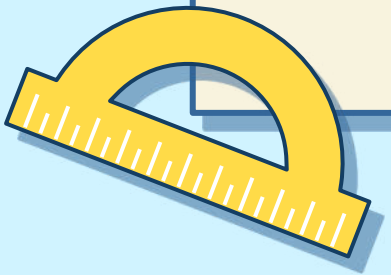
K-5

Illustrative Math for Elementary

A Teacher Guide, By Kinda Techy Teachers

Introduction

In the following slides you will get an in depth overview of the Illustrative Math Curriculum. Along with resources that will help guide your teaching and support you your students' learning.



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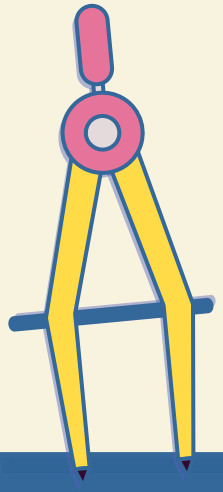


01

IM Materials

What you need, where to find it
and getting started.

Quick Facts

- Each grade level contains 8 or 9 units.
- Units contain between 8 and 28 lesson plans.
- Each unit, depending on the grade level, has pre-unit practice problems in the first section, checkpoints or checklists after each section, and an end-of-unit assessment.
- In addition to lessons and assessments, units have aligned center activities to support the unit content and ongoing procedural fluency.
- The time estimates in these materials refer to instructional time. Each lesson plan is designed to fit within a class period that is at least 60 minutes long.
- Some units contain optional lessons and some lessons contain optional activities that provide additional student practice for teachers to use at their discretion.
- Materials are available in digital and print formats.

Where to Access the Curriculum

IL Classroom formally Learnzillion

ILC login's are provided by administration or school districts. The ILC site has a organized system that can help you find grade levels, lesson numbers, and other materials by clicking through the website.

Why use ILC?

- Students can access lessons and assessments on devices.
- Assessments get graded by the site.
- Teachers can annotate directly on lessons during presentation mode from a device.

Kendall Hunt

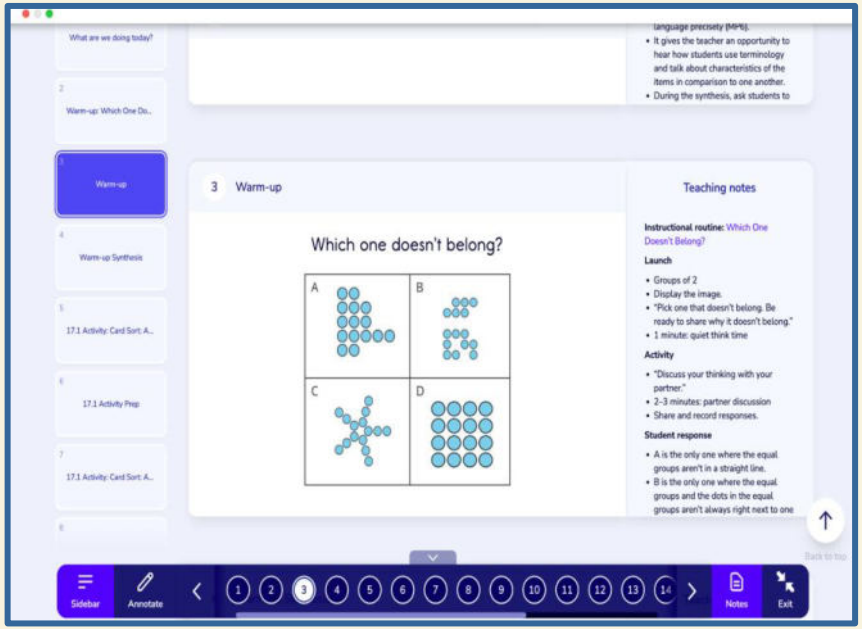
Kendall Hunt provides the Illustrative Mathematics Curriculum for free via email sign in. All you need to do is create a login using your email.

Why use Kendall Hunt?

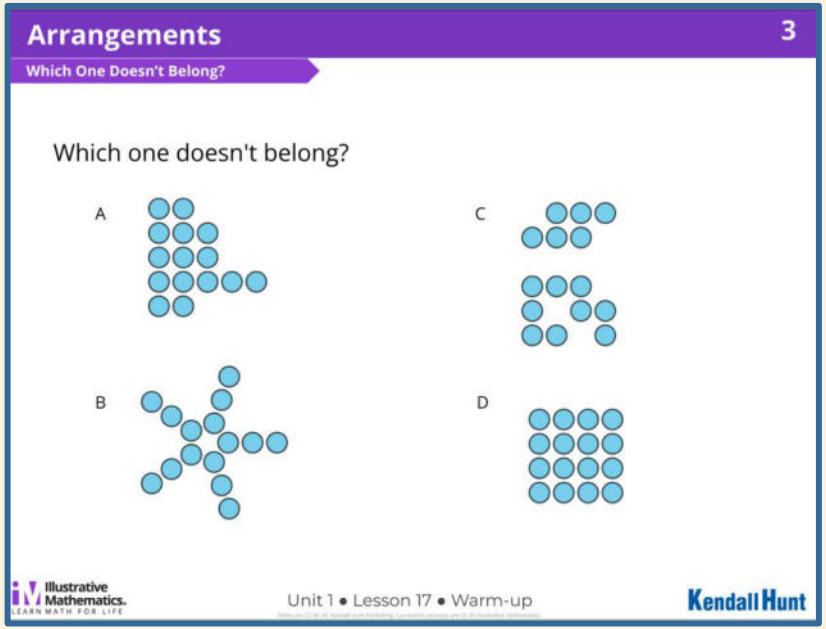
- Student facing problems created using google slides. These are great for presenting when teaching.
- Google Slides are clearer and straight forward.
- Zip files of all documents available for quick downloads.

How the curriculum looks in present mode.

IM via IL Classroom

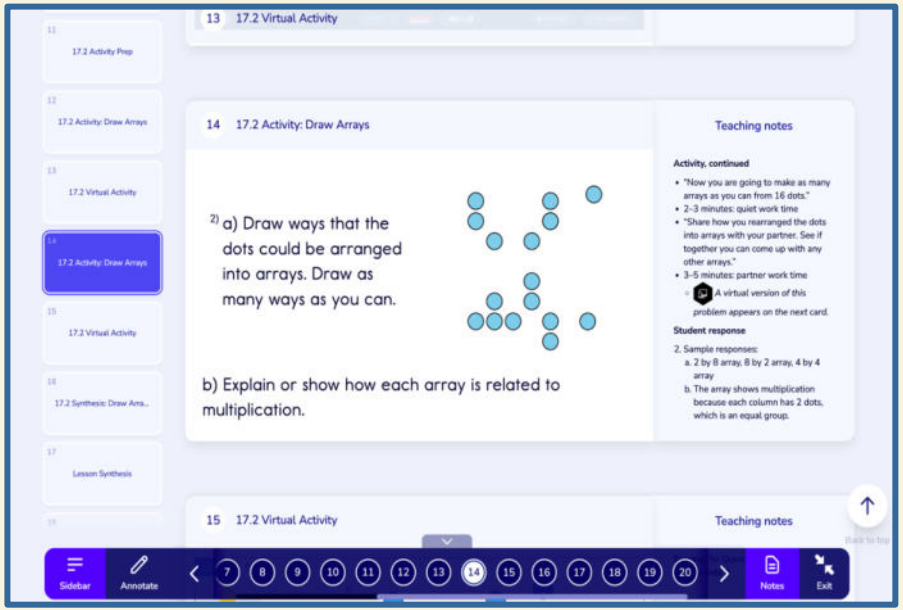


IM via Kendallhunt



How the curriculum looks in present mode.

