

Recommended Math Components

Kindergarten - 2nd

Component	Description
1. Fluency	Students practice math facts on their individual level and move up levels towards or above grade level benchmarks. Supports: Reflex Math
2. Problem Solving	Students solve rigorous mathematical tasks. Teachers choose the task, anticipate student solving, track and question student grapple time, choose and sequence students to share in a teaching narrative, and facilitate a student led discourse to focus student thinking on one learning target. Supports: Anticipatory Framework; Problem Trajectories
3a. Routines	Students work on reviewing skills they have not yet mastered but are prioritized for them to reach mastery at their grade level. Sometimes in small group, sometimes as part of whole group routines. Supports: High Yield Routines Document
3b. Jars	Jars is a particular routine done weekly in K-4 that allows students to build a sense of flexible quantity by manipulating tiles and/or money in order to figure out how many in a efficient and elegant way. (Building blocks for skip counting, place value, pre-multiplication, area, volume, perimeter, algebraic thinking, factoring, and more).
4. Workshop	Students work on other math skills in units of study mapped out in grade level scope and sequences. (Geometry, Measurement, etc). Units are taught to key grade level benchmark understandings and assessed continuously to provide feedback to teachers, students, and families. Supports: Eureka/EngageNY Tools, CFL Units, Manipulatives
5. Intervention	Students are split into homogenous groups based on need and level of mastery for specific grade level standards. Students receive coaching twice a week for 45 minutes on standards identified by the instructional team as high priority and not yet mastered. All teachers work with coaching groups (across classrooms) to allow for student needs to be supported. Supports: All instructional materials.

K-2 Scheduling
When will I teach what?

Grade Level	Component	Time
Kindergarten	Math Workshop Lesson	35-40 min, 4 times/wk
	Jars	35-40min 1 time/wk
	Problem Solving	25 min, 2-5 times/wk
	Routines, Fluency	15 min, daily
Grade 1	Math Workshop Lesson	60 min, 4 times/wk
	Jars	30-45min 1 time/wk
	Problem Solving	30 min, daily
	Routines	15 min, daily
	Fluency	30min 2 time/wk (center)
	Intervention, Small Group Instruction	30 min, 1-2 times per week
Grade 2	Math Workshop Lesson	60 min 4 times/wk
	Jars	45min 1 time/wk
	Problem Solving	30-35 min, daily
	Routines	15-20 min, daily
	Fluency	30min 2 time/wk (center)
	Intervention, Small Group Instruction	30 min, 1-2 times per week

Recommended Math Components

3rd - 5th Grade

Component	Description
1. Fluency	Students practice math facts on their individual level and move up levels towards or above grade level benchmarks. Supports: Reflex Math
2. Problem Solving	Students solve rigorous mathematical tasks. Teachers choose the task, anticipate student solving, track and question student grapple time, choose and sequence students to share in a teaching narrative, and facilitate a student led discourse to focus student thinking on one learning target. Supports: Anticipatory Framework; Problem Trajectories
3a. Routines 3b. Games	MATH ROUTINES are short daily activities that occur in a regular rotation of 3-5 days. Routines provide opportunities outside the math lesson to deepen understanding of key math concepts and to develop number sense, skills and fluency. MATH GAMES are fluency activities that align with curricular units and give targeted practice to meet the needs of specific students or groups of students. These activities may include flash and dot card games, dice games, or facts practice. Teachers observe, assess, and encourage students to think ahead and be mathematically strategic as they solve problems or play a math card or board game. Supports: High Yield Routines Document
4. Workshop	Students work through units of study mapped out in grade level scope and sequences. (Geometry, Measurement, etc). Units are taught to key grade level benchmark understandings and assessed continuously to provide feedback to teachers, students, and families. See below for a detailed unpacking of the workshop block. Supports: EngageNY Tools, CFL Units, Array Jars, Manipulatives, Workshop Overviews
5. Math Coaching (Intervention)	Students are split into homogenous groups based on need and level of mastery for specific grade level standards. Students receive coaching twice a week for 45 minutes on standards identified by the instructional team as high priority and not yet mastered. All teachers work with coaching groups (across classrooms) to allow for student needs to be supported. Supports: All instructional materials.

3th-5th Scheduling
When will I teach what?

