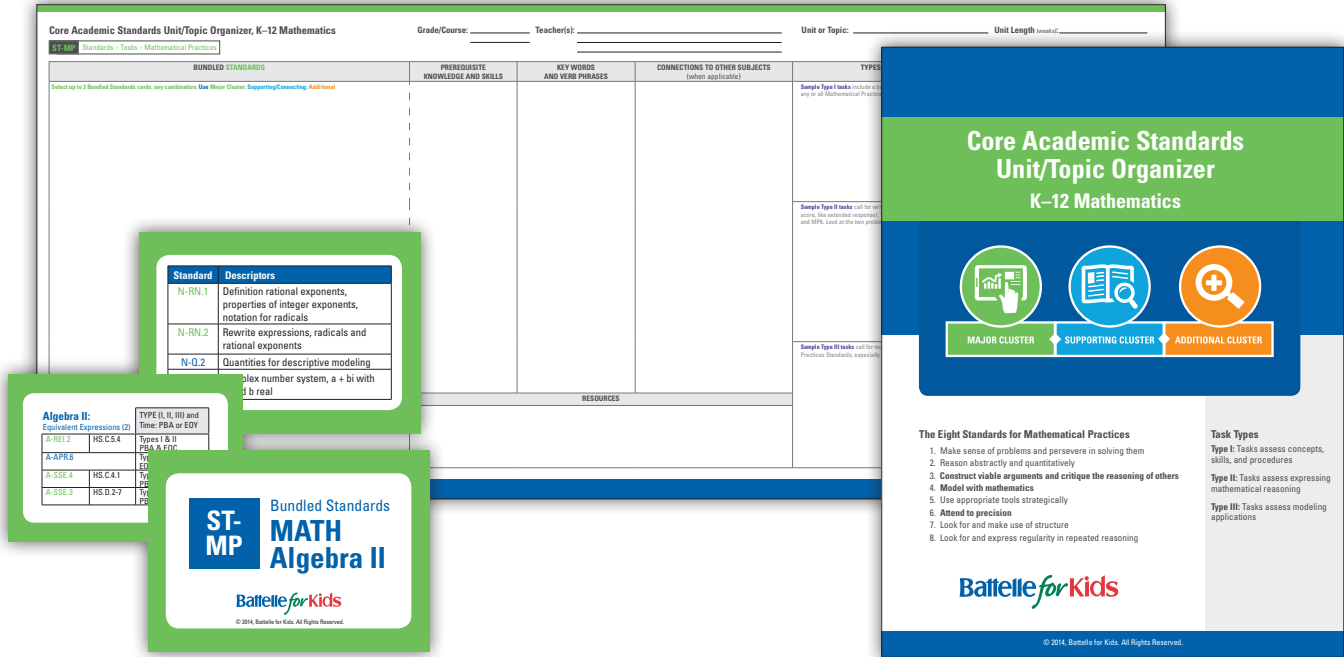


USER MANUAL



Common Core Unit Organizer K-12 Mathematics



Standards • Tasks • Mathematical Practices



What is the Purpose of the Unit Organizer and Bundled Standards Cards?

Core Academic Standards Unit/Topic Organizer, K-12 Mathematics

Grade/Course: _____ Teacher(s): _____ Unit or Topic: _____ Unit Length: _____

BUNDLED STANDARDS	PREREQUISITE KNOWLEDGE AND SKILLS	KEY WORDS AND VERB PHRASES	CONNECTIONS TO OTHER SUBJECTS (where applicable)	TYPES OF TASKS (formal and informal) and MATHEMATICAL PRACTICES (where appropriate)
Select up to 15 bundled Standards cards, any combination. See Bundled Standards Cards for more information.				<p>Sample Task Ideas: Use a variety of contextual understanding, fluency, and application like those listed. These tasks can involve any or all Mathematical Practices Standards.</p> <p>Sample Task Ideas: Use for written argument/discussion, critique of reasoning, or attention to mathematical reasoning (Modeling, the real-world context, and modeling). These tasks should be performance tasks with other Mathematical Practices Standards, especially modeling, used to guide application and clarity.</p> <p>Sample Task Ideas: Use for modeling application in a real-world context or scenario and can also include several Mathematical Practices Standards, especially MP1.</p>
<p>Fluency Expectations and Strategies: Grades 3-8 Common Core State Standards, Grades 9-12 Common Core State Standards, and other resources.</p>				<p>RESOURCES</p>

