

Ancillary Sampler



About Amplify

Amplify is dedicated to collaborating with educators to create learning experiences that are rigorous and riveting for all students. Amplify creates K–12 core and supplemental curriculum, assessment, and intervention programs for today’s students.

A pioneer in K–12 education since 2000, Amplify is leading the way in next-generation curriculum and assessment. All of our programs provide teachers with powerful tools that help them understand and respond to the needs of every student.

Amplify Desmos Math is based on curricula from Illustrative Mathematics (IM). IM K–5 Math is © 2019 Illustrative Mathematics, and is licensed under the Creative Commons Attribution 4.0 International license (CC BY 4.0). Additional modifications contained in Amplify Desmos Math are © 2024 Amplify Education, Inc. and its licensors. Amplify is not affiliated with the Illustrative Mathematics organization.

Desmos® is a registered trademark of Desmos, Inc.

English Learners Success Forum is a fiscally sponsored project of the New Venture Fund (NVF), a 501(c)(3) public charity.

Universal Design for Learning Guidelines and framework are developed by the Center for Applied Special Technology. © 2018 CAST.

The Effective Mathematics Teaching Practices are developed by NCTM in Principles to Actions: Ensuring mathematical success for all. © 2014 NCTM.

Notice and Wonder and I Notice/I Wonder are trademarks of NCTM and the Math Forum.

No part of this publication may be reproduced or distributed in its original form, or stored in a database or retrieval system, without the prior written consent of Amplify Education, Inc., except for the classroom use of the worksheets included for students in some lessons.

Copyright by Amplify Education, Inc.
55 Washington Street, Suite 800,
Brooklyn, NY 11201
www.amplify.com

Overview information

Introduction..... ii

Assessments x

Reporting..... xvi

Differentiation and Intervention xx



Welcome to your Amplify Desmos Math ancillary sampler!

One of the core tenets of the program's design is that students can catch up while keeping up with grade-level math. To ensure all students access grade-level math, Amplify Desmos Math includes core instruction, a suite of assessments, and tailored practice resources that adjust to student learning.

Multiple points of entry to lesson content and Responsive Feedback enable every student to be challenged, yet successful. Cohesive differentiation and intervention resources provide the necessary support to prevent students from falling behind or allow them to extend their thinking.

Amplify Desmos Math includes print blackline master ancillaries for Assessment, and Intervention. On the pages that follow, you'll find examples of Amplify Desmos Math Mini-Lessons, assessment resources from a sample unit, centers, and more.

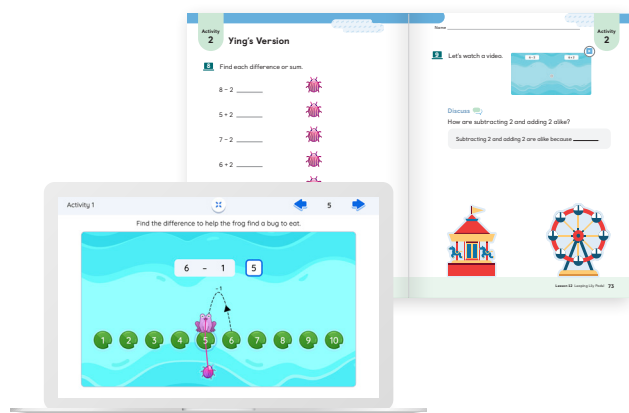
Sample resources

Assessments and Rubrics	1
Show-What-You-Know Assessments	23
Mini-Lessons	43
Centers	109
Extensions	147



Program Resources

For Students

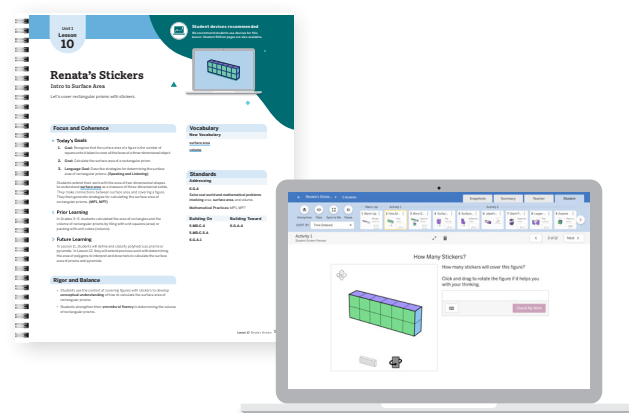


- Student Edition (two volumes)
- Digital access to lesson resources and practice
- Interactive student activity screens
- Responsive Feedback
- Collaboration tools
- Personalized practice

Optional: Manipulative Kits



For Teachers



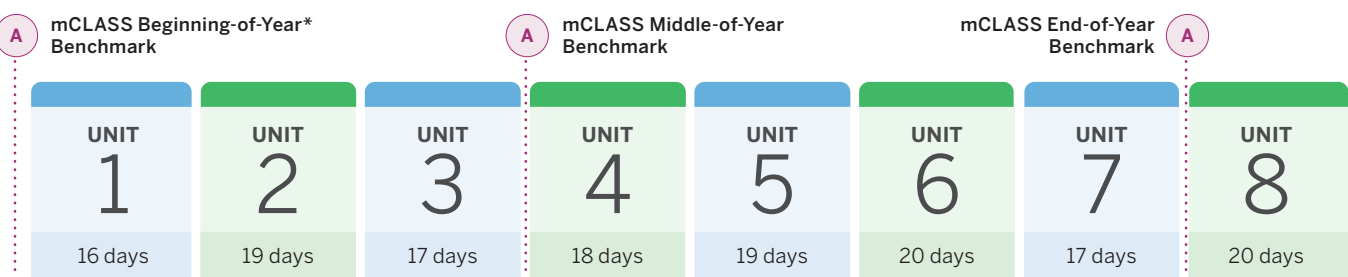
- Teacher Edition (two volumes)
- Digital access to planning and instruction resources
- Presentation Screens
- Facilitation and progress-monitoring tools
- Assessment and reporting suite, including mCLASS® Assessments

Assessment Resources, Center Resources, Intervention and Extension Resources



Program Architecture

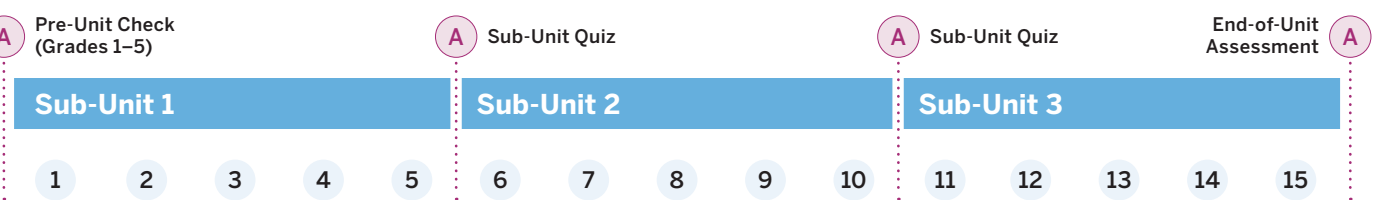
Course



Note: The number of lessons varies from unit to unit. See Scope and Sequence for the full program scope.

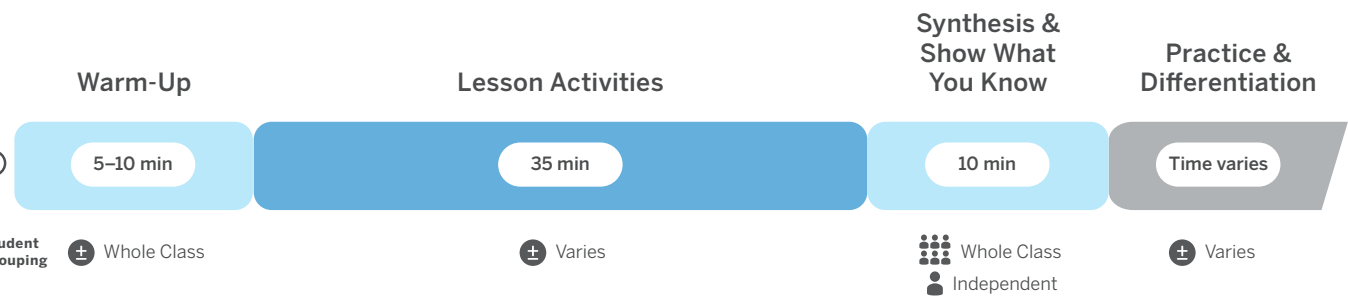
*A brief, but powerful, mCLASS Beginning-of-Year Screener is provided when mCLASS Benchmark is not included.

Unit



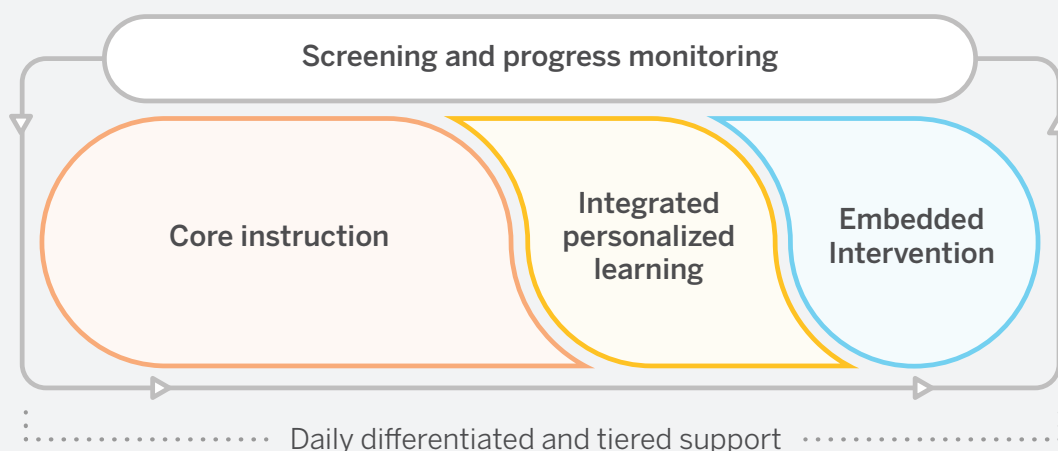
Note: The number of sub-units per unit and lessons within each sub-unit varies. This depiction shows the general structure of a unit. See the course Table of Contents in the print Teacher Edition for more details.

Lesson



Support math classrooms with one integrated, data-driven solution.

In Amplify Desmos Math, data informs instruction within integrated resources. Cohesive differentiation and intervention resources support and challenge students toward a deeper understanding of the learning goals, ensuring all students can keep up with or stretch beyond grade-level math.



Screening and progress monitoring

mCLASS® Assessments, along with daily formative checks, measure what students know and how they think. The asset-based assessment system provides teachers with targeted, actionable insights, linked to core instruction and intervention resources.

Core instruction

Amplify Desmos Math lessons provide a structured approach to problem-based learning, helping teachers create a collaborative math community with students at its center. Each lesson systematically builds on students' curiosity to develop lasting grade-level understandings for all students.

Integrated personalized learning

Boost Personalized Learning activities help students access grade-level math through engaging, independent digital practice. Responsive Feedback adjusts to students' work, providing item-level adaptivity to further support their learning.

Embedded intervention

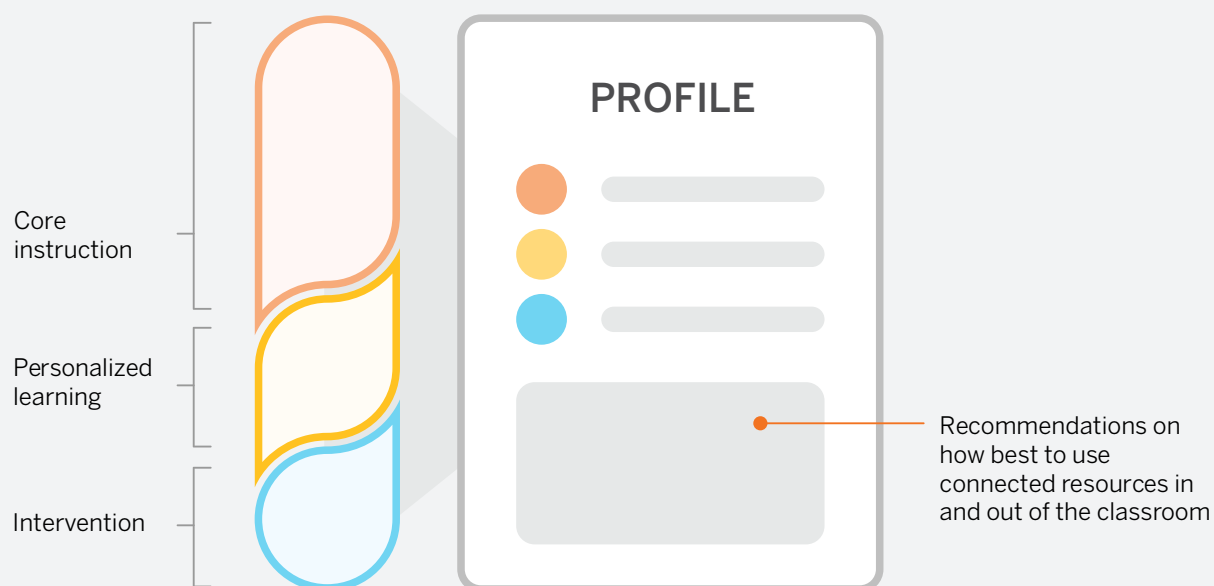
Integrated resources like Mini-Lessons, Math Fluency, Math Adventures, and Extensions provide targeted intervention on a specific concept or skill. This intervention is directly connected to daily content and offer students the individualized supports they need.

Tailored to what students think and know

Every time students demonstrate what they know, we analyze their work to create an accurate and up-to-date picture of how students think and what they know.

We've charted how mathematical thinking skills are linked, influence learning, and connect to mathematical standard mastery. Our model uses this information to tailor Personalized Learning supports to instructional areas that directly build toward grade-level concepts or skills.

Comprehensive Student Profiles provide full data on students' assets and skills, empowering teachers to provide just-in-time scaffolds throughout core instruction and targeted intervention when needed.



Robust assessments drive learning and inform instruction.

A variety of performance data in Amplify Desmos Math provides evidence of student learning while helping students bolster their skills and understanding.

Throughout lessons, units, and the entire program, you'll find summative and formative assessments meant to provide insights into students' conceptual understandings. Student learning is never a surprise at the end of a unit—with Amplify Desmos Math, understanding is made continually visible.

 **Unit 1 | Quiz: Sub-Unit 1**

Assess and Respond

Support, strengthen, and stretch learning by assigning these digital resources that adjust to each student's current level of skill and understanding: • **Personalized Practice**
• **By Heart Fluency Practice** • **Math Adventures**

Quiz: Sub-Unit 1

Independent | 20 min

Facilitation: Assign this Sub-Unit Quiz at the end of Sub-Unit 1 to evaluate students' proficiency with the key concepts and skills addressed in this sub-unit. The *Up Next* problem previews targeted concepts and skills addressed in the next sub-unit.

Item Analysis			
Problem(s)	Concept or skill	DOK	Standard(s)
1	Comparing the volumes of figures	2	4.MD.A.1, 5.MD.C.3, MP6
2	Determining the volume of a rectangular prism showing unit cubes	2	5.MD.C.3, MP7
Up Next... (preparation for Lesson 7)			
3*	Knowing relative sizes of standard measurement units	2	4.MD.A.1, MP7

* Because this problem addresses prerequisite concepts for the next sub-unit, the Up Next problem is not intended to be part of a student's overall score on this assessment.

Assessment Resources

 Student Print Assessments
• Answer Keys

Differentiation Resources

 Grade 5 Intervention and Extension Resources
 Grade 5 Centers Resources

Practice

During Sub-Unit 2, if students need further review or practice with concepts or skills, consider the following resources:
• Mini-Lessons • Extensions
• In-Lesson Practice (Student Edition)
• Item Bank

27A Unit 1 Volume

Assessment Resource PDF

Name _____ Date _____

Quiz: Sub-Unit 1 Unit 1

1 Each rectangular prism is made up of unit cubes. Which figure has a greater volume? **Claim 1: Concepts and Procedures**

Figure A

Figure B

1 Show or explain your thinking.
Sample work shown:
Figure A has a volume of 10 unit cubes, and Figure B has a volume of 9 unit cubes.
So, Figure A has a greater volume because it takes up more space.
answer: Figure A.

Quiz: Sub-Unit 1 (continued) Unit 1

2 The rectangular prism is made up of unit cubes. Determine the volume of the rectangular prism in unit cubes.
Claim 1: Concepts and Procedures
1 Show or explain your thinking.
Sample work shown:
There are 2 layers of 15 unit cubes.
answer: 30 unit cubes.

3 Which units could be used to measure the length of a pencil? Select all that apply.
Claim 1: Concepts and Procedures
☒ A. centimeter ☐ B. meter ☐ C. kilometer
☐ D. inch ☐ E. foot ☐ F. yard

D Differentiation (Quiz: Sub-Unit 1)

To Strengthen and Stretch students' learning, refer to the differentiation resources suggested throughout this Sub-Unit.

Sub-Unit Goals	Problem(s)	Respond to Student Thinking
Describe and determine the volume of a rectangular prism using its layered structure.	1	Support • Mini-Lesson: Comparing Volume (Lesson 2) • Teacher Move: Have students review the problem and then provide additional opportunities for students to compare the volumes of prisms.
	2	Support • Mini-Lesson: Using the Structure of Rectangular Prisms to Determine Volume (Lesson 4) • Teacher Move: Have students review the problem by determining the volume of the top layer and then counting the number of layers.
Up Next... (preparation for Lesson 7)		
Determine the volume of a rectangular prism using the formulas $V = \ell \times w \times h$ and $V = B \times h$.	3	Support • Mini-Lesson: Solving Problems With Liters and Milliliters (Grade 4, Unit 5, Lesson 13) • Teacher Move: Plan to use base-ten units and unit cubes in Lesson 7 to demonstrate the relative sizes of standard measurement units.

Unit 1 Volume 27B

Unit-level assessments

Our embedded unit assessments offer key insights into students' conceptual understanding of math. These assessments provide regular, actionable information about how students are thinking about and processing math, with both auto-scoring and in-depth rubrics that help teachers anticipate and respond to students' learning needs.

Pre-Unit Check (grades 2–A1)

Each unit begins with an assessment designed to identify the student skills that will be particularly relevant to the upcoming unit. This check is agnostic to the standards covered in the following unit and serves not as a deficit-based acknowledgment of what students do not know, but rather as an affirmation of the knowledge and skills with which students come in.

End-of-Unit Assessment

Students engage with rigorous grade-level mathematics through a variety of formats and tasks in the End-of-Unit Assessment. A combination of autoscored and rubric-scored items provide deep insights into student thinking. All Amplify Desmos Math End-of-Unit Assessments include two forms.

Sub-Unit Quizzes (grades 1–A1)

With regular Sub-Unit Quizzes, student understanding never comes as an end-of-unit surprise. In these checks, students are assessed on a subset of conceptual understandings from the unit, with rubrics that help illuminate students' current understanding and provide guidance for responding to student thinking.

Sub-Unit Checklists (grades K–1)

These checklists enable teachers to observe key skills and concepts that cannot be assessed on a pencil-and-paper assessment. The checklists outline the supports students need to get where they need to go.

Lesson-level assessments

Amplify Desmos Math lessons are centered around sense-making and in-the-moment feedback. Daily moments of assessment provide valuable evidence of learning for both the teacher and student.

Responsive Feedback

We harness the power of digital math and graphing tools to show students the meaning of their thinking in context. Teachers have the ability to see and provide in-the-moment feedback as students progress through a lesson. Responsive Feedback motivates students and engages them in the learning process.

Show What You Know

Each lesson has a daily formative assessment focused on one of the key concepts in the lesson. Show What You Know moments are carefully designed to minimize the time students take to complete while maximizing the insight the teacher receives on a daily basis to attend to student needs during the following class. *Show What You Know is optional in grades K–1.*

Beginning in grade 2, all unit-level and lesson-level assessments can be completed digitally.

Name _____ Date _____

Show What You Know

1.05

For Problems 1–4, find the number that makes the equation true.

1

12 + _____ = 15

2

20 - 9 = _____

3

_____ + 6 = 19

4

16 - _____ = 9

I can ...

Find numbers that make addition and subtraction equations true.



27

Name _____ Date _____

Show What You Know

1.11

Identify the mystery number from the table using the following clues:

- The number is a composite number.
- The number is a multiple of 3.
- 7 is a factor of the number.

15	7	63	32
----	---	----	----

I can ...

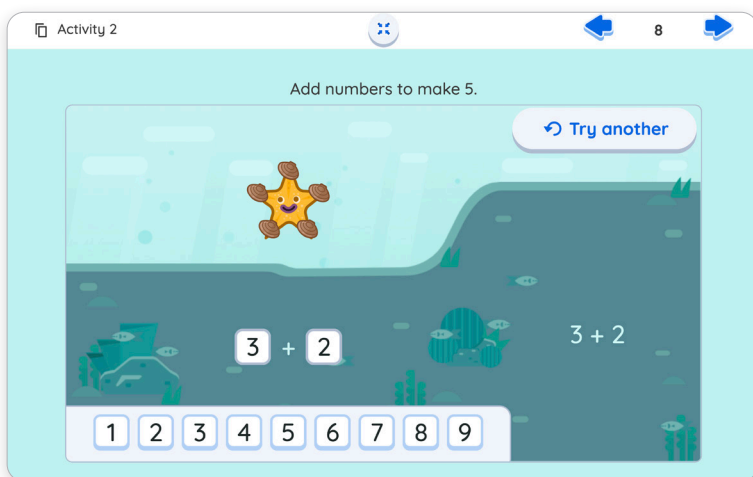
Use what I know about factors, multiples, and prime and composite numbers to identify numbers.



31

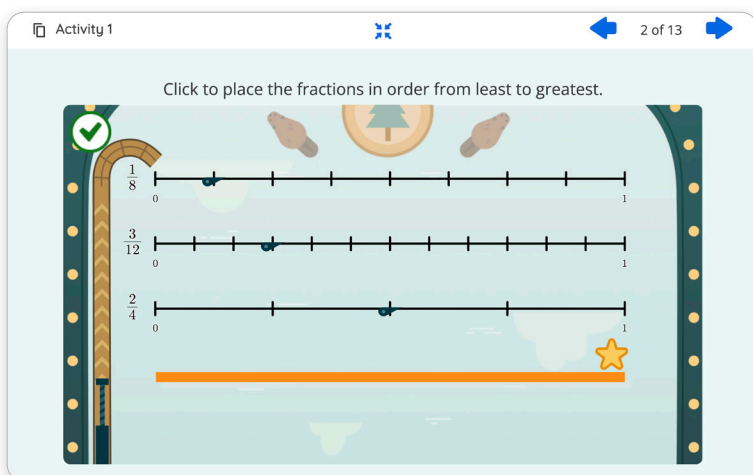
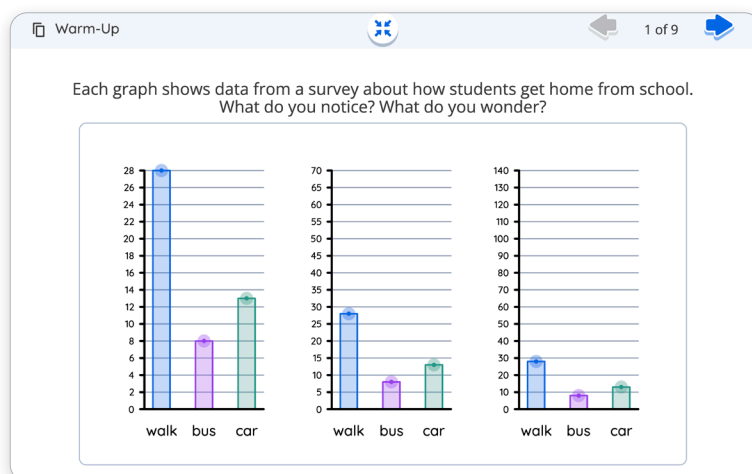
Show What You Know example pages for grades 2 and 4.

- **Celebrate student thinking with Responsive Feedback.** We harness the power of digital math and graphing tools to show students the meaning of their thinking in context. Responsive Feedback motivates students and engages them in the learning process.



In the Kindergarten lesson Harry Explores the Ocean, students receive immediate feedback on whether their addition equation equals five through an animation of a starfish collecting seashells.

In the grade 3 lesson: 2, 5, or 10?, teachers use interactive bar graphs on a Presentation Screen to help students consider how the same data is represented on graphs with three different scales—2, 5, and 10.



In the grade 4 lesson Getting in Order, students compare and order sets of fractions from least to greatest to control the locations of flippers in a pinball game. When the fractions are in order, a ball will fall through all of the flippers and roll to the star.

Benchmark and progress monitoring assessments identify students' skills and knowledge.

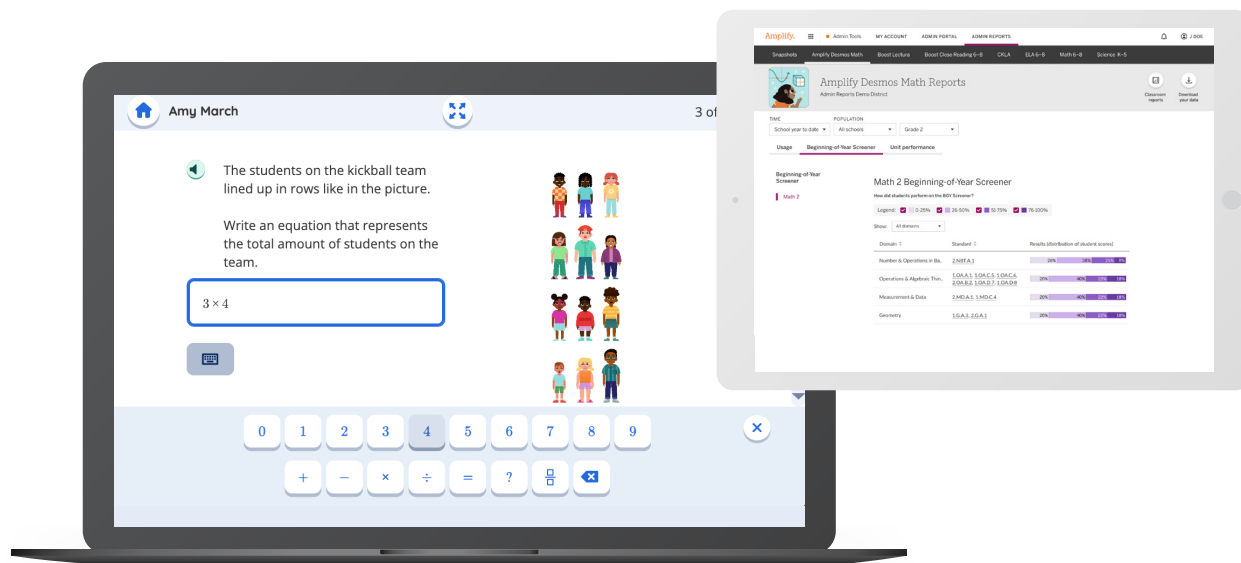
Assessments from mCLASS® surface students' math thinking with an asset-based approach, providing better insights into what students know, where they need support, and which assets to leverage.

mCLASS Benchmark

This powerful digital benchmark assessment system is administered to the whole class three times a year, at the beginning, middle, and end of the year. The assessments are designed to analyze student responses with a focus on revealing underlying math thinking, evaluating student knowledge of grade-level math, and informing instructional decisions.

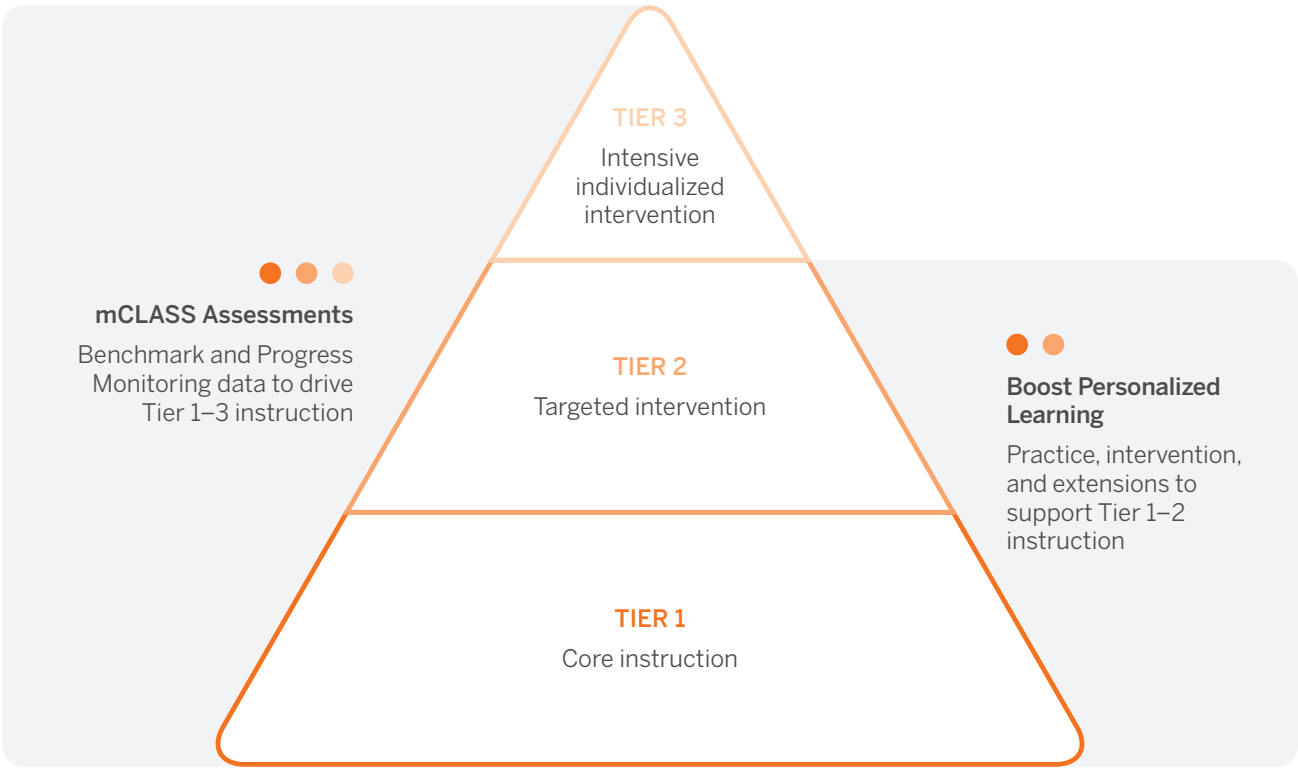
The comprehensive system of assessments also:

- Evaluates student progress toward grade-level expectations for growth measure.
- Identifies specific areas of strength and developmental need for each student to inform differentiation in Amplify Desmos Math and Boost Personalized Learning.
- Benchmark also includes an adaptive diagnostic module that can be optionally administered to collect additional information for Tier 1 and Tier 2 intervention targeting.



mCLASS Progress Monitoring

Progress Monitoring helps teachers chart students' progression between assessment periods. For students receiving targeted support, progress monitoring informs whether intervention is working or whether adjustments are needed to improve student learning.



As an essential part of a school's MTSS or Response to Intervention (RTI) framework, these assessments can be used to track student progress in specific areas as part of targeted instructional support towards benchmark goals.

Progress Monitoring is designed to be brief and easily administered every two weeks, although teachers are encouraged to use these in ways that best meet their instructional needs and goals for the student.

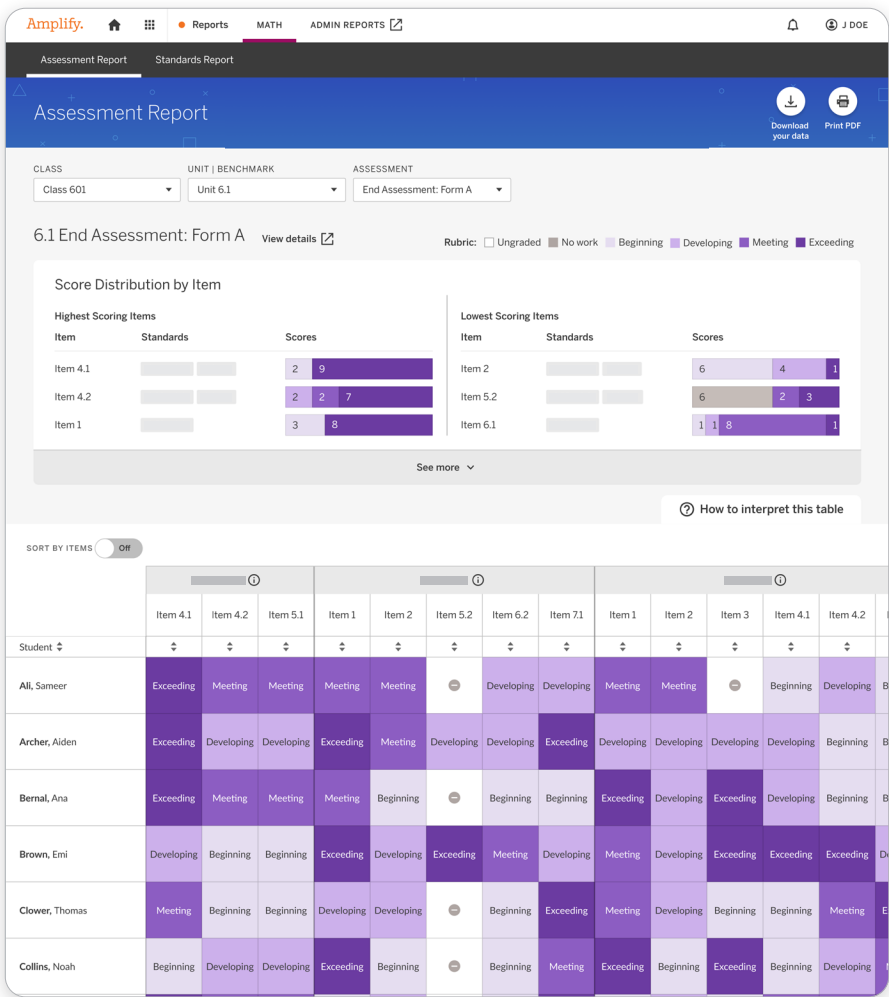
Reporting tools provide integrated insight into learning.

