

Built on Standards

Standards Focus

Reveal Math breaks down the standards into a coherent scope and sequence that emphasizes each grade level’s major content areas to develop a strong foundation as students progress towards algebra.

Standards

MajorSupportingAdditional

Content

3.OA.A.1 Interpret products of whole numbers, e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each. For example, describe a context in which a total number of objects can be expressed as 5×7 .

Each lesson list out the standards addressed as major, supporting, and additional.

Item Analysis				
Item	DOK	Lesson	Guided Support Intervention Lesson	Standard
1	1	3-4	Unknown Group Size (Equal Groups)	3.OA.A.2
2	2	3-3	Reorder Factors	3.OA.B.5
3	1	3-1	Model Multiplication (Objects)	3.OA.A.1
4	3	3-4	Unknown Group Size (Equal Groups)	3.OA.A.2
5	3	3-1	Model Multiplication (Objects)	3.OA.A.1
6	2	3-2	Model Multiplication (Arrays)	3.OA.A.1
7	1	3-2	Model Multiplication (Arrays)	3.OA.A.1
8	2	3-7	Word Problems Using Equations	3.OA.A.4
9	3	3-6	Relate Multiplication and Division Facts	3.OA.A.1 3.OA.A.2
10	2	3-7	Word Problems Using Equations	3.OA.A.4
11	2	3-4	Unknown Number of Groups (Equal Groups)	3.OA.A.2
12	2	3-5	Unknown Number of Groups (Equal Groups)	3.OA.A.2
13	2	3-7	Equal Groups Word Problems (Equations)	3.OA.A.4
14	1	3-2	Unknown Number of Groups (Equal Groups)	3.OA.A.2
15	3	3-6	Relate Multiplication and Division Facts	3.OA.A.2
16	2	3-2	Model Multiplication (Arrays)	3.OA.A.1
17	1	3-6	Relate Multiplication and Division Facts	3.OA.A.2
18	2	3-2	Model Multiplication (Arrays)	3.OA.A.1
19	3	3-3	Reorder Factors	3.OA.B.5
20	2	3-6	Relate Multiplication and Division Facts	3.OA.A.1 3.OA.A.2

Standards are included in Item Analysis and the standards report to help track student’s understanding as they progress towards the end of each grade level.

NGA Center/CCSSO	Common Core State Stand...	Mathematics (2010)	Grade 3
Show: Assessed All Show Description			
0 - 59% 60 - 69% 70 - 79% 80 - 89% 90 - 100%			
Standards	Description	Class Avg	Questions
CCSS.Math.Content.3.NF	Number and Operations-Fractions	82%	9
CCSS.Math.Content.3.NF.A	Develop understanding of fractions as numbers.	82%	9
CCSS.Math.Content.3.NF.A.3	Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.	82%	9

Teachers can access reports on class performance by standard, including a cumulative score by class and student, as well as the number of questions answered.

Spiral Review	
Students can complete the Spiral Review at any point during the unit as either a paper-and-pencil or digital activity.	
Lesson	Standard
3-1	2.OA.A
3-2	2.OA.B
3-3	2.NBT.A
3-4	2.NBT.B
3-5	2.MD.A
3-6	2.MD.B
3-7	2.OA.A

Spiral Review promotes mastery and preparation for end-of-year assessment through distributed and mixed practice of the major clusters throughout the year.

Coherent Across Grade Levels

The scope and sequence of *Reveal Math* is built on the logical learning progression of mathematical content, connecting concepts across all grades and within each grade.

Coherence

What Students Have Learned

- Repeated Addition and Arrays Students used repeated addition to find the total number of objects in an array. (Grade 2)
- Equal Groups Students determined whether a group of objects was odd or even by pairing objects into two equal groups. (Grade 2)
- Relate Addition and Subtraction Students add and subtract within 100 using the relationship between addition and subtraction. (Grade 2)

What Students Are Learning

- Understand Multiplication Students understand that multiplication represents the total number of objects in equal groups.
- Understand Division Students understand that division can represent equal sharing or equal grouping.
- Relate Multiplication and Division Students use representations to understand the relationship between multiplication and division.