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Standard	Descriptors
N-RN.1	Definition rational exponents, properties of integer exponents, notation for radicals
N-RN.2	Rewrite expressions, radicals and rational exponents
N-Q.2	Quantities for descriptive modeling

Algebra II:
Equivalent Expressions (2)

A-REL.2	HS.C.5.4	TYPE (I, II, III) and Time: PBA or EOY
A-APR.6		Types I & II PBA & EOY
A-SSE.4	HS.C.4.1	Typ: EO
A-SSE.3	HS.D.2.7	Typ: PBA, EO, PB

ST-MP Bundled Standards
MATH
Algebra II

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As districts implement the Common Core State Standards, the shift from isolated lesson plans and pacing maps should give way to individual teacher or collaborative grade-level or course teams developing multiple units per grade/course. Using the Unit Organizer and Bundled Standards Cards gradually leads teachers through the process of moving from reviewing Standards to bundling Standards that are taught best together, or integrated, as exemplified by PARCC Performance-Level Descriptors and Evidence Tables and Smarter Balanced Achievement-Level Descriptors.

Why is Bundling Standards Important?

By beginning with Standards, teachers identify key academic vocabulary and verb phrases, which helps them identify prerequisite knowledge and skills. By focusing on key academic vocabulary and verb phrases taken from the Standards, teachers can develop sample tasks that can be effectively assessed formatively and summatively. With an emphasis on Fluency Expectations and Mathematical Practices, teachers are better able to focus instruction on application for higher-level thinking.

Teachers and Instructional Leaders Are Using These Resources To:

- Plan units, essential learning activities, and scope and sequence for grade bands and K-12 articulation;
- Identify key academic content vocabulary and verb phrases to help develop sample tasks;
- Cross-check current curriculum for Common Core level alignment and rigor;
- Create sets of differentiated materials to meet students' diverse needs and interests; and
- Build cross-curricular connections.

Administrators and Instructional Leaders Are Using These Resources To:

- Ensure that curriculum complies with district, state, and other requirements;
- Conduct walk-throughs to monitor compliance with local curriculum;
- Coach individual teachers;
- Conduct staff development with groups of teachers; and
- Communicate with parents and other stakeholders.

“The Unit Organizer is a comprehensive way to ensure that all critical elements are intentionally discussed, planned, taught, and learning.” –Teacher

ST-MP Step by Step

STEP 1

GETTING STARTED

Using the Unit Organizer, fill in basic information, including grade/course, contributing teachers, unit/topic, and unit length.

STEP 2

BUNDLED STANDARDS CARDS

The Bundled Standards Cards identify the following information:

Algebra I: Interpreting Functions		TYPE (I, II, III) and Time: PBA or EOY
² F-IF.1	F-IF.A.Int.1	Types I & III PBA & EOY
³ F-IF.2- ⁴	F-IF.A.Int.1	Types I & III EOY
F-IF.4		Type I
F-IF.5-1, 2		EOY

Grade 6: Multiplying & Dividing with Fractions		TYPE (I, II, III) and Time: PBA or EOY
¹ 6.EE.5-1	6.C.6	Types I & II- ⁷ PBA & EOY
6.EE.5-2		
6.EE.5- ⁴		
6.EE.7		
6.EE.8		
6.EE.9	6.C.8.2	Types I & II PBA & EOY
³	⁹	

Legend: Column 1

- 1 Grade Level
- 2 Conceptual Categories (HS)
- 3 Domain Code
- 4 Standard Number