Amplify Desmos Math provides teachers and administrators with unified reporting and insights so that educators have visibility into what students know about grade-level math—and can plan instruction accordingly for the whole class, small groups, and individual students.

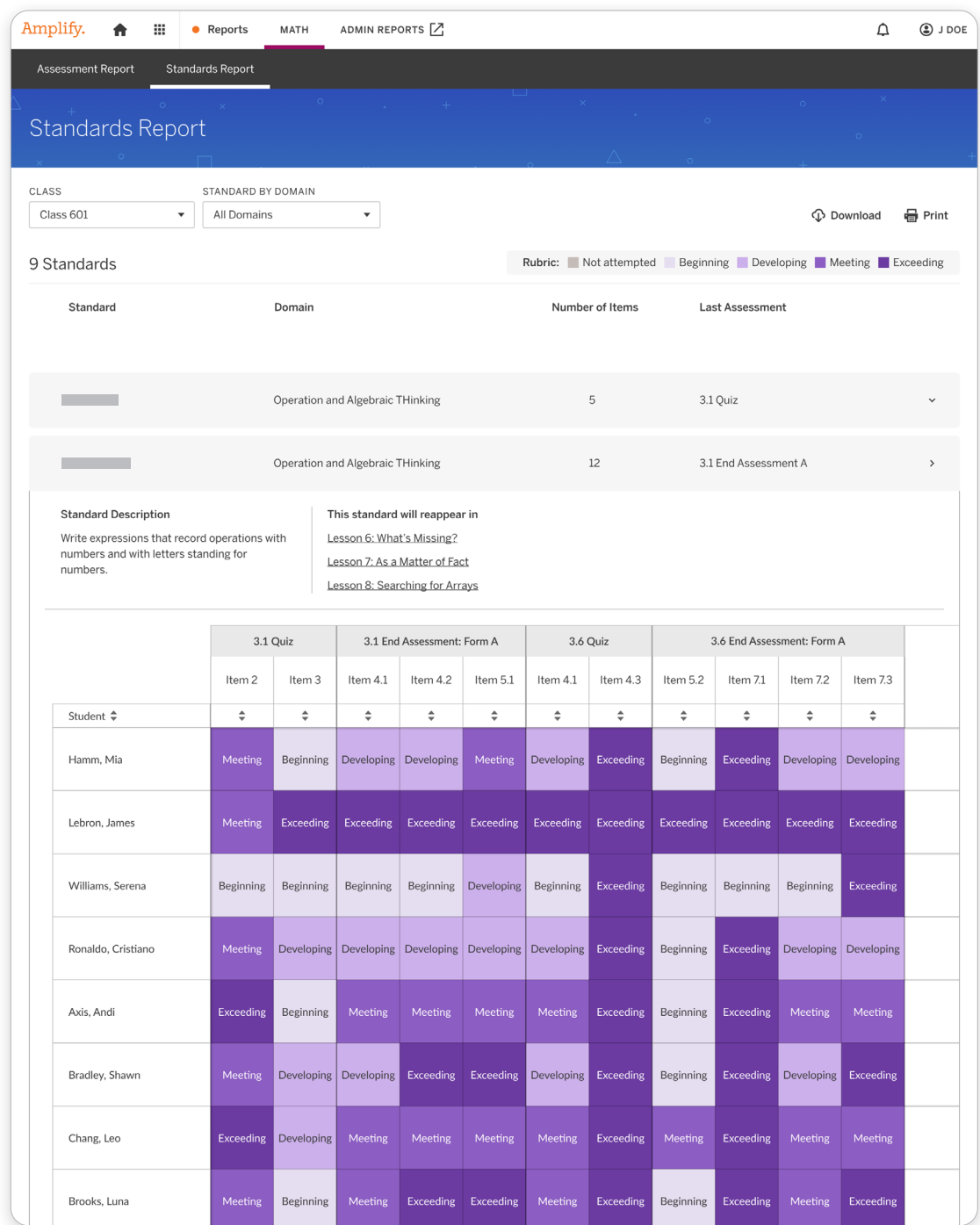
Reporting functionality integrates unit assessments, lesson assessments, personalized learning, benchmark assessments, and progress monitoring for a comprehensive look at student learning.

Amplify Desmos Math is designed to fit your specific data and reporting needs. Reporting functionality integrates unit assessments and lesson assessments for a comprehensive look at student learning.

At-a-glance views of unit-level assessment results inform instructional planning, and you can also drill down to item-level analysis



Our standards report allows you to monitor proficiency at the class and individual student levels.



Teachers have data at their fingertips to guide and differentiate instruction.

A variety of performance data in Amplify Desmos Math provides evidence of student learning while helping students bolster their skills and understanding.

- Proficiency and growth is shown by domain, cluster, standard, and priority concepts. Areas of potential student need are highlighted to allow teachers to modify their instruction and target differentiated support.
- With actionable insights provided by mCLASS Benchmark and Progress Monitoring assessments, teachers are given the data they need to inform Tier 2 and Tier 3 intervention.
- Caregiver-friendly visuals and language enable educators to easily share and celebrate growth with families.

GK Beginning of Year Assessment... 13 students

Snapshot Teacher Student

Anonymized Pace Sync to Me Pause

SORT BY Time Entered

3 Number S... 4 Enumerat... 5 Magnitud... 6 Making 10... 7 Whole Nu... 8 Whole Nu... 9 Measureab... 10 Classifi... 11 2D & 3D... 12 End Scre...

Anonymize mode is on. Your students' names have been changed to the names of notable mathematicians. [Learn more](#)

Name	3 Number S...	4 Enumerat...	5 Magnitud...	6 Making 10...	7 Whole Nu...	8 Whole Nu...	9 Measureab...	10 Classifi...	11 2D & 3D...	12 End Scre...
Shakuntala Devi	✓	✓	✓	✗	✓	✓	✓	✓	✗	—
Kimberly Weems	✗	✗	✓	✓	✓	✓	✓	✗	✓	—
Margaret H. Hamilton	✓	✗	✓	✗						
Ruth Gonzalez	✗	✓	✓	✓	✓	✓	✓	✗	✗	—
Grace Hopper										
Fan Chung	✓	✓	✓	✗	✗	✓	✓	✓	✓	—
Kunihiko Kodaira										
Abu al-Wafa' Buzjani	✓	✓	✓	✓	✓	✓	✓	✓	✓	—
Mary Golda Ross	✓	✗	✓	✗			✗		✓	—
Mary Somerville										
Ami Radunskaya	✗	✗	✓	✗	✓	✓	✗	✗		—
Rediet Abebe	✓	✓	✓	✓	✓	✓	✓	✓	✓	—
Gloria Gilmer	✓									

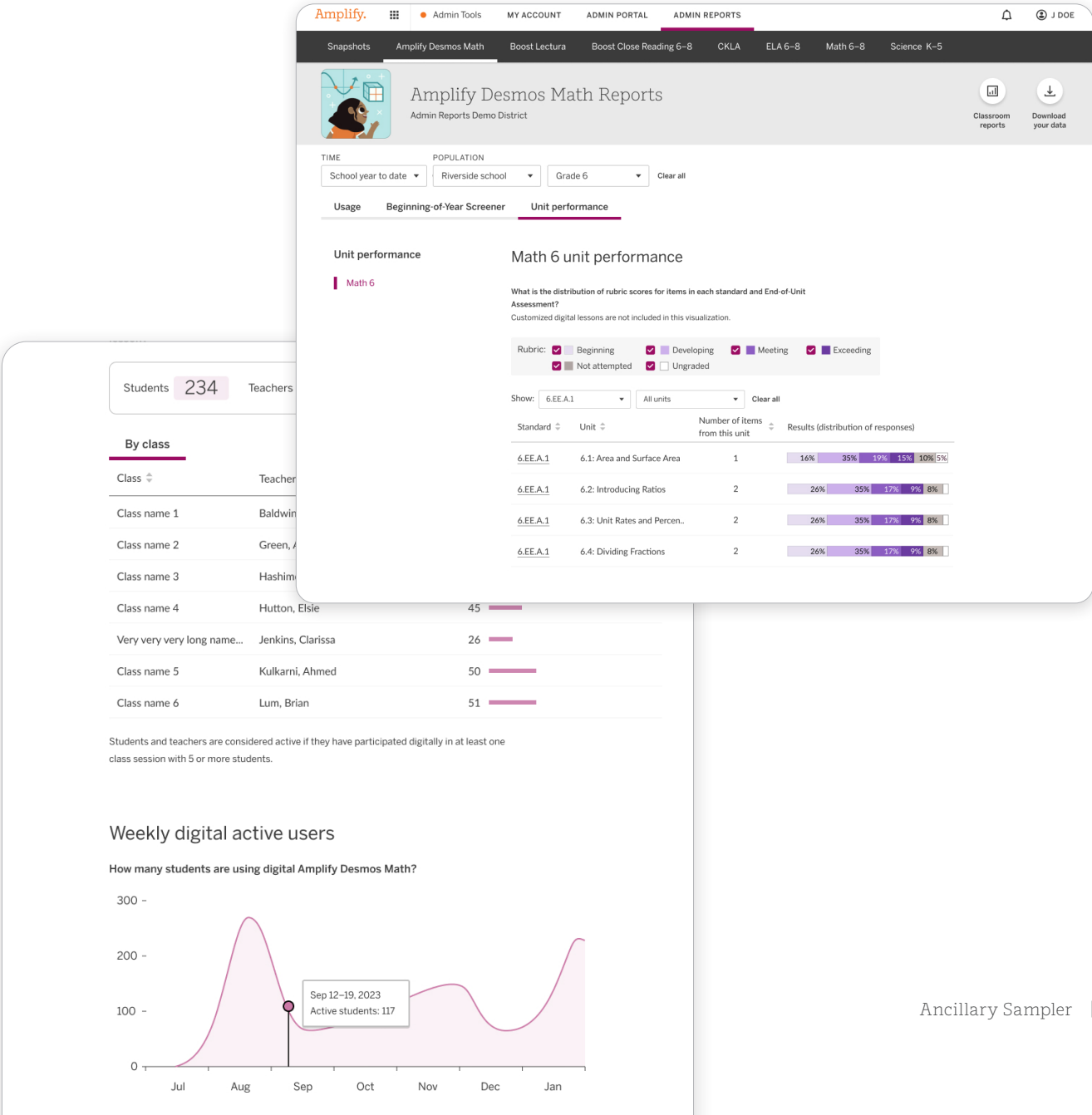
3.1 Quiz 3.1 End Assessment: Form A 3.6 Quiz

3.6 End Assessment: Form A											
3.1 Quiz		3.1 End Assessment: Form A			3.6 Quiz		3.6 End Assessment: Form A				
	Item 2	Item 3	Item 4.1	Item 4.2	Item 5.1	Item 4.1	Item 4.3	Item 5.2	Item 7.1	Item 7.2	Item 7.3
Student											
Hamm, Mia	Meeting	Beginning	Developing	Developing	Meeting	Developing	Exceeding	Beginning	Exceeding	Developing	Developing
Lebron, James	Meeting	Exceeding	Exceeding	Exceeding	Exceeding	Exceeding	Exceeding	Exceeding	Exceeding	Exceeding	Exceeding
Williams, Serena	Beginning	Beginning	Beginning	Beginning	Developing	Beginning	Exceeding	Beginning	Beginning	Beginning	Exceeding
Ronaldo, Cristiano	Meeting	Developing	Developing	Developing	Developing	Developing	Exceeding	Beginning	Exceeding	Developing	Developing
Axis, Andi	Exceeding	Beginning	Meeting	Meeting	Meeting	Meeting	Exceeding	Beginning	Exceeding	Meeting	Meeting
Bradley, Shawn	Meeting	Developing	Developing	Exceeding	Exceeding	Developing	Exceeding	Beginning	Exceeding	Developing	Exceeding
Chang, Leo	Exceeding	Developing	Meeting	Meeting	Meeting	Meeting	Exceeding	Meeting	Exceeding	Meeting	Meeting
Brooks, Luna	Meeting	Beginning	Meeting	Exceeding	Exceeding	Meeting	Exceeding	Beginning	Exceeding	Meeting	Exceeding

Administrator Reporting

Amplify Desmos Math provides a complete picture of student, class, and district performance, allowing administrators to implement instructional and intervention plans.

- Track student, class, and district performance with usage, completion, and assessment data.
- Accurately group students and classes with the Benchmark and Progress Monitoring data of mCLASS Math and allow teachers to reliably implement and track the progress of Tier 2 and Tier 3 intervention.
- Provide one data-driven solution that educators can rely on for high-quality math instruction.



Boost Personalized Learning

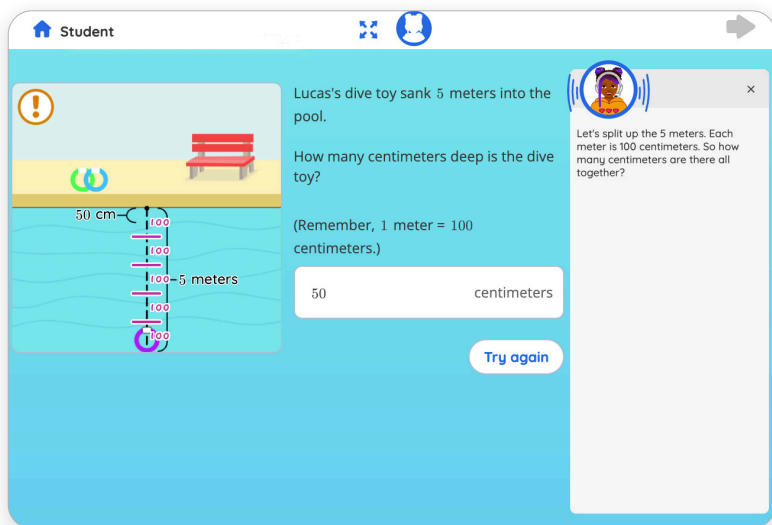
Amplify Desmos Math includes digital, adaptive practice that provides the personalized support a student needs to access grade-level math every day. Boost Personalized Learning activities target a skill or concept aligned to the day's core lesson, with each student receiving personalized scaffolds based on what they already know.

This adaptive technology complements daily learning and provides another layer of support to the in-lesson differentiation and instructional guidance provided to teachers.

Personalized feedback, scaffolds, and supports

Activities adapt to each student's unique needs based on prior assessment data and student responses. Tailored, differentiated support includes:

- **Responsive Feedback:** Visual, mathematical representation of the student's response
- **Guidance and tips:** Adaptive suggestions to help get students unstuck
- **Strategy modeling:** Moments of explicit instruction to summarize key concepts and support sensemaking
- **Precursor skill support:** Instruction and practice on skills and concepts that highly influence the development of grade-level understanding



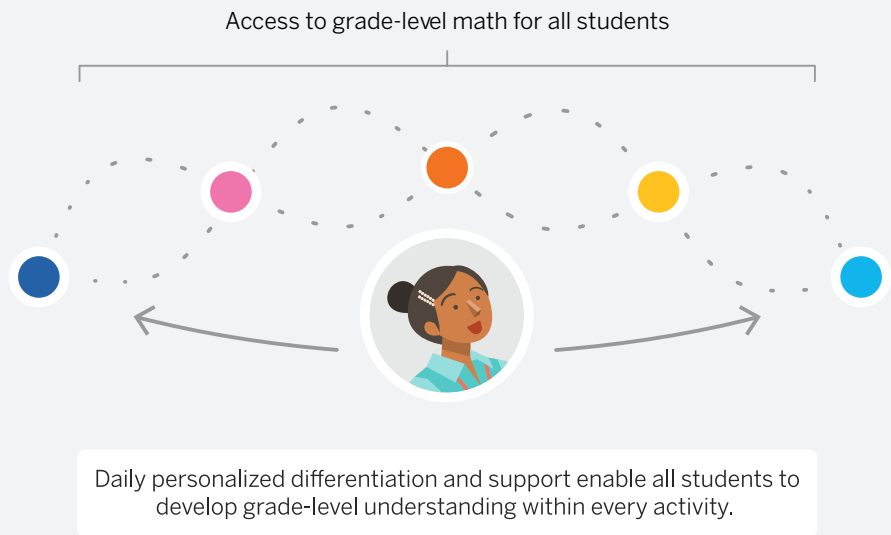
 TRY IT!

Go to amplify.com/admsample to access sample activities

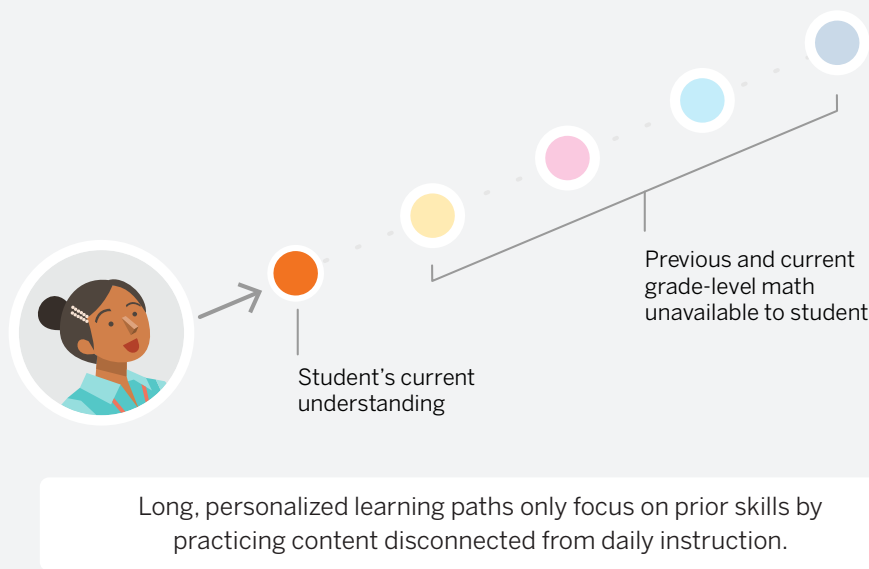
All students can access grade-level math, every day.

Boost Personalized Learning enables all students to access grade-level math in each activity with tailored supports based on what they already know. This eliminates the long path where students receive interventions that slowly build understanding unrelated to daily instruction.

The asset-based approach of Boost Personalized Learning



The traditional, deficit-based approach to intervention



More opportunities for personalized practice

Math Adventures

Math Adventures are strategy-based digital math games that offer students a fun, engaging and low-stakes way of practicing math skills. Unlike simple, repetitive math games, students navigate through various levels of complex worlds with Responsive Feedback along the way.

Math Adventures are perfect for times when teachers need students to be independent after finishing classwork, an assessment, or group work.



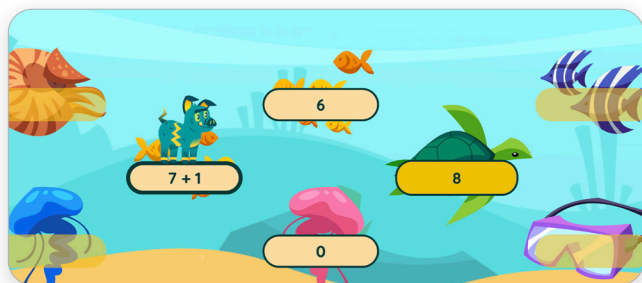
Twelve a Dozen

A story-rich puzzle platform game that integrates algebraic math into core game mechanics. Players must use their factoring skills and solve order-of-operations puzzles to save the world.



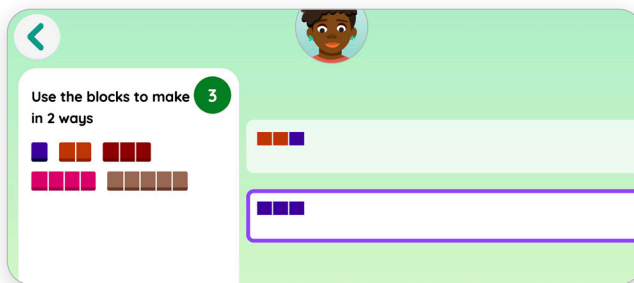
Formula Won

A racing game in which players advance around different game board race tracks, competing against an AI opponent by picking sets of cards and operations. Requires players to operate with integers, mixed numbers, or decimals.



Number Jumper

Take an adventure across different lands. Students practice addition and subtraction facts by jumping from platform to platform as they travel through swamps, caves, forests, pillow forts, and many more settings.



Connect the Blocks

Students use blocks to compose different combinations of target numbers. Students see equations that match their builds and receive feedback in the form of a length bar. Students develop their fluency through repeated opportunities to flexibly build and recognize different parts of a whole.

Fluency Practice

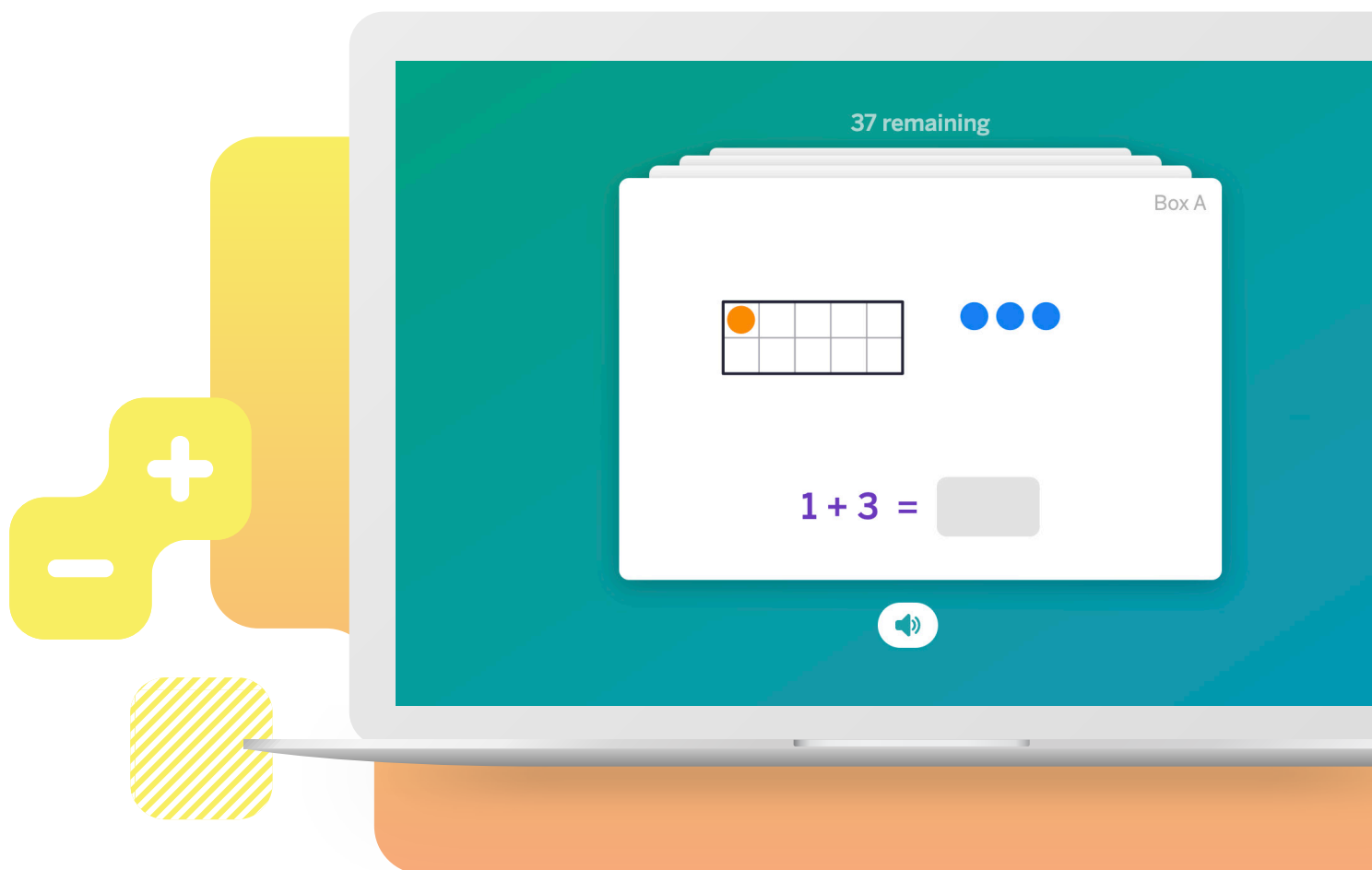
Fact fluency frees up brainpower and working memory for students to do more complex mathematical work. When basic facts and procedures are second nature, it's easier to figure out how to structure a multi-step word problem, model a solution, or puzzle out systems of equations.

We've partnered with Math for Love to iterate on the popular Multiplication by Heart for the other basic operations, such as Addition and Subtraction by Heart, Division by Heart, and fluency of other math procedures.

The Fluency Practice of Amplify Desmos Math uses an evidence-based approach to memory retention—spaced repetition—for the basic facts. The focus is conceptual understanding, not just “drill and kill” focused on rote memorization. The adaptive nature of the practice allows students to focus less and less on the facts they already know. This approach builds fluency without the anxiety that timed tests can cause.

TRY IT!

Go to fluency.amplify.com to access sample activities



About Mini-Lessons

Intervention Mini-Lessons aligned to core instruction

Amplify Desmos Math Mini-Lessons are 15-minute lessons aligned to the most critical topics throughout a unit. Teacher-led Mini-Lessons are used to provide targeted intervention to small groups of students who need additional support or to re-engage students with content that they may need more time on.

Amplify Desmos Math Mini-Lessons are the perfect complement to our problem-based approach, because they provide more explicit instruction opportunities and leverage a consistent instructional routine (Modeled Review, Guided Practice, Check for Understanding).

A minds-on experience to support your students' curiosity and thinking beyond the core lesson

Rather than serving as simple solo drills or worksheets, Mini-Lessons tie directly into critical topics to keep students thinking and exploring the grade-level math they need more time with.

Differentiation where and when it matters most, to help all students access grade-level math

Mini-Lessons are used to address critical prerequisite skills for upcoming lessons or to engage students in grade-level math immediately after a core lesson, when they need more time to think about a concept or skill. Mini-Lessons reinforce the same topics and content students see in core instruction.





Faded worked examples build proficiency

The design of Amplify Desmos Math Mini-Lessons is informed by the extensive research around worked examples, in particular faded worked examples. Because novice learners benefit more from worked examples than more experienced learners (Kalyuga, Ayres, Chandler, & Sweller, 2003), one pedagogical approach involves scaffolding, or fading away, the support given in the worked examples as practice goes on and students become more proficient (Atkinson et al., 2003; van Merriënboer, Kirschner, & Kester, 2003).

In essence, the worked examples get less “worked out” over time. Studies on the use of faded worked examples have found benefits for problem solving, both in terms of better performance on difficult problems (Atkinson et al., 2003) and less time taken to achieve the same level of performance (Flores & Inan, 2014). Students working with faded worked examples have also been shown to have fewer unproductive moments during their practice sessions (Renkl et al., 2004).

Structure of a Mini-Lesson

Structure of a Mini-Lesson

Easy as one, two, three:

- 1

Modeled review

Teachers work through an example with students.
- 2

Guided practice

Teachers guide students through faded examples, where scaffolds are heavier early on and are gradually removed.
- 3

Check for understanding

Teachers provide students an opportunity to show what they have learned.

Determining the Volume of Solid Rectangular Prisms

Teacher's Guide

ML 1.06

Goal

Calculate the volume of a rectangular prism using the formula $V = l \times w \times h$.

Standard

NY-5.MD.5b

Materials

highlighters

Modeled Review

Point to Han's example.

Ask:

- "Why did Han cross out one of the edge lengths?"
- "How does the expression Han wrote represent the volume of the prism?"

Reinforce Han's thinking by saying, "Sometimes, problems show more information than you need. To calculate the volume, you only need to identify the length, width, and height of the prism and then multiply."

Model identifying the needed edge lengths to write an expression.

Guided Practice

For each problem, focus students' attention on using the provided prisms to complete the table.

To scaffold students' thinking, ask:

- "What do the edge lengths represent?"
- "How does each expression represent the volume of the prism?"

Determining the Volume of Solid Rectangular Prisms

Ms. Loi

Modeled Review

Determine the volume of the prism in cubic units.

length

width

height

$V = l \times w \times h$
 $V = 4 \times 5 \times 8$
 $V = 160$
answer: 160 cubic units

Guided Practice

Use the prisms to complete the table. Sample work shown for Prism C.

Prism A

Prism B

Prism C

length

width

height

Prism A

10

4

3

120

80 cubic units

Prism B

6

5

3

90

90 cubic units

Prism C

3

2

6

36

36 cubic units

Vocabulary

If needed, share the meaning of the words with students.
associative property of multiplication: The product of three or more numbers remains the same regardless of how the numbers are grouped.
rectangular prism: A solid figure with six faces that are all rectangles.
volume: The amount of space a three-dimensional figure takes up.

Guided Practice

1

Suggest students highlight the edge lengths that represent the length, width, and height.

Key Takeaway:

Say, "Volume is measured in cubic units, such as cubic inches. The formula $V = lwh$ can be used to determine the volume of any rectangular prism."

Guided Practice

For Problems 1-4, determine the volume of the prism. Show or explain your thinking. Sample work shown.

1

length

width

height

$V = l \times w \times h$
 $V = 4 \times 5 \times 8$
 $V = 160$
answer: 160 cubic units

2

length

width

height

$V = l \times w \times h$
 $V = 10 \times 3 \times 3$
 $V = 90$
answer: 90 cubic units

3

length

width

height

$V = l \times w \times h$
 $V = 3 \times 4 \times 5$
 $V = 60$
answer: 60 cubic units

4

length

width

height

$V = l \times w \times h$
 $V = 10 \times 5 \times 2$
 $V = 100$
answer: 100 cubic units

Check

Determine the volume of the prism. Show or explain your thinking. Sample work shown.

length

width

height

$V = l \times w \times h$
 $V = 10 \times 5 \times 2$
 $V = 100$
answer: 100 cubic units

Reflection

Ask:

- "How could you determine whether an expression represents the volume of a rectangular prism?"
- "After today's lesson, what questions do you still have?"

Check: Recommended Next Steps

Almost There

If students need more support, consider using Grade 5 Mini-Lesson 1.08: Using Volume Formulas.

Got It!

If students need more practice, have students refer to the prism in the Modeled Review. Ask them what the volume would be if the height was 6 units.

1 | Grade 5

© 2023 Amplify Education, Inc. All rights reserved.

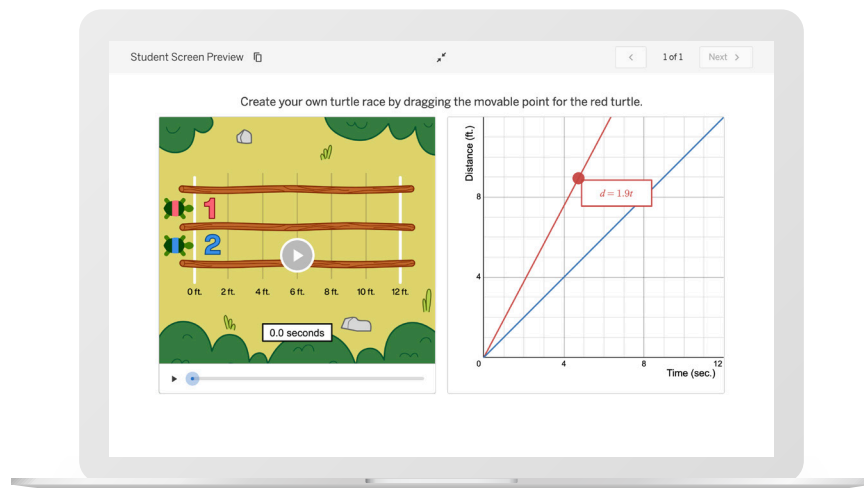
2 | Grade 5

© 2023 Amplify Education, Inc. All rights reserved.

xxvi | AmplifyDesmosMath

Accessing Mini-Lessons in Amplify Desmos Math

Amplify Desmos Math Mini-Lessons are easily accessible at point-of-use for teachers.



In the digital experience

Online, Teacher Edition PDF pages for each mini-lesson, along with the Teacher Presentation Screens, can be accessed within sub-unit resources.

In the print Teacher Edition

In the Amplify Desmos Math Teacher Edition, Mini-Lessons will be referenced in the differentiation table at the sub-unit level.

Assessments

Every unit includes a variety of formative and summative assessments, designed to highlight students' understanding of a variety of concepts and skills.

Pre-unit Check

The Pre-unit Check helps highlight the knowledge and skills students already have related to this unit. (Can be given in its entirety before the unit or spread throughout the unit.)

Standards addressed: 3.OA.A.2, 3.OA.B.5, 4.NF.A.1, 4.NF.A.2, 5.NF.B.3, 5.NF.B.6, 5.NF.C.7, 5.NF.D.8, 5.NF.D.9

Lesson | Exit Ticket

Each lesson's Exit Ticket helps highlight students' progress toward the lesson goals.

Sub-unit Quizzes

Each Sub-unit Quiz and Rubric helps highlight students' progress toward the concepts and skills addressed in part of a unit.

Standards addressed on Quiz: Sub-unit 1 and 2: 5.OA.A.1

End-of-unit Assessment

The End-of-unit Assessment helps highlight students' progress toward the concepts and skills addressed throughout the unit.

Standards addressed: 5.OA.A.2, 5.OA.A.3, 5.NF.A.1

Differentiation

Every unit includes additional resources to support, strengthen, and stretch student learning.

Support

Provide targeted intervention for students by using these resources.

Strengthen

Reinforce students' understanding of the lesson's concepts and skills by using these resources.

Stretch

Challenge students and extend their learning with these resources.

Differentiation Across the Unit	
Unit Goals	Differentiation Response
Decompose a shape and rearrange without overlaps to create a shape with the same area. (Lessons 1-2)	Support • Mini-lesson Strengthen • Lesson from previous courses Stretch • Lesson from previous courses
Calculate the area of a parallelogram and triangle. (Lessons 3-7)	Support • Resource linked here Strengthen • Resource linked here Stretch • Resource linked here
Calculate the area of a polygon. (Lesson 8)	Support • Resource linked here Strengthen • Resource linked here
Calculate the surface area of a prism or pyramid. (Lessons 9-12)	Support • Resource linked here Strengthen • Resource linked here Stretch • Resource linked here

Spotlight on...
 Lesson 4.A.1.1 Test given here. Test given here. Test given here.
 Test given here. Test given here.