IM via IL Classroom



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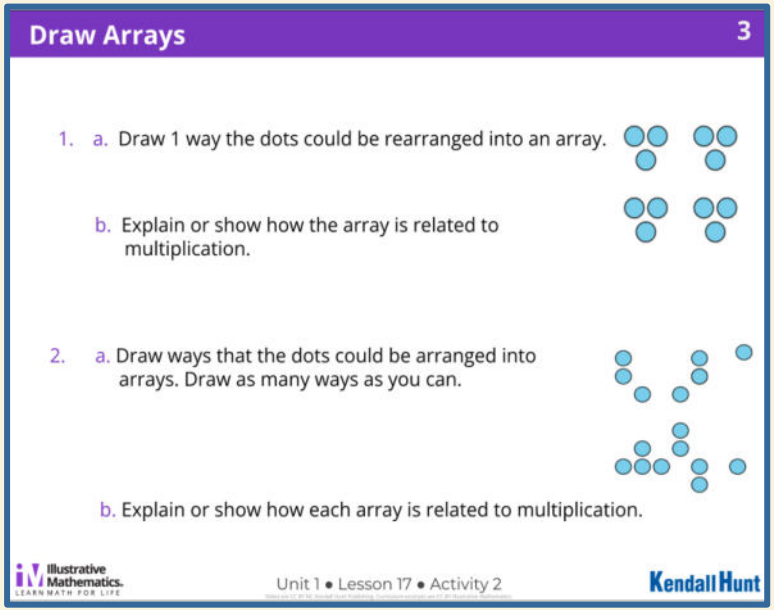
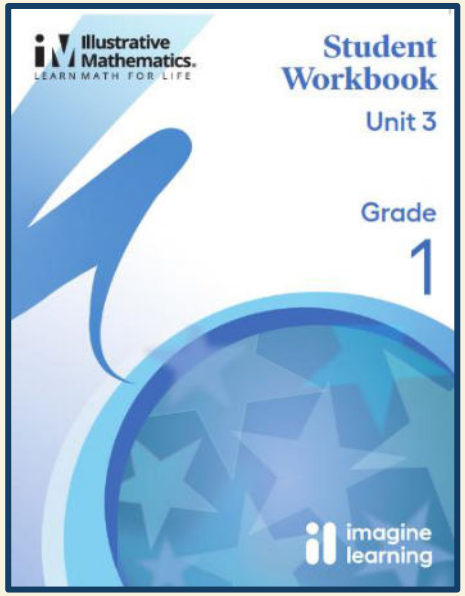


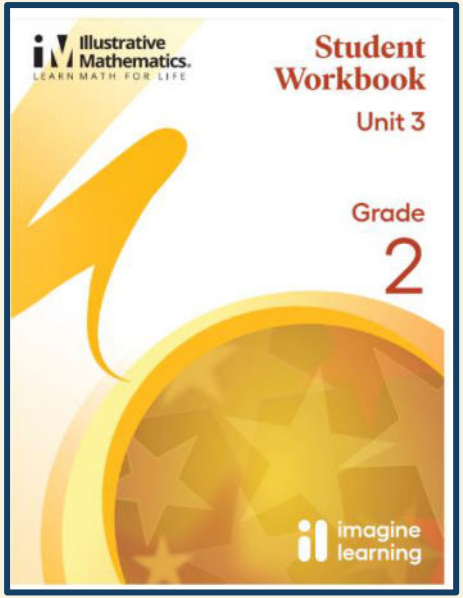
Student Work Books

Kinder

1st Grade

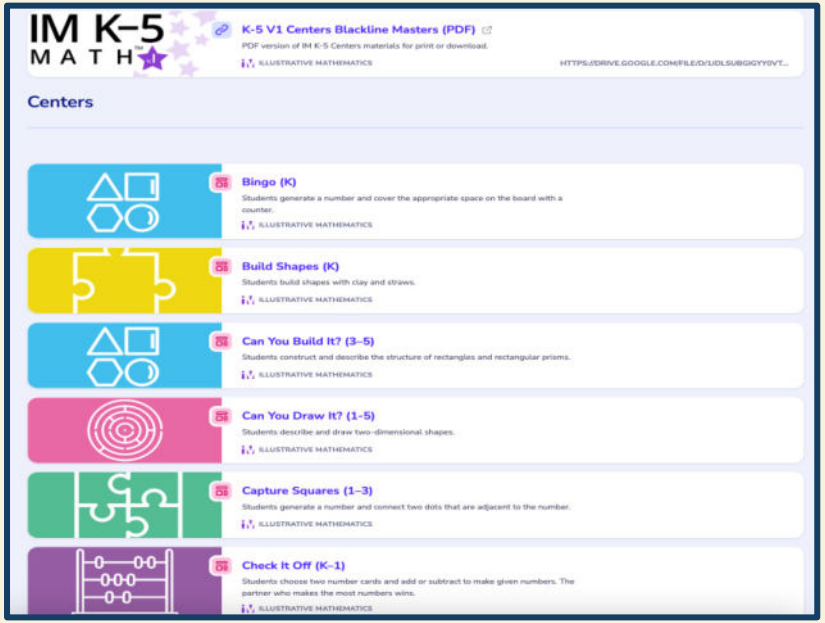


2nd Grade



Centers

Via ILC you access all centers in one location unless you go to your unit and section to view center summary by section.



Via Kendall Hunt you can access all the centers per grade level.

Manipulatives

Click on images below to see where you can buy them if you don't already have them.

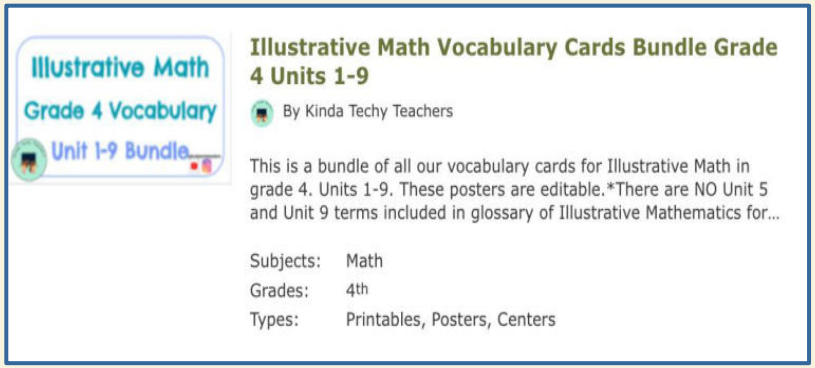
A list of manipulatives needed for each grade level can be found in your curriculum. Manipulatives are a big part of this curriculum.

Example of manipulatives: Kinder

Example of manipulatives: 3rd Grade

Vocabulary

Each grade level has a glossary of words for each unit. Kinder is the only grade that has some images included with the vocabulary words. To help present and teach students the vocabulary words you can look for your grade level vocabulary cards on TPT. The curriculum only presents the words with no images.