Columns 2 & 3

- 5 Int. = Integrated Assessment
- 6 Item Number in PARCC Assessment Bank
- 7 Assessment Task Type
- 8 Time of Year Assessed
 - PBA—Performance-based Assessment (approximately after 75% of school year completed)
 - EOY—End of Year

- 9 Content Scope (See Task Type/Subclaim Chart)

Standard	Descriptors
6.RP.1	Ratio concepts
6.RP.2	Unit rate with a ratio
6.RP.3	Ratio/rate reasoning to solve problems
6.NS.1	Quotients of fractions
6.NS.2	Fluently divide multi-digit numbers
6.NS.3	Fluently +, -, ×, / multi-digit decimals

Descriptor Card

Analyze each Standard included on a card and decide what key words and verb phrases can represent the Standard. Use the Descriptor Cards from the deck to assist and record key words and verb phrases to represent each bundle in the designated spaces.

STEP 3

IDENTIFY A UNIT AND SELECT BUNDLED STANDARDS

Identify a unit topic by referring to the PARCC Performance-Level Descriptors (PLDs) (July 2013). Column 1 of the PLDs provides the information used on the Bundled Standards Cards that can accompany this Unit/Topic Organizer. Typically, teachers can select 1-5 Bundled Standards Cards in Column 1, depending on the unit.

Grade 4: Multi-Step Problems		TYPE (I, II, III) and Time: PBA or EOY
4.OA.3-1	4.C.5-1 4.C.6-1	Types I, II, & III PBA & EOY
4.OA.3-2	4.C.5-1 4.C.6-1 4.Int.5	Types I, II, & III PBA & EOY
4.NBT.5-1 4.NBT.5-2	4.C.1-1 4.Int.5	Types I, II, & III PBA & EOY
4.NBT.6-1 4.NBT.6-2	4.C.1-2 4.C.2 4.Int.5	Types I, II, & III PBA & EOY

Core Academic Standards Unit/Topic Organizer, K-12 Mathematics

Grade/Course: _____ Teacher(s): _____

4.1.MP Standards - Tasks - Mathematical Practices

BUNDLED STANDARDS	PREREQUISITE KNOWLEDGE AND SKILLS	KEY WORDS AND VERB PHRASES
Select up to 3 Bundled Standards cards, any combination. Use Major Cluster, Supporting/Connecting, Additional		

STEP 4

DETERMINE PREREQUISITE KNOWLEDGE AND SKILLS

Core Academic Standards Unit/Topic Organizer, K-12 Mathematics

Grade/Course: _____ Teacher(s): _____

4.1.MP Standards - Tasks - Mathematical Practices

BUNDLED STANDARDS	PREREQUISITE KNOWLEDGE AND SKILLS	KEY WORDS AND VERB PHRASES
Select up to 3 Bundled Standards cards, any combination. Use Major Cluster, Supporting/Connecting, Additional		

- 3.OA.3
- 3.OA.5
- 3.OA.2
- 3.MD 7a-d

Identify the prerequisite skills from the Bundled Standards Cards you selected and write in the section labeled Prerequisite Knowledge and Skills. Planning teams can identify resources and place in the box provided. To learn more about Prerequisite Knowledge and Skills, refer to the K-12 Mathematics Vertical Progression Guide.

STEP 5

SET FLUENCY EXPECTATIONS

If you are using the Unit/Topic Organizer to create math units in Grades 3, 4, 5, or 6, consult the *PARCC Model Content Framework* for fluency expectations, and note in the space provided.

- 3.OA.7 Fluently multiply and divide within 100
- 3.OA.2 Fluently add and subtract within 100
- 2.NBT.5 Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or relationship between addition and subtraction

Core Academic Standards Unit/Topic Organizer, K-12 Mathematics

Grade/Course: _____ Teacher(s): _____

4.1.MP Standards - Tasks - Mathematical Practices

BUNDLED STANDARDS	PREREQUISITE KNOWLEDGE AND SKILLS	KEY WORDS AND VERB PHRASES
Select up to 3 Bundled Standards cards, any combination. Use Major Cluster, Supporting/Connecting, Additional	3.OA.3 3.OA.5 3.OA.2 3.MD 7a-d	

Fluency Expectations and Strategies - Grades 3-6 (Source: PARCC Model Content Framework), Details for K-12 Content Core Vertical Progression Guide, or other resources

RESOURCES

STEP 6

RECORD KEY WORDS AND VERB PHRASES

Key Words and Verb Phrases

Consider learning implications of the chosen Standards with your grade or subject collaborative team. Add key phrases, including verb phrases, taken from the Bundled Standards and prerequisite skills and add the phrases in the section labeled Key Words and Verb Phrases.