Differentiation Within the Lesson

Each lesson in Amplify Desmos Math includes point-of-use differentiation suggestions to modify or adjust instruction during the lesson to accommodate the needs of all learners.

Lesson	Support	Strengthen	Stretch
Lesson 4.A.1.1	See resource for differentiation here.	See resource for differentiation here.	See resource for differentiation here.

Differentiation

Every unit includes additional resources to support, strengthen, and stretch student learning.

Support

Provide targeted intervention for students by using these resources.

Strengthen

Reinforce students' understanding of the lesson's concepts and skills by using these resources.

Stretch

Challenge students and extend their learning with these resources.

Differentiation Across the Unit	
Unit Goals	Differentiation Response
Decompose a shape and rearrange without overlaps to create a shape with the same area. (Lessons 1-2)	Support • Mini-lesson Strengthen • Lesson from previous courses Stretch • Lesson from previous courses
Calculate the area of a parallelogram and triangle. (Lessons 3-7)	Support • Resource linked here Strengthen • Resource linked here Stretch • Resource linked here
Calculate the area of a polygon. (Lesson 8)	Support • Resource linked here Strengthen • Resource linked here

Centers

Game-based Centers strengthen student engagement and reinforce key skills and concepts

Centers are engaging, hands-on games for students to play collaboratively to strengthen their understanding of key skills and concepts.

Centers are designed so that students engage in them with minimal teacher direction and support. Each Center has multiple stages so that students return to the same Center game repeatedly within and across grade levels, with the content of the Center growing in complexity to align with grade-level standards in a scaffolded manner.



Daily Center Time (Grades K–1)

The last 15 minutes of the daily lesson is always Center Time. Depending on where the lesson falls in the learning trajectory, students will either:

- Be introduced together to a new Center
- Engage in Center Choice Time, choosing previously introduced Centers to revisit

Centers as Activities

New Centers are strategically introduced to the whole class as one of the Lesson Activities.

- Students return to these Centers in future Center Choice Times
- Teachers can also engage students in Centers as a Differentiation activity

Differentiation

Each lesson lists specific Centers that teachers can use with small groups to strengthen their understanding of key learning goals.

- Students usually have previously been introduced to at least an earlier stage of these Centers
- Teachers can also use Centers after Assessment points

The materials required to utilize Centers are included in program materials.

- Work mats and instruction cards are included in the Centers Resource book
- The required manipulatives are included in the Manipulative Kit

Capture Squares



Students generate a number and connect two dots that are adjacent to the number. If that line closes a square, they capture it and shade it using their color. The player to shade three squares first is the winner.

Stage 1

Add Within 10

Stage 2

Subtract Within 10

Stage 3

Add Within 20

Stage 4

Subtract Within 20

Stage 5

Multiply With 2, 5, and 10

Stage 6

Multiply With 2–5

Stage 7

Multiply With 6–9

Cover Up



Let's multiply using factors of 1–5 and 10.

You'll need . . .

- 2 base-ten units
- two-color counters
- Gameboard A or B
- Recording Sheet

Set-up

- Choose a Gameboard.
- Choose who will use red counters and who will use yellow counters.

How to Play

- Player A:**
 - Place each cube on a number in the gray row. Each cube can be on a different number, or both cubes can be on the same number.
 - Cover the product of the two numbers with a counter.
 - Record the multiplication expression and product.
- Player B:**
 - Move one of the cubes. Multiply the numbers.
 - If the product is not already covered with a counter, cover it.
 - Record the multiplication expression and product.
- Take turns moving one cube at a time. Record each multiplication expression and product, even if you were unable to cover the product.

How to Win

- The first player to cover 5 squares in a row wins.

Cover Up



40	2	3
6	20	8
100	15	2
12	9	16
4	1	50

1	2	3	4
---	---	---	---

Stretch student mathematical thinking with Extensions.

All students should have access to fun and challenging problems. Amplify Desmos Math extensions are 10–15-minute activities aligned to the most critical topics in a sub-unit. Extensions can provide targeted intervention to small groups of students ready for an extra challenge or whole-class.

Amplify Desmos Math extensions build on our student-led, problem-based approach, providing more opportunities for students to engage in creative and rigorous problems that can be approached with different strategies.

These low-lift activities give teachers flexibility and provide students with open-ended, hands-on problems they can choose from.

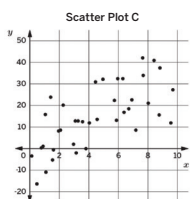
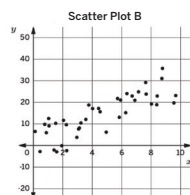
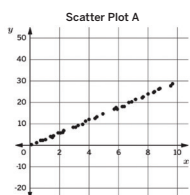
Challenge Extension Activities

These activities focus on student choice and provide open-ended problem-solving questions to discuss together. They are hands-on and require only a pencil and paper.

Unit 6 Sub-Unit 2 Extension

Name _____ Date _____

- 1 Each point on these scatterplots was created by randomly choosing an x -value between 0 and 10, then multiplying by 3 and adding a different random number to get the y -value.
- In Scatter Plot A, a random number between -0.5 and 0.5 was added to the y -coordinate.
 - In Scatter Plot B, a random number between -8 and 8 was added to the y -coordinate.
 - In Scatter Plot C, a random number between -20 and 20 was added to the y -coordinate.



- 2 For each scatter plot, draw a line that fits the data.

Continued next page ...

© Amplify Education, Inc. and its licensors.

Extensions are structured on the principle of student choice and designed to be student-led. Every sub-unit comes with an Extension problem set.

Extension Activities will be referenced in the differentiation table at the lesson-level. You will also find the sub-unit extensions recommended for each lesson digitally on the differentiation tab.

Teachers are provided with:

- Key background information about the math in the problem
- Sample responses
- Hints to share with students (when needed)
- Suggestions for which problems to share with the whole class

 **You Choose!** Pick any problem to start with.

2

There are 9 different-sized cubes in a $2 \times 2 \times 2$ cube: 8 unit cubes and one $2 \times 2 \times 2$ cube.

Cube	Number of $1 \times 1 \times 1$ cubes	Number of $2 \times 2 \times 2$ cubes
$2 \times 2 \times 2$		

How many different-sized cubes are there in a $3 \times 3 \times 3$ cube?



 **You Choose!** Pick any problem on this page to start with.

1


Avocado

Directions: Jada made guacamole from several avocados and left the pits. Figure out how many avocados Jada used. Explain how you know.

GRADE 2

Assessments and Rubrics

The following section includes one full unit of unit-level assessments. These include the Pre-Unit Check, Sub-Unit Quizzes, and End-of-Unit Assessment. These assessments will also be available for students to complete digitally in Grades 2–5.

Pre-Unit Check**Unit 2.1**

For Problems 1–4, add or subtract.

1 $1 + 5 = \underline{6}$

2 $7 - 5 = \underline{2}$

3 $8 + 2 = \underline{10}$

4 $10 - 3 = \underline{7}$

5 Circle **2** equations that are true.

$10 = 9 + 1$

$5 = 10 + 5$

$5 + 5 = 10$

Quiz: Sub-Unit 1**Unit 2.1**

For Problems 1 and 2, find the number that makes the equation true.

1 $6 + \underline{4} = 10$

2 $8 - \underline{2} = 6$

3 Find the number that makes the equation true.

$20 = 13 + \underline{7}$

 Show or explain your thinking.

Sample work shown.

$$20 - 13 = 7$$

answer: $\underline{7}$

4 Find the value of the expression $9 + 5$.

 Show or explain your thinking.

Sample work shown.

$$\begin{aligned} 9 + 1 + 4 \\ 10 + 4 = 14 \end{aligned}$$

answer: $\underline{14}$

Quiz: Sub-Unit 1 (continued)**Unit 2.1****Up Next ...**

The tally chart shows students' votes for their favorite activities. Use the tally chart for Problems 5 and 6. **Sample work shown.**

Votes for Favorite Activities

art	sports	reading
	 	

i Show or explain your thinking. _____

5 How many more votes are there for reading than sports?

$$10 - 7 = 3$$

answer: 3

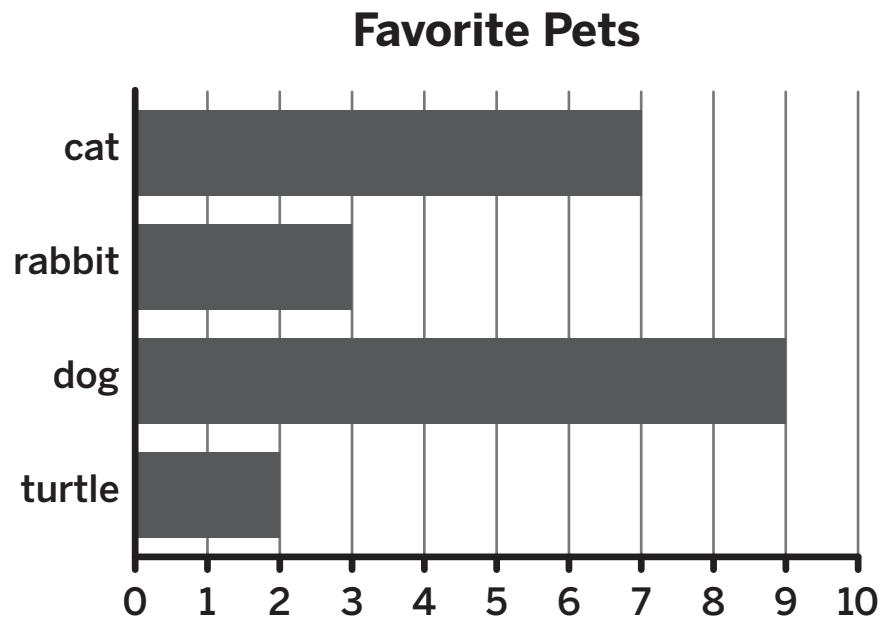
6 How many fewer votes are there for art than reading?

$$2 + 8 = 10$$

answer: 8

Quiz: Sub-Unit 2**Unit 2.1**

The bar graph shows the favorite pets of some students. Use the bar graph for Problems 1 and 2.



- 1** How many students chose a dog as their favorite pet?

9 students

- 2** What is the total number of students who chose a dog or a cat? Write an equation to represent your answer.

answer: 16 students

equation: $9 + 7 = 16$

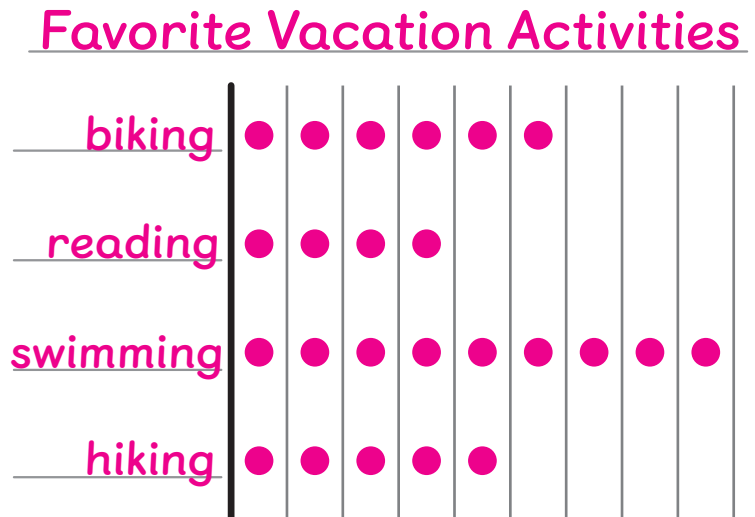
Quiz: Sub-Unit 2 (continued)

Unit 2.1

- 3** The table shows the favorite vacation activities for students in a class. Represent the data from the table in a picture graph.

Sample response shown.

Activity	Number of Students
biking	6
reading	4
swimming	9
hiking	5



Up Next ...

Show your thinking.
Sample work shown.

4 $23 + 11 = \underline{34}$

$$\begin{aligned} 3 + 1 &= 4 \\ 20 + 10 &= 30 \\ 4 + 30 &= 34 \end{aligned}$$

5 $35 + 15 = \underline{50}$

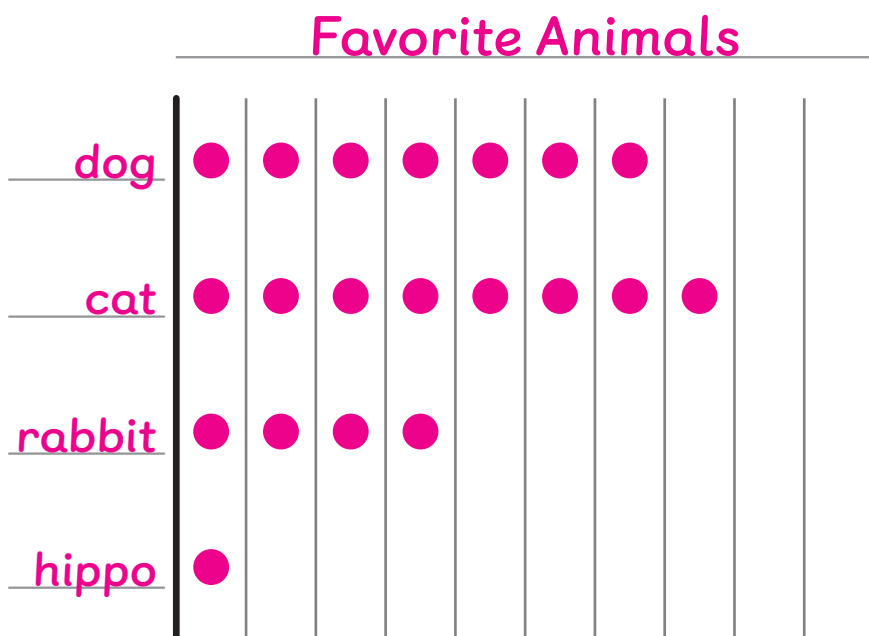
$$\begin{aligned} 5 + 5 &= 10 \\ 20 + 10 &= 30 \\ 10 + 30 &= 40 \end{aligned}$$

End-of-Unit Assessment**Unit 2.1**

- 1** The table shows the favorite animals of some second graders. Represent the data with a picture graph.

Sample response shown.

Animal	Number of students
dog	7
cat	8
rabbit	4
hippo	1



For Problems 2–6, find the number that makes the equation true.

2 $7 + \underline{11} = 18$

3 $20 - \underline{8} = 12$

4 $9 + 7 = \underline{16}$

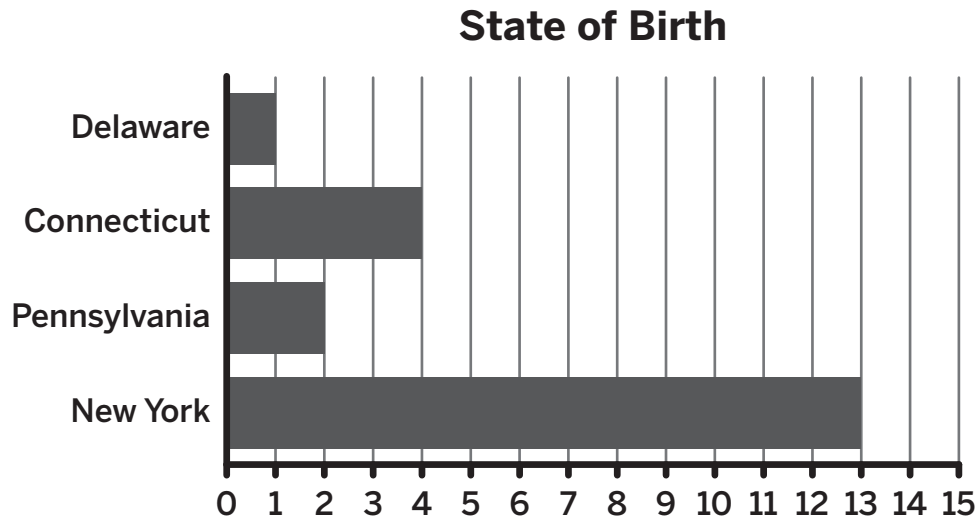
5 $8 + 7 = \underline{15}$

6 $19 - 14 = \underline{5}$

End-of-Unit Assessment (continued)

Unit 2.1

Use the bar graph for Problems 7 and 8.



- 7** How many students in the class were born in Pennsylvania or in Connecticut?

6 students

- 8** How many fewer students in the class were born in Connecticut than in New York?

Show or explain your thinking.

Sample work shown.

$$13 - 4 = 9$$

answer: 9 fewer students

End-of-Unit Assessment (continued)**Unit 2.1**

- 9** Jada picked 42 more peaches than Noah. Noah picked 12 peaches. How many peaches did Jada pick?



Show or explain your thinking.

Sample work shown.

$$42 + 12 = 54$$

answer: **54 peaches**

- 10** Priya picked 62 apricots. Diego picked 41 fewer apricots than Priya. How many apricots did Diego pick?



Show or explain your thinking.

Sample work shown.

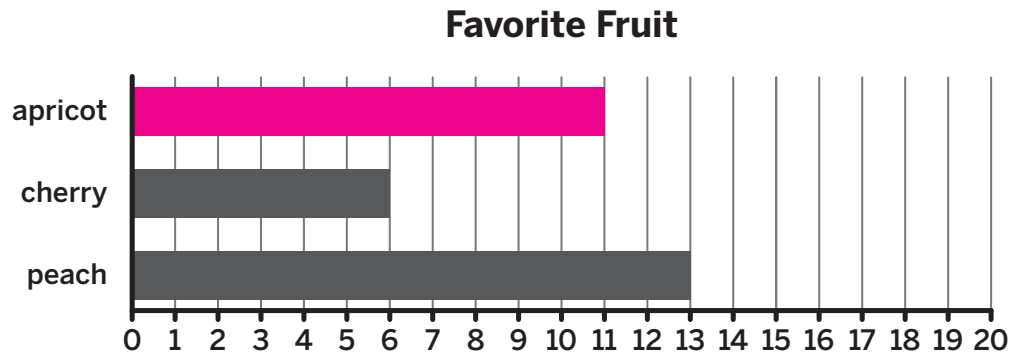
$$62 - 40 = 22$$

$$22 - 1 = 21$$

answer: **21 apricots**

End-of-Unit Assessment (continued)**Unit 2.1**

The Grade 2 students at a school chose their favorite summer fruit. The graph shows some of their choices. Use the graph for Problems 11–13.



- 11** 5 fewer students chose cherry than apricot. How many students chose apricot? Show the number of students who chose apricot in the graph. Write an equation that represents your thinking. **Number of students shown in the bar graph.**

Sample equation shown.

answer: 11 students

equation: $6 + 5 = 11$

- 12** 29 students chose watermelon or apricot. How many students chose watermelon? Write an equation that represents your thinking. **Sample equation shown.**

answer: 18 students

equation: $29 - 11 = 18$

- 13** Explain how you found the amount of students that chose watermelon. **Sample explanation shown.**

11 of the 29 votes are for apricot. I started
at 11 and added 10 to get 21 and then 8 more
to get 29. 18 students chose watermelon.

Standard	2.OA.A.1	2.OA.B.2	2.NBT.B.5	2.MD.D.10
Problem(s)	9, 10	2–6	9, 10	1, 7, 8, 11–13

Problem 1			Standard: 2.MD.D.10
4 Exceeding	3 Meeting	2 Approaching	1 Beginning
Correct response: Accurate and complete pictograph for all 4 animals	Response shows conceptual understanding with minor errors and/or incomplete reasoning. Student accurately graphs 3 animals.	Response shows incomplete understanding with significant errors. Student attempts to use a pictograph.	Response shows limited understanding.

Problem 2			Standard: 2.OA.B.2
4 Exceeding	3 Meeting	2 Approaching	1 Beginning
Correct response: 11	Some responses may show more understanding than others. Consider assigning Meeting or Approaching based on what can be determined about the student's understanding when applicable.		Response shows limited understanding.

Problem 3			Standard: 2.OA.B.2
4 Exceeding	3 Meeting	2 Approaching	1 Beginning
Correct response: 8	Some responses may show more understanding than others. Consider assigning Meeting or Approaching based on what can be determined about the student's understanding when applicable.		Response shows limited understanding.

Problem 4			Standard: 2.OA.B.2
4 Exceeding	3 Meeting	2 Approaching	1 Beginning
Correct response: 16	Some responses may show more understanding than others. Consider assigning Meeting or Approaching based on what can be determined about the student's understanding when applicable.		Response shows limited understanding.

Problem 5				Standard: 2.OA.B.2
4 Exceeding	3 Meeting	2 Approaching	1 Beginning	
Correct response: 15	Some responses may show more understanding than others. Consider assigning Meeting or Approaching based on what can be determined about the student's understanding when applicable.		Response shows limited understanding .	

Problem 6				Standard: 2.OA.B.2
4 Exceeding	3 Meeting	2 Approaching	1 Beginning	
Correct response: 5	Some responses may show more understanding than others. Consider assigning Meeting or Approaching based on what can be determined about the student's understanding when applicable.		Response shows limited understanding .	

Problem 7				Standards: 2.MD.D.10, MP3
4 Exceeding	3 Meeting	2 Approaching	1 Beginning	
Correct response: 6	Some responses may show more understanding than others. Consider assigning Meeting or Approaching based on what can be determined about the student's understanding when applicable.		Response shows limited understanding .	

Problem 8				Standards: 2.MD.D.10, MP3
4 Exceeding	3 Meeting	2 Approaching	1 Beginning	
Correct response: 9 fewer students; $13 - 4 = 9$	Response shows conceptual understanding with minor errors and/or incomplete reasoning. Student writes an equation or expression to show $13 - 4$ but makes an error in calculation.	Response shows incomplete understanding with significant errors. Student attempts to compare different quantities. OR Student combines the given quantities.	Response shows limited understanding .	

Problem 9		Standards: 2.OA.A.1, 2.NBT.B.5, MP3	
4 Exceeding	3 Meeting	2 Approaching	1 Beginning
Correct response: 54 peaches; $42 + 12 = 54$	Response shows conceptual understanding with minor errors and/or incomplete reasoning. Student writes an equation or expression to show $42 + 12$ but makes an error in calculation.	Response shows incomplete understanding with significant errors. Student uses subtraction to compare the 2 quantities.	Response shows limited understanding.

Problem 10		Standards: 2.OA.A.1, 2.NBT.B.5, MP3	
4 Exceeding	3 Meeting	2 Approaching	1 Beginning
Correct response: 21 apricots; $62 - 40 = 22$, $22 - 1 = 21$	Response shows conceptual understanding with minor errors and/or incomplete reasoning. Student writes an equation or expression to show $62 - 41$, but makes an error in calculation.	Response shows incomplete understanding with significant errors. Student uses addition to compare the 2 quantities.	Response shows limited understanding.

Problem 11		Standards: 2.MD.D.10, MP4	
4 Exceeding	3 Meeting	2 Approaching	1 Beginning
Correct response: 11 students; $6 + 5 = 11$ Accurately plots apricot in the bar graph	Some responses may show more understanding than others. Consider assigning Meeting or Approaching based on what can be determined about the student's understanding when applicable.		Response shows limited understanding.

Problem 12			Standards: 2.MD.D.10, MP4
4 Exceeding	3 Meeting	2 Approaching	1 Beginning
Correct response: 18 students; $29 - 11 = 18$	Some responses may show more understanding than others. Consider assigning Meeting or Approaching based on what can be determined about the student's understanding when applicable.		Response shows limited understanding .

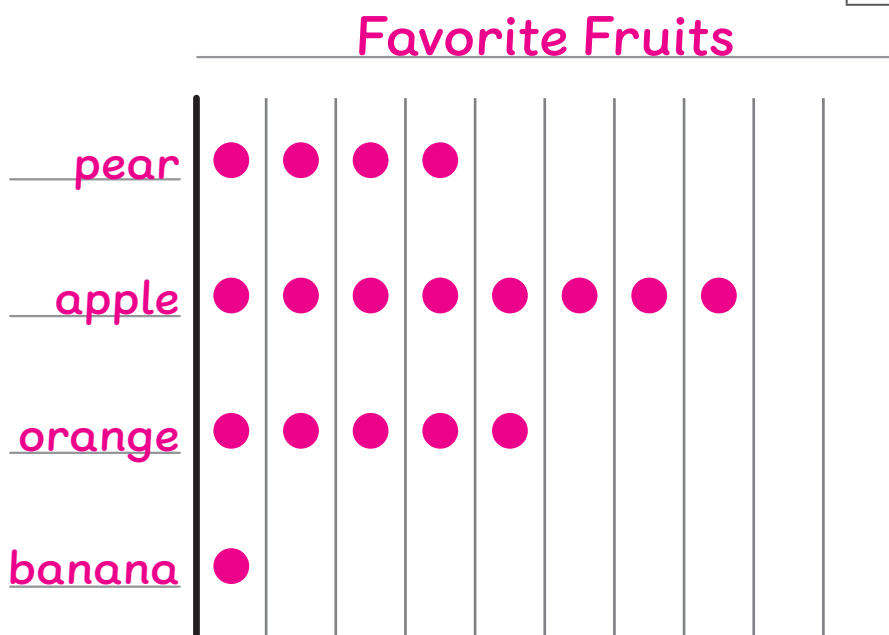
Problem 13			Standard: 2.MD.D.10
4 Exceeding	3 Meeting	2 Approaching	1 Beginning
Sample response: 11 of the 29 votes are for apricot. I started at 11 and added 10 to get 21 and then 8 more to get 29. 18 students chose watermelon.	Student who writes about finding the difference may understand the relationship between the amounts in the problem.	Student states the answer or writes an equation, but does not explain their thinking.	Response includes an attempt to solve the problem but has an interpretation or calculation error.

End-of-Unit Assessment**Unit 2.1**

- 1** The table shows the favorite fruits of some second graders. Represent the data with a picture graph.

Sample response shown.

Fruit	Number of students
pear	4
apple	8
orange	5
banana	1



For Problems 2–6, find the number that makes the equation true.

2 $8 + \underline{11} = 19$

3 $20 - \underline{9} = 11$

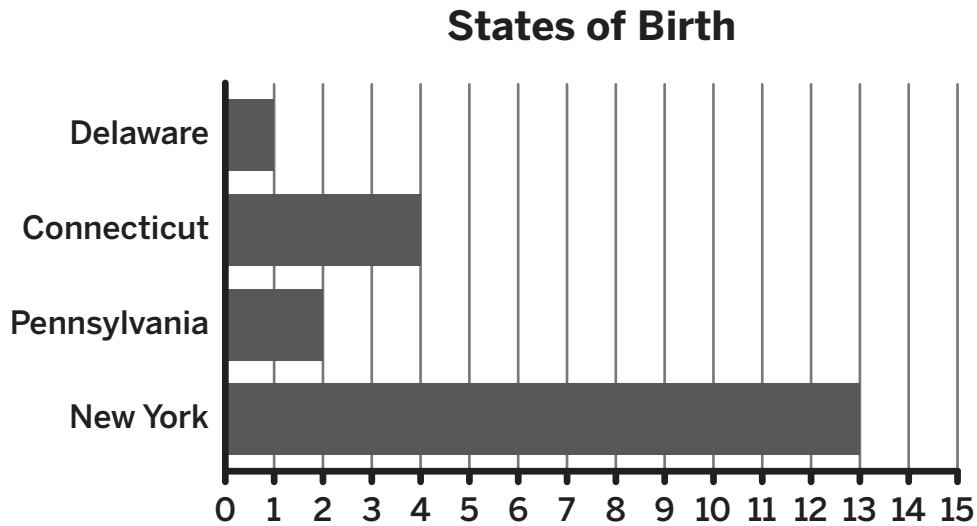
4 $6 + 9 = \underline{15}$

5 $9 + 8 = \underline{17}$

6 $18 - 14 = \underline{4}$

End-of-Unit Assessment (continued)**Unit 2.1**

The bar graph shows the states where some students were born. Use the bar graph for Problems 7 and 8.



- 7** How many students in the class were born in New York or Pennsylvania?

15

- 8** How many fewer students in the class were born in Pennsylvania than in New York?



Show or explain your thinking.

Sample work shown.

$$13 - 2 = 11$$

answer: 11 fewer students

End-of-Unit Assessment (continued)**Unit 2.1**

- 9** Jada picked 32 more ears of corn than Noah. Noah picked 15 ears of corn. How many ears of corn did Jada pick?



Show or explain your thinking.

Sample work shown.

$$15 + 32 = 47$$

answer: 47 ears of corn

- 10** Priya picked 57 watermelons. Diego picked 25 fewer watermelons than Priya. How many watermelons did Diego pick?



Show or explain your thinking.

Sample work shown.

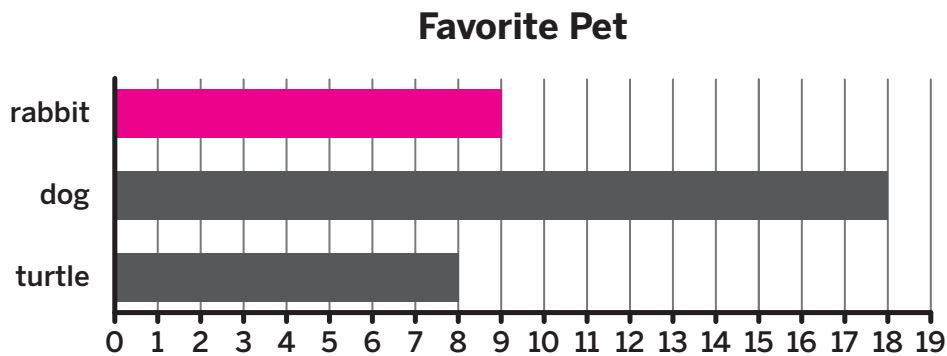
$$57 - 20 = 37$$

$$37 - 5 = 32$$

answer: 32 watermelons

End-of-Unit Assessment (continued)**Unit 2.1**

The Grade 2 students at a school chose their favorite pet. The graph shows some of their choices. Use the graph for Problems 11–13.



- 11** 9 more students chose dog than rabbit. How many students chose rabbit? Show the number of students who chose rabbit in the graph. Write an equation that represents your thinking.

Number of students shown in the bar graph.

Sample equation shown.

answer: 9 students

equation: $18 - 9 = 9$

- 12** 21 students chose cat or rabbit. How many students chose cat? Write an equation that represents your thinking.

Sample equation shown.

answer: 12 students

equation: $12 + 9 = 21$

- 13** Explain how you found the amount of students that chose cat.

Sample explanation shown.

9 of the 21 votes are for rabbit. I started

at 9 and added 11 to get 20 and then 1 more

to get 21. 12 students chose cat.

Standard	2.OA.A.1	2.OA.B.2	2.NBT.B.5	2.MD.D.10
Problem(s)	9, 10	2–6	9, 10	1, 7, 8, 11–13

Problem 1			Standard: 2.MD.D.10
4 Exceeding	3 Meeting	2 Approaching	1 Beginning
Correct response: Accurate and complete pictograph for all fruits	Response shows conceptual understanding with minor errors and/or incomplete reasoning. Student accurately graphs 3 fruits.	Response shows incomplete understanding with significant errors. Student attempts to use a pictograph.	Response shows limited understanding .

Problem 2			Standard: 2.OA.B.2
4 Exceeding	3 Meeting	2 Approaching	1 Beginning
Correct response: 11	Some responses may show more understanding than others. Consider assigning Meeting or Approaching based on what can be determined about the student's understanding when applicable.		Response shows limited understanding .

Problem 3			Standard: 2.OA.B.2
4 Exceeding	3 Meeting	2 Approaching	1 Beginning
Correct response: 9	Some responses may show more understanding than others. Consider assigning Meeting or Approaching based on what can be determined about the student's understanding when applicable.		Response shows limited understanding .

Problem 4			Standard: 2.OA.B.2
4 Exceeding	3 Meeting	2 Approaching	1 Beginning
Correct response: 15	Some responses may show more understanding than others. Consider assigning Meeting or Approaching based on what can be determined about the student's understanding when applicable.		Response shows limited understanding .

Problem 5				Standard: 2.OA.B.2
4 Exceeding	3 Meeting	2 Approaching	1 Beginning	
Correct response: 17	Some responses may show more understanding than others. Consider assigning Meeting or Approaching based on what can be determined about the student's understanding when applicable.		Response shows limited understanding .	

Problem 6				Standard: 2.OA.B.2
4 Exceeding	3 Meeting	2 Approaching	1 Beginning	
Correct response: 4	Some responses may show more understanding than others. Consider assigning Meeting or Approaching based on what can be determined about the student's understanding when applicable.		Response shows limited understanding .	

Problem 7				Standards: 2.MD.D.10, MP3
4 Exceeding	3 Meeting	2 Approaching	1 Beginning	
Correct response: 15	Some responses may show more understanding than others. Consider assigning Meeting or Approaching based on what can be determined about the student's understanding when applicable.		Response shows limited understanding .	

Problem 8				Standards: 2.MD.D.10, MP3
4 Exceeding	3 Meeting	2 Approaching	1 Beginning	
Correct response: 11 fewer students; $13 - 2 = 11$	Response shows conceptual understanding with minor errors and/or incomplete reasoning. Student writes an equation or expression to show $13 - 2$, but makes an error in calculation.	Response shows incomplete understanding with significant errors. Student attempts to compare different quantities. OR Student combines the given quantities.	Response shows limited understanding .	

Problem 9		Standards: 2.OA.A.1, 2.NBT.B.5, MP3	
4 Exceeding	3 Meeting	2 Approaching	1 Beginning
Correct response: 47 ears of corn; $15 + 32 = 47$	Response shows conceptual understanding with minor errors and/or incomplete reasoning. Student writes an equation or expression to show $15 + 32$, but makes an error in calculation.	Response shows incomplete understanding with significant errors. Student uses subtraction to compare the 2 quantities.	Response shows limited understanding.

