

Common Core Shifts in Mathematics

Implications for Students, Teachers, and Administrators

Mathematics Shift 1: Focus		
What the Student Does...	What the Teacher Does...	What the Principal Does...
<ul style="list-style-type: none"> • Spend more time thinking and working on fewer concepts. • Being able to understand concepts as well as processes (algorithms). 	<ul style="list-style-type: none"> • Make conscious decisions about what to excise from the curriculum and what to focus • Pay more attention to high leverage content and invest the appropriate time for all students to learn before moving onto the next topic. • Think about how the concepts connects to one another • Build knowledge, fluency and understanding of why and how we do certain math concepts. 	<ul style="list-style-type: none"> • Work with groups of math teachers to determine what content to prioritize most deeply and what content can be removed (or decrease attention). • Determine the areas of intensive focus (fluency), determine where to re-think and link (apply to core understandings), sampling (expose students, but not at the same depth). • Determine not only the what, but at what intensity. • Give teachers enough time, with a focused body of material, to build their own depth of knowledge.
Mathematics Shift 2: Coherence		
<ul style="list-style-type: none"> • Build on knowledge from year to year, in a coherent learning progression 	<ul style="list-style-type: none"> • Build on knowledge from year to year, in a coherent learning progression 	<ul style="list-style-type: none"> • Ensure that teachers of the same content across grade levels allow for discussion and planning to ensure for coherence/threads of main ideas
Mathematics Shift 3: Fluency		
<ul style="list-style-type: none"> • Spend time practicing, with intensity, skills (in high volume) 	<ul style="list-style-type: none"> • Push students to know basic skills at a greater level of fluency • Focus on the listed fluencies by grade level • Create high quality worksheets, problem sets, in high volume 	<ul style="list-style-type: none"> • Take on fluencies as a stand-alone CC aligned activity and build school culture around them.

Mathematics Shift 4: Deep Understanding

What the Student Does...	What the Teacher Does...	What the Administrator Does...
<ul style="list-style-type: none"> • Show, through numerous ways, mastery of material at a deep level • Use mathematical practices to demonstrate understanding of different material and concepts 	<ul style="list-style-type: none"> • Facilitate evidence based conversations with students, dependent on the text • Have discipline about asking students where in the text to find evidence, where they saw certain details, where the author communicated something, why the author may believe something; show all this in the words from the text. • Plan and conduct rich conversations about the stuff that the writer is writing about. • Keep students in the text • Identify questions that are text-dependent, worth asking/exploring, deliver richly. • Provide students the opportunity to read the text, encounter references to another text, another event and to dig in more deeply into the text to try and figure out what is going on. • Spend much more time preparing for instruction by reading deeply. 	<ul style="list-style-type: none"> • Allow teachers the time to spend more time with students writing about the texts they read- and to revisit the texts to find more evidence to write stronger arguments. • Provide planning time for teachers to engage with the text to prepare and identify appropriate text-dependent questions. • Create working groups to establish common understanding for what to expect from student writing at different grade levels for text based answers. • Structure student work protocols for teachers to compare student work products; particularly in the area of providing evidence to support arguments/conclusions.

Mathematics Shift 5: Application

What the Student Does...	What the Teacher Does...	What the Administrator Does...
<ul style="list-style-type: none"> • Apply math in other content areas and situations, as relevant • Choose the right math concept to solve a problem when not necessarily prompted to do so 	<ul style="list-style-type: none"> • Apply math including areas where it's not directly required (i.e. in science) • Provide students with real world experiences and opportunities to apply what they have learned 	<ul style="list-style-type: none"> • Support science teachers about their role of math and literacy in the science classroom • Create a culture of math application across the school

Math Shift 6: Dual Intensity

What the Student Does...	What the Teacher Does...	What the Administrator Does...
<ul style="list-style-type: none"> • Practice math skills with an intensity that results in fluency • Practice math concepts with an intensity that forces application in novel situations 	<ul style="list-style-type: none"> • Find the dual intensity between understanding and practice within different periods or different units • Be ambitious in demands for fluency and practice, as well as the range of application 	<ul style="list-style-type: none"> • Provide enough math class time for teachers to focus and spend time on both fluency and application of concepts/ideas