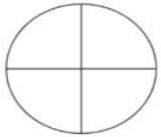


Images include links to products.

Examples of Vocab Cards

fourths

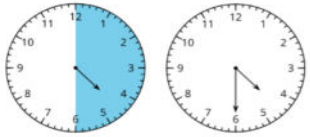
The circle is split into fourths, or quarters.



The pieces created when a shape is split into 4 pieces that are the same size.

IM 1.7

half-past



The clock shows half-past 4 o'clock or 4:30.

IM 1.7

greater than

Symbol	Words	Example
>	greater than	10 > 3

10 is greater than 3.

IM 1.4

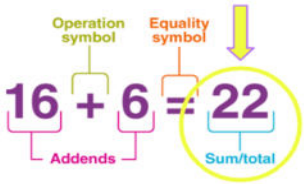
less than

Symbol	Words	Example
<	Less than	2 < 6

2 is less than 6.

IM 1.4

sum

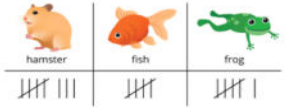


The total when two or more numbers are added.

IM 1.1

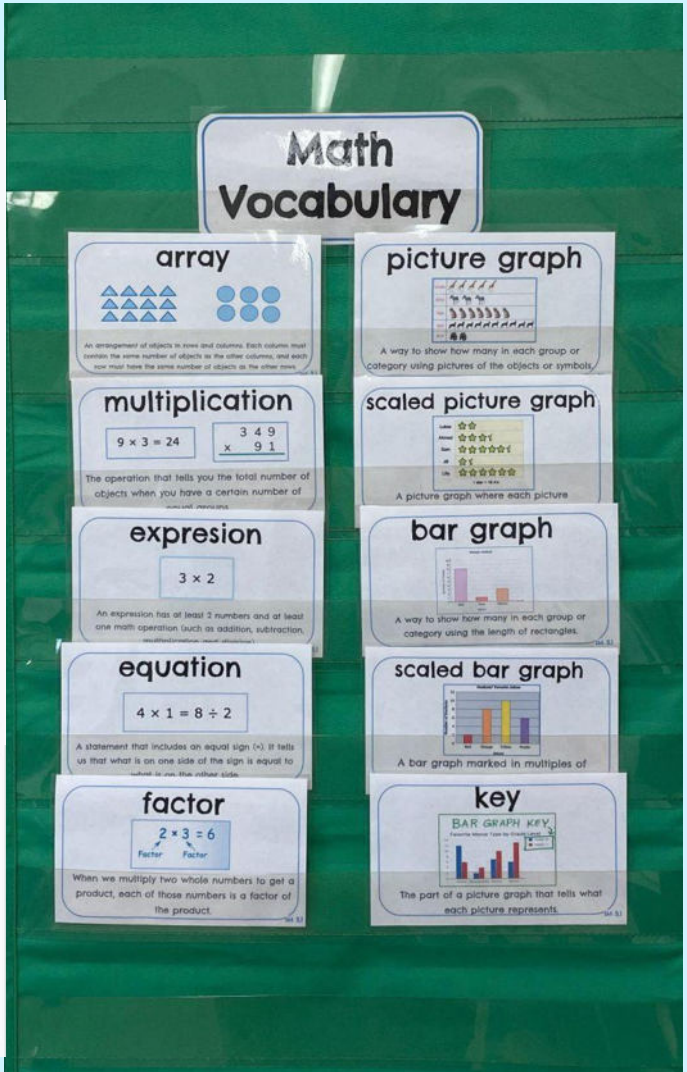
survey

A student took a survey in his class on which animal would make the best class pet?
Their responses are shown below.



A way to collect data using a group of people answering the same question.

IM 1.1



Assessment: Standard Based Scoring

Gr. 3 Unit 1. Checkpoint C. Standards based on end of U1 Standards.

Student	Standard	Description	#1	#2	Avg	Avg Total Score
Valeria	3.OA.A.3	Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. See Glossary, Table 2.	3	4	3	3.5
	3.OA.A.4	Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 × ? = 48, 5 = __ ÷ 3, 6 × 6 = ?.		4	4	

Gr. 3 Unit 1. End of Unit Assessment. Standards based on end of U1 Standards found on End of Unit Assessment Key.

Student	Standard	Description	#1	#2	#3	#4	#5	#6	#7	Avg	Avg
Valeria	3.MD.B.3	Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets	4	2						3	2.75
	3.OA.A.1	Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. For example, describe a context in which a total number of objects can be expressed as 5 × 7.			4					4	
	3.OA.A.3	Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. See Glossary, Table 2.				2	4	3		3	
	3.OA.A.4	Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 × ? = 48, 5 = __ ÷ 3, 6 × 6 = ?.							1	1	

How to find the standards connected to each problem on the end of unit assessments to add them to your grading rubric spreadsheet.

Step 1.

- Locate end of unit assessment answer key.
- Each problem has a standard attached to it.
- Write those down next to the problem number or add them to spread sheet.

Printable versions

- 3.1 End-of-Unit Assessment (PDF)
- 3.1 End-of-Unit Assessment (Word)
- 3.1 End-of-Unit Assessment Answer Key
- 3.1 Spanish End-of-Unit Assessment (PDF)
- 3.1 Spanish End-of-Unit Assessment (Word)

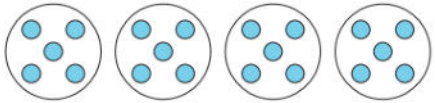
Problem 3

Students write multiplication expressions to represent the number of dots in different images. These include an array and an equal groups image. In each case, students may write the order of the factors in two different ways. Students could possibly see the diagrams differently, that is they could write 2×10 for the first if they group pairs of 5 dots. This is not likely but if they write a multiplication expression whose value is 20 for the first diagram or 30 for the second diagram they may understand the meaning of multiplication but may view the diagram differently.

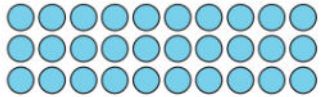
Statement

Write a multiplication expression that could represent the number of dots in each drawing.