Problem 10		Standards: 2.OA.A.1, 2.NBT.B.5, MP3	
4 Exceeding	3 Meeting	2 Approaching	1 Beginning
Correct response: 32 watermelons; $57 - 20 = 37$, $37 - 5 = 32$	Response shows conceptual understanding with minor errors and/or incomplete reasoning. Student writes an equation or expression to show $57 - 25$, but makes an error in calculation.	Response shows incomplete understanding with significant errors. Student uses addition to compare the 2 quantities.	Response shows limited understanding.

Problem 11		Standards: 2.MD.D.10, MP4	
4 Exceeding	3 Meeting	2 Approaching	1 Beginning
Correct response: 9 students; $18 - 9 = 9$ Accurately plots rabbit in the bar graph	Some responses may show more understanding than others. Consider assigning Meeting or Approaching based on what can be determined about the student's understanding when applicable.		Response shows limited understanding.

Problem 12			Standards: 2.MD.D.10, MP4
4 Exceeding	3 Meeting	2 Approaching	1 Beginning
Correct response: 12 students; $12 + 9 = 21$	Some responses may show more understanding than others. Consider assigning Meeting or Approaching based on what can be determined about the student's understanding when applicable.		Response shows limited understanding.

Problem 13			Standard: 2.MD.D.10
4 Exceeding	3 Meeting	2 Approaching	1 Beginning
Sample response: 9 of the 21 votes are for rabbit. I started at 9 and added 11 to get 20 and then 1 more to get 21. 12 students chose cat.	Students who write about finding the difference may understand the relationship between the amounts in the problem.	Student states the answer or writes an equation but does not explain thinking.	Response includes an attempt to solve the problem but has an interpretation or calculation error.

GRADE 2

Show-What- You-Know Assessments

The following includes all lesson-level Show What You Know assessments from one full unit. These daily formative assessments focus on the key concept of the lesson. Show What You Know assessments will also be available for students to complete digitally in Grades 2–5.

Show What You Know

1.02

For Problems 1–4, find the value of the expression.

1 $4 + 2$ 6

2 $9 - 3$ 6

3 $9 - 2$ 7

4 $7 + 3$ 10

I can ...

Add and subtract within 10.



Show What You Know

1.03

For Problems 1 and 2, find the number that makes 10.

1 $2 + \underline{8} = 10$

2 $6 + \underline{4} = 10$

I can ...

Find pairs that make 10.

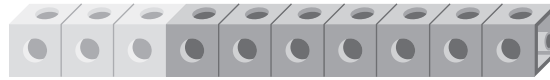


Show What You Know



1.04

- 1 Circle 3 equations that represent the cubes.



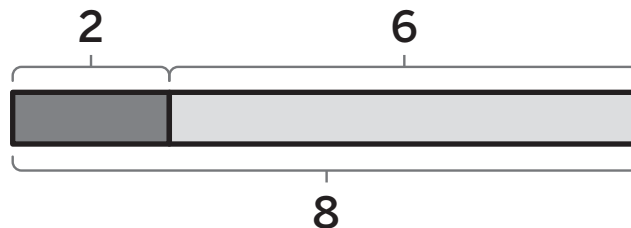
$$7 + 3 = 10$$

$$3 + 7 = 10$$

$$10 + 3 = 13$$

$$10 - 3 = 7$$

- 2 Write an addition equation and a subtraction equation that represent the tape diagram. **Sample equations shown.**



addition equation: $6 + 2 = 8$ or $2 + 6 = 8$

subtraction equation: $8 - 2 = 6$ or $8 - 6 = 2$

I can ...

Write related addition and subtraction equations.



Show What You Know

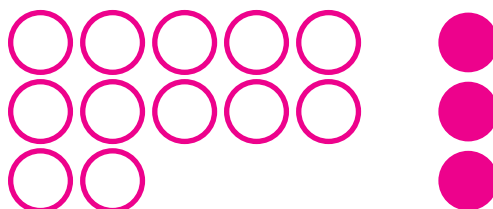
1.05

For Problems 1–4, find the number that makes the equation true.

Sample work shown.

 Show or explain your thinking.

1 $12 + \underline{3} = 15$



2 $20 - 9 = \underline{11}$

I know $20 - 10$ is 10,
so $20 - 9$ is 11.

3 $\underline{13} + 6 = 19$

I counted back 6
from 19 to get 13.

4 $16 - \underline{7} = 9$

$$\begin{aligned} 9 + 1 &= 10 \\ 10 + 6 &= 16 \\ 1 + 6 &= 7 \end{aligned}$$

I can ...

Find numbers that make addition and subtraction equations true.



Show What You Know

1.06

For Problems 1 and 2, find the value of the expression.

Sample work shown.

 Show your thinking. _____

1 $8 + 6$ **14**

$$\begin{aligned}8 + 8 &= 16 \\16 - 2 &= 14\end{aligned}$$

2 $13 + 7$ **20**

$$\begin{aligned}10 + 3 + 7 \\3 + 7 &= 10 \\10 + 10 &= 20\end{aligned}$$

I can ...

Add and subtract
within 20.

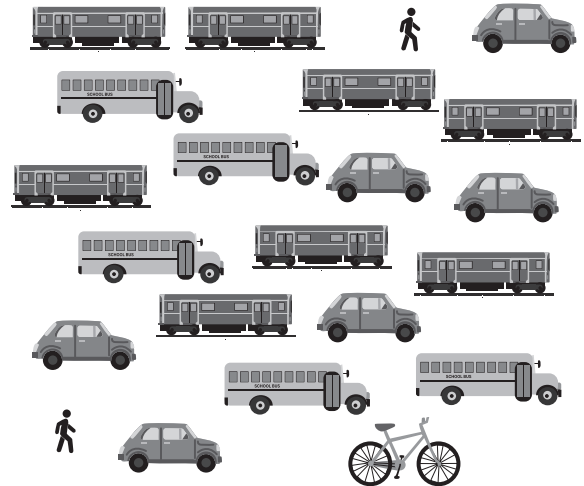


Show What You Know**1.07**

Clare and Priya showed how classmates traveled to school.
Use their work for Problems 1 and 2.

Clare's work

bus	train
 	   
 	   
	
car	another way
 	  
 	
 	

Priya's work

- 1** How are Clare's work and Priya's work similar, or alike? How are they different? **Sample response shown.**

They have the same number of each item.

Clare put each type in its own group and

labeled the groups, and Priya did not.

- 2** Circle the name of the student whose work is more organized.

Clare

Priya

I can . . .

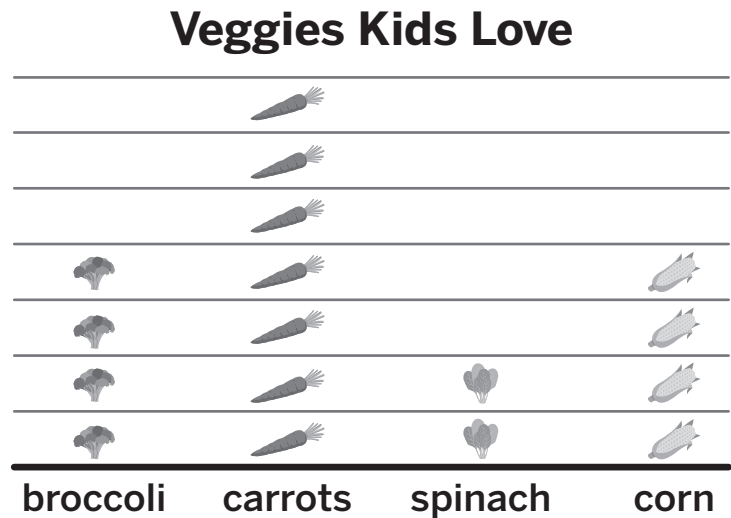
Organize data in a way that makes sense to others.



Show What You Know



A group of students were asked, “What is your favorite vegetable?” Their responses are shown in this picture graph. Use the picture graph for Problems 1 and 2.



- 1** Write **3** statements based on the data in the picture graph.
Sample response shown.

Carrots are the most popular veggie.

More students like corn than spinach.

2 students chose spinach.

- 2** How many *more* students chose carrots than corn? Write an equation and underline the answer. **Sample equation shown.**

answer: 3 students

equation: 4 + 3 = 7

I can . . .

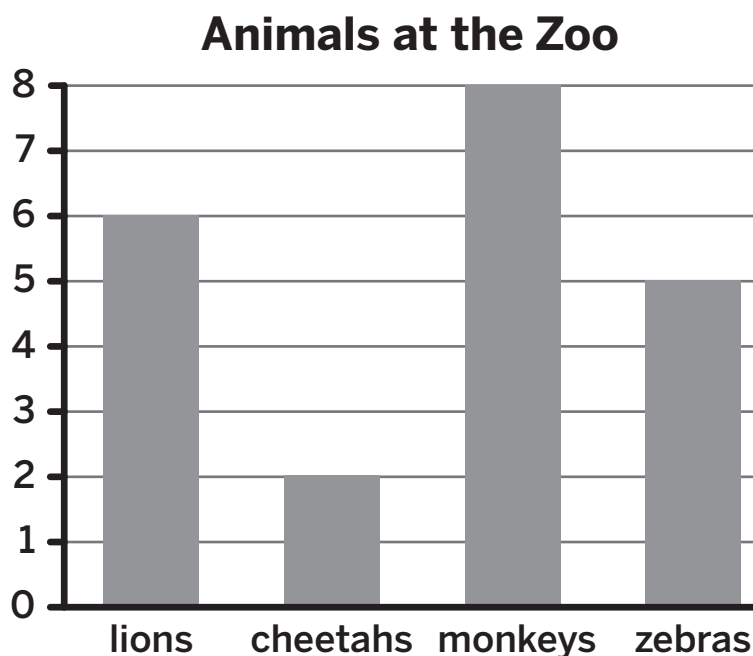
Read and understand data in picture graphs.



Show What You Know

1.09

A zookeeper counted the number of lions, cheetahs, monkeys, and zebras at the zoo. The zookeeper's data is shown in the bar graph. Use the bar graph for Problems 1 and 2.



1 How many monkeys were at the zoo? 8 monkeys

2 What is the total number of cheetahs and zebras? Write an equation and underline the answer. **Sample equation shown.**

answer: 7 cheetahs and zebras

equation: $2 + 5 = 7$

I can . . .

Use data in bar graphs to answer questions.



Show What You Know

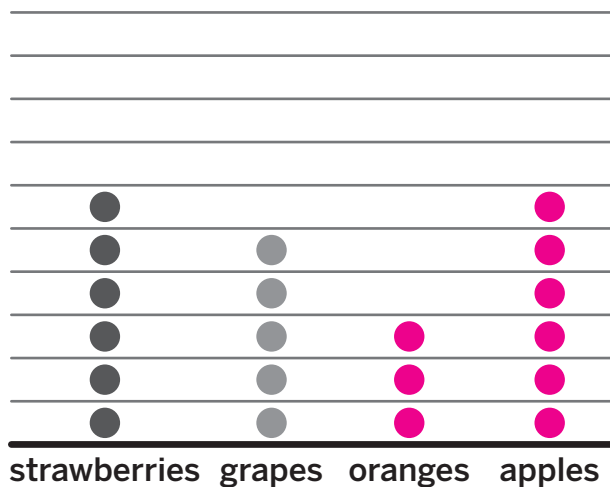


1.10

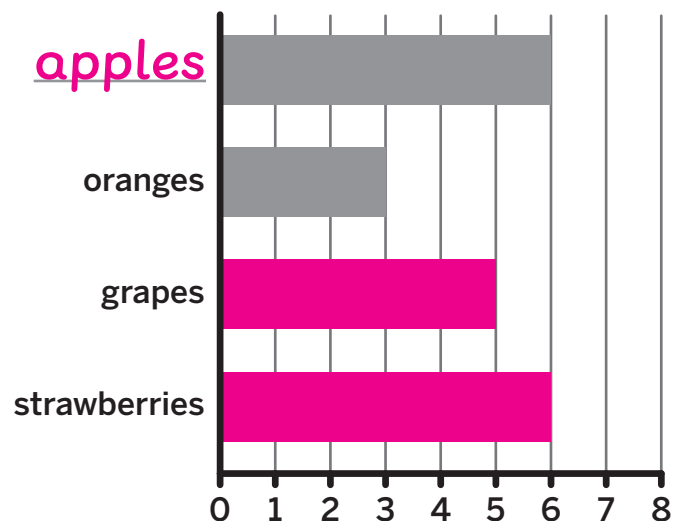
Mr. Patel asked the soccer team, “What fruits do you love to eat?” Jada and Han used the data he collected to make graphs.

Use the information from the graphs to complete each graph.

Jada's Graph
Fruits We Love



Han's Graph
Fruits We Love



I can ...

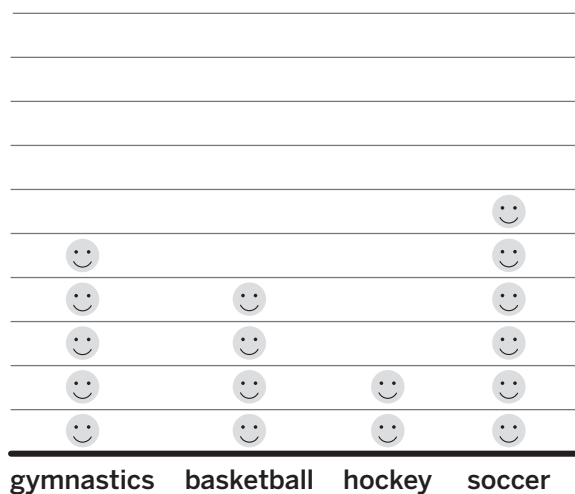
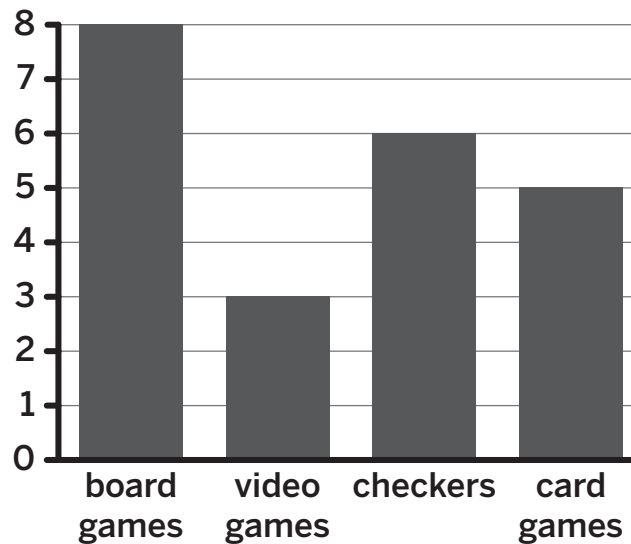
Represent data in a graph.



Show What You Know**1.11**

A group of students were surveyed about their favorite sports and indoor recess games. Their responses are shown in the following graphs. Use the graphs for Problems 1 and 2.

Write an equation that represents your thinking and underline the answer.

2nd Graders' Favorite Sports**Indoor Recess Games**

Sample equations shown.

- 1** How many *more* students chose checkers than card games?

answer: **1 student** equation: **$6 - 5 = 1$**

- 2** How many students chose soccer or hockey?

answer: **8 students** equation: **$6 + 2 = 8$**

I can ...

Answer questions about data represented in graphs.



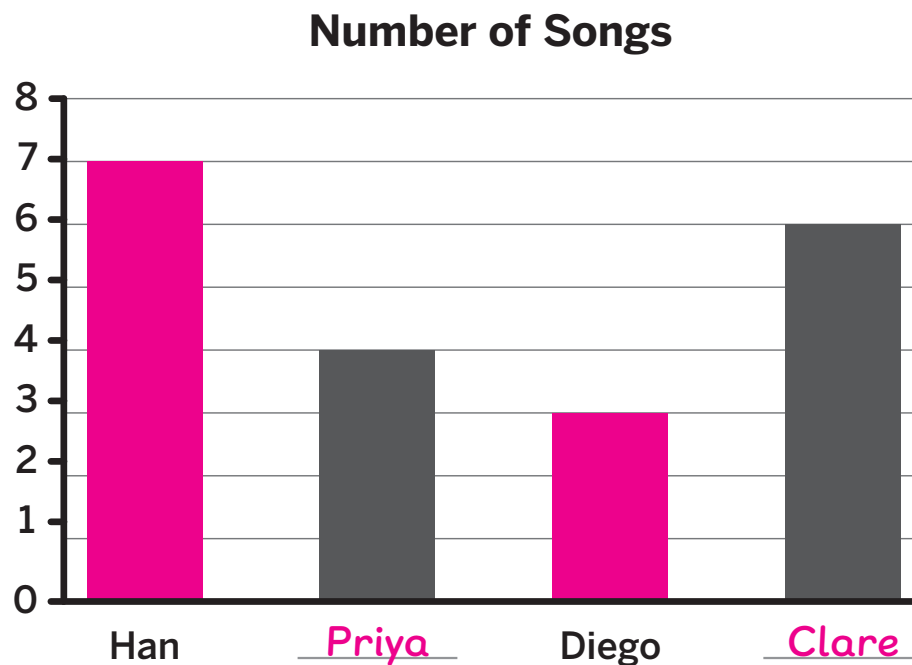
Show What You Know



1.12

A group of students were asked, “How many songs did you listen to on Saturday?” The data is shown in the table. Use the data table to complete the bar graph.

Student	Total songs
Han	7
Priya	4
Diego	3
Clare	6



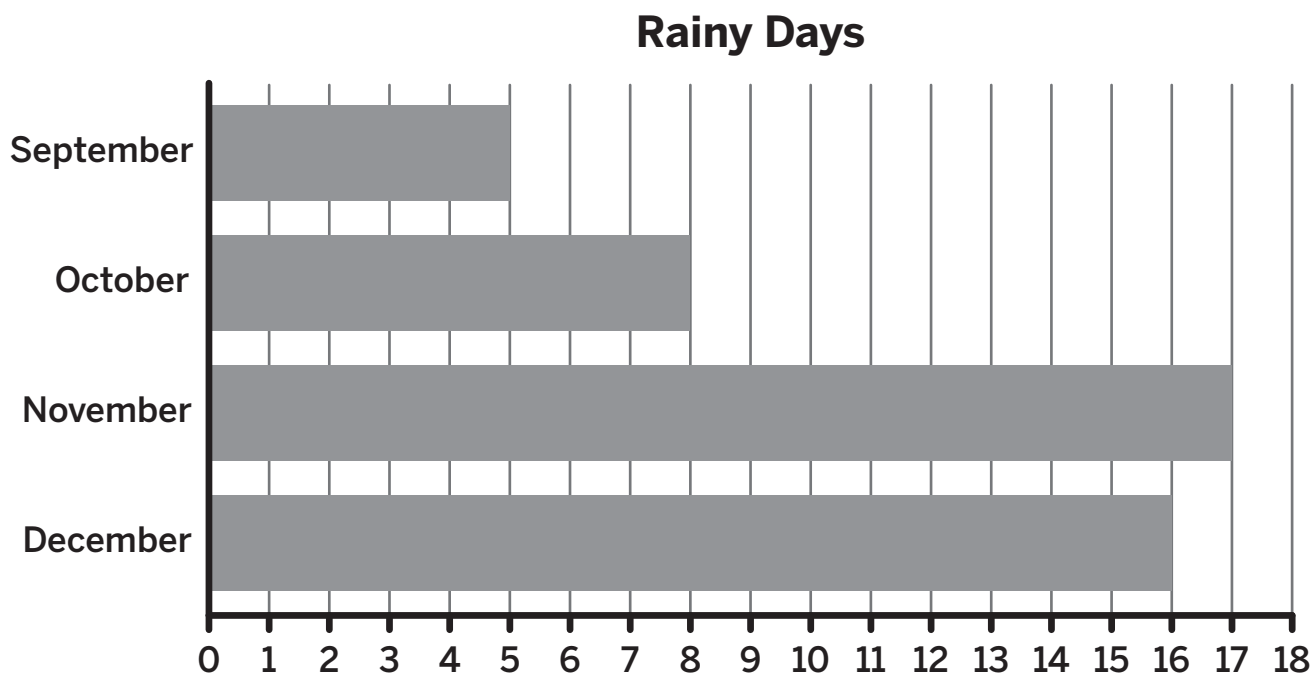
I can ...

Collect, organize, and represent data.



Show What You Know**1.13**

The bar graph shows how many days it rained each month.



How many *fewer* days did it rain in September than in December? Write an addition equation and a subtraction equation to show how many fewer days and underline the answer.

Sample equations shown.

answer: 11 fewer days

addition equation: $5 + 11 = 16$

subtraction equation: $16 - 5 = 11$

I can ...

Use bar graphs and equations to help represent and solve story problems.



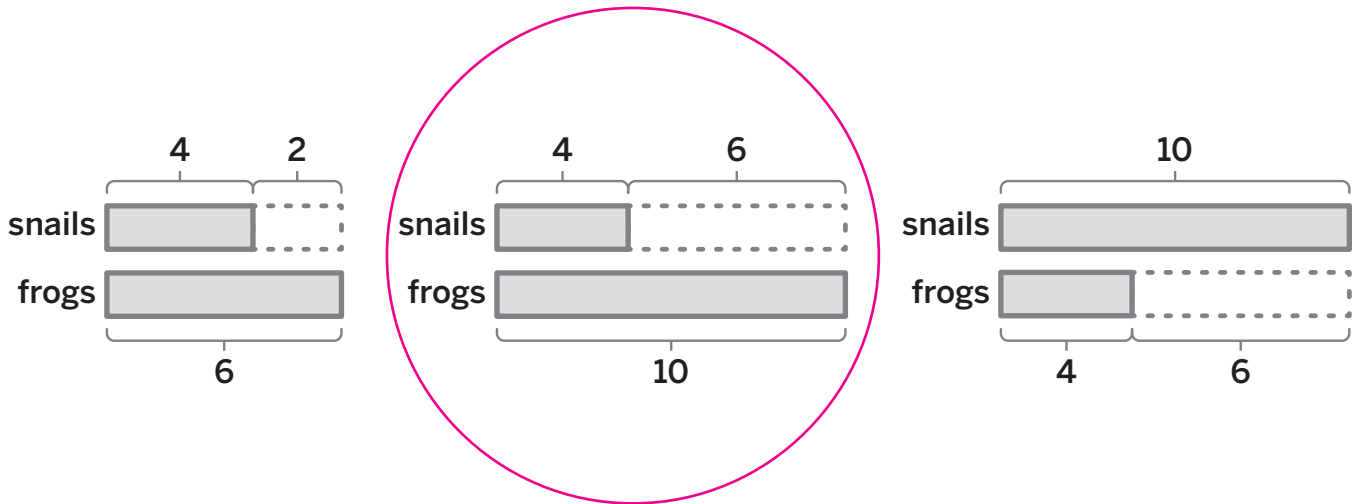
Show What You Know



1.14

Circle the tape diagram that represents the comparison statement.

There are 6 more frogs than snails in the aquarium.



I can ...

Represent comparisons with tape diagrams.

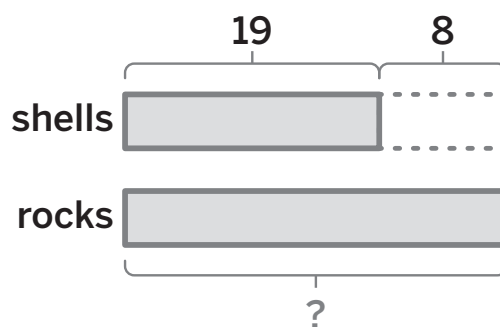
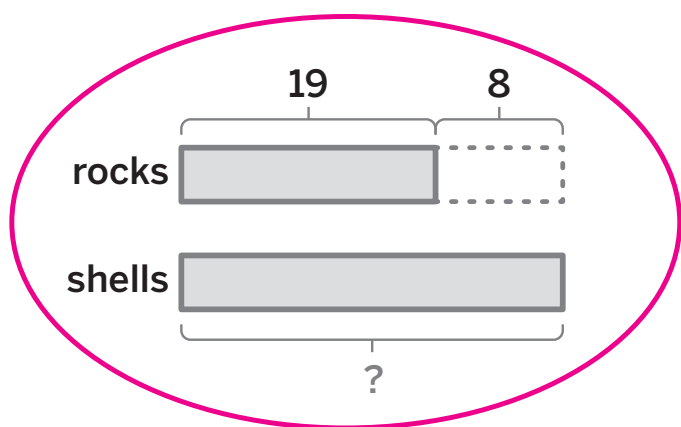


Show What You Know

1.15

A group of children found shells and rocks at the beach. They found 8 more shells than rocks. They found 19 rocks. How many shells did the children find?

Circle the tape diagram that represents the story problem.
Describe how you know the tape diagram represents the story.
Sample explanation shown.



The story and tape diagram show the children _____
found 19 rocks. The diagram shows that _____
they found 8 more shells than rocks. It also _____
shows that they do not know the number of _____
shells that they found. _____

I can ...

Describe how tape diagrams represent story problems.



Show What You Know

1.16

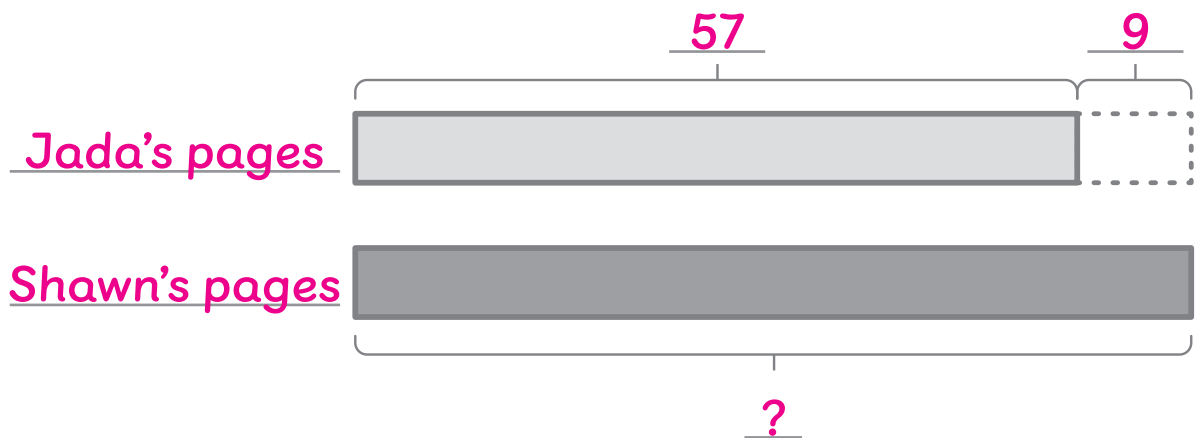
Solve the story problem. Write an equation that represents the story problem and underline the answer. You can represent your thinking using a tape diagram if it is helpful.

Jada read 57 pages. Shawn read 9 more pages than Jada. How many pages did Shawn read?



Show your thinking.

Sample work and equation shown.



$$57 + 3 = 60$$

$$60 + 6 = 66$$

answer: 66 pages

equation: $57 + 9 = 66$

I can ...

Clearly represent and solve story problems.



Show What You Know Lesson 2

Name _____ Date _____

Show What You Know  1.02

For Problems 1–4, find the value of the expression.

1 $4 + 2 = \underline{6}$

2 $9 - 3 = \underline{6}$

3 $9 - 2 = \underline{7}$

4 $7 + 3 = \underline{10}$

I can . . .
Add and subtract within 10.

24 © Amplify Education, Inc. and its licensors. Amplify Deanna Math is based on curricula from Illustrative Mathematics (IM).

Show What You Know Lesson 3

Name _____ Date _____

Show What You Know  1.03

For Problems 1 and 2, find the number that makes 10.

1 $2 + \underline{8} = 10$

2 $6 + \underline{4} = 10$

I can . . .
Find pairs that make 10.

25 © Amplify Education, Inc. and its licensors. Amplify Deanna Math is based on curricula from Illustrative Mathematics (IM).

Show What You Know Lesson 4

Name _____ Date _____

Show What You Know  1.04

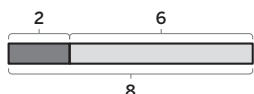
1 Circle 3 equations that represent the cubes.



$7 + 3 = 10$ $3 + 7 = 10$

$10 + 3 = 13$ $10 - 3 = 7$

2 Write an addition equation and a subtraction equation that represent the tape diagram. **Sample equations shown.**



addition equation: $6 + 2 = 8$ or $2 + 6 = 8$

subtraction equation: $8 - 2 = 6$ or $8 - 6 = 2$

I can . . .
Write related addition and subtraction equations.

26 © Amplify Education, Inc. and its licensors. Amplify Deanna Math is based on curricula from Illustrative Mathematics (IM).

Show What You Know Lesson 5

Name _____ Date _____

Show What You Know  1.05

For Problems 1–4, find the number that makes the equation true. **Sample work shown.**

1 $12 + \underline{3} = 15$ 

2 $20 - 9 = \underline{11}$ **I know $20 - 10$ is 10, so $20 - 9$ is 11.**

3 $\underline{13} + 6 = 19$ **I counted back 6 from 19 to get 13.**

4 $16 - \underline{7} = 9$ $9 + 1 = 10$
 $10 + 6 = 16$
 $1 + 6 = 7$

I can . . .
Find numbers that make addition and subtraction equations true.

27 © Amplify Education, Inc. and its licensors. Amplify Deanna Math is based on curricula from Illustrative Mathematics (IM).

Show What You Know Lesson 6

Name _____ Date _____

Show What You Know

1.06

For Problems 1 and 2, find the value of the expression.

Sample work shown.

Show your thinking.

1 $8 + 6 = 14$

$8 + 8 = 16$
 $16 - 2 = 14$

2 $13 + 7 = 20$

$10 + 3 + 7$
 $3 + 7 = 10$
 $10 + 10 = 20$

I can ...

Add and subtract within 20.



28

© Amplify Education, Inc. and its licensors. Amplify Openness Math is based on curricula from Illustrative Mathematics (IM).

Show What You Know Lesson 7

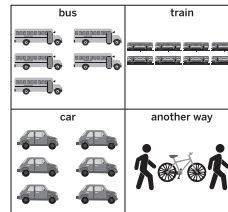
Name _____ Date _____

Show What You Know

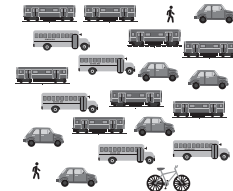
1.07

Clare and Priya showed how classmates traveled to school. Use their work for Problems 1 and 2.

Clare's work



Priya's work



- 1 How are Clare's work and Priya's work similar, or alike? How are they different?
- Sample response shown.**

They have the same number of each item.

Clare put each type in its own group and labeled the groups, and Priya did not.

- 2 Circle the name of the student whose work is more organized.

Clare Priya

I can ...

Organize data in a way that makes sense to others.



29

© Amplify Education, Inc. and its licensors. Amplify Openness Math is based on curricula from Illustrative Mathematics (IM).

Show What You Know Lesson 8

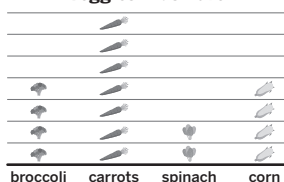
Name _____ Date _____

Show What You Know

1.08

A group of students were asked, "What is your favorite vegetable?" Their responses are shown in this picture graph. Use the picture graph for Problems 1 and 2.

Veggies Kids Love



- 1 Write 3 statements based on the data in the picture graph.

Sample response shown.

Carrots are the most popular veggie.

More students like corn than spinach.

2 students chose spinach.

- 2 How many more students chose carrots than corn? Write an equation and underline the answer.
- Sample equation shown.**

answer: 3 students equation: $4 - 3 = 1$

I can ...

Read and understand data in picture graphs.



30

© Amplify Education, Inc. and its licensors. Amplify Openness Math is based on curricula from Illustrative Mathematics (IM).

Show What You Know Lesson 9

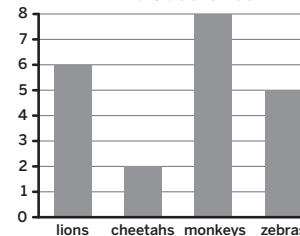
Name _____ Date _____

Show What You Know

1.09

A zookeeper counted the number of lions, cheetahs, monkeys, and zebras at the zoo. The zookeeper's data is shown in the bar graph. Use the bar graph for Problems 1 and 2.

Animals at the Zoo



- 1 How many monkeys were at the zoo?
- 8 monkeys**
-
- 2 What is the total number of cheetahs and zebras? Write an equation and underline the answer.
- Sample equation shown.**

answer: 7 cheetahs and zebras

equation: $2 + 5 = 7$

I can ...

Use data in bar graphs to answer questions.



31

© Amplify Education, Inc. and its licensors. Amplify Openness Math is based on curricula from Illustrative Mathematics (IM).

Show What You Know Lesson 10

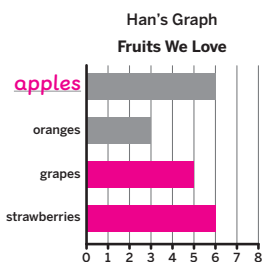
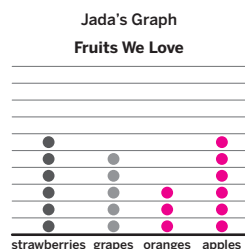
Name _____ Date _____

Show What You Know

1.10

Mr. Patel asked the soccer team, "What fruits do you love to eat?" Jada and Han used the data he collected to make graphs.

Use the information from the graphs to complete each graph.



I can ...
Represent data in a graph.



32

© Amplify Education, Inc. and its licensors. Amplify Classroom Math is based on curricula from Illustrative Mathematics (IM).

Show What You Know Lesson 11

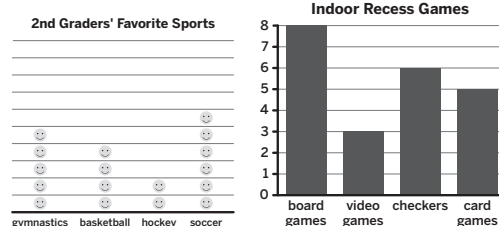
Name _____ Date _____

Show What You Know

1.11

A group of students were surveyed about their favorite sports and indoor recess games. Their responses are shown in the following graphs. Use the graphs for Problems 1 and 2.

Write an equation that represents your thinking and underline the answer.



Sample equations shown.

