

Assistive Technology Devices for Students Struggling in Mathematics

This document contains information on the range of assistive technology devices that can be used by students who are struggling in mathematics. Devices are available to support basic calculations through higher level math skills. Devices are also available to support students who are experiencing difficulty in math due to writing and/or reading difficulties. The types of assistive technology devices used to support mathematics are determined by individual student abilities and needs as well as the required mathematical tasks across all instructional environments.

In this document, assistive technology devices are organized into various categories based on the primary features or applications of the technology. Moreover, the age ranges for which the devices are appropriate are identified in the following categories: elementary, middle, and high school. Lastly, tools are linked to the various math skills addressed in the Georgia Performance Standards. It is recommended that individuals utilizing this document refer to the standards to determine the specific skills that are addressed at each grade level.

- Number and Number Relations
- Measurement
- Geometry
- Algebra
- Data Analysis and Probability

The assistive technology devices referenced in this document are included to provide examples of different types of devices used by students with disabilities to accomplish educationally relevant tasks in instructional and access areas. The document does not include all assistive technology devices within a device category and inclusion of a particular device does not constitute endorsement by the Georgia Department of Education. Additional devices may be added to the document by contacting the Georgia Project for Assistive Technology.

Additional information about the assistive technology devices referenced in this document is available on the Georgia Project for Assistive Technology's website at <http://www.gpat.org>. Additional information about the Georgia Performance Standards is available on the Georgia Department of Education's website at <http://www.georgiastandards.org/>.

Device Category	Examples	Age Range			Content Strands				
		Elementary	Middle School	High School	Number and Number Relations	Measurement	Geometry	Algebra	Data Analysis & Probability
	Calculation and Problem Solving								
Manipulatives	Counters, fraction, tangram, slideline, patterns (Kaidy Educational Resources dba MathFun.com, Beacon-Ridge)	X	X	X	X	X	X	X	X
	Math Line (Onion Mountain Technology)								
	Master Fraction (Onion Mountain Technology)								
	BarCulator (Kaidy Educational Resources dba MathFun.com)	X	X		X				
	PieCulator (Kaidy Educational Resources dba MathFun.com)	X	X		X				
	Cranmer Abacus (APH)	X	X	X	X				
Virtual Manipulatives	IntelliMathics (IntelliTools)	X	X	X	X	X	X		X
	National Library of Virtual Manipulatives (http://nlvm.usu.edu/en/nav/)	X	X	X	X	X	X	X	X
Charts & Study Guides	Paper based								
	• Flip charts, Quick Study guides (Amazon.com, Publisher provided)	X	X	X	X	X	X	X	
	• Quick Math Books (Curriculum Associates)	X	X	X	X	X	X	X	X
	• CliffNotes (www.cliffsnotes.com , bookstores)		X	X	X	X	X	X	X
	• Teacher made flow chart, cheat sheet	X	X	X	X	X	X	X	X

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Charts & Study Guides (continued)	Application component								
	• Microsoft Student with Encarta (Microsoft)	X	X	X	X	X	X	X	X
	Online resources								
	• Ask Dr. Math –Math Forum @ Drexel (http://mathforum.org/dr.math/)	X	X	X	X	X	X	X	X
	• Math.com (www.math.com/)	X	X	X	X	X	X	X	X
	• WebMath.com (www.webmath.com)	X	X	X	X	X	X	X	X
	• Algebra.help (www.algebrahelp.com)	X	X	X				X	
	• MathOnline (www.mathonline.org/)	X	X	X	X	X	X	X	X
	• SparkNotes (www.sparknotes.com/math/)	X	X	X	X	X	X	X	X
Process Aids	StepPad (Attainment)	X	X	X	X	X	X	X	X
	Voice Cue (Attainment)	X	X	X	X	X	X	X	X
Calculators	Large Key Calculators								
	• Dino Junior Big Number (Independent Living Aids)	X	X		X				
	• Sci-Pod Low Vision Scientific Calculator (MaxiAids)		X	X	X				
	• Desk-top Calculator (MaxiAids)	X	X	X	X				
	Talking Calculators								
	• Talking Desktop Calculator (Independent Living Aids)	X	X	X	X				