What Students Will Learn

- Multiply Within 100 Students use patterns and multiplication properties to multiply within 100. (Units 4 and 5)
- Divide Within 100 Students use strategies to divide within 100. (Unit 9)
- Relate Multiplication and Division Students use the relationship between multiplication and division to solve division equations. (Unit 9)

Unit- and lesson-level Coherence guidance helps teachers understand what prior knowledge students need to be able to access the unit content and what math the current unit is building the foundation for.

Readiness Diagnostic assesses pre-requisite skills and provides connected intervention resources to ensure students have a strong foundation in previously learned topics relevant to the unit content.

Readiness Diagnostic

Administer the Readiness Diagnostic to determine your students' readiness for this unit.

Targeted Intervention
 Use Guided Support Intervention lessons available in the Teacher Digital Center to provide targeted intervention.

Item	DOK	Skill	Guided Support Intervention Lesson	Standard
1	2	Commutative Property of Addition	Add in Any Order	2.NBT.B.5
2	1	Add equal groups	Repeated Addition Equations with Arrays	2.OA.C.4
3	2	Add equal groups	Solve Repeated Addition with Arrays	2.OA.C.4
4	3	Relate addition and subtraction	Use Related Addition Facts to Subtract	2.NBT.B.5
5	3	Understand the unknown number in an addition or subtraction equation	Result Unknown within 50 (Take From)	2.OA.A.1
6	1	Add equal groups	Repeated Addition Equations with Arrays	2.OA.C.4
7	2	Relate addition and subtraction	Use Related Addition Facts to Subtract	2.NBT.B.5
8	1	Add equal groups	Repeated Addition Equations with Arrays	2.OA.C.4
9	1	Add to find total number of objects in an array	Repeated Addition Equations with Arrays	2.OA.C.4
10	2	Understand the unknown number in an addition or subtraction equation	Result Unknown within 50 (Add To)	2.OA.A.1

Assign the digital Readiness Diagnostic to students or download and print PDFs from the Digital Teacher Center.

Unit 3
How Ready Am I?

Name: _____

1. Which number makes the equation true?
 $5 + 4 = 4 + ?$
 A. 3 B. 5 C. 4 D. 6

2. Cars bought a package of toy cars for each of her 5 friends. Each package has 4 cars. Which equation can be used to find the total number of cars Cars bought?
 A. $5 + 4 = ?$ B. $5 + 5 + 5 + 5 = ?$
 C. $4 + 4 + 4 + 4 = ?$ D. $4 + 4 + 4 + 4 + 4 = ?$

3. Marco has 3 shelves in his room. There are 3 trophies on each shelf. How many trophies does Marco have?
 A. 3 B. 6 C. 9 D. 12

4. Maria's dog buried 10 bones. Maria found 6 bones. Maria wrote the subtraction equation $15 - 6 = ?$ to find out how many bones are left buried. Which equation could Maria use to help solve her equation?
 A. $15 + 6 = 9$ B. $6 + 9 = 15$
 C. $6 - 15 = 9$ D. $9 - 15 = 6$

5. Geoff rides his bike for a total of 10 miles in two days. On the first day he rides his bike for 3 miles. Which equation represents the number of miles he rode his bike the second day?
 A. $10 - 1 = 3$ B. $10 + 3 = ?$
 C. $1 + 10 = 3$ D. $7 - 10 = 3$

6. Daria puts 3 stickers each on 4 pages. Which equation can Daria use to find out how many stickers are on each page?
 A. $3 + 4 = ?$ B. $3 + 3 + 3 = ?$
 C. $4 + 4 + 4 = ?$ D. $3 + 3 + 3 + 3 = ?$

7. Which addition equation is related to $14 - 8 = 7$?
 A. $8 + 7 = 15$ B. $7 + 14 = 8$
 C. $8 + 14 = 7$ D. $14 + 8 = 7$

8. Which equation correctly represents the array?

 A. $3 + 3 = 6$ B. $3 + 3 + 3 = 9$
 C. $3 + 3 + 3 + 3 = 12$ D. $3 + 6 = 9$

9. Which equation correctly represents the array?

 A. $5 + 2 = 7$ B. $5 + 5 = 10$ C. $2 + 2 = 4$ D. $2 + 2 + 2 + 2 = 8$

10. Which number makes the equation true? $9 + ? = 17$
 A. 5 B. 6 C. 7 D. 8

Assessment Resource Book 3P

Rigorous Instruction

Rigor Focus Derived from Standards

The learning objective for each lesson is influenced by the element or elements of rigor that each standard targets—conceptual understanding, procedural skill and fluency, or application.