1 How many more students chose checkers than card games?

answer: 1 student equation: $6 - 5 = 1$

2 How many students chose soccer or hockey?

answer: 8 students equation: $6 + 2 = 8$

I can ...
Answer questions about data represented in graphs.



33

© Amplify Education, Inc. and its licensors. Amplify Classroom Math is based on curricula from Illustrative Mathematics (IM).

Show What You Know Lesson 12

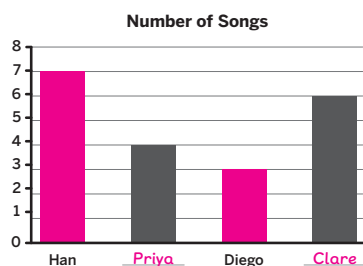
Name _____ Date _____

Show What You Know

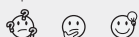
1.12

A group of students were asked, "How many songs did you listen to on Saturday?" The data is shown in the table. Use the data table to complete the bar graph.

Student	Total songs
Han	7
Priya	4
Diego	3
Clare	6



I can ...
Collect, organize, and represent data.



34

© Amplify Education, Inc. and its licensors. Amplify Classroom Math is based on curricula from Illustrative Mathematics (IM).

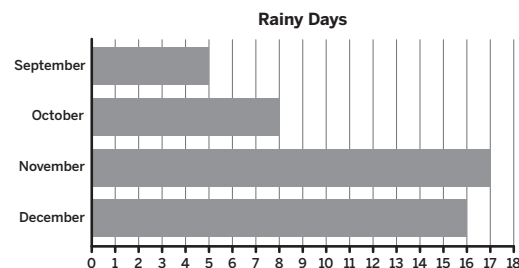
Show What You Know Lesson 13

Name _____ Date _____

Show What You Know

1.13

The bar graph shows how many days it rained each month.



How many fewer days did it rain in September than in December? Write an addition equation and a subtraction equation to show how many fewer days and underline the answer.

Sample equations shown.

answer: 11 fewer days

addition equation: $5 + 11 = 16$

subtraction equation: $16 - 5 = 11$

I can ...
Use bar graphs and equations to help represent and solve story problems.



35

© Amplify Education, Inc. and its licensors. Amplify Classroom Math is based on curricula from Illustrative Mathematics (IM).

Show What You Know Lesson 14

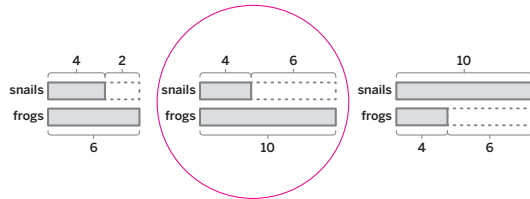
Name _____ Date _____

Show What You Know

1.14

Circle the tape diagram that represents the comparison statement.

There are 6 more frogs than snails in the aquarium.


I can ...
Represent comparisons
with tape diagrams.


36

© Amplify Education, Inc. and its licensors. Amplify Openness Math
is based on curricula from Illustrative Mathematics (IM).

Show What You Know Lesson 15

Name _____ Date _____

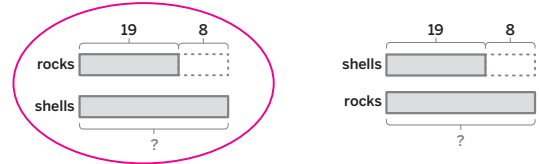
Show What You Know

1.15

A group of children found shells and rocks at the beach. They found 8 more shells than rocks. They found 19 rocks. How many shells did the children find?

Circle the tape diagram that represents the story problem.
Describe how you know the tape diagram represents the story.

Sample explanation shown.



The story and tape diagram show the children found 19 rocks. The diagram shows that they found 8 more shells than rocks. It also shows that they do not know the number of shells that they found.

I can ...
Describe how tape diagrams
represent story problems.


37

© Amplify Education, Inc. and its licensors. Amplify Openness Math
is based on curricula from Illustrative Mathematics (IM).

Show What You Know Lesson 16

Name _____ Date _____

Show What You Know

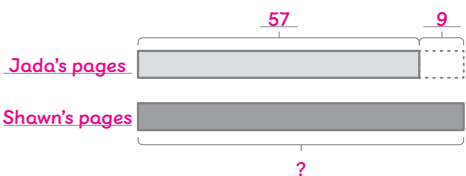
1.16

Solve the story problem. Write an equation that represents the story problem and underline the answer. You can represent your thinking using a tape diagram if it is helpful.

Jada read 57 pages. Shawn read 9 more pages than Jada. How many pages did Shawn read?

Show your thinking.

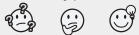
Sample work and equation shown.



$$57 + 3 = 60$$

$$60 + 6 = 66$$

answer: 66 pages equation: $57 + 9 = 66$

I can ...
Clearly represent and
solve story problems.


38

© Amplify Education, Inc. and its licensors. Amplify Openness Math
is based on curricula from Illustrative Mathematics (IM).

GRADE 2

Mini-Lessons

The following section includes a selection of Mini-Lessons that support core instruction. These 15-minute lessons are aligned to the most critical topics throughout a unit to provide targeted intervention to small groups who need additional support. Mini-Lessons appear as a support activity in the differentiation options supporting each lesson.

Name _____ Date _____

ML 1.02

Adding and Subtracting Within 10



Modeled Review



Name: Shawn

Use the patterns in the equations to fill in the tables.

4	+	1	=	5
4	+	2	=	6
4	+	3	=	7



Guided Practice



Use the patterns in the equations to fill in the tables.

1.

3	+	1	=	4
3	+	2	=	5
3	+	3	=	6
3	+	4	=	7

2.

10	-	1	=	9
10	-	2	=	8
10	-	3	=	7
10	-	4	=	6



Guided Practice



Use the patterns in the equations to fill in the tables.

3.

10	-	2	=	8
9	-	2	=	7
8	-	2	=	6
7	-	2	=	5

4.

3	+	4	=	7
4	+	4	=	8
5	+	4	=	9
6	+	4	=	10



Check



Use the patterns in the equations to fill in the tables.

9	-	3	=	6
9	-	4	=	5
9	-	5	=	4

4	+	2	=	6
5	+	2	=	7
6	+	2	=	8

Goal

Add and subtract within 10 using patterns.

Standard

2.OA.B.2

Materials

two-color counters (optional),
10-frames (optional)



Modeled Review

Point to Shawn's work and ask:

- "What patterns do you see in the problems?"
- "What connections can you make between the patterns and equations?"

Reinforce Shawn's thinking by saying, "Recognizing patterns in equations can help you when adding and subtracting within 10."

ML/EL Model finding the patterns by reading the problems aloud and drawing students' attention to the patterns presented.



Guided Practice

Focus students' attention on using the patterns in the equations to fill in the table.

To scaffold their thinking, **ask**:

- "Look at each row in the first table. What is changing? What is staying the same?"
- "How will the answers change as the pattern continues?"

Name _____ Date _____

Adding and Subtracting Within 10

Modeled Review

Name: Shawn

Use the patterns in the equations to fill in the tables.

4	+	1	=	5
4	+	2	=	6
4	+	3	=	7

Guided Practice

Use the patterns in the equations to fill in the tables.

1.

3	+	1	=	4
3	+	2	=	5
3	+	3	=	6
3	+	4	=	7

2.

10	-	1	=	9
10	-	2	=	8
10	-	3	=	7
10	-	4	=	6

1 | © Amplify Education, Inc. and its licensors.

Vocabulary

If needed, share the meaning of the words with students:

difference: The result when one number is subtracted from another.

expression: A statement with at least 2 numbers and at least one math operation.

sum: The total when two or more numbers are added.

Guided Practice

A Optimize access to tools by providing students access to a 10- frame and counters to recreate the equations.

Key Takeaway:

Say, “There are patterns in addition and subtraction that can be used to solve equations within 10.”

Guided Practice

Use the patterns in the equations to fill in the tables.

3.

10	–	2	=	8
9	–	2	=	7
8	–	2	=	6
7	–	2	=	5

4.

3	+	4	=	7
4	+	4	=	8
5	+	4	=	9
6	+	4	=	10

Check

Use the patterns in the equations to fill in the tables.

9	–	3	=	6
9	–	4	=	5
9	–	5	=	4

4	+	2	=	6
5	+	2	=	7
6	+	2	=	8

2 | © Amplify Education, Inc and its licensors.

Reflection

Ask:

- “What patterns did you notice that helped you solve the equations?”
- “What made sense from today’s learning?”



Check: Recommended Next Steps

Almost there

If students need more support, consider using Grade 1 Mini-Lesson 3.02: *Using Patterns to Find Sums Within 10* or Grade 1 Mini-Lesson 3.03: *Using Patterns to Find Differences Within 10*.

Got it!

If students need more practice, provide them with the following four problems. Ask them to use patterns to solve the equations.

$$6 + 1 =$$

$$6 + 2 =$$

$$6 + 3 =$$

$$6 + 4 =$$

Name _____ Date _____

ML 1.03

Finding Number Pairs That Make 10

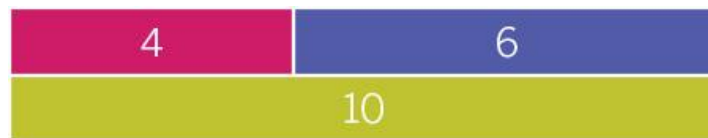


Modeled Review



Name: Clare

Use the bars to complete the equation.



$$4 + \underline{6} = 10$$



Guided Practice



1. Make 10 by writing the missing number in each bar.



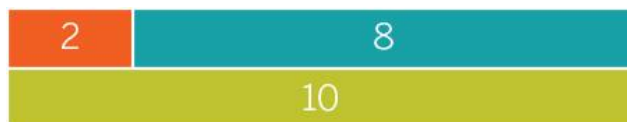


Guided Practice



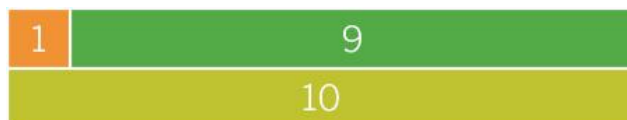
Complete the equations.

2.



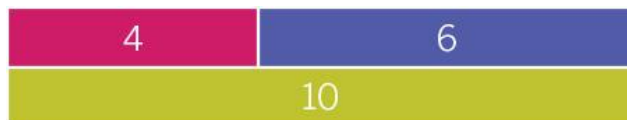
$$2 + \underline{8} = 10$$

3.



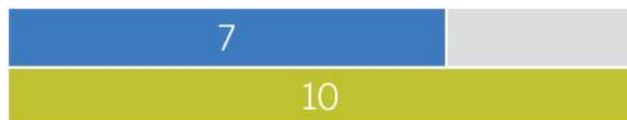
$$\underline{1} + 9 = 10$$

4.



$$\underline{4} + \underline{6} = 10$$

5.



$$7 + \underline{3} = 10$$

6.



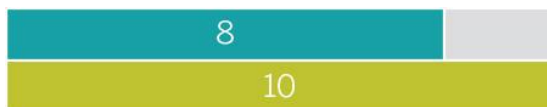
$$\underline{5} + \underline{5} = 10$$



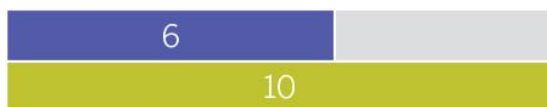
Check



Complete the equations. Sample responses shown.



$$\underline{8} + \underline{2} = 10$$



$$\underline{4} + \underline{6} = 10$$

Goal

Determine pairs of addends with a sum of 10.

Standard

2.OA.B.2

Materials

connecting cubes (optional)



Modeled Review

Point to Clare's work and **ask**:

- "What do you notice about the number bars labeled 4, 6, and 10?"
- "What other addition equation could be made using the number bars shown?"

Reinforce Clare's thinking by saying, "You can use patterns or strategies, such as counting on, counting back, or using known sums, to find pairs that make 10."

ML/EL Invite students to share how number bars can be used to identify number pairs that have a sum of 10.



Guided Practice

Focus students' attention on finding the missing number that will make 10.

To scaffold their thinking, **ask**:

- "What number is represented by the colored bar?"
- "What number can be added to the colored bar to make 10?"

Name _____ Date _____

Finding Number Pairs That Make 10

ML 1.03



Modeled Review



Name: Clare

Use the bars to complete the equation.



$$4 + \underline{6} = 10$$



Guided Practice



1. Make 10 by writing the missing number in each bar.



1 | © Amplify Education, Inc. and its licensors.

Vocabulary

If needed, share the meaning of the word with students:

equation: A statement that includes an equal sign. It tells us that what is on one side of the sign is equal to what is on the other side.



Guided Practice

A Provide connecting cubes in two different colors so that students may use them to make 10 and find patterns, such as 7 blue cubes and 3 red cubes, or 6 blue cubes and 4 red cubes.

Key Takeaway:

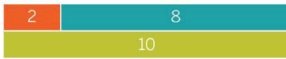
Say, "Using patterns or strategies, such as counting on, counting back, or using known sums, can help to find pairs that make 10."

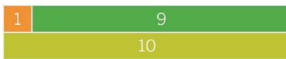


Guided Practice

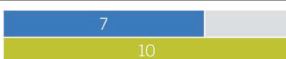


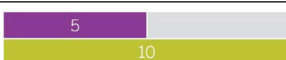
Complete the equations.

2.  $2 + \underline{8} = 10$

3.  $\underline{1} + 9 = 10$

4.  $\underline{4} + \underline{6} = 10$

5.  $7 + \underline{3} = 10$

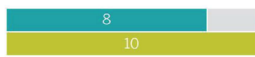
6.  $\underline{5} + \underline{5} = 10$



Check



Complete the equations. **Sample responses shown.**

 $\underline{8} + \underline{2} = 10$

 $\underline{4} + \underline{6} = 10$

2 | © Amplify Education, Inc. and its licensors.

Reflection

Ask:

- "Did you solve each problem in the same way? Why or why not?"
- "What new ideas do you have about 10?"



Check: Recommended Next Steps

Almost there

If students need more support, consider using Mini-Lesson 1.02: *Adding and Subtracting Within 10*.

Got it!

If students need more practice, have them generate as many number pairs as they can with a sum of 10.

Name _____ Date _____

Connecting Equations and Tape Diagrams

ML 1.04

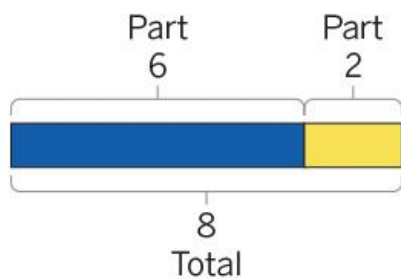


Modeled Review



Name: Diego

Write an addition and subtraction equation to match the tape diagram.



$$6 + 2 = 8$$

$$8 - 6 = 2$$

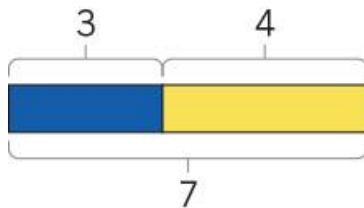


Guided Practice



Circle two equations that match the tape diagram.

1.

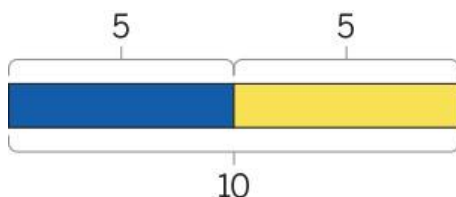


$$4 + 3 = 7$$

$$7 + 3 = 10$$

$$3 + 4 = 7$$

2.



$$10 + 5 = 15$$

$$10 - 5 = 5$$

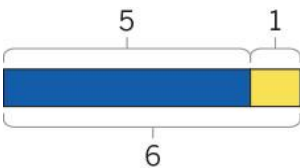
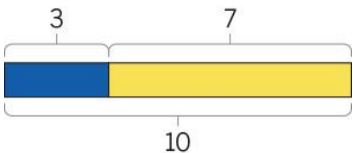
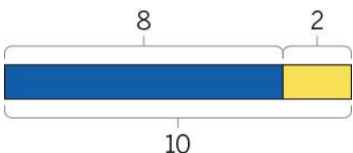
$$5 + 5 = 10$$



Guided Practice



3. Represent each tape diagram with equations.

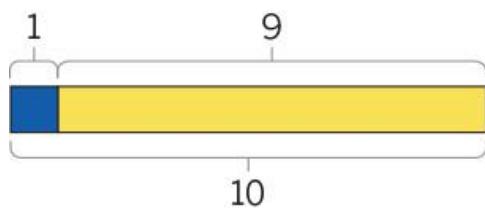
Tape diagram	Equations	
	$5 + 1 = 6$ $6 - 5 = 1$	$1 + \underline{5} = 6$ $6 - \underline{1} = 5$
	$\underline{3} + \underline{7} = 10$ $10 - \underline{3} = \underline{7}$	$\underline{7} + \underline{3} = 10$ $10 - \underline{7} = \underline{3}$
	$8 + 2 = 10$ $10 - 8 = 2$	$2 + 8 = 10$ $10 - 2 = 8$



Check



Represent the tape diagram with one addition and one subtraction equation. **All possible responses shown.**



$$\underline{1} + 9 = 10 \quad \text{or} \quad 9 + \underline{1} = 10$$

$$\underline{10} - 1 = 9 \quad \text{or} \quad 10 - \underline{9} = 1$$

Goal

Represent tape diagrams with addition and subtraction equations.

Standard

2.OA.B.2

Materials

connecting cubes (optional),
10-frame (optional)

**Modeled Review**

Point to Diego's work and ask:

- "What are the two parts represented by the tape diagram?"
- "What is the total represented by the tape diagram?"
- "How is the addition equation represented in the tape diagram?"
- "How is the subtraction equation represented in the tape diagram?"

Reinforce Diego's thinking by saying, "Tape diagrams show the relationship between the parts and total."

ML/EL Model thinking aloud about how the tape diagram represents part-part-total.

**Guided Practice**

Focus students' attention on representing tape diagrams with equations.

To scaffold their thinking, **ask**:

- "What is the total represented by the tape diagram?"
- "What parts are represented by the tape diagram?"

Name _____ Date _____

Connecting Equations and Tape Diagrams

ML 1.04

Modeled Review

Name: Diego
Write an addition and subtraction equation to match the tape diagram.



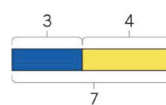
$$6 + 2 = 8$$

$$8 - 6 = 2$$

Guided Practice

Circle two equations that match the tape diagram.

1.

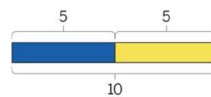


$$4 + 3 = 7$$

$$7 + 3 = 10$$

$$3 + 4 = 7$$

2.



$$10 + 5 = 15$$

$$10 - 5 = 5$$

$$5 + 5 = 10$$

1 | © Amplify Education, Inc. and its licensors.

Vocabulary

If needed, share the meaning of the word with students:

tape diagram: A tape diagram is a group of rectangles put together to represent a relationship between quantities.

Guided Practice

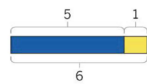
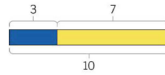
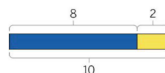
A Optimize access to tools by providing students with connecting cubes to build the tape diagram.

Key Takeaway:

Say, "Tape diagrams can help you see and represent the relationship between parts and a total."

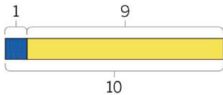
Guided Practice

3. Represent each tape diagram with equations.

Tape diagram	Equations
	$5 + 1 = 6$ $1 + 5 = 6$ $6 - 5 = 1$ $6 - 1 = 5$
	$3 + 7 = 10$ $7 + 3 = 10$ $10 - 3 = 7$ $10 - 7 = 3$
	$8 + 2 = 10$ $2 + 8 = 10$ $10 - 8 = 2$ $10 - 2 = 8$

Check

Represent the tape diagram with one addition and one subtraction equation. All possible responses shown.

	$1 + 9 = 10$ or $9 + 1 = 10$ $10 - 1 = 9$ or $10 - 9 = 1$
---	--

2 | © Amplify Education, Inc and its licensors.

Reflection

Ask:

- "What does each part of a tape diagram represent?"
- "How can knowing an addition fact help you subtract?"



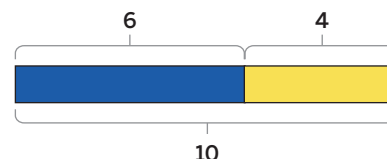
Check: Recommended Next Steps

Almost there

If students need more support, consider using Grade 1 Mini-Lesson 5.04: *Finding Sums Using Equations and Drawings*.

Got it!

If students need more practice, sketch the tape diagram and ask students to generate addition and subtraction equations.



Name _____ Date _____

Finding Missing Values in Equations Within 20

ML 1.05

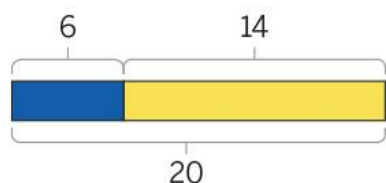


Modeled Review



Name: Han

Complete the equation to match the tape diagram.



$$20 - \underline{6} = 14$$

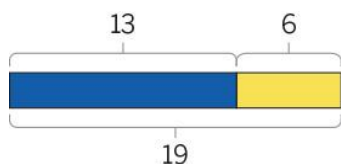


Guided Practice



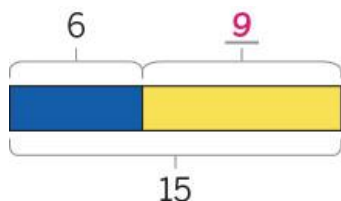
Find the number that makes each equation true. Use the tape diagram if it is helpful.

1.



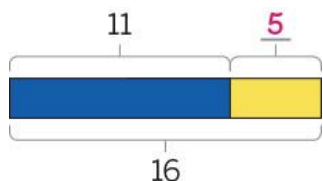
$$19 - \underline{6} = 13$$

2.



$$15 - \underline{9} = 6$$

3.



$$11 + \underline{5} = 16$$

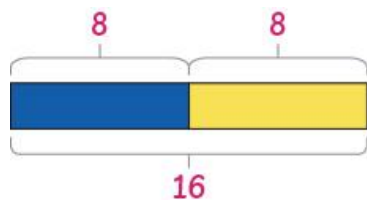


Guided Practice



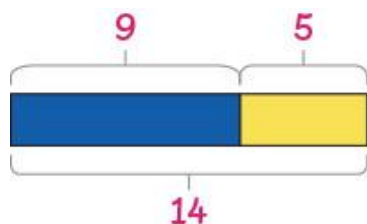
Find the number that makes each equation true. Use the tape diagram if it is helpful.

4.



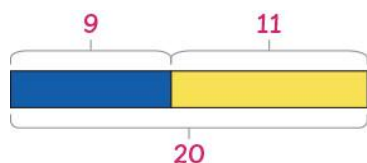
$$16 - \underline{8} = 8$$

5.



$$9 + \underline{5} = 14$$

6.



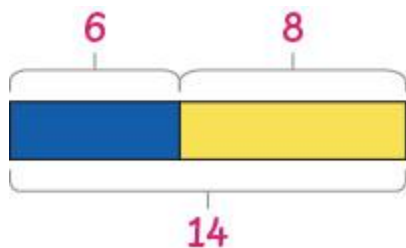
$$20 - \underline{9} = 11$$



Check



Find the number that makes the equation true. Use the tape diagram if it is helpful.



$$14 - \underline{6} = 8$$

Goal

Find missing values in equations.

Standard

2.OA.B.2

Materials

connecting cubes (optional),
10-frame (optional)



Modeled Review

Point to Han's work and **ask**:

- "What is the total value represented by the tape diagram?"
- "How does the tape diagram represent the subtraction equation?"
- "What other equations can be represented by the tape diagram?"

Reinforce Han's thinking by saying, "Tape diagrams show the relationship between the parts and total and can help us identify missing values."

ML/EL Model identifying each part and the total of the tape diagram to help find the missing value.



Guided Practice

Focus students' attention on completing the equations to represent the tape diagrams.

To scaffold their thinking, **ask**:

- "How can you use the tape diagram to complete the equations?"

Name _____ Date _____

Finding Missing Values in Equations Within 20

ML 1.05

Modeled Review

Name: Han

Complete the equation to match the tape diagram.

$20 - 6 = 14$

Guided Practice

Find the number that makes each equation true. Use the tape diagram if it is helpful.

- $19 - 6 = 13$
- $15 - 9 = 6$
- $11 + 5 = 16$

1 | © Amplify Education, Inc. and its licensors.

Vocabulary

If needed, share the meaning of the words with students:

difference: The result when one number is subtracted from another.

sum: The total when two or more numbers are added.

Guided Practice

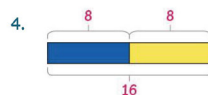
A Optimize access to tools by providing students with connecting cubes to build the tape diagram.

Key Takeaway:

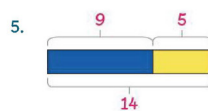
Say, “Missing numbers can be found using different strategies and can be represented using equations, cube towers, and tape diagrams.”

Guided Practice

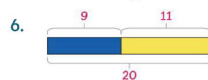
Find the number that makes each equation true. Use the tape diagram if it is helpful.



$$16 - \underline{8} = 8$$



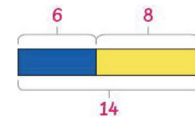
$$9 + \underline{5} = 14$$



$$20 - \underline{9} = 11$$

Check

Find the number that makes the equation true. Use the tape diagram if it is helpful.



$$14 - \underline{6} = 8$$

2 | © Amplify Education, Inc. and its licensors.

Reflection

Ask:

- “How can you use a tape diagram to find the missing number in an equation?”
- “What strategies did you use today that were helpful?”



Check: Recommended Next Steps

Almost there

If students need more support, consider using Mini-Lesson 1.04: *Connecting Equations and Tape Diagrams*.

Got it!

If students need more practice, provide students with the following addition and subtraction equations. Ask students to find the missing value.

$$20 - \underline{\quad} = 13$$

$$9 + \underline{\quad} = 17$$

$$18 - \underline{\quad} = 12$$

$$7 + \underline{\quad} = 20$$

Name _____

Date _____

Exploring Strategies for Adding Within 20

ML 1.06



Modeled Review

Name: Diego

Find the value of the equation by composing a 10.

1. $9 + 5 = \underline{14}$

$$9 + 1 = 10$$

$$10 + 4 = 14$$

I know $4 + 1 = 5$ so I added the 1 to 9 to make 10. I had 4 left over so I added 4 and 10 to make 14.

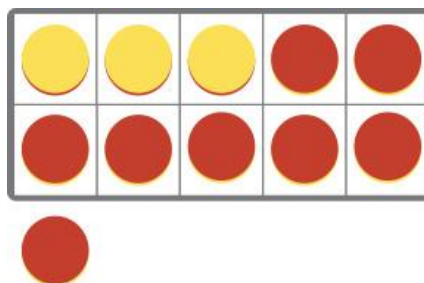


Guided Practice

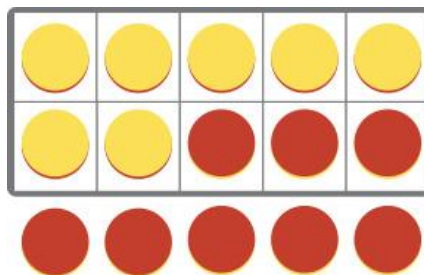


Find the value of each equation. Use the 10-frame if it is helpful.

1. $3 + 8 = \underline{11}$



2. $7 + 8 = \underline{15}$





Guided Practice



3. Find the value of the equation. Show or explain your thinking.

Equation	Workspace Sample responses shown.
$12 + 8 = \underline{\quad 20 \quad}$	$8 + 2 = 10$ $10 + 10 = 20$
$9 + 7 = \underline{\quad 16 \quad}$	$9 + 1 = 10$ $10 + 6 = 16$
$13 + 7 = \underline{\quad 20 \quad}$	$7 + 3 = 10$ $10 + 10 = 20$
$14 + 3 = \underline{\quad 17 \quad}$	$4 + 3 = 7$ $10 + 7 = 17$



Check



Find the value of the equation. Show or explain your thinking.

Equation	Workspace Sample response shown.
$15 + 3 = \underline{\quad 18 \quad}$	$5 + 3 = 8$ $10 + 8 = 18$

Goal

Solve addition equations within 20.

Standard

2.OA.B.2

Materials

two-color counters, 10-frames

**Modeled Review**

Point to Diego's work and ask:

- "What addends are represented in the equation?"
- "How did Diego break apart one of the addends to help compose a ten?"
- "What do you notice about Diego's strategy of composing a 10?"

Reinforce Diego's thinking by saying, "Composing a 10 can make it easier to find the value of an expression."

ML/EL Model using 10-frames to find the value of an expression.

**Guided Practice**

Focus students' attention on finding the value of the equation.

To scaffold their thinking, ask:

- "How could you use the counters to help you find the sum?"
- "How could you use what you know about making 10 to help you find the sum?"

Name _____ Date _____

Exploring Strategies for Adding Within 20

ML 1.06

**Modeled Review**Name: Diego

Find the value of the equation by composing a 10.

1. $9 + 5 = \underline{14}$

$9 + 1 = 10$

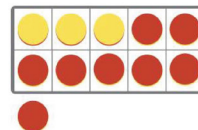
$10 + 4 = 14$

I know $4 + 1 = 5$ so I added the 1 to 9 to make 10. I had 4 left over so I added 4 and 10 to make 14.

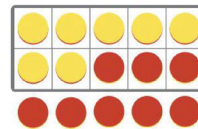
**Guided Practice**

Find the value of each equation. Use the 10-frame if it is helpful.

1. $3 + 8 = \underline{11}$



2. $7 + 8 = \underline{15}$



1 | © Amplify Education, Inc. and its licensors.

Vocabulary

If needed, share the meaning of the words with students:

equation: A statement that includes an equal sign (=). It tells us that what is on one side of the sign is equal to what is on the other side.

sum: The total when two or more numbers are added.

 Guided Practice

A Encourage students to represent the equations using counters and a 10-frame. Guide visualization by showing connections between parts of the equation and the counters.

Key Takeaway:

Say, “There are different strategies you can use to add like counting on, composing a ten, or using a ten-frame. You can use what you notice about the values to choose a strategy.”

 Guided Practice

3. Find the value of the equation. Show or explain your thinking.

Equation	Workspace Sample responses shown.
$12 + 8 =$ <u>20</u>	$8 + 2 = 10$ $10 + 10 = 20$
$9 + 7 =$ <u>16</u>	$9 + 1 = 10$ $10 + 6 = 16$
$13 + 7 =$ <u>20</u>	$7 + 3 = 10$ $10 + 10 = 20$
$14 + 3 =$ <u>17</u>	$4 + 3 = 7$ $10 + 7 = 17$

 Check

Find the value of the equation. Show or explain your thinking.

Equation	Workspace Sample response shown.
$15 + 3 =$ <u>18</u>	$5 + 3 = 8$ $10 + 8 = 18$

2 | © Amplify Education, Inc. and its licensors.

Reflection**Ask:**

- “What strategies did you use today that were helpful? Why did you find them helpful?”
- “What made sense from today’s lesson?”

**Check: Recommended Next Steps****Almost there**

If students need more support, consider using Mini-Lesson 1.03: *Finding Number Pairs That Make 10*.

Got it!

If students need more practice, present them with the following addition expressions. Ask students to find the value of the expression and show/explain their thinking.

$16 + 4$

$7 + 12$

Name _____ Date _____

Representing Data in an Organized Way

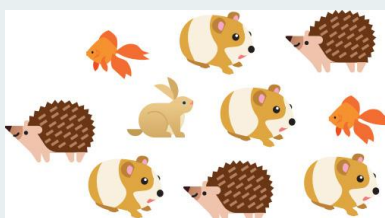
ML 1.07



Modeled Review



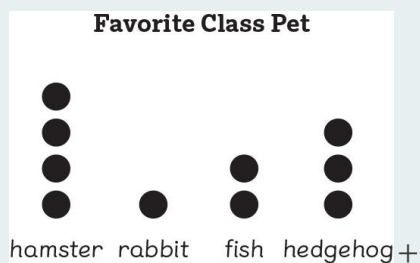
Students voted for their preferred class pet. Han and Diego represented the data in two different ways.



Han's Work

Favorite Class Pet	
hamster ● ● ● ●	rabbit ●
fish ● ●	hedgehog ● ● ●

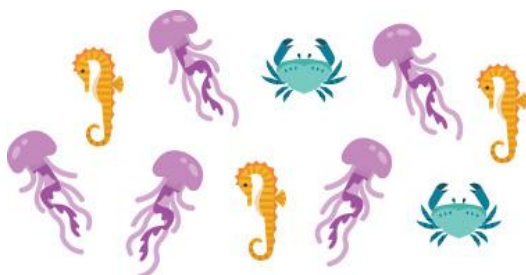
Diego's Work



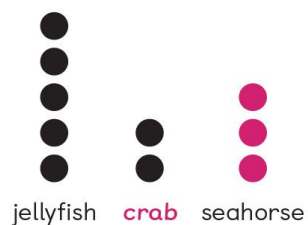
Guided Practice



- Write the missing label for the center column. Then draw dots to show the number of votes for seahorse.



Favorite Aquarium Animal





Guided Practice



2. Students voted on their favorite sport. Create a representation of the data. **Sample response shown.**



Favorite Sport



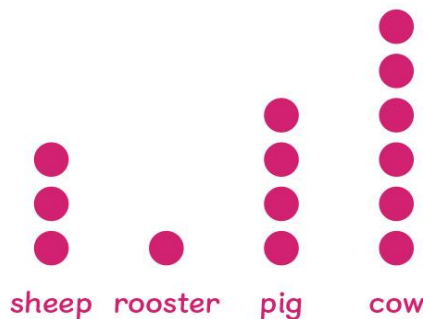
Check



- Students voted for their favorite farm animal. Create a representation of the data. **Sample response shown.**



Favorite Farm Animal



Goal

Organize and represent data.

Standard

2.MD.D.10

**Modeled Review**

Point to the problem in the Modeled Review and **ask**:

- “What is the same about Han’s and Diego’s data representations? What is different?”
- “What makes a data display organized and clear to read?”
- “Why is it important to represent data in an organized way?”