Grade Level	Component	Time
All Grades	Math Workshop Lesson	35-50min 4-5x a week
	Problem Solving	20-30min 4-5x a week
	Games, Routines	Fit in as available
	Math Coaching	20 min, twice a week per student

Recommended Math Components
6th - 8th

Component	Description
1. Fluency	Students practice math facts on their individual level and move up levels towards or above grade level benchmarks. Middle school goals builds towards I can perform operations with rational numbers. Supports: Reflex Math; Dreambox Learning; Online tools
2. Workshop	Students work through units of study mapped out in grade level scope and sequences. (Geometry, Measurement, etc). Units are taught to key grade level benchmark understandings and assessed continuously to provide feedback to teachers, students, and families. See below for a detailed unpacking of the workshop block. Supports: Illustrative Mathematics, EngageNY Tools, CFL Units, Manipulatives, Dreambox learning
3 Math Coaching (Intervention)	Students are split into homogenous groups based on need and level of mastery for specific grade level standards. Students receive coaching twice a week for 45 minutes on standards identified by the instructional team as high priority and not yet mastered. All teachers work with coaching groups (across classrooms) to allow for student needs to be supported. Supports: All instructional materials.

6th - 8th
When will I teach what?

Grade Level	Component	Time
All Grades	Math Workshop Lesson	45-60 min, daily
	Fluency	5-20min Daily or 1 block weekly
	Math Coaching	Dependent of school schuedling

Components of Math Instruction
A Deeper Look into Workshop, Problem Solving & Math Coaching

Math Workshop

Math Workshop is the instructional content block. Each workshop lesson addresses a specific learning target and is designed to promote discourse to drive student understanding. Teachers design questions to guide students to actively construct their own conjectures and generalizations, rather than directly disseminating formulas without students' deep understanding. See Workshop Unit Overviews for more unpacking.

Component/Time	Description/Purpose
Pose the Problem/Do Now (5-10 min)	Short activity (usually a word problem) that allows for students to engage with relevant content for the lesson for the day. Designed to promote discussion and curiosity.
Launch (5-10 min)	Standards aligned tasks designed to lead students to the learning target through authentic experiences. Students are encouraged to model their thinking and compare their work with other classmates. Teachers design questions to lead students to constructing their own understanding rather than the teacher doing the heavy lifting for them.
Independent Work & Small Group Support (20-40min)	Based on anecdotal data from the lesson, teacher releases students to work independently while pulling a small group who may need more support to master content for the day. With two teachers in the room two small groups could be running, or one teacher could do one-on-one conferring.
Debrief (10-20 min)	This can take on one of a few forms, however the most effective common is as follows: Strategically selected student work (1-4 pieces) is presented building towards a selected synthesis goal that reveals or confirms growth on a learning target. Teacher acts as facilitator of student work share out, and poses strategic high-leverage questions to guide students to a synthesis statement of the lesson's learning. At times, this can be left unresolved to be pick-up the following day.
Exit Ticket (10 min)	Completely independent assessment of students understanding. Students complete with no support from teacher or manipulatives unless teacher feels that students would have no access without support or that the exit ticket would not provide informative data. Teachers use exit ticket data to inform next day's instruction.
Teacher Data Reflection	This should occur after workshop each day in conjunction with your co-teacher (or other support team: para, etc). Teachers should review exit tickets and analyze trends through a quick sort. What percentage of students got it, partially got it, didn't get it. What are the big misconceptions? Teachers should also use this data to plan for groupings and preferential seating for the next day (Who understands and how can I push them further? Who is almost there and how can I use scaffolds so that they grasp the learning target? Who is really struggling and how can I differentiate to support them?).

In math workshop, co-taught classrooms can choose from a variety of models for co-teaching. Below you will find all models, and when you should use them (listed in order of frequency used in classrooms).