Rigor		
Conceptual Understanding <ul style="list-style-type: none">Students develop understanding of one meaning of multiplication as the total number of objects in equal groups.	Procedural Skill & Fluency <ul style="list-style-type: none">Students begin to build a foundation for fluency with multiplication facts. <i>Procedural skill and fluency is not a targeted element of rigor for this standard.</i>	Application <ul style="list-style-type: none">Students begin to apply their understanding of multiplication to represent and solve real-world problems with equal groups. <i>Application is not a targeted element of rigor for this standard.</i>

Conceptual Understanding

Reveal Math places a large emphasis on sense-making as the foundation for conceptual understanding. Sense-making routines at the beginning of each lesson help build a classroom environment that supports thinking, reasoning, and communicating about math to uncover the “why” behind the math.



Sense-Making Routines

- Notice & Wonder** (Lessons 3-1, 3-5) In Lesson 3-1, students think about the total number of items and how the items are grouped together. In Lesson 3-5, students understand that when things are grouped equally, each group has the same amount.
- Notice & Wonder: How are they the same? How are they different?** (Lesson 3-2) Students think about the use of structure to determine the total number of objects in each array.
- Is It Always True?** (Lesson 3-3) Students think about how an array can be used as a tool to determine the total number of objects, and why the direction of the rows in an array does not impact the total.
- Numberless Word Problem** (Lessons 3-4, 3-7) In Lesson 3-4, students understand that when things are shared equally, each group has the same amount. In Lesson 3-7, students understand that when objects are sorted into equal groups, it is easier to identify the total number of objects.
- Which Doesn't Belong?** (Lesson 3-6) Students understand that representations with the same number of objects in each group or each row can show both multiplication and division.

Procedural Skill and Fluency

Students engage in mathematical discourse and productive struggle as they develop the math for each lesson. This engagement allows students to connect the “why” to the “how” of mathematics. Students are given purposeful practice problems and multiple opportunities to practice throughout the year to help meet each grade level’s fluency expectations.

Daily Practice Opportunities:

- On My Own
- Additional Practice
- Game Station
- Digital Station
- Spiral Review

Unit Practice Opportunities:

- Unit Review
- Fluency Practice
- Digital Game Station

Application

Real-world problems are provided throughout each lesson with rich, application-based question types, such as “Find the Error” and “Extend Thinking,” which are embedded in daily practice.

Daily differentiation provides opportunities for application through the Application Station Cards, STEM Adventures, and WebSketch Explorations.

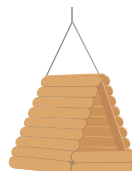
- 9. Error Analysis** Frankie says she can add $3 + 5$ to find the total number of ice cubes in the tray. Do you agree? Explain.



- 10. Extend Your Thinking** Mrs. Ruiz is placing 18 chairs in equal rows. What 2 multiplication equations can represent different arrays she can create with the chairs?

Making a Bird Feeder

Equal groups are often used in construction. You will build a craft stick bird feeder, like the one shown. Bird feeders like this use equal groups of craft sticks to create the sides of the bird feeder. Search the Internet for ideas about making a craft stick bird feeder. Discuss the ideas with your group. Then, create a supply list and build the bird feeder together.



Make up an equal group word problem about the bird feeder.

Be sure to include a symbol for the unknown quantity. Switch problems with another group and solve.

1. What are some other math questions you can ask about your bird feeder?
2. How can you use equal groups to help answer these questions?
3. How could you make your bird feeder so it will hold more birdseed?

Unit 3 • Multiplication and Division