Reinforce the goal by saying, “Data can be organized and represented in different ways, while still showing the same information.”

**Guided Practice**

Focus students’ attention on representing the given data.

To scaffold their thinking, **ask**:

- “Using the data in the picture, what label should be added to the center column?”
- “How many dots should be added to the seahorse column?”

Name _____ Date _____

Representing Data in an Organized Way

ML 1.07

**Modeled Review**

Students voted for their preferred class pet. Han and Diego represented the data in two different ways.



Han's Work

Favorite Class Pet

hamster	rabbit
•••••	•
fish	hedgehog
••	•••••

Diego's Work

Favorite Class Pet

hamster	rabbit	fish	hedgehog
•••••	•	••	•••••

**Guided Practice**

1. Write the missing label for the center column. Then draw dots to show the number of votes for seahorse.

**Favorite Aquarium Animal**

jellyfish	crab	seahorse
•••••	••	•••

1 | Amplify Education, Inc and its licensors.

Vocabulary

If needed, share the meaning of the words with students:

category: A label; that tells how objects in a group are alike.

data: Information about the things or people in a group.

Guided Practice

A Chunk this task into smaller, more manageable parts by having students label the graph and then add the data to represent the total votes for each sport.

ML/EL Invite students to discuss their ideas aloud before producing their data representations.

Key Takeaway:

Say, “When you group together related data and label it, you can read and understand the data more clearly.”

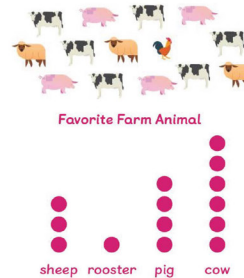
Guided Practice

2. Students voted on their favorite sport. Create a representation of the data. **Sample response shown.**



Check

Students voted for their favorite farm animal. Create a representation of the data. **Sample response shown.**



2 | Amplify Education, Inc. and its licensors.

Reflection

Ask:

- “What makes a data display organized and clear to read?”
- “Why is it important to make data clear to read?”



Check: Recommended Next Steps

Almost there

If students need more support, consider using Grade 1 Mini-Lesson 1.04: *Creating and Interpreting Data Representations*.

Got it!

If students need more practice, sketch 3 circles, 2 rectangles, and 5 triangles. Have students organize the data using their choice of representation.

Interpreting Picture Graphs



Modeled Review



Name: Jada

The picture graph shows some students' favorite type of pet. Use the picture graph for Problems 1 and 2.

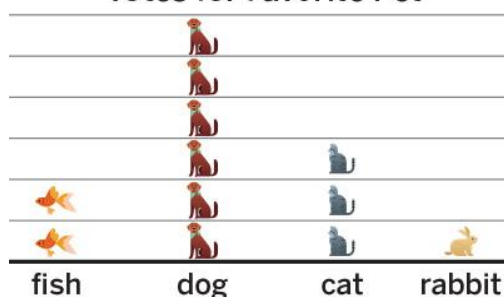
1. How many students voted for fish or cat?

5 students

2. How many *more* students voted for dog than fish?

4 students

Votes for Favorite Pet



Guided Practice



The picture graph shows some students' favorite vegetable.

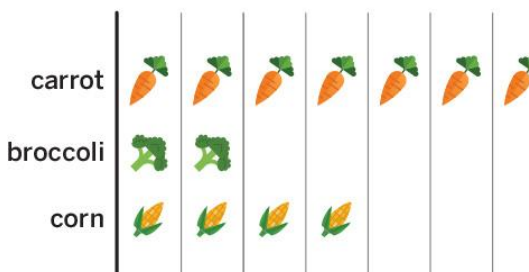
1. How many students chose each vegetable?

carrot: 7 students

broccoli: 2 students

corn: 4 students

Votes for Favorite Vegetable

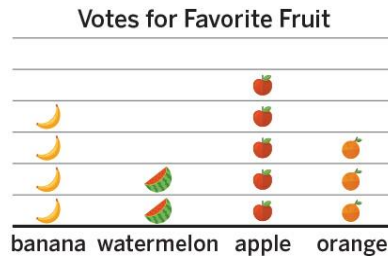




Guided Practice



The picture graph shows some students' favorite type of fruit. Use the picture graph for Problems 2–4.



2. How many students voted for apple or orange?

8 students

3. How many *more* students voted for banana than watermelon?

2 students

4. How many students voted altogether?

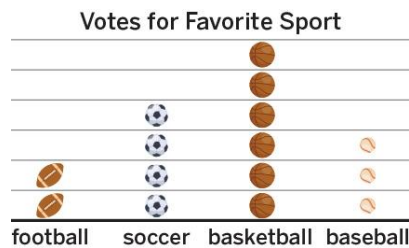
14 students



Check



The picture graph shows some students' favorite sport. Use the picture graph for Problems 1 and 2.



1. How many students voted for soccer or baseball?

7 students

2. How many *more* students voted for basketball than football?

4 students

Goal

Interpret data represented on a picture graph.

Standard

2.MD.D

**Modeled Review**Point to Jada's work and **ask**:

- "What did Jada do to get 5 students for problem 1?"
- "What strategy might Jada have used to find out how many more students voted for dog than fish."

Reinforce Jada's thinking by saying, "A picture graph is a way to show how many objects are in each group or category, using symbols or pictures of the objects. Picture graphs have a title and labels that help you interpret the data."

**Guided Practice**

Focus students' attention on interpreting the data presented in the picture graphs.

To scaffold their thinking, **ask**:

- "What is the question asking?"
- "What categories should you use to answer the question?"

Name _____ Date _____

Interpreting Picture Graphs ML 1.08

Modeled Review

Name: Jada

The picture graph shows some students' favorite type of pet. Use the picture graph for Problems 1 and 2.

1. How many students voted for fish or cat?
5 students

2. How many *more* students voted for dog than fish?
4 students

Votes for Favorite Pet

Pet	Number of Symbols
fish	5
dog	9
cat	4
rabbit	1

Guided Practice

The picture graph shows some students' favorite vegetable.

1. How many students chose each vegetable?

carrot: 7 students

broccoli: 2 students

corn: 4 students

Votes for Favorite Vegetable

Vegetable	Number of Symbols
carrot	7
broccoli	2
corn	4

1 | © Amplify Education, Inc. and its licensors.

Vocabulary

If needed, share the meaning of the words with students:

picture graph: A way to show how many in each group or category using pictures of the objects or symbols.



Guided Practice

A Chunk this task into smaller, more manageable parts by having students label the amount in each category before answering the questions.

Key Takeaway:

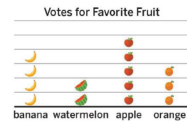
Say, "Picture graphs are a way to organize and represent data. You can use picture graphs to answer questions about data."



Guided Practice



The picture graph shows some students' favorite type of fruit. Use the picture graph for Problems 2–4.



2. How many students voted for apple or orange?

8 students

3. How many *more* students voted for banana than watermelon?

2 students

4. How many students voted altogether?

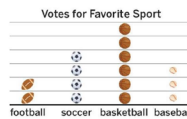
14 students



Check



The picture graph shows some students' favorite sport. Use the picture graph for Problems 1 and 2.



1. How many students voted for soccer or baseball?

7 students

2. How many *more* students voted for basketball than football?

4 students

2 | © Amplify Education, Inc. and its licensors.

Reflection

Ask:

- "How can picture graphs help you answer questions about data?"
- "Why is a picture graph useful?"

**Check: Recommended Next Steps****Almost there**

If students need more support, ask the following questions about the picture graph in the Modeled Review.

- "How many students voted for dog or cat?"
- "How many more students voted for cat than rabbit?"

Got it!

If students need more practice, ask the following questions about the "Favorite Sport" picture graph in the Check.

- "How many students voted for football or baseball?"
- "How many more students voted for basketball than football?"

Interpreting Bar Graphs



Modeled Review



Name: Clare

Students voted for their favorite color. Use the data displayed on the bar graph to answer Problems 1 and 2.

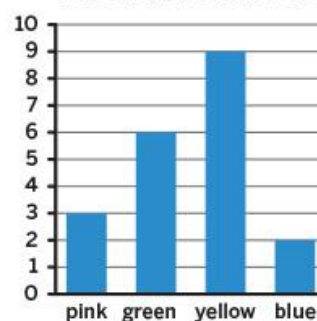
- How many students voted for green or yellow?

8 students

- How many *more* students voted for blue than pink?

6 students

Votes for Favorite Color



Guided Practice



The bar graph shows students' favorite subject in school.

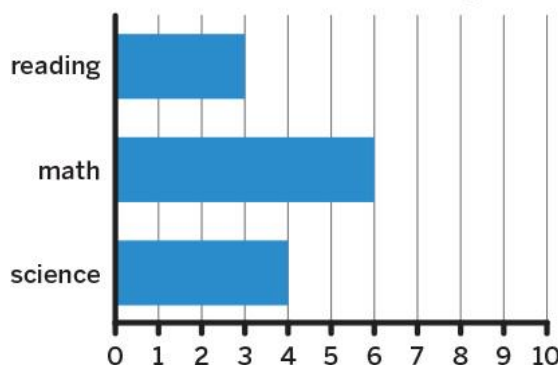
- How many students chose each subject?

reading: 3 students

math: 6 students

science: 4 students

Votes for Favorite Subject





Guided Practice



The bar graph shows some students' favorite farm animal. Use the bar graph for Problems 2–4.

2. How many students voted for sheep or pig?

12 students

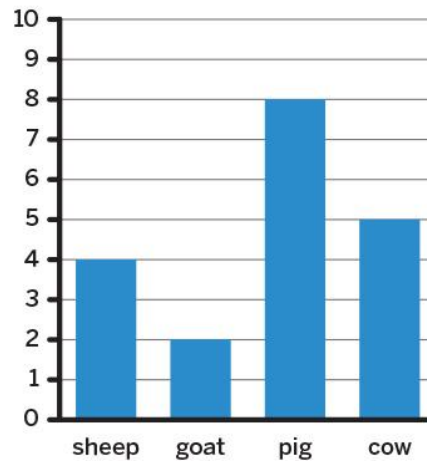
3. How many *more* students voted for cow than goat?

3 students

4. How many students voted in total?

19 students

Votes for Favorite Farm Animal

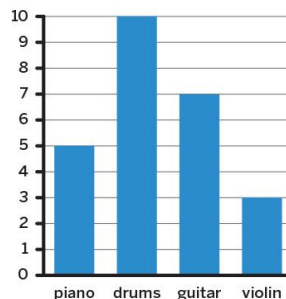


Check



The bar graph shows some students' favorite instrument. Use the bar graph for Problems 1 and 2.

Votes for Favorite Instrument



1. How many students voted for guitar or piano?

12 students

2. How many *more* students voted for drums than violin?

7 students

Goal

Interpret data represented on a bar graph.

Standard

2.MD.D.10

**Modeled Review**Point to Clare's work and **ask**:

- "What colors are represented in the bar graph?"
- "How did Clare figure out how many students voted for green or yellow?"

Reinforce Clare's thinking by saying, "You can use bar graphs to answer questions about the data."

ML/EL Model drawing a line from the top of the bar in a category over to the labels to find the amount.

**Guided Practice**

Focus students' attention on interpreting the data presented in the bar graphs.

To scaffold their thinking, **ask**:

- "What is the question asking?"
- "What categories should you use to answer the question?"

Name _____ Date _____

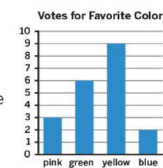
Interpreting Bar Graphs

ML 1.09

**Modeled Review**Name: Clare

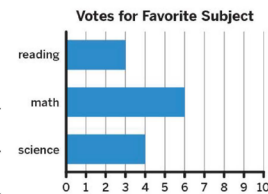
Students voted for their favorite color. Use the data displayed on the bar graph to answer Problems 1 and 2.

1. How many students voted for green or yellow?
8 students
2. How many more students voted for blue than pink?
6 students

**Guided Practice**

The bar graph shows students' favorite subject in school.

1. How many students chose each subject?

reading: 3 studentsmath: 6 studentsscience: 4 students

1 | © Amplify Education, Inc. and its licensors.

Vocabulary

If needed, share the meaning of the word with students:

bar graph: A way to show how many in each group or category using the length of the rectangles.



Guided Practice

A Have students label the amounts in each category before answering the questions.

Key Takeaway:

Say, “Bar graphs are a way to organize and represent data. You can use bar graphs to answer questions about data.”



Guided Practice



The bar graph shows some students' favorite farm animal. Use the bar graph for Problems 2–4.

2. How many students voted for sheep or pig?

12 students

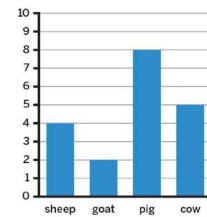
3. How many *more* students voted for cow than goat?

3 students

4. How many students voted in total?

19 students

Votes for Favorite Farm Animal

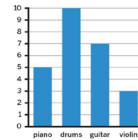


Check



The bar graph shows some students' favorite instrument. Use the bar graph for Problems 1 and 2.

Votes for Favorite Instrument



1. How many students voted for guitar or piano?

12 students

2. How many *more* students voted for drums than violin?

7 students

2 | © Amplify Education, Inc. and its licensors.

Reflection

Ask:

- “What features of a bar graph can be used to answer questions about the data?”
- “How did today’s learning connect with your previous learning?”

**Check: Recommended Next Steps****Almost there**

If students need more support, consider using Mini-Lesson 1.08: *Interpreting Picture Graphs*.

Got it!

If students need more practice, ask the following questions about the bar graph displayed in the Modeled Review:

- “How many students voted for pink or yellow?”
- “How many *more* students voted for green than yellow?”

Name _____ Date _____

Drawing Picture Graphs

ML 1.10.A



Modeled Review

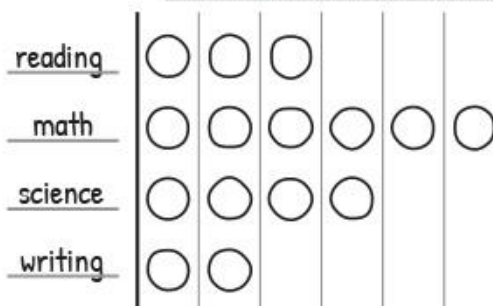


Name: Dylan

Use the data from the table to complete the picture graph.

Favorite Subject	
reading	3
math	6
science	4
writing	2

Votes for Favorite Subject



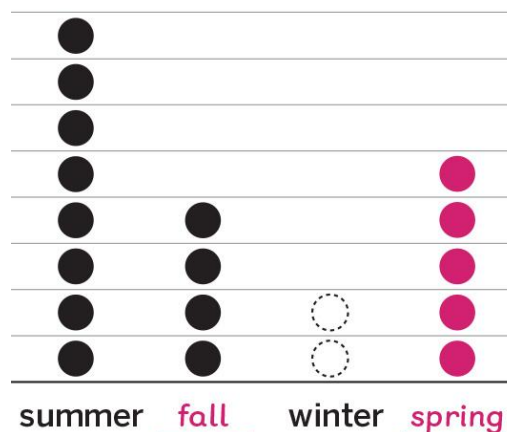
Guided Practice



1. Use the data from the table to complete the picture graph.

Favorite Season	
summer	8
fall	4
winter	2
spring	5

Votes for Favorite Season

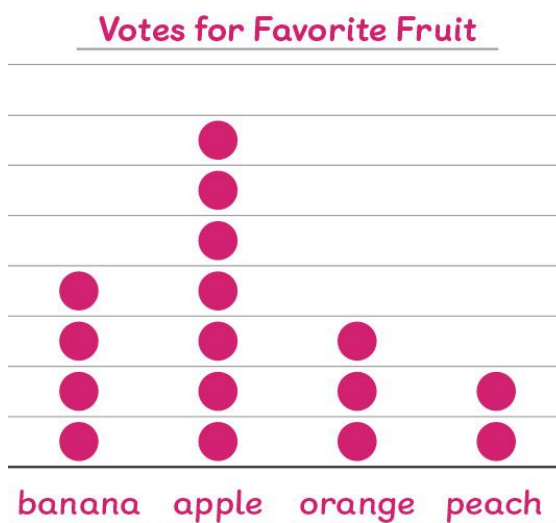


Guided Practice



2. Create a picture graph to represent the data in the table.

Favorite Fruit	
banana	4
apple	7
orange	3
peach	2

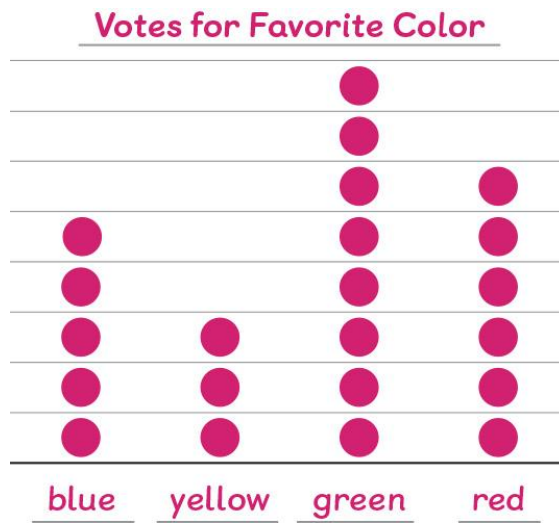


Check



Create a picture graph to represent the data in the table.

Favorite Color	
blue	5
yellow	3
green	8
red	6



Goal

Represent data using a picture graph.

Standard

2.MD.D.10



Modeled Review

Point to Dylan's work and **ask**:

- "How did Dylan represent the data in the picture graph?"
- "How many votes does each circle represent?"

Reinforce Dylan's thinking by saying, "A picture graph has a title that indicates what data it shows. It also has labels to show what each category represents."

ML/EL Model drawing simple images such as dots to represent the data.



Guided Practice

Focus students' attention on using the data to complete the picture graphs.

To scaffold their thinking, **ask**:

- "How could you label the categories in the graph?"
- "How will you determine the number of dots to use for each category?"

Name _____ Date _____

Drawing Picture Graphs

ML 1.10.A



Modeled Review

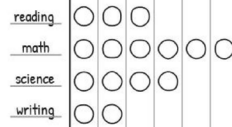


Name: Dylan

Use the data from the table to complete the picture graph.

Votes for Favorite Subject

Favorite Subject	
reading	3
math	6
science	4
writing	2



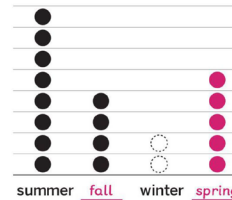
Guided Practice



1. Use the data from the table to complete the picture graph.

Favorite Season	
summer	8
fall	4
winter	2
spring	5

Votes for Favorite Season



1 | © Amplify Education, Inc. and its licensors.

Vocabulary

If needed, share the meaning of the words with students:

category: A group of objects that are alike in some way, often labeled or named.

picture graph: A way to show the number of items in a group or category using pictures to represent the objects.

Guided Practice

A Provide students with a partially created bar graph with which to work.

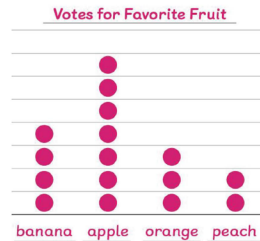
Key Takeaway:

Say, “Picture graphs are helpful for organizing and representing data in categories. Picture graphs show the amount in each category using pictures and a key that tells the amount each picture represents.”

Guided Practice

2. Create a picture graph to represent the data in the table.

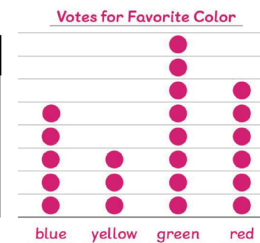
Favorite Fruit	
banana	4
apple	7
orange	3
peach	2



Check

Create a picture graph to represent the data in the table.

Favorite Color	
blue	5
yellow	3
green	8
red	6



2 | © Amplify Education, Inc and its licensors.

Reflection

Ask:

- “What information can you gather from a picture graph?”
- “What made sense after today’s learning? What is still confusing?”



Check: Recommended Next Steps

Almost there

If students need more support, have them create a picture graph to represent the following data. Model by drawing the first category.

Favorite Sport	
basketball	3
football	5
soccer	2
baseball	3

Got it!

If students need more practice, have them create a picture graph to represent the following data:

Best Pet	
dog	8
cat	5
fish	2
hamster	3

Name _____ Date _____

Drawing Bar Graphs

ML 1.10.B



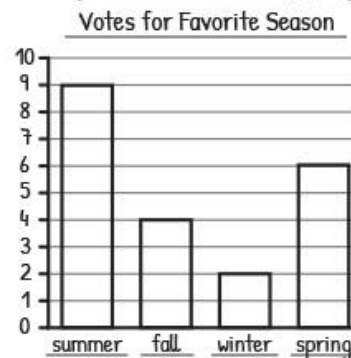
Modeled Review



Name: Santiago

Use the data from the table to complete the bar graph.

Favorite Season	
summer	9
fall	4
winter	2
spring	6

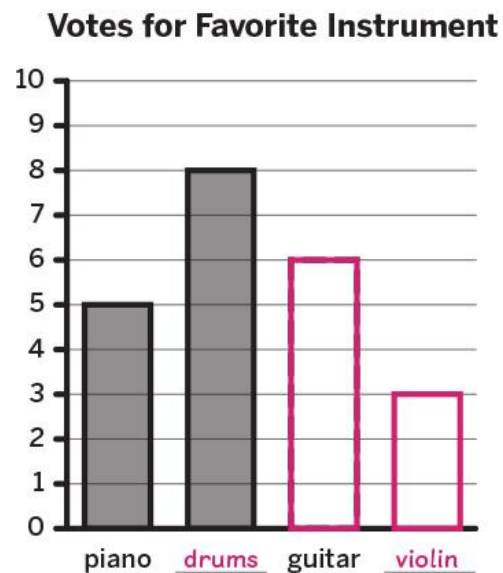


Guided Practice



1. Use the data from the table to complete the bar graph.

Favorite Instrument	
piano	5
drums	8
guitar	6
violin	3



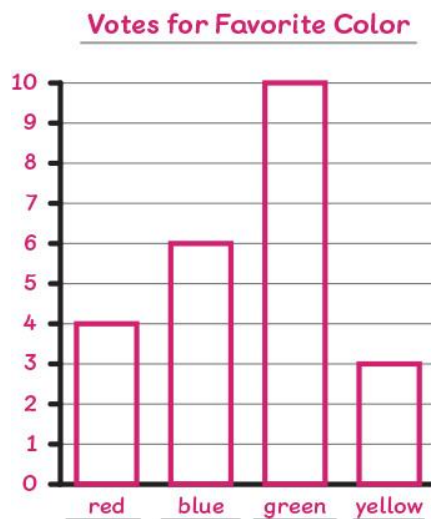


Guided Practice



2. Create a bar graph to represent the data in the table.

Favorite Color	
red	4
blue	6
green	10
yellow	3

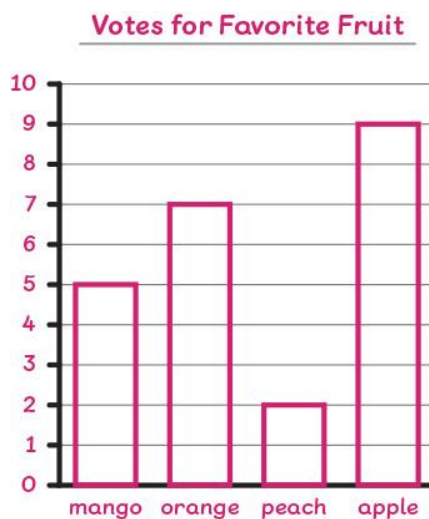


Check



Create a bar graph to represent the data in the table.

Favorite Fruit	
mango	5
orange	7
peach	2
apple	9



Goal

Represent data using a bar graph.

Standard

2.MD.D.10



Modeled Review

Point to Santiago's work and ask:

- "How does Santiago represent the data in the bar graph?"

Reinforce Santiago's thinking by saying, "A bar graph has a title that indicates what data it shows. It also has number labels and category labels, which show what each bar represents."

ML/EL Model touching the number label and tracing your finger along the line to determine what heights to make the bars.



Guided Practice

Focus students' attention on using the data to complete the bar graph.

To scaffold their thinking, ask:

- "What will be appropriate labels for the bar graph?"
- "How will you determine the heights of the bars?"

Name _____ Date _____

Drawing Bar Graphs

ML 1.10.B

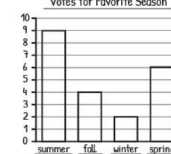


Modeled Review



Name: Santiago
Use the data from the table to complete the bar graph.

Favorite Season	
summer	9
fall	4
winter	2
spring	6

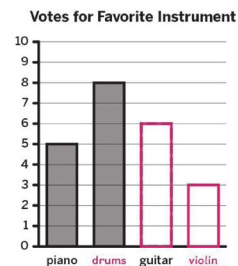


Guided Practice



1. Use the data from the table to complete the bar graph.

Favorite Instrument	
piano	5
drums	8
guitar	6
violin	3



1 | © Amplify Education, Inc. and its licensors.

Vocabulary

If needed, share the meaning of the words with students:

category: A label that tells how objects in a group are alike.

bar graph: A way to show how many in each group or category using the length of the rectangles.

Guided Practice

A Provide students with a partially completed bar graph.

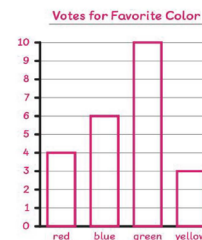
Key Takeaway:

Say, “Bar graphs are helpful for organizing and representing data in categories. Bar graphs show the amount in each category bars and number labels.”

Guided Practice

2. Create a bar graph to represent the data in the table.

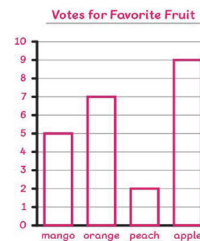
Favorite Color	
red	4
blue	6
green	10
yellow	3



Check

Create a bar graph to represent the data in the table.

Favorite Fruit	
mango	5
orange	7
peach	2
apple	9



2 | © Amplify Education, Inc. and its licensors.

Reflection

Ask:

- “What type of graph do you prefer? Why?”
- “How does what you learned today connect to your prior learning?”



Check: Recommended Next Steps

Almost there

If students need more support, have them create a picture graph to represent the following data. Model by drawing the first category.

Favorite Color	
red	2
blue	4
green	2
yellow	5

Got it!

If students need more practice, have students create a bar graph to represent the following data:

Favorite Farm Animal	
goat	2
sheep	4
pig	7
cow	5

Writing and Answering Questions Using Graphs

ML 1.11



Modeled Review



Name: Priya

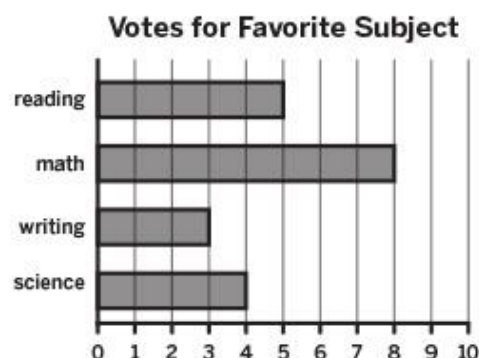
The bar graph shows some students' favorite subject in school. Use the graph for Problems 1 and 2.

1. How many fewer students voted for reading than math?

answer: 5 students

2. Write 1 question you can answer using the graph.

How many more students chose reading than writing?

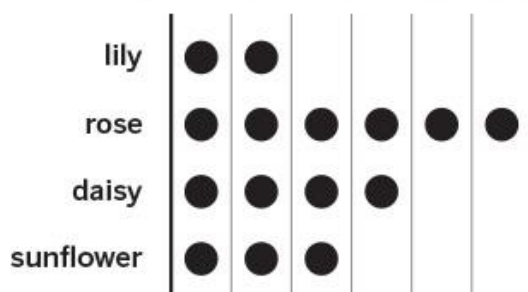


Guided Practice



The picture graph shows some students' favorite flower. Circle the three questions that can be answered by looking at the graph.

Votes for Favorite Flower



How many students chose rose or lily?

How many more students choose daisy than lily?

How do flowers smell?

How many fewer students choose sunflower than rose?



Guided Practice

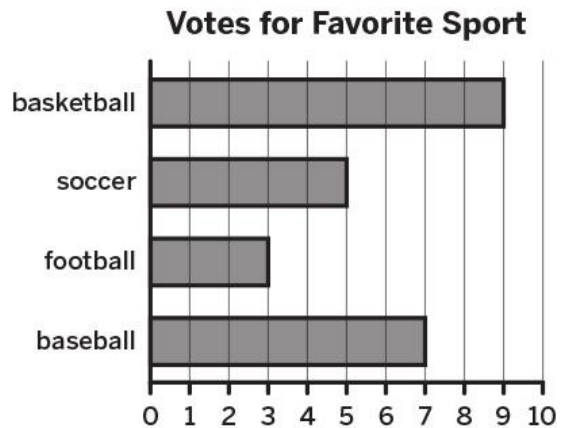


The bar graph shows some students' favorite sport. Use the bar graph for Problems 1 and 2.

1. How many *more* students voted for basketball than soccer?

answer: 4 students

2. Write 1 question that you can answer using the graph. **Sample response shown.**



How many students voted for football or baseball?



Check

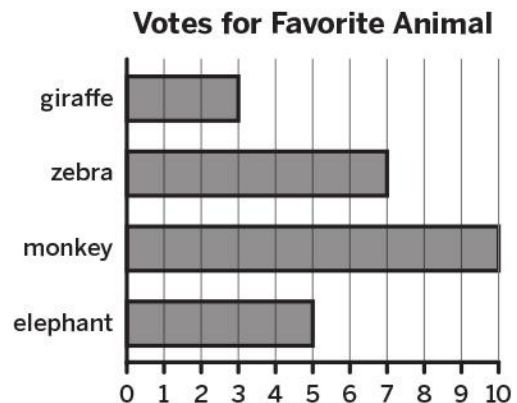


The bar graph shows some students' favorite animal. Use the bar graph for Problems 1 and 2.

1. How many *fewer* students voted for giraffe than elephant?

answer: 2 students

2. Write 1 question that you can answer using the graph. **Sample response shown.**



How many students voted for monkey or zebra?

Goal

Write and answer questions about data represented in bar graphs and picture graphs.

Standard

2.MD.D.10



Modeled Review

Point to Priya's work and **ask**:

- "How did Priya figure how many fewer students voted for writing than math?"
- "Do you think Priya's question can be answered by the bar graph? Why or Why not?"
- "What other questions can be answered using the graph?"

Reinforce Priya's thinking by saying, "Bar graphs and picture graphs can be used to ask and answer questions about data."



Guided Practice

Focus students' attention on using the data presented to help them ask and answer questions.

To scaffold their thinking, **ask**:

- "How could you use the features of the graph to help you answer the question?"

Name _____ Date _____

Writing and Answering Questions Using Graphs

ML 1.11



Modeled Review



Name: Priya

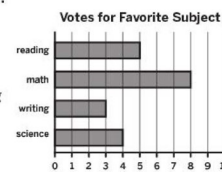
The bar graph shows some students' favorite subject in school. Use the graph for Problems 1 and 2.

1. How many fewer students voted for reading than math?

answer: 5 students

2. Write 1 question you can answer using the graph.

How many more students chose reading than writing?

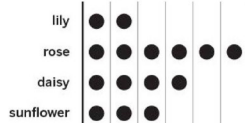


Guided Practice



The picture graph shows some students' favorite flower. Circle the three questions that can be answered by looking at the graph.

Votes for Favorite Flower



How many students chose rose or lily?

How many more students choose daisy than lily?

How do flowers smell?

How many fewer students choose sunflower than rose?

1 | © Amplify Education, Inc. and its licensors.

Vocabulary

If needed, share the meaning of the words with students:

bar graph: A way to show the number of items in each group or category using the length of the rectangles.

picture graph: A way to show the number of items in each group or category using pictures of objects or symbols.

Guided Practice

A Chunk this task into smaller, more manageable parts by having students label the amounts in each category before asking and answering questions about the data.

ML/EL Provide the following question frames if needed.

- How many total students chose ___ or ___?
- How many more students chose ___ than ___?
- How many fewer students chose ___ than ___?

Key Takeaway:

Say, “You can use picture graphs and bar graphs to ask and answer questions about how many are in each category, and to ask and answer questions that require you to combine or compare categories.”

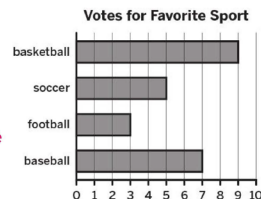
Guided Practice

The bar graph shows some students' favorite sport. Use the bar graph for Problems 1 and 2.

1. How many *more* students voted for basketball than soccer?

answer: 4 students

2. Write 1 question that you can answer using the graph. **Sample response shown.**



How many students voted for football or baseball?

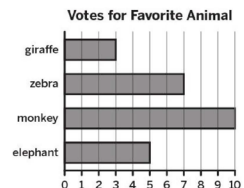
Check

The bar graph shows some students' favorite animal. Use the bar graph for Problems 1 and 2.

1. How many *fewer* students voted for giraffe than elephant?

answer: 2 students

2. Write 1 question that you can answer using the graph. **Sample response shown.**



How many students voted for monkey or zebra?

2 | © Amplify Education, Inc. and its licensors.

Reflection

Ask:

- “How do the features of each graph, such as category labels, number labels, and the title, help you answer questions that require combining or comparing categories?”
- “What questions do you still have?”



Check: Recommended Next Steps

Almost there

If students need more support, consider using Grade 1 Mini-Lesson 1.15: *Selecting Which Questions Can be Answered Using Data*.

Got it!

If students need more practice, have students answer the three questions they circled in Guided Practice Problem 1.

Name _____ Date _____

ML 1.12

Organizing and Representing Data



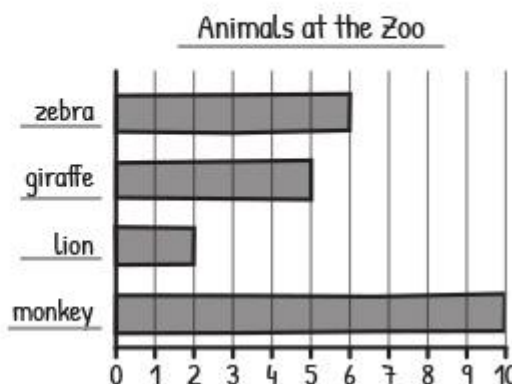
Modeled Review



Name: Shawn

Create a bar graph or picture graph to represent the data in the table.