A



B



Solution

A: 4×5 or 5×4

B: 3×10 or 10×3

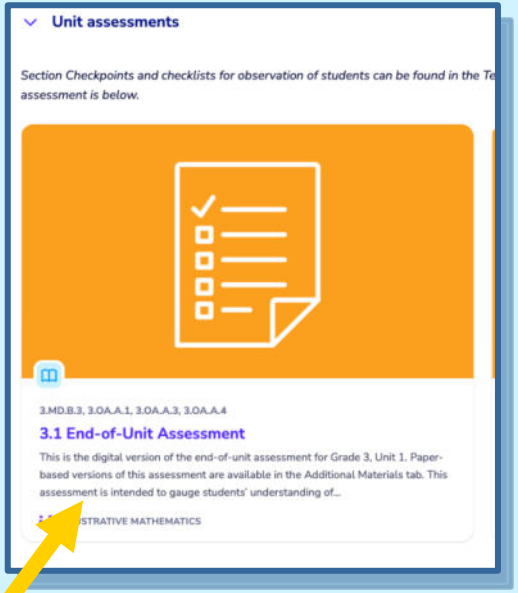
Aligned Standards

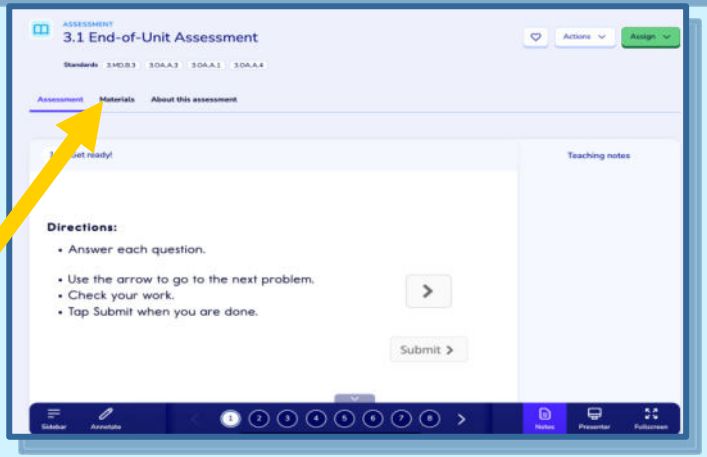
3.OA.A.1

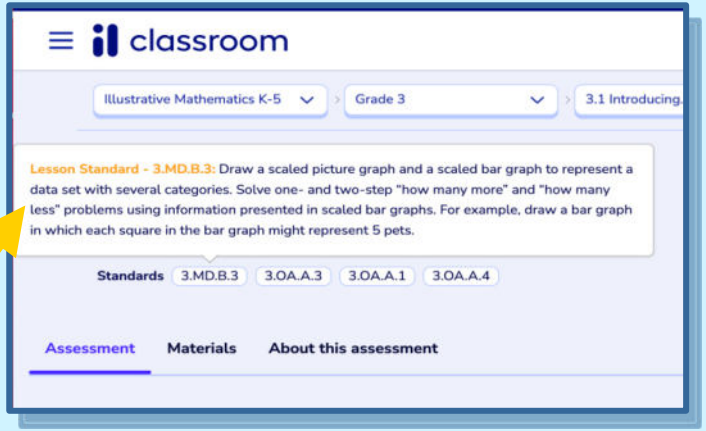
How to find the standards connected to each problem on the end of unit assessments to add them to your grading rubric spreadsheet.

Step 2.

- Locate end of unit assessment in present mode.
- Click into it, standards are listed at the top.
- Place cursor over the standards numbers to read the standard. It will pop up.
- Write those down next to each standard number with problem number or copy and paste the standard into the spreadsheet.



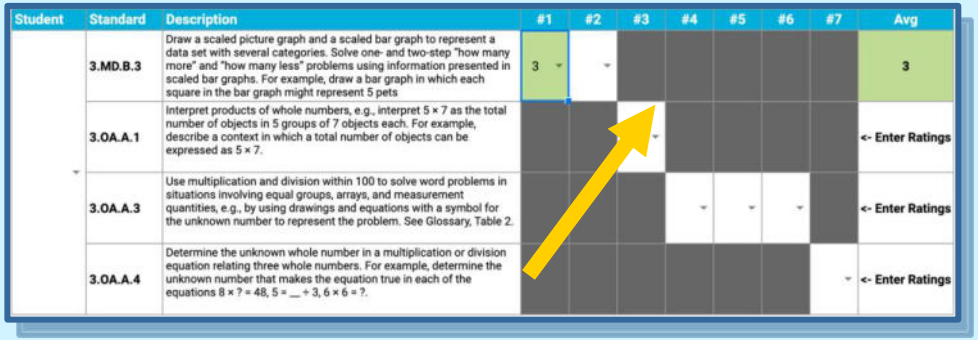




How to find the standards connected to each problem on the end of unit assessments to add them to your grading rubric spreadsheet.

Step 3.

- Duplicate a copy of the end of unit assessment spreadsheet from grade 3 into a new spreadsheet.
- Under (setting) tab fill in your student names.
- Under the (U1 End) tab edit the white and gray boxes to fit your assessment.
- Enter the standard #s and the standards (see previous slides).
- Adjust the white fill in boxes and gray blank boxes to fit your assessment by copy and pasting them under the right number/standard to be filled in when grading.
- Score each problem #/4.



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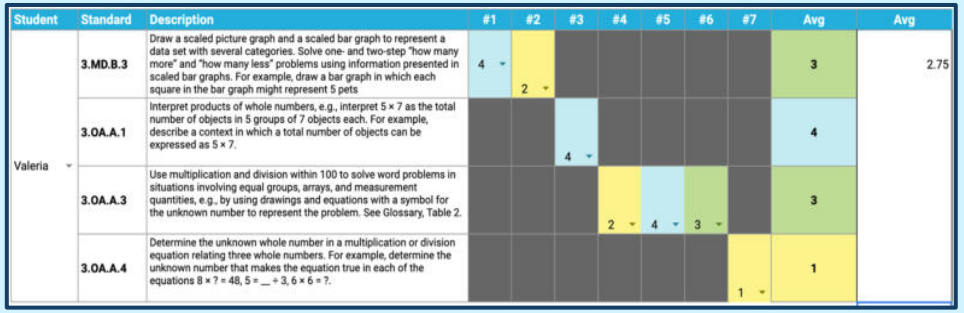
	3.OA.A.1	Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. For example, describe a context in which a total number of objects can be expressed as 5 × 7.								<- Enter Ratings
	3.OA.A.3	Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. See Glossary, Table 2.								<- Enter Ratings
	3.OA.A.4	Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 × ? = 48, 5 = _ ÷ 3, 6 × 6 = ?.								<- Enter Ratings



Student	Standard	Description	#1	#2	#3	#4	#5	#6	#7	Avg	Avg
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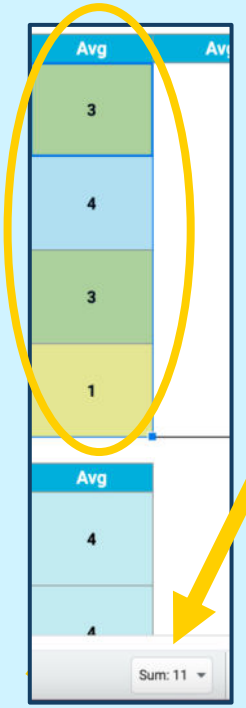
	3.OA.A.1	Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. For example, describe a context in which a total number of objects can be expressed as 5 × 7.			4					4	
	3.OA.A.3	Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. See Glossary, Table 2.				2	4	3		3	
	3.OA.A.4	Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 × ? = 48, 5 = _ ÷ 3, 6 × 6 = ?.							1	1	



To get total average score, highlight the 4 Avg boxes, and at the bottom of spreadsheet click on box labeled sum.