Model	Description	Frequency of use	When to use
One Teach, One Assist	One teacher leads the lesson while one teacher circulates and pops in to support students one-on-one.	Frequently used	Used when the bulk of the class is within a similar track to understanding the content, but a few students may need one-on-one support at certain intervals.
Alternate Teaching	One teacher leads the lesson to the majority of the class while one teacher has a small group working along with the lesson. The small group follows the same trajectory and participates in the lesson with the rest of the class, but have added materials or support in their group.	Frequently used	Used when there is a clear group of students (4-6) that are outliers and either need more support to understand the content or would need additional challenges because they are showing solid mastery of the grade-level content.
One Teach, One Observe	One teacher leads the lesson while one teacher observes and takes notes on student work (or any other aspect that the teaching pair has decided on).	Sometimes used	Used when there aren't gaps in understanding that would merit individual or small group support during instruction and teachers feel thorough anecdotal notes would be more beneficial than additional student support.
Parallel Teaching	Both teachers teach same content, but independently of one another in partial-class groups.	Sometimes used	Used when a smaller group would be beneficial to the structure of the lesson. Not used as frequently because this model does not lend itself to supporting differentiation, but can be very useful during a project or similar task.
Team Teaching	Both teachers teach the whole class at the same time (i.e. one brain two bodies).	Rarely used	Infrequently used because nearly every workshop lesson requires some form of differentiation that can be better met with a different model of co-teaching.
Station Teaching	Teachers teach one aspect of the content in their own group as students switch from group to group.	Rarely used	Infrequently used because of the setup/schedule of workshop.

Supports Include: Scope and Sequence, EngageNY Seed Lessons, Reflex Math or other computer tools, Manipulatives

Problem Solving

Our problem solving block is based on Cognitively Guided Instruction (CGI), which is designed to build on students' natural problem solving ability to draw out their inventive strategies and deepen their comprehension of word problems and complex mathematical situations.

Problem solving is implemented in different ways in different classrooms, typically changing based on the teacher's anticipatory framework. What follows is the typical set-up for a problem solving block. Teachers should have a predictable sequence for the block at the beginning of the year to establish routines. See additional documents for detailed plans per grade level and planning tools.

Component/Time	Description/Purpose
Introduction to the Problem (3 - 5 minutes)	With the problem hidden, the teacher invests the students in the problem solving situation by providing some sort of brief narrative. Once teacher has built interest, teacher reveals the problem and reads verbatim. Then, teacher covers up the problem and asks three students to repeat the problem (teacher may give students the numbers or names if they forget). Teacher should try to call on students with a range of mastery. If a student struggles, go to another student and then return to previous student. Teacher may then ask a comprehension question to gauge understanding before students go off to solve independently, but teacher should be mindful that the comprehension question not give away a solution strategy or answer. There should be some form of silent signal so teacher can call on a child that is confused and a child that is certain. There should be no indication of who is correct.
Independent Work Time (10 - 15 minutes)	Teacher circulates the room and observes students' solution strategies. Teacher should only intervene to ask guiding questions and not to tell students what to do to solve the problem. Teacher may choose to have manipulatives out for students to use to solve, though this is typically only provided in the upper grades for students who have shown significant prior need for these tools.
Share (10 - 15 minutes)	Teacher chooses 3 strategies that represent different ways of thinking about the problem. Teacher records student thoughts as students' share and asks clarifying question of the rest of the class to promote engagement. Questions should be open-ended. Once shares are complete, teacher asks for similarities and differences between the strategies and for explanations as to why each strategy worked. Be sure to collaboratively compose an equation that represents what happened in the problem, and ask for rationale as to why student equations worked if they do not match.
Editing and Revision (5 minutes)	If time allows, students return to their seats and get the chance to either edit their work, explain what confused them in writing, or move on to an additional challenge problem on the back of the problem solving sheet for the day.

Problem solving can take many forms and, with the support of instructional coaches, teachers can choose to change up their sequence to fit the needs of their class. This block also allows for for a variance of co-teaching

models, including team teaching.

Supports Include: Problem Solving Anticipatory Framework, Problem Trajectories, Problem types visual

Math Coaching (Intervention)

Math coaching is a powerful tool for math instruction each week. Students are split into homogenous groups based on need and level of mastery for specific grade level standards. Math coaching groups are changed based on Assessment data. They are also flexible between Assessment cycles.

There are a wealth of resources in curriculum libraries, and online for for planning math coaching materials. However, these math coaching lessons are not pre-made - they are responsive to students needs and are often pulled right from exit tickets, or games/problem solving problems, etc.

Supports Include: All instructional resources