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Calculators (continued)	<ul style="list-style-type: none"> Pocket Sized Talking 10-digit Calculator (MaxiAids) 	X	X	X	X				
	Fraction Calculators								
	<ul style="list-style-type: none"> TI-15 Explorer Calculator (Onion Mountain Technology) 	X	X	X	X				
	Graphing Calculators								
	<ul style="list-style-type: none"> TI-83, TI-84 (Texas Instruments, office supply and discount stores) 		X	X	X		X		
	<ul style="list-style-type: none"> CFX-9850G+ (Casio, office supply and discount stores) 		X	X	X		X		
	<ul style="list-style-type: none"> Accessible Graphing Calculator (Independent Living Aids) 		X	X	X		X		
	Talking Scientific Calculators								
	<ul style="list-style-type: none"> Talking Scientific Calculator (Independent Living Aids) 		X	X	X		X		
	<ul style="list-style-type: none"> Orion T136 Talking Scientific Calculator (APH, Maxi-Aids) 		X	X	X		X		
	<ul style="list-style-type: none"> Ti - 36x Talking Scientific (Independent Living Aids) 		X	X	X		X		
	Onscreen Calculators								
	<ul style="list-style-type: none"> Windows Standard and Scientific Calculator (Microsoft) 	X	X	X	X				
	<ul style="list-style-type: none"> Big Calc (Don Johnston) 	X	X	X	X				
	<ul style="list-style-type: none"> Giant On-Screen Calculator - free (http://mrjennings.co.uk/teacher/maths/calc.html) 	X	X	X	X				
	<ul style="list-style-type: none"> Large Talking On-Screen Calculator – free (http://www.sensorysoftware.com/software/bigcalculator/index.html) 	X	X	X	X				

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Calculators (continued)	<ul style="list-style-type: none"> Calcu-Scan (Mayer-Johnson) 	X	X	X	X				
	<ul style="list-style-type: none"> Ti -Smart View emulator software (Texas Instruments) 			X	X		X		
	Calculator with Braille input and output								
	<ul style="list-style-type: none"> Braille 'n Speak (Freedom Scientific) 	X	X	X	X				
Software for Graphs and Charts	Microsoft Word (Microsoft)	X	X	X		X			X
	Microsoft Excel (Microsoft)	X	X	X		X			X
	Graph Club (Tom Snyder)	X	X		X	X			X
	TI Interactive (Texas Instruments)	X	X	X		X			X
	Geometer Sketchpad (Key Curriculum Press)	X	X	X		X			X
	Scientific Notebook (MacKichen Software)								
Portable Math Processors	CalcuScribe (CalcuScribe)	X	X	X	X				
	Palm OS with math software (Handango, ImagiWorks)		X	X	X	X	X	X	X
Electronic Math Processing Software	Basic Operations								
	<ul style="list-style-type: none"> MathPad (IntelliTools) 	X			X				
	<ul style="list-style-type: none"> MathPad Plus (IntelliTools) 	X	X	X	X				
	Higher Level Operations								
	<ul style="list-style-type: none"> Equation Editor -On MS Office CD (Microsoft) 		X	X	X			X	

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Electronic Math Processing Software (continued)	• Math Type (Design Science)		X	X	X			X	
	• Microsoft Student with Encarta (Microsoft)	X	X	X	X		X	X	X
	• TI Interactive (Texas Instruments)		X	X	X		X	X	X
	• Virtual Pencil series (Henter Math)	X	X	X	X			X	
	• Scientific Notebook (MacKichan Software)	X	X	X	X			X	
	• Geometer's Sketchpad (Key Curriculum Press)		X	X			X		
	• Algebrator (Sofmath)		X	X				X	
	Money								
Manipulatives	Bills, coins - Hands on Money (Attainment)	X	X	X	X				
	Bills, coins, stickers, trays - (Creative Presentation Resources, PCI Educational Publishing)	X	X	X	X				
	Check writing and banking sets (PCI Educational Publishing)	X	X	X	X				
	Coin Abacus (PCI Educational Publishing)	X			X				
Charts & Study Guides	Money Books (Attainment Company)	X	X	X	X				
Calculators	Coinulator (PCI Educational Publishing)	X			X				
	Money Calc (PCI Educational Publishing)	X	X		X				

Device Category	Examples	Age Range			Content Strands				
		Elementary	Middle School	High School	Number and Number Relations	Measurement	Geometry	Algebra	Data Analysis & Probability
	Measurement								
Adapted Rulers	Master Ruler (Onion Mountain Technology)	X	X	X		X			
	Finger Grip Ruler (Onion Mountain Technology)	X	X	X		X			
	Large Number Rulers (Fiskars, office supply)	X	X	X		X			
Adapted Tape Measure	Fractional tape measure (Lufkin, StanleyTools)	X	X	X		X			
	Laser/ Digital, tapeless measures (StanleyTools)	X	X	X		X			
	Talking Tape Measure (LLS Group, MaxiAids)	X	X	X		X			
Adapted Measuring Devices	Talking Measuring Jug (Independent Living Aids)	X	X	X		X			
	Teaspoon Measuring Syringe (Independent Living Aids)	X	X	X		X			
	Color Coded Measuring Cups (MaxiAids)	X	X	X		X			
	Big Number Funnel Set (MaxiAids)	X	X	X		X			
	Time								
Manipulatives	TimeWheel 2 (Attainment)	X	X			X			
	Master Clock (Onion Mountain Technology)	X	X			X			
Adapted Watches	Talking Watch (Independent Living Aids)	X	X	X		X			
	Vibrating Watch (Independent Living Aids)	X	X	X		X			
	Dual Time Watch (Timex)	X	X	X		X			
	Teaching watches (Timex, Zoobee)	X				X			