FEATURES TO ENGAGE STUDENTS

At the Center for Mathematics and Teaching, we know that all students have the potential to achieve in mathematics, we believe that the development of mathematics should reflect the connectedness of Big Ideas into a coherent whole, and we aim to make mathematics inviting and inclusive to more students. Many features in the *MathLinks* program engage students in problems and routines that will help them experience success as they see the beauty and utility of mathematics. Some are located in the Student Packets while others are located under Packet Resources in the Teacher Portal.

The Student Packet (SP)	**Packet Resources in the Teacher Portal**
Features are embedded into: • Lessons • Practice (for the lessons) • Review (for the packet) • Spiral Review (for the program)	Features are located in: • Essential Skills (ES) • Math Talks (MT) • Nonroutine Problems (NP) • Tasks (T) • Projects (P) • Technology Activities (TA)

KINESTHETIC ACTIVITIES

Building conceptual understanding is at the heart of every *MathLinks* Core course, and many lessons employ kinesthetic methods to engage students and attain this goal. For Grade 6, here are some exemplars.

- Packet 1 (Statistics and Probability): Students learn about measures of center and spread through a Name Score activity where they move around the room as human data points.
- Packet 2 (Number Sense): By building rectangles with square tiles, students learn about prime, composite, and square numbers, and factors, which lead to an understanding of greatest common factors.
- Packet 3 (Ratios and Proportional Relationships): Paint Mixture picture-cards lead students to an intuitive understanding of ratios and how to compare them. This leads to the creation of tape diagrams as a tool to problem-solve with ratios.
- Packet 7 (Expressions and Equations): Students build growing geometric patterns with square tiles, keep track of data in tables, graph the data on the coordinate plane, and write rules using words and algebraic symbols
- Packet 9 (Geometry): Students use dot paper drawings, with the option of cutting them out, to derive the area formulas of geometric figures. Students also use tangram pieces to form figures for which they apply their knowledge of area formulas. Students use nets of solids to understand surface area.

TECHNOLOGY ACTIVITIES

MathLinks promotes the use of technology for exploration of concepts, but the program is not technology driven. All *MathLinks* Technology Activities (TA) are open source and available to all. We have partnered with mathematics technology leaders like Desmos and Geogebra to align many of their meaningful activities directly to our lessons. Many technology activities come with a *MathLinks* worksheet as a companion to the technology activity to facilitate deeper thinking and connect it to a *MathLinks* lesson. TA are located under Packet Resources in the Teacher Portal.

ACTIVITY ROUTINES

Activity Routines are recurring features in *MathLinks*, designed to engage students in problem solving and practice. Detailed instructions for each Activity Routine, along with introductory sample activities can be found under General Resources in the Teacher Portal. We recommend that teachers use these samples to establish classroom norms and procedures for the activities.

Activity Routines – Grade 6	Packet / Main Domain									
	1 SP	2 NS	3 RP	4 NS	5 RP	6 EE	7 EE	8 EE	9 G	10 NS
Big Square Puzzles			SP NP		SP	SP		SP		
Computational Fluency Challenge	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP
Four in a Row		NP	NP	NP	NP	NP	ES	NP	NP	
Match and Compare Sorts	SP	SP				SP	SP	SP	SP	
Math Talks	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT
Open Middle Problems	ES				NP	ES		ES NP	ES	NP
Poster Problems	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP
Why Doesn't It Belong?	SP	SP		SP	SP		SP		SP	
Using the *MathLinks* Rubric	SP T	SP T	SP T	SP T	SP T	SP T	SP T	SP T	SP T	SP T

PUZZLES, GAMES, AND CARD SORTS

Puzzles, games, and card sorts add variety and promote student interaction as students develop skills and practice concepts. These activities frequently include a reproducible.

Packet	Puzzles	Games	Card Sorts
1 (SP)			These Are – These Aren't (SP) Waqueyzaquey (SP) Match and Compare Sort (SP)
2 (NS)	Number Puzzles (NP)	The Factor Game (SP) The Product Game (SP) Four-in-a-Row (NP)	Match and Compare Sort (SP)
3 (RP)	Big Square Puzzles (SP, NP) I Have, Who Has? (SP)	Four-in-a-Row (NP)	Paint Mixtures (SP) Measurement Systems (SP)
4 (NS)		Four-in-a-Row (NP)	Rate Problems (SP)
5 (RP)	Big Square Puzzle (SP)	Four-in-a-Row (NP)	
6 (EE)	Big Square Puzzle (SP)	Four-in-a-Row (NP) Two Card Games (NP)	Match and Compare Sort (SP)
7 (EE)		Four-in-a-Row (ES) Battling Ships (ES)	Match and Compare Sort (SP) Animal Card Sort (NP)
8 (EE)	Big Square Puzzle (SP) I Have, Who Has? (SP)	Four-in-a-Row (NP) Equation Memory Game (NP)	Match and Compare Sort (SP)
9 (G)	Tangram Puzzles (ES) Tangram Polygons (NP)	Four-in-a-Row (NP)	Match and Compare Sort (SP) Polyhedra Sort (NP)
10 (NS)	Back and Forth (SP) Battling Ships (SP)	X Marks the Spot (ES, NP) Order It (NP)	True-False Explain (SP),

REAL LIFE AND MATHEMATICAL PROBLEMS

Real life and mathematical problems provide natural opportunities to work on the Standards for Mathematical Practice in the context of grade level mathematics. These problems sometimes create a need to know, and sometimes provide opportunities to apply math concepts to meaningful and interesting work. Look for a note on the Answer Key when "Using the *MathLinks* Rubric," is an appropriate feedback or assessment enhancement.

Packet	Student Packet (SP) Opening Problems, Lessons, Practice	Packet Resources in the Teacher Portal	
		Tasks (T)	Projects (P)
1 (SP)	Beach Cleanup* Ages of Presidents	Choosing a School Mascot	Conduct a Survey
2 (NS)	The Locker Problem*	Where do They Fit?	
3 (RP)	Nana's Chocolate Milk* The Grain Grocer The Assembly Slime	The Toothpaste Problem	Our Heritage Through Food
4 (NS)	Chocolate Bars	Artistic Division A Triple Celebration	
5 (RP)	Growth Spurts* Text Messaging	Priya's Budget Building a House	Painting Rooms
6 (EE)	Problem of 4s* Perimeter of a Rectangle	One Grain of Rice	Create Your Own Menu
7 (EE)	The Keychain Fundraiser* Raising Money for Music*	Choosing a Car The Soccer Fundraiser The Pineapple Party	Your Savings Plan
8 (EE)	Leticia's Training	Interpreting Equations	
9 (G)	Which Rug is Bigger?* Who Needs More Paint? The Food Drive	Baseball Packaging Problem	Construct a Box How Many Plastic Bottles?
10 (NS)	House Plans* A Basketball Court*	Sea Diving Reading a Map	

*Extensions or followups are included in the packet or program.