Animals at the Zoo	
zebra	6
giraffe	5
lion	2
monkey	10



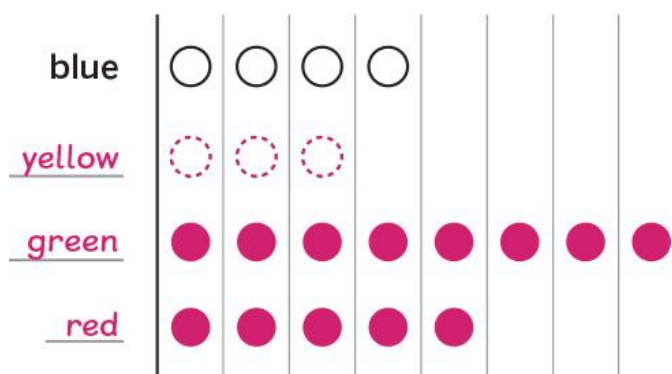
Guided Practice



- The picture graph shows some students' favorite color. Use the data from the table to complete the picture graph.

Favorite Color	
blue	4
yellow	3
green	8
red	5

Votes for Favorite Color



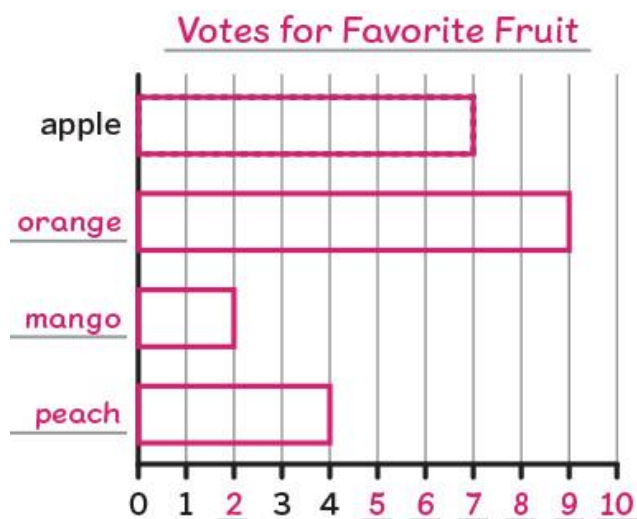


Guided Practice



2. The bar graph shows some students' favorite type of fruit. Use the data from the table to complete the bar graph.

Favorite Fruit	
apple	7
orange	9
mango	2
peach	4

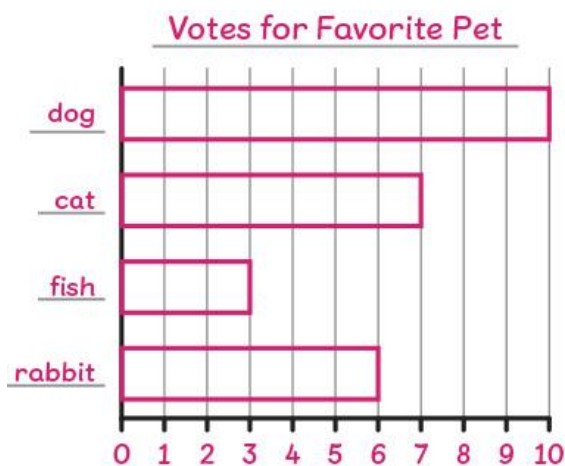


Check



Create a bar graph to represent the data in the table. **Sample response shown.**

Favorite Pet	
dog	10
cat	7
fish	3
rabbit	6



Goal

Represent data using a bar graph or a picture graph.

Standard

2.MD.D.10

**Modeled Review**

Point to Shawn's work and ask:

- "What type of graph did Shawn use to represent his data?"
- "What features did Shawn include in his graph to help others understand it?"

Reinforce Shawn's thinking by saying, "When creating graphs, you need to decide which kind of graph to make, how to title it, how to label it, and how many should be in each category."

**Guided Practice**

Focus students' attention on representing the given data using a graph.

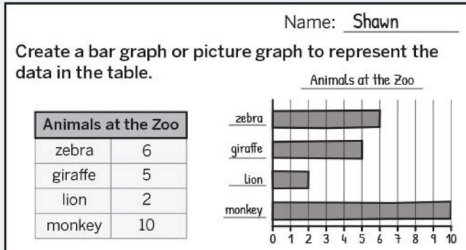
To scaffold their thinking, **say**:

- "Simple symbols, like dots, can be used to represent the data in a picture graph."
- "When creating your graph, what features are you including that will help others understand your graph?"

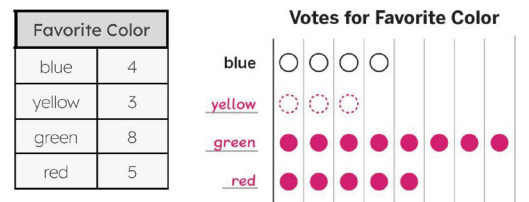
Name _____ Date _____

Organizing and Representing Data

ML 1.12

**Modeled Review****Guided Practice**

1. The picture graph shows some students' favorite color. Use the data from the table to complete the picture graph.



1 | © Amplify Education, Inc. and its licensors.

Vocabulary

If needed, share the meaning of the words with students:

bar graph: A way to show how many in each group or category using the length of the rectangles.

picture graph: A way to show how many in each group or category using pictures of objects or symbols.

Guided Practice

A Chunk this task into smaller, more manageable parts by having students label the graph before adding their data.

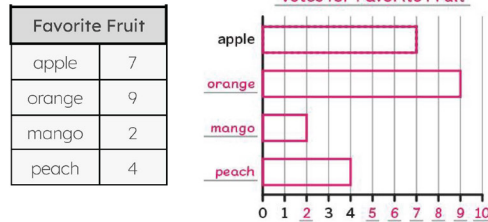
ML/EL Model touching the number label and tracing your finger along the line to determine what length to make the bars.

Key Takeaway:

Say, “When you collect data and create graphs, there are different choices you can make. It can be helpful to think about how you can organize and use features of a graph to represent the data clearly.”

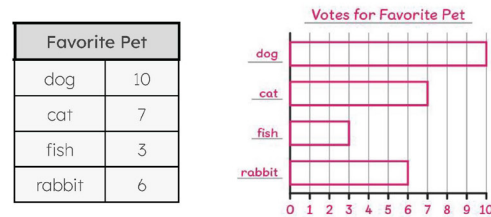
Guided Practice

2. The bar graph shows some students' favorite type of fruit. Use the data from the table to complete the bar graph.



Check

Create a bar graph to represent the data in the table. **Sample response shown.**



2 | © Amplify Education, Inc. and its licensors.

Reflection

Ask:

- “Which type of graph did you prefer using to represent your data: a bar graph or picture graph? Why?”
- “What is something you were proud of from today’s lesson?”



Check: Recommended Next Steps

Almost there

If students need more support, consider using Mini-Lesson 1.10.A: *Drawing Picture Graphs* or Mini-Lesson 1.10.B: *Drawing Bar Graphs*.

Got it!

If students need more practice, have students create a bar graph using the data in Problem 1 or a picture graph using the data in Problem 2.

Name _____

Date _____

Writing Equations and Solving Story Problems About Data

ML 1.13



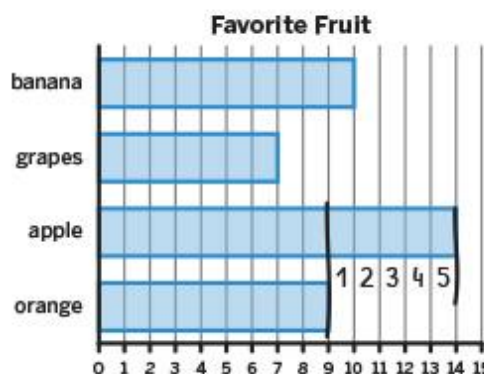
Modeled Review

Name: Tristan

The bar graph shows the students' favorite fruits.

How many *fewer* students voted for orange than apple? Write an equation to show your thinking. Use an underline to show the answer in the equation.

equation: $9 + \underline{5} = 14$



Guided Practice



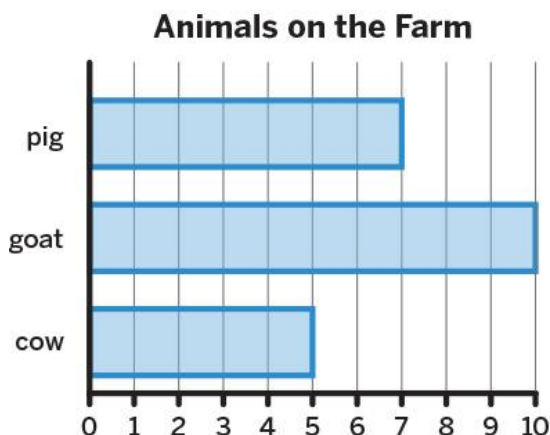
Use the information in the bar graph to answer each question. Write an equation to show your thinking. **Sample equations shown.**

- How many *more* pigs than cows are on the farm?

equation: $7 - 5 = 2$

- How many *fewer* cows than goats are on the farm?

equation: $10 - 5 = 5$





Guided Practice



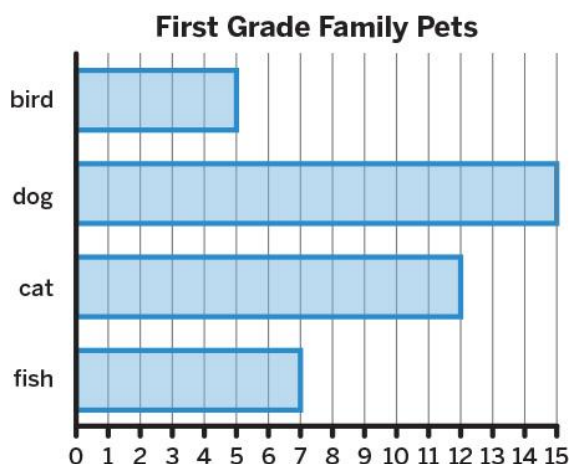
Use the information in the bar graph to answer each question. Write an equation to show your thinking. Use an underline to show the answer in the equation. **Sample equations shown.**

3. How many *more* students have dogs than fish?

equation: $15 - 7 = \underline{8}$

4. How many *fewer* students have birds than cats?

equation: $5 + \underline{7} = 12$

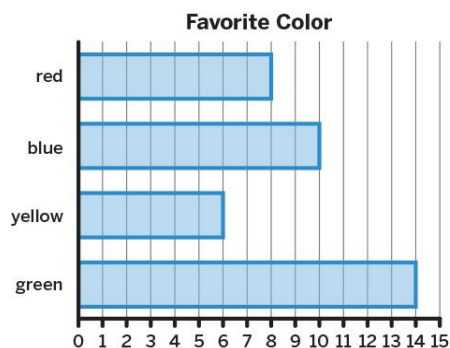


Check



The bar graph shows some students' favorite colors.

How many *fewer* students voted for yellow than blue? Use an underline to show the answer in the equation. **Sample equation shown.**



equation: $10 - 6 = \underline{4}$

Goal

Solve comparison problems about data and represent the comparison with an equation.

Standard

2.MD.D.10

Materials

connecting cubes (optional)



Modeled Review

Point to Tristan's work and ask:

- "What information do we know based on the graph?"
- "Where do you see Tristan's comparison on the graph?"
- "Where is each number in the equation in the graph?"

Reinforce Tristan's thinking by saying, "Tristan compared the number of votes for apples and oranges by comparing the lengths of the bars on the graph. Tristan counted up starting at 9 to find the difference."

ML/EL Use gestures while tracing the bars to illustrate how equations represent the comparison.



Guided Practice

Focus students' attention on writing equations using the given data.

To scaffold their thinking, **ask**:

- "How can the lengths of the bars help you answer a comparison question?"
- "What does each number in each equation represent?"

Name _____ Date _____

Writing Equations and Solving Story Problems About Data

ML 1.13



Modeled Review

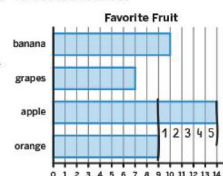


Name: Tristan

The bar graph shows the students' favorite fruits.

How many *fewer* students voted for orange than apple? Write an equation to show your thinking. Use an underline to show the answer in the equation.

equation: $9 - \underline{5} = 4$



Guided Practice



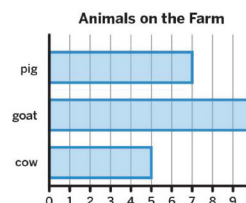
Use the information in the bar graph to answer each question. Write an equation to show your thinking. **Sample equations shown.**

1. How many *more* pigs than cows are on the farm?

equation: $7 - 5 = 2$

2. How many *fewer* cows than goats are on the farm?

equation: $10 - 5 = 5$



1 | © Amplify Education, Inc. and its licensors.

Vocabulary

If needed, share the meaning of the words with students:

category: A label that tells how objects in a group are alike.

Guided Practice

A Optimize access to tools by providing students with connecting cubes to build a model of the bars from the bar graph with a concrete manipulative. Have students share how their cubes match the graph and story.

Key Takeaway:

Say, "You can use the structure of a bar graph to make comparisons and write addition or subtraction equations that represent them."

Guided Practice

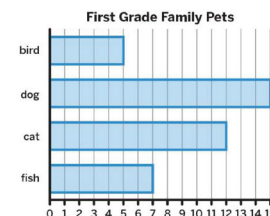
Use the information in the bar graph to answer each question. Write an equation to show your thinking. Use an underline to show the answer in the equation. **Sample equations shown.**

3. How many *more* students have dogs than fish?

equation: $15 - 7 = \underline{8}$

4. How many *fewer* students have birds than cats?

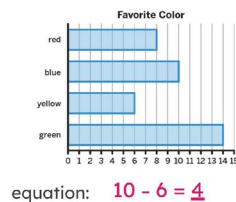
equation: $5 + \underline{2} = 12$



Check

The bar graph shows some students' favorite colors.

How many *fewer* students voted for yellow than blue? Use an underline to show the answer in the equation. **Sample equation shown.**



equation: $10 - 6 = \underline{4}$

2 | © Amplify Education, Inc. and its licensors.

Reflection

Ask:

- "How did the length of the bars help you compare data?"
- "What made sense in today's lesson? What is still confusing?"



Check: Recommended Next Steps

Almost there

If students need more support, consider using Mini-Lesson 1.09: *Interpreting Bar Graphs*.

Got it!

If students need more practice, have them use the bar graph in Problem 3 to write and solve equations answering the following questions.

- How many *fewer* students have birds than fish?
- How many *more* students have cats than fish?

Name _____ Date _____

Using Tape Diagrams to Represent Comparisons

ML 1.14



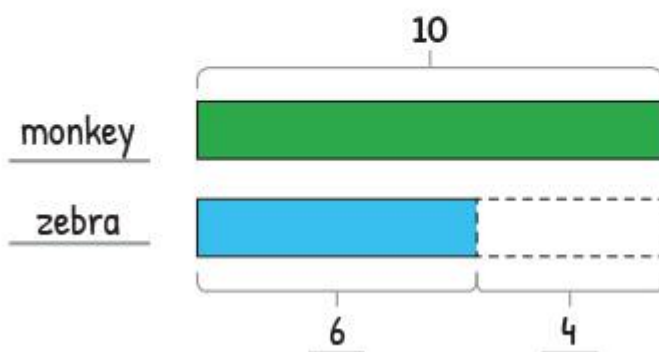
Modeled Review



Name: Maya

Complete the tape diagram using the comparison statement.

There are 4 *fewer* zebras than monkeys.

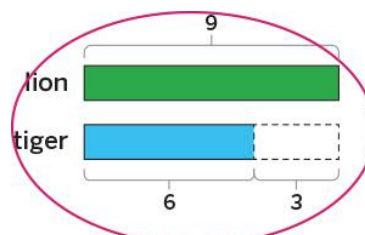
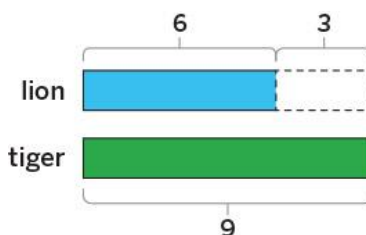
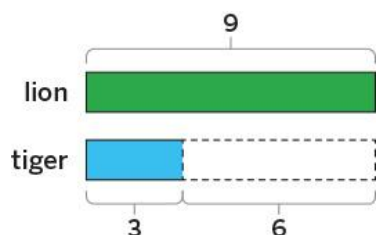


Guided Practice



Circle the tape diagram that represents the comparison statement.

- There are 3 *more* lions than tigers.

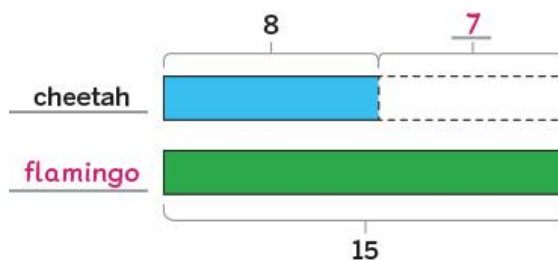


Guided Practice

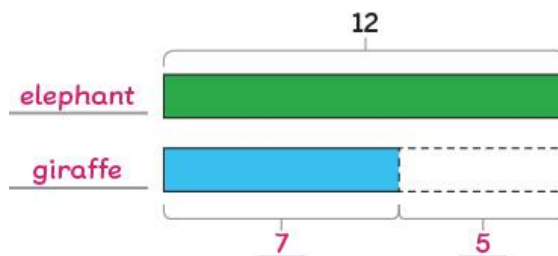


Complete the tape diagrams using the comparison statements.

2. There are 7 *fewer* cheetahs than flamingos.



3. There are 5 *more* elephants than giraffes.

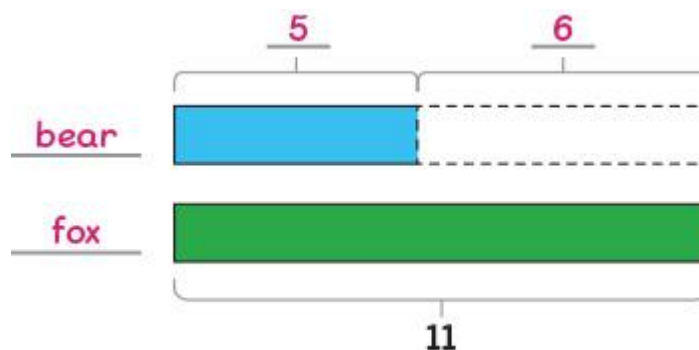


Check



Complete the tape diagram using the comparison statement.

There are 6 *fewer* bears than foxes.



Goal

Represent a comparison statement with a tape diagram.

Standard

2.OA.A.1

Materials

connecting cubes (optional)



Modeled Review

Point to Maya's work and **ask**:

- "How did Maya know which bar was monkeys and which was zebras?"
- "How did Maya know where to write the 4?"
- "How did Maya know the other number was 6?"

Reinforce Maya's thinking by saying, "A tape diagram can help us represent and compare quantities. Just like graphs, tape diagrams need labels so we can understand what they represent."



Guided Practice

Focus students' attention on using tape diagrams to represent comparisons.

To scaffold their thinking, **ask**:

- "Based on the comparison statement, are there more lions or tigers?"
- "Should the bar be longer for the lion or the tiger? How much longer?"

Name _____ Date _____

Using Tape Diagrams to Represent Comparisons

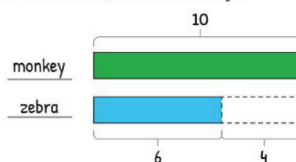
ML 1.14

Modeled Review

Name: Maya

Complete the tape diagram using the comparison statement.

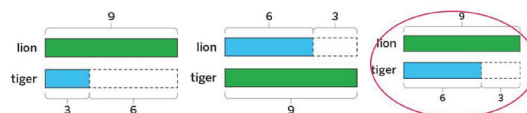
There are 4 fewer zebras than monkeys.



Guided Practice

Circle the tape diagram that represents the comparison statement.

1. There are 3 more lions than tigers.



1 | © Amplify Education, Inc. and its licensors.

Vocabulary

If needed, share the meaning of the word with students:

tape diagram: A tape diagram is a group of rectangles put together to represent a relationship between quantities.

Guided Practice

A Optimize access to tools by providing access to connecting cubes. Encourage students to represent the comparison using the connecting cubes.

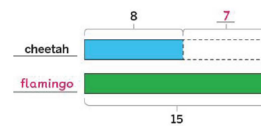
Key Takeaway:

Say, “You can use bars to create a tape diagram that represents the relationship between two amounts being compared.”

Guided Practice

Complete the tape diagrams using the comparison statements.

2. There are 7 *fewer* cheetahs than flamingos.



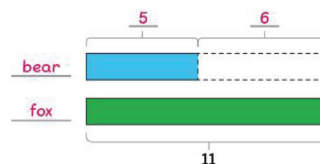
3. There are 5 *more* elephants than giraffes.



Check

Complete the tape diagram using the comparison statement.

There are 6 *fewer* bears than foxes.



2 | © Amplify Education, Inc. and its licensors.

Reflection

Ask:

- “How can tape diagrams represent a comparison?”
- “How did you feel while using tape diagrams today?”



Check: Recommended Next Steps

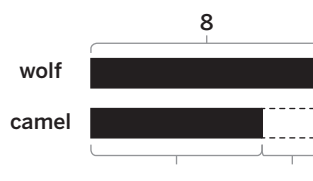
Almost there

If students need more support, consider using Grade 1 Mini-Lesson 2.13: *Representing and Solving Story Problems (Compare, Difference Unknown)*.

Got it!

If students need more practice, sketch the tape diagram. Ask students to use the comparison statement to complete the tape diagram.

There are 2 *fewer* camels than wolves.



Matching Tape Diagrams, Equations, and Story Problems About Data

ML 1.15



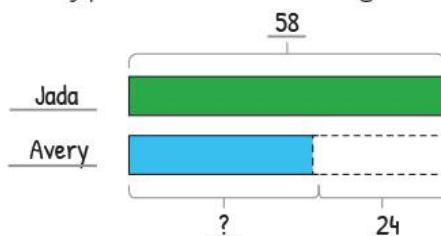
Modeled Review



Name: Shawn

Jada has 58 stamps. Avery has 24 *fewer* stamps than Jada.

1. Use the story problem to fill in the diagram.



2. Write **two** equations that match the story problem and tape diagram. Use a ? symbol to represent the unknown number of stamps.

equation 1: $? + 24 = 58$

equation 2: $58 - 24 = ?$

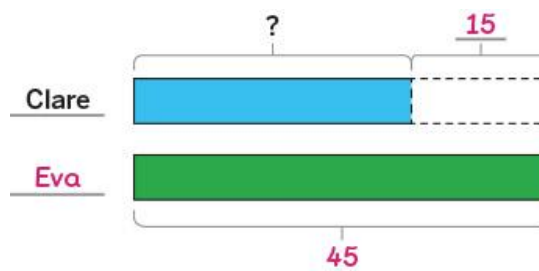


Guided Practice



Eva has 45 stickers. Clare has 15 *fewer* stickers than Eva.

1. Use the story problem to fill in the diagram..



2. Complete the equation that matches the story problem and tape diagram.

equation: $? + 15 = 45$

Guided Practice



Jack has 23 toy cars. Dylan has 11 *more* toy cars than Jack.

3. Use the story problem to fill in the diagram.



4. Write an equation that matches the story problem and tape diagram. Use a ? symbol to represent the unknown number of toy cars. **Sample equation shown.**

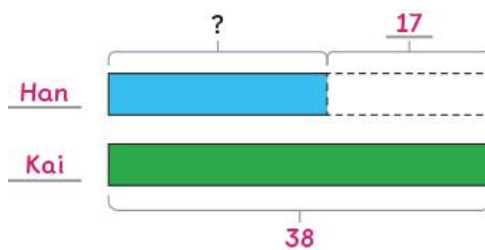
equation: $23 + 11 = ?$

Check



Kai has 38 marbles. Han has 17 *fewer* marbles than Kai.

1. Use the story problem to fill in the diagram.



2. Write an equation that matches the story problem and tape diagram. Use a ? symbol to represent the unknown number of marbles. **Sample equation shown.**

equation: $38 - 17 = ?$

Goal

Represent a comparison story problem using tape diagrams and equations.

Standard

2.OA.A.1

Materials

connecting cubes (optional)



Modeled Review

Point to Shawn's work and ask:

- "How did Shawn know which bar to write Jada and Avery's name by?"
- "How did Shawn know where to write the 58? The 24?"
- "What does the question mark symbol in the tape diagram and equation represent?"

Reinforce Shawn's thinking by saying, "The lengths of the bars in a tape diagram help you see the relationships among the smaller numbers, the larger numbers, and the difference in a story problem."



Guided Practice

Focus students' attention on using the information to complete the tape diagrams.

To scaffold their thinking, ask:

- "Who has more stickers? How should that be represented on the tape diagram?"
- "How can you complete the equation using the tape diagram?"

Name _____ Date _____

Matching Tape Diagrams, Equations, and Story Problems About Data

ML 1.15

Modeled Review

Name: Shawn

Jada has 58 stamps. Avery has 24 fewer stamps than Jada.

1. Use the story problem to fill in the diagram.

2. Write two equations that match the story problem and tape diagram. Use a ? symbol to represent the unknown number of stamps.

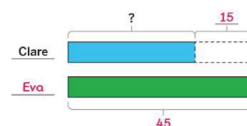
equation 1: $? + 24 = 58$

equation 2: $58 - 24 = ?$

Guided Practice

Eva has 45 stickers. Clare has 15 fewer stickers than Eva.

1. Use the story problem to fill in the diagram.



2. Complete the equation that matches the story problem and tape diagram.

equation: $? + 15 = 45$

1 | © Amplify Education, Inc. and its licensors.

Vocabulary

If needed, share the meaning of the word with students:

tape diagram: A tape diagram is a group of rectangles put together to represent a relationship between quantities.

Guided Practice

A Optimize access to tools by providing students with connecting cubes to build a model of the tape diagram with a concrete manipulative. Have students share how their cubes match the diagram and story.

ML/EL Invite students to use the following sentence frame to support their thinking: I decided to label ____ as ____ because ____."

Key Takeaway:

Say, "Tape diagrams are a representation you can use to understand the knowns and unknowns in a story problem."

Guided Practice

Jack has 23 toy cars. Dylan has 11 *more* toy cars than Jack.

3. Use the story problem to fill in the diagram.



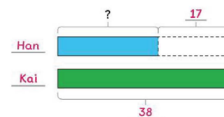
4. Write an equation that matches the story problem and tape diagram. Use a ? symbol to represent the unknown number of toy cars. **Sample equation shown.**

equation: $23 + 11 = ?$

Check

Kai has 38 marbles. Han has 17 *fewer* marbles than Kai.

1. Use the story problem to fill in the diagram.



2. Write an equation that matches the story problem and tape diagram. Use a ? symbol to represent the unknown number of marbles. **Sample equation shown.**

equation: $38 - 17 = ?$

2 | © Amplify Education, Inc. and its licensors.

Reflection

Ask:

- "Why do the lengths of the bars in a tape diagram matter?"
- "How did today's lesson connect to previous learning?"



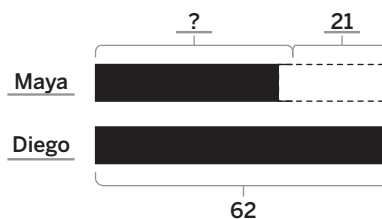
Check: Recommended Next Steps

Almost there

If students need more support, consider using Mini-Lesson 1.14: *Using Tape Diagrams to Represent Comparisons*.

Got it!

If students need more practice, sketch the tape diagram and invite students to write two equations that describe it.



Name _____ Date _____

Solving Comparison Problems and Writing Equations

ML 1.16

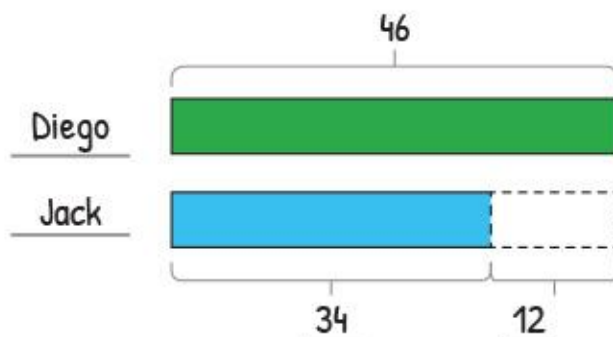


Modeled Review



Name: Priya

Jack collected 34 rocks. Diego collected 12 *more* rocks than Jack. How many rocks did Diego collect? Complete the tape diagram.



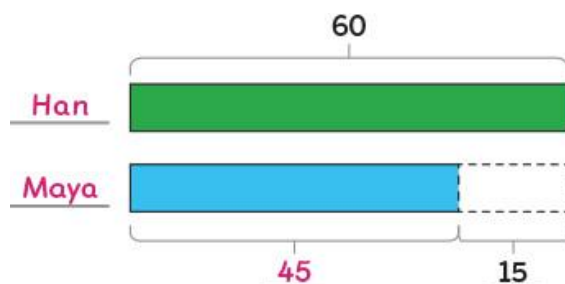
$$\begin{aligned} 34 + 12 \\ 34 + 10 &= 44 \\ 44 + 2 &= 46 \end{aligned}$$



Guided Practice



- Han has 60 marbles. Maya has 15 *fewer* marbles than Han. How many marbles does Maya have? Use the story problem to fill in the tape diagram. **Sample work shown.**

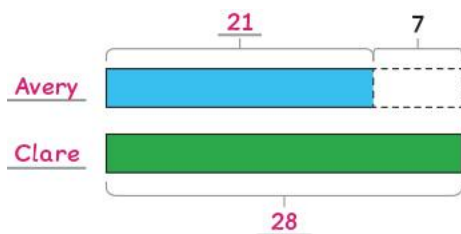


$$\begin{aligned} 60 - 10 &= 50 \\ 50 - 5 &= 45 \end{aligned}$$

Guided Practice

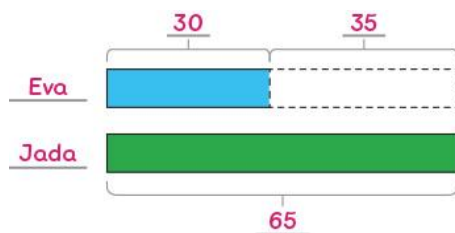


2. Clare found 7 *more* shells than Avery. Avery found 21 shells. How many shells did Clare find? Use the story problem to fill in the tape diagram. **Sample work shown.**



$$28 - 7 = 21$$

3. Eva has 35 *fewer* stickers than Jada. Jada has 65 stickers. How many stickers does Eva have? Use the story problem to fill in the tape diagram. **Sample work shown.**

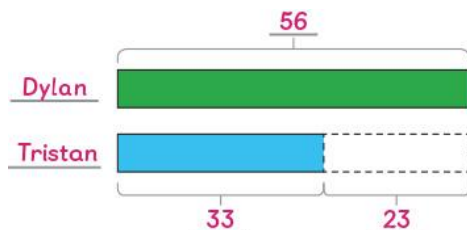


$$65 - 35 = 30$$

Check



Tristan has 23 *fewer* trading cards than Dylan. Dylan has 56 trading cards. How many trading cards does Tristan have? Use the story problem to fill in the tape diagram. **Sample work shown.**



$$56 - 20 = 36$$

$$36 - 3 = 33$$

Goal

Represent and solve comparison story problems using a tape diagram.

Standard

2.OA.A.1



Modeled Review

Point to Priya's work and **ask**:

- "How did Priya know which bar to write Diego and Jack's name by?"
- "How did Priya know where to write 34?"
- "How did Priya know where to write 12?"

Reinforce Priya's thinking by saying, "Tape diagrams can help you visualize the bigger amount, smaller amount, and difference in a story before you solve the problem."

ML/EL Throughout the lesson, invite students to read each problem aloud. Clarify any words they don't know.



Guided Practice

Focus students' attention on solving the story problem.

To scaffold their thinking, **ask**:

- "Who has more marbles? How can you use that to help you fill in the tape diagram?"
- "What strategy could you use to solve for the unknown value?"

Name _____ Date _____

Solving Comparison Problems and Writing Equations

ML 1.16

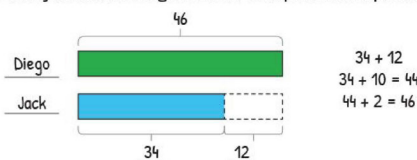


Modeled Review



Name: Priya

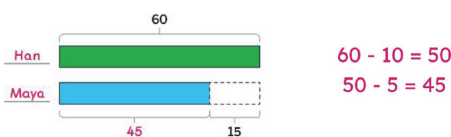
Jack collected 34 rocks. Diego collected 12 *more* rocks than Jack. How many rocks did Diego collect? Complete the tape diagram.



Guided Practice



1. Han has 60 marbles. Maya has 15 *fewer* marbles than Han. How many marbles does Maya have? Use the story problem to fill in the tape diagram. **Sample work shown.**



1 | © Amplify Education, Inc. and its licensors.

Vocabulary

If needed, share the meaning of the word with students:

tape diagram: A tape diagram is a group of rectangles put together to represent a relationship between quantities.

Guided Practice

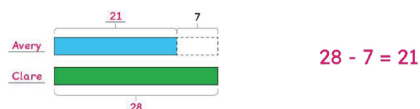
A Vary the task demands by inviting students to decide in which order to complete the problems, as well as choosing to solve the problem before or after they label the tape diagram.

Key Takeaway:

Say, “You can use different representations to help make sense of the problem before solving. After you understand the problem, you can use different strategies to solve the problem.”

Guided Practice

2. Clare found 7 *more* shells than Avery. Avery found 21 shells. How many shells did Clare find? Use the story problem to fill in the tape diagram. **Sample work shown.**



3. Eva has 35 *fewer* stickers than Jada. Jada has 65 stickers. How many stickers does Eva have? Use the story problem to fill in the tape diagram. **Sample work shown.**



Check

Tristan has 23 *fewer* trading cards than Dylan. Dylan has 56 trading cards. How many trading cards does Tristan have? Use the story problem to fill in the tape diagram. **Sample work shown.**



2 | © Amplify Education, Inc. and its licensors.