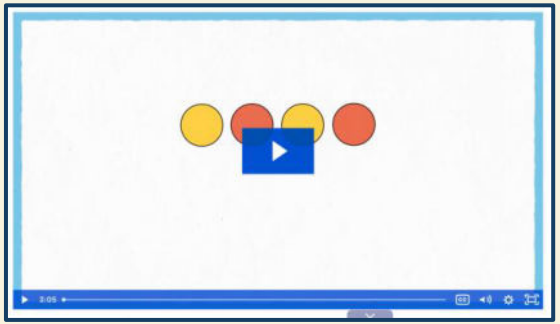
Standards Based Scoring Rubric

	Missing	1	2	3	4
"I'm here...	*"I don't know where to begin."*	*"I can complete this task with substantial assistance."*	*"I am familiar with the concept, but I make some significant errors."*	*"I understand the concepts well enough to complete the task without significant errors."*	*"I understand the concepts well enough to teach it to someone else."*
"Because...	I provided no evidence for evaluation or...	I can begin the task with the assistance of the teacher.	I can begin and make meaningful progress on the task but need help to complete it.	I can complete the task with limited guidance.	I can complete the task independently.
	I did not attempt the opportunity.	I can apply a strategy with assistance.	I can apply a strategy but there are significant procedural errors in my work.	I can apply an appropriate strategy and perform procedures accurately.	I can apply an effective strategy and perform procedures accurately, efficiently, and flexibly.
		I can demonstrate a beginning understanding of the concept.	I can demonstrate a developing understanding of the concept.	I can demonstrate a general understanding of the concept.	I can demonstrate a thorough understanding of the concept.
"So I should...	Provide evidence for evaluation	Progress toward independence with the help of reteaching.	Reflect on feedback and make revisions in order to develop a greater understanding.	Deepen my understanding by explaining my thinking and making connections to related ideas.	Teach the concepts to someone else.

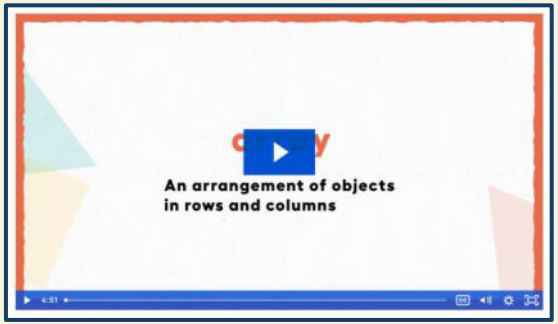
Unit Videos & Family Videos

The ILC platform now has unit videos that give you an overview of what your students will be learning along with videos you can share with families so they know what their child is learning in math. There are also videos to inspire student learning that you play for students after certain lessons.

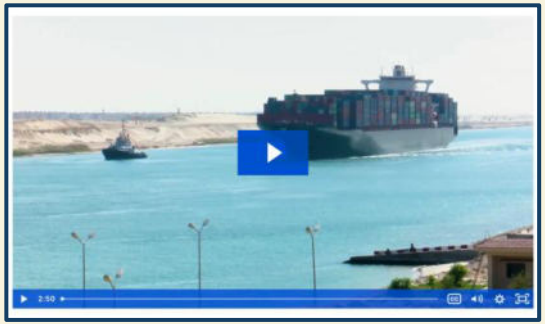
Unit Launch Video



Unit Launch Video For Families



Inspire Videos



*This appears to only be available on the ILC platform.

02

IM Lessons

Teaching the lessons, student groups, and assessments.

Problem Based Instruction

Learning Mathematics by Doing Mathematics

A problem-based instructional framework supports teachers in structuring lessons so students are the ones doing the problem solving to learn the mathematics. The activities and routines are designed to give teachers opportunities to see what students already know and what they can notice and figure out before having concepts and procedures explained to them. The teacher has many roles in this framework: listener, facilitator, questioner, synthesizer, and more. In all these roles, teachers must listen to and make use of student thinking, be mindful about who participates, and continuously be aware of how students are positioned in terms of status inside and outside the classroom. Teachers also guide students in understanding the problem they are being asked to solve, ask questions to advance students' thinking in productive ways, provide structure for students to share their work, orchestrate discussions so students have the opportunity to understand and take a position on the ideas of others, and synthesize the learning with the whole class at the end of activities and lessons.

Example of how I teach my IM lessons.

Teacher presents lesson slides.

Warm-up *Whole Class Work (Teachers poses question/students take turns sharing ideas)

Warm-up Synthesis * Whole Class Work
(Teacher asks students to synthesis what they learned from the warm up/teacher might need to synthesis depending on level of learning.)

Students will go into math groups with their workbooks.

Activity 1 *Math Group Work
(Depending on classroom abilities, teacher go over activity directions and have students work together as a group to solve the problems. Teacher will walk around and monitor/facilitate groups/differentiate or guide students in the right direction)

Activity 2 (This may be optional if you don't have enough time. Same model as above.)

Lesson Synthesis *Whole Class Work
(Teacher review what students have discovered in their math learning)

Cool Down *Mini Test
(Students show what they have learned in the lesson by completing 1 problem based on new learning.)

Pacing Guides

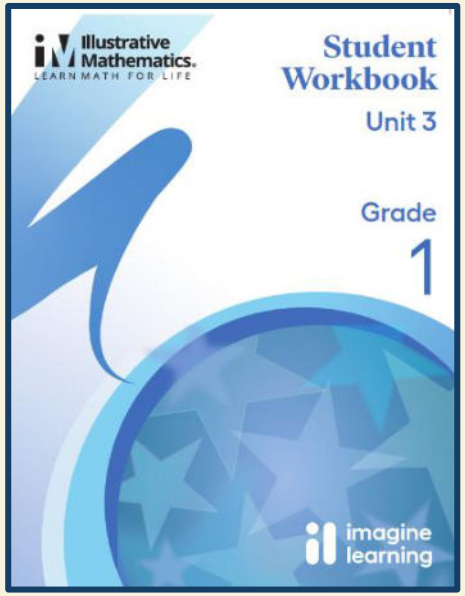
	Kindergarten	Grade 1	Grade 2
week 1	Unit 1 Math in Our World (18–19 days) Optional Lesson: 17	Unit 1 Adding, Subtracting, and Working with Data (16–17 days) Optional Lesson: 15	Unit 1 Adding, Subtracting, and Working with Data (16–20 days) Optional Lessons: 6, 12, 17, 18
week 2			
week 3			
week 4			
week 5	Unit 2 Numbers 1–10 (23–24 days) Optional Lesson: 22	Unit 2 Addition and Subtraction Story Problems (23–24 days) Optional Lesson: 22	Unit 2 Adding and Subtracting within 100 (14–18 days) Optional Lessons: 4, 10, 15, 16
week 6			
week 7			
week 8			
week 9			Unit 3 Measuring Length (16–20 days) Optional Lessons: 7, 13, 17, 18
week 10	Unit 3 Flat Shapes All Around Us (16–17 days) Optional Lesson: 15	Unit 3 Adding and Subtracting within 20 (29–30 days) Optional Lesson: 28	
week 11			
week 12			
week 13			Unit 4 Addition and Subtraction on the Number Line (14–17 days) Optional Lessons: 6, 14, 15
week 14	Unit 4 Understanding Addition and Subtraction (18–20 days) Optional Lessons: 13, 18		
week 15			
week 16		Unit 4 Numbers to 99 (23–25 days) Optional Lessons: 12, 23	
week 17			Unit 5 Numbers to 1,000 (13–15 days) Optional Lessons: 7, 13, 14
week 18			
week 19	Unit 5 Composing and Decomposing Numbers to 10 (15–17 days) Optional Lessons: 4, 15		
week 20			Unit 6 Geometry, Time, and Money (18–23 days) Optional Lessons: 5, 10, 14, 20, 21
week 21		Unit 5 Adding within 100 (15–16 days) Optional Lesson: 14	
week 22	Unit 6 Numbers 0-20 (13–15 days) Optional Lessons: 2, 13		
week 23		Unit 6 Length Measurements within 120 Units (18–19 days) Optional Lesson: 17	
week 24			
week 25	Unit 7 Solid Shapes All Around Us (18 days) Optional Lessons: none		Unit 7 Adding and Subtracting within 1,000 (16–20 days) Optional Lessons: 5, 11, 17, 18
week 26			
week 27			
week 28		Unit 7 Geometry and Time (19 days) Optional Lessons: none	Unit 8 Equal Groups (12–15 days) Optional Lessons: 5, 6, 13
week 29			
week 30	Unit 8 Putting It All Together (17–23 days) Optional Lessons: 2, 4, 5, 17, 18, 19		
week 31			
week 32		Unit 8 Putting It All Together (12 days) Optional Lessons: none	Unit 9 Putting It All Together (15 days) Optional Lessons: none
week 33			
week 34			