- digits
- place value
- remainder
- strategies
- properties of operations
- quotient
- dividend
- addition
- subtraction
- multiplication
- division

STEP 7

ADD CROSS-CURRICULAR EXPECTATIONS AND RESOURCES

If applicable for this unit, use the section provided to add connections to other subjects.

Cross-Curricular Connections

Resources

STEP 8

DESIGN TASKS

Write sample tasks in the sections provided.

Type I Tasks: Include a balance of conceptual understanding, fluency, and application and can involve any or all Mathematical Practices Standards.

Type II Tasks: Call for written arguments/justifications, critique of reasoning, or precision in mathematical statements (rubric). Type II Tasks should be performance tasks with other Mathematical Practices Standards, especially MP3 and MP6.

Type III Tasks: Call for modeling/application in a real-world context or scenario and can also include several Mathematical Practices Standards and performance tasks, especially MP4.

Examples of Types of Tasks/Problems

Type I Tasks	Type II Tasks	Type III Tasks
Include a balance of conceptual understanding, fluency, and application	Call for written arguments and justifications, critique of reasoning, or precision of mathematical statements	Application in real-world context or scenario
Selected response, short answer	Extended response, rubric to score	Modeling, rubric to score
Involve Mathematical Practices	Performances tasks, include additional Mathematical Practices, especially MP3 and MP 6	Include several Mathematical Practices, especially MP 4
There are 17 members of three teams. How many vans will be necessary to carry them if each van carries 11 people?	Explain how knowing that $4 \times 23 = 92$ and $4 \times 50 + 200$ would allow you to more easily solve the problem of $292 \div 4$. Solve the problem $292 \div 4$.	Ned bought 5 baskets at \$12.00 each and 11 bags of candy At \$3.00 per bag. If he shares the cost with his sister, how much does this purchase cost him? If he has a \$50 bill, will he have enough money? If he has enough, how much will he have left?



Order & Learn More

Order Unit Organizers and Bundled Standards Cards and learn more about our suite of Common Core resources at www.BattelleforKids.org/CommonCore.

About Battelle for Kids

Battelle for Kids is a national, not-for-profit organization that provides strategic counsel and innovative solutions for today's complex educational-improvement challenges. Our mission-driven team of education, technology, communications, and business professionals specializes in creating strategies that advance the development of human capital, the implementation of strategic measures, practices for improving educator effectiveness, and communication with all stakeholders in schools. At the heart of this work is an unwavering focus on accelerating student growth.

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Source Documents

The following resources were used to create the Unit Organizer and Bundled Standards Cards:

The Common Core State Standards and Battelle for Kids' Vertical Progression Guides
PARCC, SBC, ACT, ETS

Model Content Frameworks

<http://www.parcconline.org/mcf/ela/parcc-model-content-frameworks-browser>

Grade-Level Combined Task Generation Models and Combined Form Specifications

Grade-Level Evidence Tables

Combined Passage Selection Guides and Worksheets (for Literary and Informational Text)

<http://www.parcconline.org/assessment-blueprints-test-specs>

Grade-Specific PLDs (Performance-Level Descriptors)

<http://www.parcconline.org/plds>

Smarter Balanced Assessment Consortium

<http://www.smarterbalanced.org/smarter-balanced-assessments/>

ACT

<http://www.discoveractaspire.org/index.html>

The CBAL Initiative: Innovation in K-12 Assessment (ETS)

<http://www.ets.org/research/topics/cbal/initiative>