Reflection

Ask:

- “What was helpful about the ways you represented and solved problems today?”
- “What do you feel confident about when solving story problems?”



Check: Recommended Next Steps

Almost there

If students need more support, consider using Grade 1 Mini-Lesson 6.11: *Solving Compare Story Problems With Unknowns In All Positions*.

Got it!

If students need more practice, invite them to solve the following comparison story problem using any strategy.

Kai has 37 stamps. Shawn has 15 *more* stamps than Kai. How many stamps does Shawn have?

GRADE 2

Centers

The following section includes a selection of Center Resources. Centers are engaging hands-on, 15-minute games for students to play collaboratively to strengthen their understanding of key skills and concepts. Centers appear in instruction as part of instructional activities, lesson differentiation, and daily Centers time (K–1 only).

Check It Off



Students choose two number cards and add or subtract to make given numbers.

GRADE 1

Stage 1 Add or Subtract Within 10

Stage 2 Add Three Numbers

Stage 3 Add or Subtract Tens



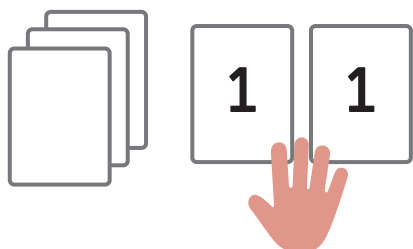
Check It Off

Stage	Materials	Differentiation
Stage 1 Add or Subtract Within 10 (GRADE 1)	• Directions, Recording Sheet, Number Cards, 0–10 (Centers Resources)	Support • Have students work with only addition or subtraction expressions. • Provide students with access to 10-frames and either counters or cubes to represent the expressions. Stretch Have students play until one student has checked off every number.
Stage 2 Add Three Numbers (GRADE 1)	• Directions, Recording Sheet, Number Cards, 0–10 (Centers Resources)	Support Provide students with access to double 10-frames and either counters or cubes to represent the expressions. Stretch Have students play until one student has checked off every number.
Stage 3 Add or Subtract Tens (GRADE 1)	• Directions, Recording Sheet, Number Cards, Multiples of 10 (Centers Resources)	Support Have students work with only subtraction instead of both operations. Stretch Have students play until one student has checked off every number.



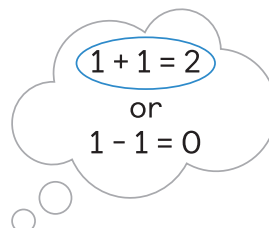
Check It Off

1



Draw 2 cards.

2



Find the *sum* or *difference*.

3

	✓	Expressions
0		
1		
2	✓	$1 + 1$

Check off the *sum* or *difference* you found, and record the *expression*.

4



Take turns. The player who checks off more *sums* and *differences* wins.

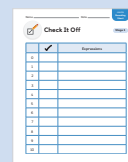
Let's add and subtract within 10.

Pairs

You'll need . . .



Number Cards,
0-10



Recording Sheet

Name _____ Date _____



Check It Off

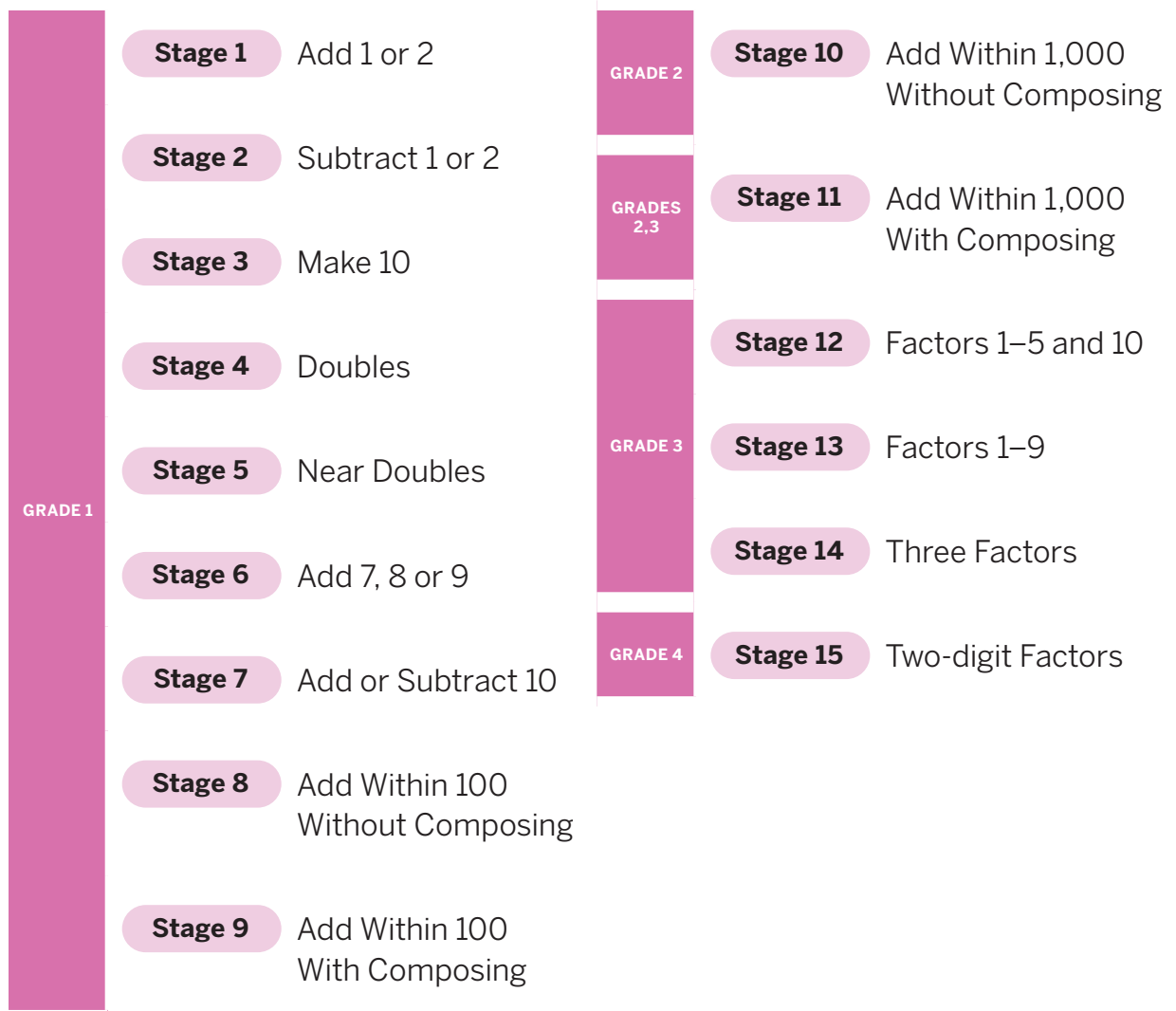
Stage 1

	✓	Expressions
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Cover Up



Students take turns generating numbers and placing counters on a board. The first partner to fill a row, column, or diagonal wins.





Stage	Materials	Differentiation
Stage 1 Add 1 or 2 (GRADE 1)	• Directions, Gameboards A and B (one per player), Number Cards, 0–9 (Centers Resources) • two-color counters (Manipulative Kit)	Support • Have students use addition strategies, such as counting all, counting on, or relating addition to counting. • Provide students with access to 10-frames and either counters or cubes to represent the expressions. Stretch Encourage students to be strategic when adding 1 or 2 to cover a preferred number.
Stage 2 Subtract 1 or 2 (GRADE 1)	• Directions, Gameboards A and B (one per player), Number Cards, 2–10 (Centers Resources) • two-color counters (Manipulative Kit)	Support • Have students use subtraction strategies, such as representing all and then removing, counting back, or relating subtraction to counting. • Provide students with access to 10-frames and either counters or cubes to represent the expressions. Stretch Encourage students to be strategic when subtracting 1 or 2 to cover a preferred number.
Stage 3 Make 10 (GRADE 1)	• Directions, Gameboards A and B (one per player), Number Cards, 0–10 (Centers Resources) • two-color counters (Manipulative Kit)	Support • Have students use addition strategies, such as counting all, counting on, or relating addition to counting. • Provide students with access to 10-frames and either counters or cubes to make 10. Stretch Encourage students to be strategic when covering the sum.



Stage	Materials	Differentiation
Stage 4 Doubles (GRADE 1)	- Directions, Gameboards A and B (one per player), Number Cards, 0–10 (Centers Resources) - two-color counters (Manipulative Kit)	Support Provide students with access to 10-frames and either counters or cubes to represent the expressions. Stretch Encourage students to be strategic when covering the sum.
Stage 5 Near Doubles (GRADE 1)	- Directions, Gameboards A and B (one per player), Number Cards, 0–10 (Centers Resources) - two-color counters (Manipulative Kit)	Support - Have students think of near doubles as doubles plus one. Encourage students to draw number bonds to help them with this thinking. - Provide students with access to 10-frames and either counters or cubes to represent the expressions. Stretch Encourage students to be strategic when covering the sum.
Stage 6 Add 7, 8 or 9 (GRADE 1)	- Directions, Gameboards A and B (one per player), Number Cards, 0–10 (Centers Resources) - two-color counters (Manipulative Kit)	Support - Have students use addition strategies, such as counting all, counting on, or relating addition to counting. - Provide students with access to 10-frames and either counters or cubes to represent the expressions. Stretch Encourage students to be strategic when adding 7, 8, or 9 to cover a preferred number.



Cover Up (continued)

Stage	Materials	Differentiation
Stage 7 Add or Subtract 10 (GRADE 1)	• Directions, Gameboards A and B (one per player), Number Cards, Multiples of 10 (Centers Resources) • two-color counters (Manipulative Kit)	Support Have students use addition strategies, such as skip counting and counting on. Stretch Encourage students to add or subtract a multiple of 10 to cover a preferred number.
Stage 8 Add Within 100 Without Composing (GRADE 1)	• Directions, Gameboards A and B (one per player), Recording Sheet (Centers Resources) • base-ten units, two-color counters (Manipulative Kit)	Support • Have students record their expressions and show their work to find the sums. • Have students use Gameboard A to add a one-digit number and a two-digit number. Stretch Have students use Gameboard B to add 2 two-digit numbers.
Stage 9 Add Within 100 With Composing (GRADE 1)	• Directions, Gameboards A and B (one per player), Recording Sheet (Centers Resources) • base-ten units, two-color counters (Manipulative Kit)	Support • Have students record their expressions and show their work to find the sums. • Have students use Gameboard A to add a one-digit number and a two-digit number. Stretch Have students use Gameboard B to add 2 two-digit numbers.

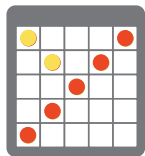


Stage	Materials	Differentiation
Stage 10 Add Within 1,000 Without Composing (GRADE 2)	• Directions, Gameboards A and B, Recording Sheet (Centers Resources) • base-ten units, two-color counters (Manipulative Kit)	Support • Have students record their expressions and show their work to find the sums. • Have students use Gameboard A to add a two-digit number and a three-digit number. Stretch Have students use Gameboard B to add 2 three-digit numbers.
Stage 11 Add Within 1,000 With Composing (GRADES 2, 3)	• Directions, Gameboards A and B, Recording Sheet (Centers Resources) • base-ten units, two-color counters (Manipulative Kit)	Support • Have students record their expressions and show their work to find the sums. • Have students use Gameboard A to add a two-digit number and a three-digit number. Stretch Have students use Gameboard B to add 2 three-digit numbers.
Stage 12 Factors 1–5 and 10 (GRADE 3)	• Directions, Gameboards A and B, Recording Sheet (Centers Resources) • base-ten units, two-color counters (Manipulative Kit)	Support • Have students use multiplication strategies, such as using manipulatives, equal groups, or skip counting. • Have students record their strategies to find the products. Stretch Encourage students to be strategic when multiplying to cover a preferred number.



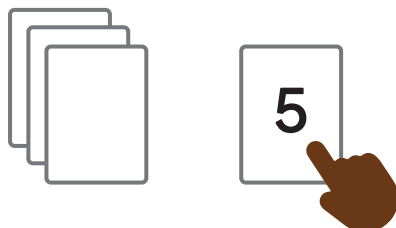
Cover Up (continued)

Stage	Materials	Differentiation
Stage 13 Factors 1–9 (GRADE 3)	• Directions, Gameboards A and B, Recording Sheet (Centers Resources) • base-ten units, two-color counters (Manipulative Kit)	Support • Have students use multiplication strategies, such as using manipulatives, equal groups, or skip counting. • Have students record their strategies to find the products. Stretch Encourage students to be strategic when multiplying to cover a preferred number.
Stage 14 Three Factors (GRADE 3)	• Directions, Gameboards A and B, Recording Sheet (Centers Resources) • base-ten units, two-color counters (Manipulative Kit)	Support • Encourage students to use the associative property to multiply the numbers in an order that makes the most sense to them. • Have students record their expressions in an order that makes the most sense to them. Stretch Encourage students to be strategic when multiplying to cover a preferred number.
Stage 15 Two-digit Factors (GRADE 4)	• Directions, Gameboards A and B, Recording Sheet (Centers Resources) • base-ten units, two-color counters (Manipulative Kit)	Support • Encourage students to show their work when multiplying. • Have students use different multiplication strategies. Stretch Encourage students to be strategic when multiplying to cover a preferred number.



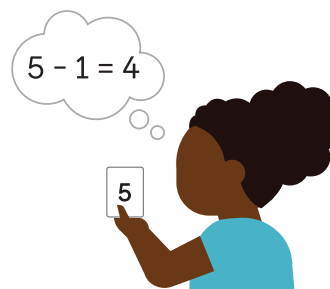
Cover Up

1



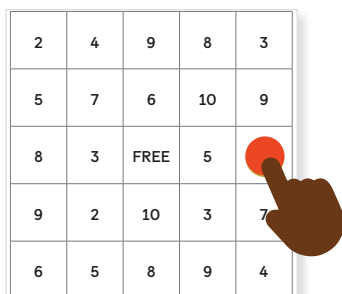
Draw a card.

2



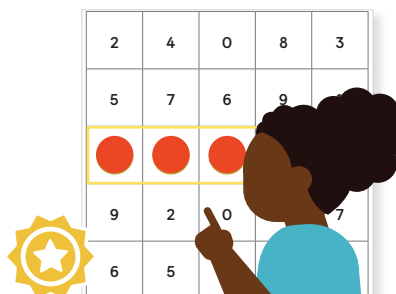
Subtract 1 or 2. Tell your partner which you choose.

3



Cover the difference.

4



Take turns and repeat. The first player to cover 5 in a row wins.

Let's subtract 1 or 2.

Pairs

You'll need ...



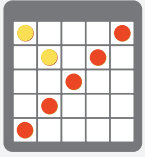
Number
Cards, 2-10



counters

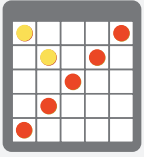


Gameboard
A or B



Cover Up

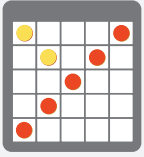
2	4	0	8	3
5	7	6	9	1
8	3	FREE	5	4
9	2	0	3	7
6	5	8	1	4



Cover Up

Stage 2

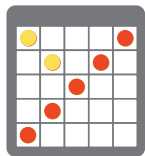
8	1	8	5	2
5	2	3	7	4
8	9	FREE	6	0
1	3	5	0	8
4	7	4	9	3



Cover Up

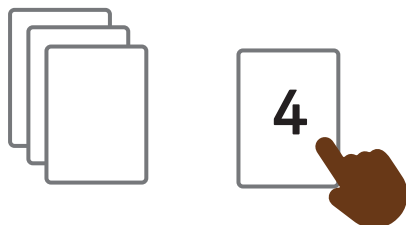
Stage 2

8	1	8	5	2
5	2	3	7	4
8	9	FREE	6	0
1	3	5	0	8
4	7	4	9	3



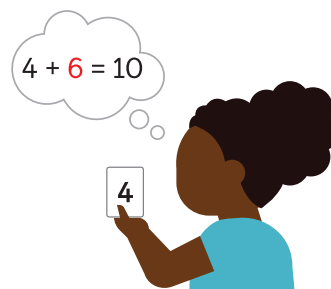
Cover Up

1



Draw a card.

2



Find the number you can add to make 10.

3

0	8	3	4	1
2	9	5	7	2
9	6	FREE	10	3
3	4	0	2	8
1	10	5	2	8

Cover that number.

4

0	8	3	●	1
2	9	5	●	2
9	6	FREE	●	3
3	4	0	●	8
1	10	5	●	8

Take turns and repeat.
The first player to cover 5 squares in a row wins.

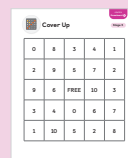
Let's add to make 10.

Pairs

You'll need . . .



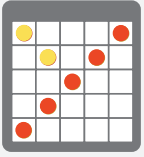
counters



Gameboard
A or B

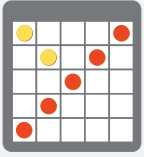


Number
Cards, 0–10



Cover Up

0	8	3	4	1
2	9	5	7	2
9	6	FREE	10	3
3	4	0	6	7
1	10	5	2	8



Cover Up

Stage 3

6	2	1	7	9
5	3	4	1	6
0	10	FREE	9	0
7	8	10	5	4
4	5	8	3	2

Find the Pair

Students work with number cards to build addition and subtraction fluency.



GRADE K

Stage 1

Make 5

GRADE 1

Stage 2

Make 10



Find the Pair

Stage	Materials	Differentiation
Stage 1 Make 5 (GRADE K)	• Directions, Recording Sheet, Number Cards, 0–5 (Centers Resources)	Support • Provide students with access to 5-frames and either counters or cubes to use as a visual reference. • Omit the Recording Sheet. Stretch Have students use Number Cards, 0–10 to play a new round in which they find the pair that makes 10.
Stage 2 Make 10 (GRADE 1)	• Directions, Recording Sheet, Number Cards, 0–10 (Centers Resources)	Support • Provide students with access to 10-frames and either counters or cubes to use as a visual reference. • Omit the Recording Sheet. Stretch Suggest that students choose a different sum for the game (11–15).



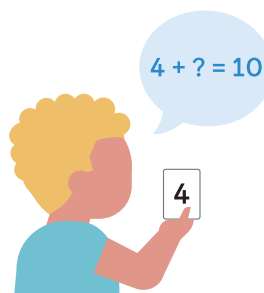
Find the Pair

1



Each player draws 5 cards and lays the rest facedown in a pile.

2



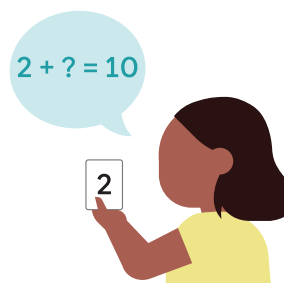
Ask your partner for a number card so you can make 10.

3



Yes? Put the pair of cards down, and fill in the equation.
No? Draw another card from the pile.

4



Take turns asking for cards to make 10. The player who makes more pairs wins.

Let's find pairs that make 10.

Pairs

You'll need . . .



Number Cards,
0–10



Recording Sheet

Name _____ Date _____



Find the Pair

Stage 2

Pairs that make 10

$$\underline{\quad\quad} + \underline{\quad\quad} = 10$$

$$\underline{\quad\quad} + \underline{\quad\quad} = 10$$

$$\underline{\quad\quad} + \underline{\quad\quad} = 10$$

$$\underline{\quad\quad} + \underline{\quad\quad} = 10$$

$$\underline{\quad\quad} + \underline{\quad\quad} = 10$$

How Close?

Students select a given number of digit cards and then choose a subset of those to make an expression that yields a number as close as possible to the target number.



GRADES 1, 2	Stage 1	Add to 20	GRADE 5	Stage 8	Multiply Fractions and Whole Numbers to 5
	Stage 2	Subtract From 20		Stage 9	Add Decimals to 1
	Stage 3	Add to 100		Stage 10	Subtract Decimals From 1
GRADE 2	Stage 4	Add Coins		Stage 11	Add Fractions to 5
GRADES 2, 3	Stage 5	Add to 1,000		Stage 12	Subtract Fractions From 5
GRADE 3	Stage 6	Multiply to 100			
GRADE 4	Stage 7	Multiply to 3,000			



How Close?

Stage	Materials	Differentiation
Stage 1 Add to 20 (GRADES 1, 2)	Directions, Recording Sheet, Number Cards, 0–9 (Centers Resources)	Support - Have students choose only 2 cards to complete their equation instead of 3. - Provide access to counters to assist students in finding the sums. Stretch In each round, the student's score is the distance between the sum and 20. The player with fewer points wins.
Stage 2 Subtract From 20 (GRADES 1, 2)	Directions, Recording Sheet, Number Cards, 0–9 (Centers Resources)	Support - Have students choose only 2 cards to complete their equation instead of 3. - Provide access to counters to assist students in finding the difference. Stretch In each round, the student's score is the distance between their difference and 0. The player with fewer points wins.
Stage 3 Add to 100 (GRADES 1, 2)	Directions, Recording Sheet, Number Cards, 0–9 (Centers Resources)	Support - Suggest that students draw fewer than 7 cards (such as 4, 5, or 6). - Encourage students to show their work when finding the sums. Stretch Have students play a few rounds where they subtract from 100 to find a difference closest to 100.

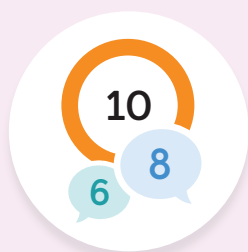
Stage	Materials	Differentiation
Stage 4 Add Coins (GRADE 2)	Directions, Recording Sheet, Number Cards, 0–9 (Centers Resources)	Support - Provide students with access to coins to represent their work. - Encourage students to show their work when finding the sums. Stretch In each round, the student's score is the difference between their sum and 100¢. The player with fewer points wins.
Stage 5 Add to 1,000 (GRADES 2, 3)	Directions, Recording Sheet, Number Cards, 0–9 (Centers Resources)	Support - In each round, the student whose sum is closer to 1,000 wins a point. The player who earns more points wins. - Encourage students to show their work when finding the sums. Stretch Have students draw 8 cards so they can be strategic when choosing their addends.
Stage 6 Multiply to 100 (GRADE 3)	Directions, Recording Sheet, Number Cards, 0–9 (Centers Resources)	Support - In each round, the student whose product is closer to 100 wins a point. The player who earns more points wins. - Have students use two cards to multiply 2 one-digit factors to practice multiplication facts. Stretch Students can choose a different number as the goal.



How Close? (continued)

Stage	Materials	Differentiation
Stage 7 Multiply to 3,000 (GRADE 4)	Directions, Recording Sheet, Number Cards, 0–9 (Centers Resources)	Support - In each round, the student whose product is closer to 3,000 wins a point. The player who earns more points wins. - Have students fill their Recording Sheet multiplying a one-digit number by a three-digit number. Stretch Students can choose a different number as the goal.
Stage 8 Multiply Fractions and Whole Numbers to 5 (GRADE 5)	Directions, Recording Sheet, Number Cards, 0–9 (Centers Resources)	Support Encourage students to show their work when finding the products. Stretch Students can choose a different number as the goal.
Stage 9 Add Decimals to 1 (GRADE 5)	Directions, Recording Sheet, Number Cards, 0–9 (Centers Resources)	Support Encourage students to show their work when finding the sums. Stretch Students can choose a different number as the goal and decide on a different place for the decimal point.

Stage	Materials	Differentiation
Stage 10 Subtract Decimals From 1 (GRADE 5)	Directions, Recording Sheet, Number Cards, 0–9 (Centers Resources)	Support Encourage students to show their work when finding the differences. Stretch - Students can choose a different number as the goal and decide on a different place for the decimal point. - In each round, the student's score is the distance between their difference and 0. The player with fewer points wins.
Stage 11 Add Fractions to 5 (GRADE 5)	Directions, Recording Sheet, Number Cards, 0–9 (Centers Resources)	Support Encourage students to show their work when finding the sums. Stretch - Students can choose a different number as the goal. - In each round, the student's score is the distance between their sum and 5. The player with fewer points wins.
Stage 12 Subtract Fractions From 5 (GRADE 5)	Directions, Recording Sheet, Number Cards, 0–9 (Centers Resources)	Support Encourage students to show their work when finding the differences. Stretch - Students can choose a different number as the goal. - In each round, the student's score is the distance between their difference and 0. The player with fewer points wins.



How Close?

Stage 1

Let's add within 20.

Pairs

You'll need . . .



Number Cards, 0–9



Recording Sheet



Set-up

- Shuffle the Number Cards and lay them in a stack facedown.



How to Play

- 1 Each player draws 5 cards.
- 2 Choose 3 cards to fill in your equation. Find the sum.
- 3 Compare your sums. If your sum is closer to 20, you earn a point.
- 4 Draw 3 new cards and play again until the Recording Sheet is full.



How to Win

- The player who earns more points wins.

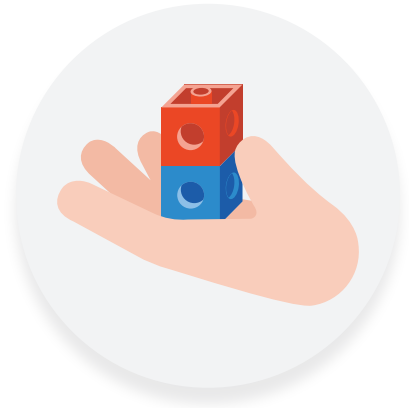


How Close?

Stage 1

Addition equation	Points
$\square + \square + \square = \square$	
$\square + \square + \square = \square$	
$\square + \square + \square = \square$	
$\square + \square + \square = \square$	
$\square + \square + \square = \square$	

What's Behind My Back?



Students work with a given number of connecting cubes. They break apart the tower into two parts.

GRADE K	Stage 1	Show Two Parts
GRADE 1	Stage 2	Making 10
GRADE 2	Stage 3	Different Equations for Making 10
GRADE 1	Stage 4	Making 20
GRADE 2	Stage 5	Different Equations for Making 20

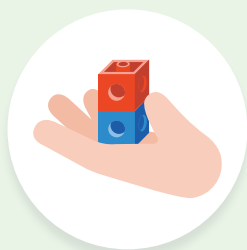


What's Behind My Back?

Stage	Materials	Differentiation
Stage 1 Show Two Parts (GRADE K)	• Directions, Recording Sheets (Centers Resources) • connecting cubes (Manipulative Kit)	Support • Encourage students to use the relationship between the connecting cubes and the equation to determine the missing number of cubes. • Have students use different strategies to find the parts by counting on, counting back, or using known facts. Stretch Have students play with 5–10 connecting cubes.
Stage 2 Making 10 (GRADE 1)	• Directions, Recording Sheet (Centers Resources) • 10-frames, connecting cubes (Manipulative Kit)	Support • Encourage students to use the relationship between addition and subtraction to figure out the missing addend. • For students who need support figuring out the missing addend, consider providing a 10-frame to use as a visual reference. • Have students use different strategies to find the missing part by counting on, counting back, or using known facts of 10. Stretch Have students start with different amounts of cubes.
Stage 3 Different Equations for Making 10 (GRADE 2)	• Directions, Recording Sheet (Centers Resources) • 10-frames, connecting cubes (Manipulative Kit)	Support • Encourage students to use the relationship between addition and subtraction to figure out the missing addend. • For students who need support figuring out the missing addend, consider providing a 10-frame to use as a visual reference. Stretch Have students start with different amounts of cubes.



Stage	Materials	Differentiation
Stage 4 Making 20 (GRADE 1)	• Directions, Recording Sheet (Centers Resources) • connecting cubes, double 10-frames (Manipulative Kit)	Support • Encourage students to use the relationship between addition and subtraction and the structure of 10 to figure out the missing addend. • For students who need support figuring out the missing addend, consider providing a double 10-frame to use as a visual reference. Stretch Have students start with different amounts of cubes.
Stage 5 Different Equations for Making 20 (GRADE 2)	• Directions, Recording Sheet (Centers Resources) • connecting cubes, double 10-frames (Manipulative Kit)	Support • Encourage students to use the relationship between addition and subtraction and the structure of 10 to figure out the missing addend. • For students who need support figuring out the missing addend, consider providing a double 10-frame to use as a visual reference. Stretch Have students start with different amounts of cubes.

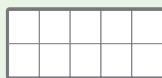


What's Behind My Back?

Let's figure out the missing part to make 10.

Pairs

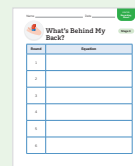
You'll need . . .



10-frame



10 connecting cubes



Recording Sheet



Set-up

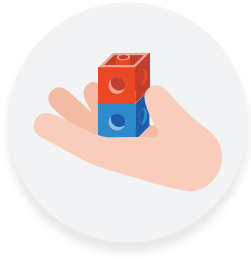
- Build a tower of 10 connecting cubes.



How to Play

- 1 **Player A:** Hide the tower of 10 connecting cubes behind your back and break off some cubes. Show your partner the rest.
- 2 **Player B:** Write an equation with a blank space to show what is missing.
- 3 **Player A:** Ask, "How many are behind my back? How do you know?"
- 4 **Player B:** Record the equation on the Recording Sheet. Switch roles and repeat.
- 5 Continue playing until your Recording Sheet is full.

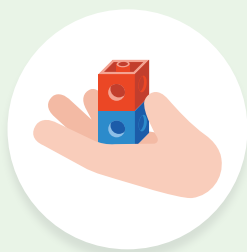
Name _____ Date _____



What's Behind My Back?

Stage 3

Round	Equation
1	
2	
3	
4	
5	
6	



What's Behind My Back?

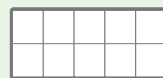
Let's figure out the missing part to make 20.

Pairs

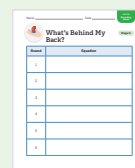
You'll need . . .



20 connecting cubes



double 10-frame



Recording Sheet



Set-up

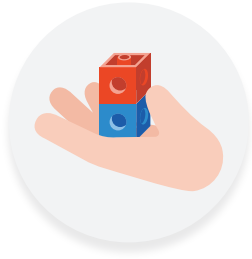
- Build a tower of 20 connecting cubes.



How to Play

- 1 **Player A:** Hold 2 towers of 10 cubes behind your back and break off some cubes. Show your partner the rest.
- 2 **Player B:** Write an equation with a blank space to show what is missing.
- 3 **Player A:** Ask, "How many are behind my back? How do you know?"
- 4 **Player B:** Record the equation on the Recording Sheet.
- 5 Switch roles and repeat.
- 6 Continue playing until your Recording Sheet is full.

Name _____ Date _____



What's Behind My Back?

Stage 5

Round	Equation
1	
2	
3	
4	
5	
6	

GRADE 2

Extensions

The following section includes a selection of Extensions. Extensions are 10–15-minute activities aligned to the most critical topics in a sub-unit. These are print-based, hands-on activities, structured on the principle of student choice and designed to be student-led. Extensions appear as part of lesson differentiation.

Name

Date



You Choose!

Pick any problem to start with.

1

Choose 3 cards to make the sum of 20.

1

3

4

5

7

8

9

Make 20 in more than 1 way.

Can one of your 3 cards be a 1 to make 20?

Name

Date

**You Choose!**

Pick any problem to start with.

2

Look at the examples written using Mongolian digits and try to guess what each digit represents. One of the digits is given to you in the table.

$$\Omega + \Omega = \partial$$

$$\partial + \Omega = \mathbb{G}$$

$$\mathcal{L} - \Omega = \mathbb{G}$$

$$\mathfrak{M} + \mathfrak{M} = \mathbb{G}$$

$$\mathfrak{M} + \mathfrak{M} + \mathfrak{M} = \mathcal{Q}$$

$$\mathcal{L} - \mathcal{A} = \mathfrak{M}$$

$$\mathfrak{N} - \mathcal{Q} = \mathbb{G}$$

∂	$\mathfrak{N}$	$\mathcal{Q}$	$\mathcal{A}$	$\mathcal{L}$	Ω	$\mathfrak{M}$	$\mathcal{Q}$	$\mathbb{G}$
4								

Assign problems to students who want to extend their thinking.

Problems can be solved in any order. If time allows, consider sharing Problem 1 with all students.

Problem 1

Students build fluency with adding and subtracting within 20 and extend their logical reasoning by solving the puzzle.

Provide students with the following hints if additional scaffolding is needed.

- **Hint 1:** Say, "Pick the card 9 and try to find 2 more cards that make the sum of 11."
- **Hint 2:** Say, "Use the set that you already found to make another set of 3 cards that adds up to 20."

Sample responses shown.

$$20 = 9 + 8 + 3$$

$$20 = 9 + 7 + 4$$

$$20 = 8 + 7 + 5$$

It's not possible to make 20 using 1, because the other 2 cards must added up to 19, but the greatest sum I can get using the 2 cards is 17.

Problem 2

Students build fluency with adding and subtracting within 20 and extend their logical reasoning by solving the puzzle.

Provide students with the following hints if additional scaffolding is needed.

- **Hint 1:** Ask, "Replace ɔ with 4 in all the equations. Can you guess what the number is for Ɔ?"
- **Hint 2:** Ask, "Keep replacing the symbols you already guessed with the numbers. What are the only options left for Ɂ and 9?"

Sample responses shown.

$$Ɔ + Ɔ = ɔ \quad 2 + 2 = 4$$

$$ɔ + Ɔ = 6 \quad 4 + 2 = 6$$

$$厶 - Ɔ = 6 \quad 8 - 2 = 6$$

$$凵 + 凵 = 6 \quad 3 + 3 = 6$$

$$凵 + 凵 + 凵 = 9 \quad 3 + 3 + 3 = 9$$

$$厶 - 厶 = 凵 \quad 8 - 5 = 3$$

$$Ɂ - 9 = 6 \quad 7 - 1 = 6$$

ɔ	Ɂ	9	厶	厶	凵	凵	9	6
4	7	1	5	8	2	3	9	6

Visit us online for more information
on Amplify Desmos Math.

 amplify.com/math

Amplify.

© 2024 Amplify Education, Inc.
All trademarks and copyrights are the property of Amplify or its licensors.

MA0482 - 1679150