	Grade 3	Grade 4	Grade 5
week 1	Unit 1 Introducing Multiplication (22–23 days) Optional Lesson: 21	Unit 1 Factors and Multiples (8–10 days) Optional Lessons: 4, 8	Unit 1 Finding Volume (13–14 days) Optional Lesson: 12
week 2			
week 3		Unit 2 Fraction Equivalence and Comparison (18–19 days) Optional Lesson: 17	Unit 2 Fractions as Quotients and Fraction Multiplication (17–19 days) Optional Lessons: 16, 17
week 4			
week 5	Unit 2 Area and Multiplication (15–17 days) Optional Lessons: 11,15		
week 6		Unit 3 Extending Operations to Fractions (20–22 days) Optional Lessons: 19, 20	Unit 3 Multiplying and Dividing Fractions (19–22 days) Optional Lessons: 9, 10, 20
week 7			
week 8			
week 9	Unit 3 Wrapping Up Addition and Subtraction within 1,000 (22–23 days) Optional Lesson: 21		
week 10		Unit 4 From Hundredths to Hundred-thousands (24–25 days) Optional Lesson: 23	Unit 4 Wrapping Up Multiplication and Division with Multi-Digit Numbers (21–23 days) Optional Lessons: 17, 21
week 11			
week 12			
week 13	Unit 4 Relating Multiplication to Division (23–24 days) Optional Lesson: 22		
week 14		Unit 5 Multiplicative Comparison and Measurement (19-20 days) Optional Lesson: 18	Unit 5 Place Value Patterns and Decimal Operations (26–28 days) Optional Lessons: 4, 26
week 15			
week 16			
week 17	Unit 5 Fractions as Numbers (19–20 days) Optional Lesson: 18		
week 18		Unit 6 Multiplying and Dividing Multi-digit Numbers (26–27 days) Optional Lesson: 25	Unit 6 More Decimal and Fraction Operations (21–23 days) Optional Lessons: 20, 21
week 19			
week 20			
week 21	Unit 6 Measuring Length, Time, Liquid Volume, and Weight (17–18 days) Optional Lesson: 16		
week 22		Unit 7 Angles and Angle Measurement (17–18 days) Optional Lesson: 16	Unit 7 Shapes on the Coordinate Plane (15 days) Optional Lessons: none
week 23			
week 24	Unit 7 Two-dimensional Shapes and Perimeter (17 days) Optional Lessons: none		
week 25		Unit 8 Properties of Two-dimensional Shapes (9–12 days) Optional Lessons: 6, 9, 10	
week 26			
week 27			
week 28			Unit 8 Putting It All Together (19–20 days) Optional Lesson: 9
week 29			
week 30			
week 31	Unit 8 Putting It All Together (17 days) Optional Lessons: none		
week 32		Unit 9 Putting It All Together (14 days) Optional Lessons: none	
week 33			
week 34			

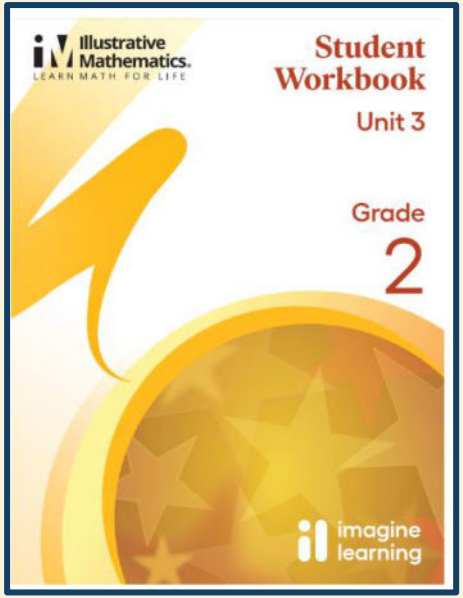
Work Books vs. Online Platform

Kinder

1st Grade



2nd Grade



01

IM Centers

Organizing and playing centers.

Centers

Structure of Center Time

In **kindergarten and grade 1,** center time is **built into lessons** so that students have a chance to spend more time on topics that require more time to develop understanding. New centers are introduced during this time and students are given a choice to work on previously introduced centers.

In **grades 1 and 2,** there is a **center day at the end of each section of each unit**. In grade 2, these lessons are optional. In these lessons, new centers are introduced and students also have time to choose between previously introduced centers that reinforce content from the unit or build grade-level fluencies.

In **grades 3–5,** center time is in **addition to regular class time, as desired by the teacher.** Optional center day lessons are included occasionally in a unit to introduce a center to students, but in general centers are provided as an extra resource for teachers.

Centers can be used in a variety of additional ways. Students can work on centers if a lesson is completed and there is class time remaining. Entire class sessions can also be dedicated to centers for students to practice or solidify the mathematical ideas of a unit. Students can work on center activities during morning work time, or any other free periods throughout the day. Centers can also be used as support for students when practice with prior grade-level standards is needed.

Example of how I teach my IM lessons.

Whole Class Centers

I introduce the center, and play a game with a student so the class sees an example of how to play the center.

I pair students up and everyone starts playing the center.

While students play, I walk around facilitating the game, differentiating for those who need it, or reteaching the rules of the game.

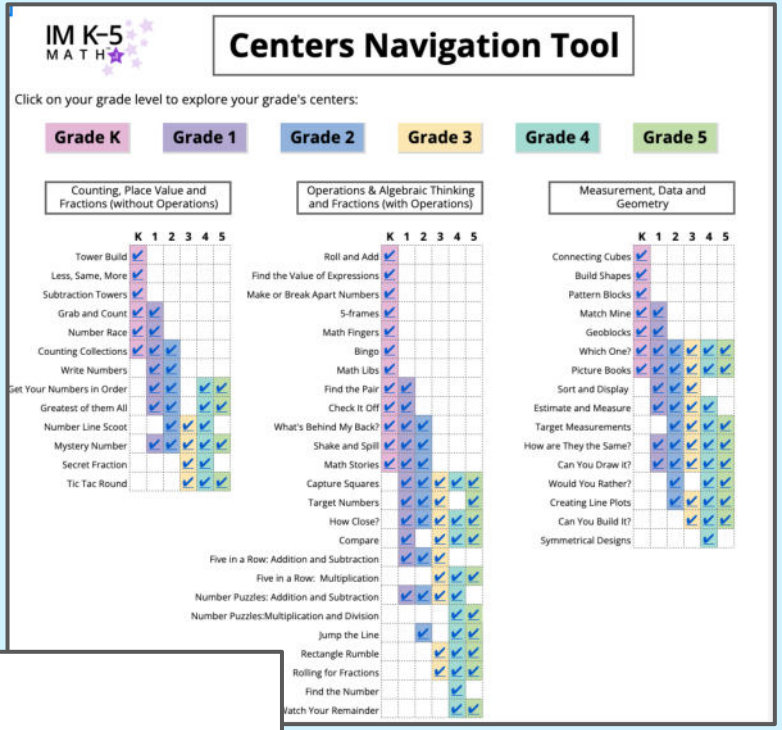
If things are going smoothly I participate in the games with some students.

