uploading content to an LMS.** Uploading *Ready Classroom Mathematics* PDFs directly to an LMS page where students can access the content without having to enter login information or a separate platform.
- **Single Sign-On between LMS and *i-Ready Connect*.** Navigation directly from an LMS into the *i-Ready Connect* platform without having to re-enter login credentials.
- **Direct access to *i-Ready* content from an LMS.** Navigation directly from an LMS to a content asset that may or may not require login credentials.

13. Do these resources come with supporting assessments? What is the format of assessments? What formative assessments are available?

- Please see attached document, *Ready Classroom Assessment Options*, for comprehensive list of optional assessments included with Ready Classroom.

14. Is there a range of DOK questions in formative tasks as well as "unit" assessments?

- **Facilitate meaningful mathematical discourse.**

Effective teaching of mathematics facilitates discourse among students to build shared understanding of mathematical ideas by analyzing and comparing student approaches and arguments. *Ready Classroom Mathematics* helps build strong mathematical habits in students through discourse-based instruction. The Try–Discuss–Connect instructional routine supports teachers in facilitating meaningful mathematical discourse in a manageable way that engages all learners. Each of the Standards for Mathematical Practice are developed throughout this instructional routine.
· The Try–Discuss–Connect instructional routine supports teachers to effectively:

· engage students in meaningful mathematical discourse
· facilitate discussion of multiple student strategies, allowing students to build confidence in their mathematical abilities, make connections between representations, and develop flexible thinking seamlessly integrate the mathematical practices and questions with the appropriate Depth of Knowledge (DOK) level.

Formative Assessments:
Various forms of assessments are included throughout *Ready Classroom Mathematics*. There are numerous classroom discourse questions, critical-thinking questions, activities, exit tickets, and practice problems that provide opportunities for educator observation of student understanding during a Lesson. Lessons include questions with a range of Depth of Knowledge (DOK) levels and that address the SMPs with a heavy emphasis on mathematical discourse.

Lesson Quizzes and Mid/Unit Assessments list the DOK levels for each question in the Teacher's Guide. The DOK levels of the assessment questions are aligned to the intended DOK level of the standard being assessed.

15. How do these resources integrate with assessment platforms?

i-Ready Connect/Ready Classroom Resources do not directly integrate with other assessment platforms. However, our instructional resources are specifically designed and developed to address the rigor and intent of the Common Core State Standards (CCSS). Any assessment that provides reporting and data aligned to grade level standards can be paired easily with i-Ready Connect/RCL for whole group, differentiated, and personalized instruction.

16. Are these resources associated with any Open Education Resources?

i-Ready Connect/Ready Classroom Resources are not associated with any Open Education Resources. However, our instructional resources are

specifically designed and developed to address the rigor and intent of the Common Core State Standards (CCSS). Any OER that is designed to address standards-based instruction could be paired with i-Ready Connect/Ready Classroom resources

17. Can we have access to explore the materials?

Yes, we are happy to provide the PPS Review Committee full access to explore i-Ready Connect/Ready Classroom. We have shipped print samples (English and Spanish) to the district for review. In addition to print samples, we crafted comprehensive email/video messages for the different grade level bands, K/1, 2/3 and 4/5, highlighting the contents of Ready Classroom samples and resources. Lastly, we customized a Portland Public Schools Review Site (please see link below) designed to provide access to all instructional and support resources. If any additional resources are needed to assist with your review, please have Lynette Engstrom contact our team.

Portland Public Schools Review Site