Small Group Centers

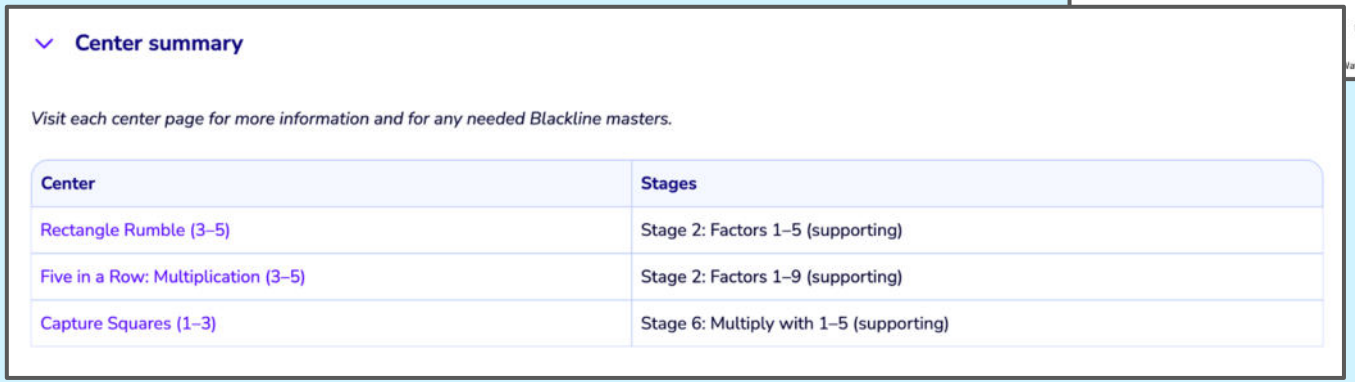
At times, I also play centers in small groups. This is another way to introduce the games, practice fluency, and differentiate if needed. ,

Center Tools in the Curriculum

Center navigation tool shows what centers you will need for all of your units.



Center summaries found under each section of each unit.



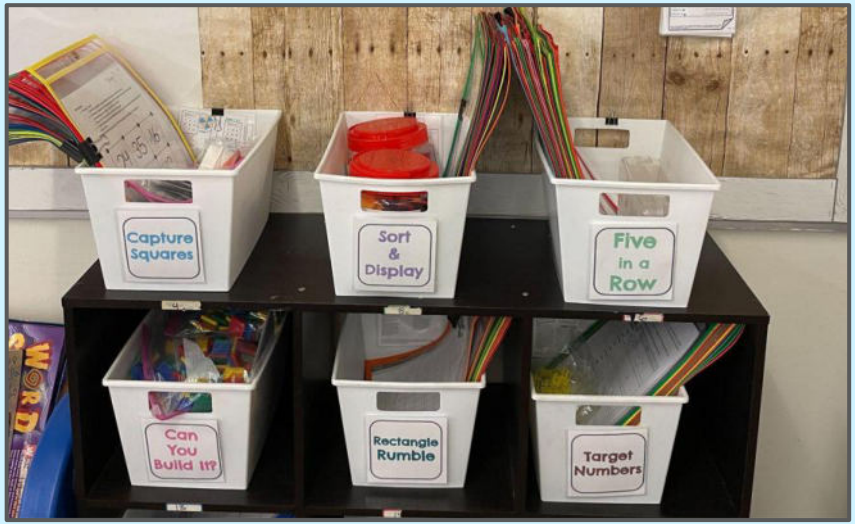
Center summary

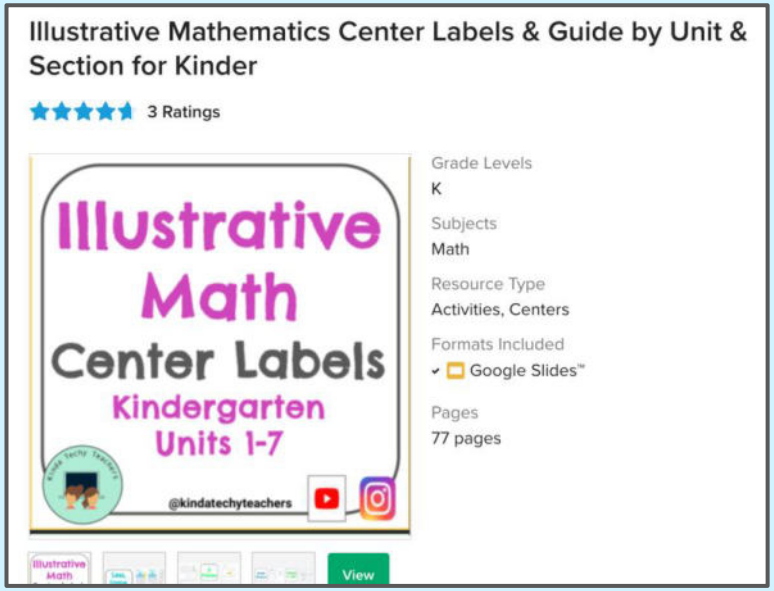
Visit each center page for more information and for any needed Blackline masters.

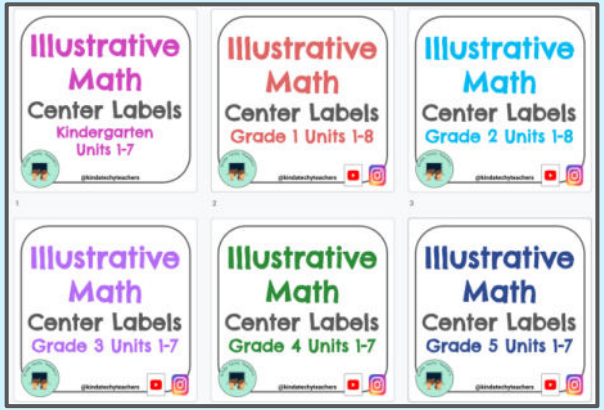
Center	Stages
Rectangle Rumble (3–5)	Stage 2: Factors 1–5 (supporting)
Five in a Row: Multiplication (3–5)	Stage 2: Factors 1–9 (supporting)
Capture Squares (1–3)	Stage 6: Multiply with 1–5 (supporting)

Center Tools on TPT

If you find it difficult to manage and locate centers and directions etc. consider this TPT resource. A collection of all the centers you will use in your grade level, with center summaries, and images to help you organize or keep track of the manipulatives each center needs.





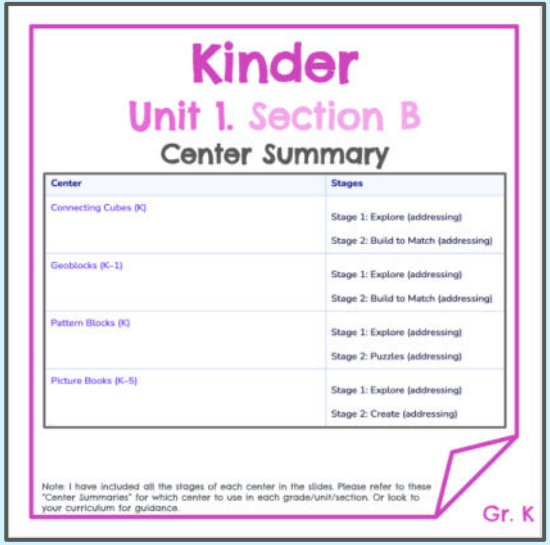


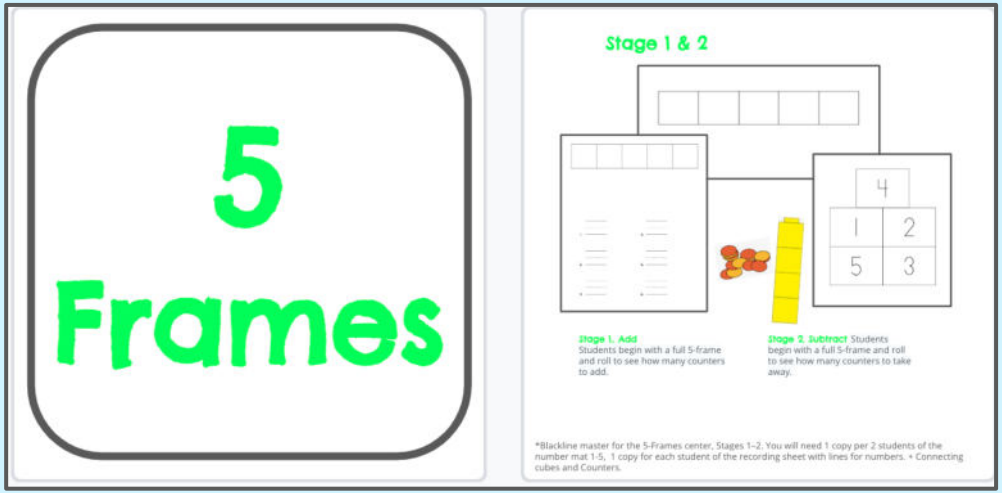
Center Tools on TPT

Center summaries are found under each section of each unit. This product organizes all the section summaries into a easy to use guide card you can print and laminate for continued use.

It also comes with labels for all the centers in your grade level and a mini guide to what you need for each center.

Print and laminate for a quick reference guide for what you need and how to play the center when you are ready for it.

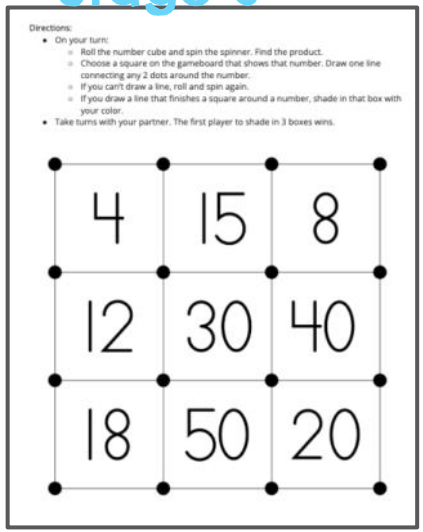




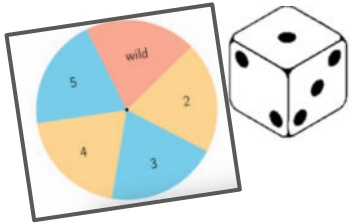
Capture Squares

Stage 6 & 7

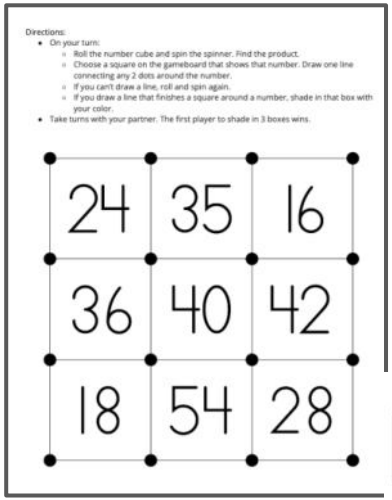
Stage 6



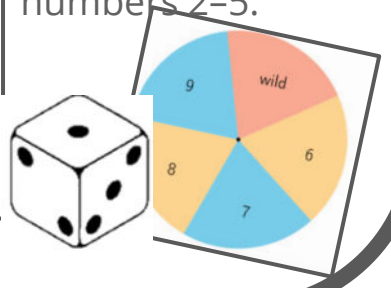
Stage 5 & 6. Students roll a number cube and spin a spinner and find the product of the two numbers they generated. The spinner has numbers 2, 5, and 10 and a wild space where students can choose their own number.



Stage 7



Stage 7. Students roll a number cube and spin a spinner and find the product of the two numbers they generated. The spinner has numbers 2–5.



Five in a Row

Stage 1

Directions:

- Partner A:
  - Put a paper clip on 2 numbers in the grey row.
  - Multiply the numbers.
  - Cover the product of the 2 numbers with a counter.
- Partner B:
  - Move 1 of the paper clips, multiply the numbers, and cover the product with a counter.
- Take turns. The first partner to cover 5 squares in a row wins.

40	2	3	30	5
6	20	8	15	10
100	15	2	16	50
12	9	16	20	25
4	1	50	4	100

1	2	3	4	5	10

Stage 1.
Students multiply using factors of 1–5 and 10. Partner A chooses two numbers and places a paperclip on each number. They multiply the numbers and place a counter on the product. Partner B moves one of the paper clips to a different number, multiplies the numbers, and places a counter on the product. Students take turns moving one paper clip, finding the product, and covering it with a counter.

Stage 2

Directions:

- Partner A:
  - Put a paper clip on 2 numbers in the grey rows.
  - Multiply the numbers.
  - Cover the product of the 2 numbers with a counter.
- Partner B:
  - Move 1 of the paper clips, multiply the numbers, and cover the product with a counter.
- Take turns. The first partner to cover 5 squares in a row wins.

1	2	3	4	5	6
7	8	9	10	12	14
15	16	18	20	21	24
25	27	28	30	32	35
36	40	42	45	48	49
54	56	63	64	72	81

1	2	3	4	5

6	7	8	9

Stage 1.
Students multiply using factors of 1–5 and 10. Partner A chooses two numbers and places a paperclip on each number. They multiply the numbers and place a counter on the product. Partner B moves one of the paper clips to a different number, multiplies the numbers, and places a counter on the product. Students take turns moving one paper clip, finding the product, and covering it with a counter.

Resources

Click on Yellow Buttons for Links

Vocabulary Cards

IM Center Labels with Guides

Lesson Planning

Centers By Grade

Links to Free and TPT Resources

Center Navigation Tool

Math Centers By Standard

Unit Plans Example Grade 3

Assessment Tool

Kinda Techy Teachers TPT Store

Thank you for all the support. If you have any questions, share them with us in our IM Math FB group **HERE**.

Click here to check out our Link Tree for free resources , TPT, and Socials.

Presented By, Kinda Techy Teachers