We collected two weeks’ worth of middle school math assignments from 12 middle schools in six different school districts across three states.

We defined assignments as any in-school or out-of-school task that a student completed independently or with a group of peers.

We reviewed a total of 1,853 math assignments, collected from 63 teachers in 91 courses, ranging from Math 6 through Geometry.

**WHAT WE DID**

**WHAT WE FOUND**

More than 70% of math assignments were at least partially aligned with one or more grade- or course-appropriate Common Core math content standards. And over two-thirds of these aligned tasks addressed multiple standards, either within the same domain or across domains in the same grade level.

Aligned to at least part of one grade- or course-appropriate Common Core math content standard / 73%

Addresses multiple standards within the same grade or course / 68%

Only 9% of assignments pushed student thinking to higher levels. The overwhelming majority required low cognitive demand, with more than 9 out of 10 assignments limiting students to recalling a fact, performing a simple procedure, or applying basic knowledge to a skill or concept.

**COGNITIVE CHALLENGE OF ASSIGNMENTS**

*Based on Norman L. Webb’s Depth of Knowledge (DOK) Levels*

32% RECALL AND REPRODUCTION

Recall a fact, term, principle, concept; perform a routine procedure or a simple algorithm; or apply a formula.

59% BASIC APPLICATION OF SKILLS/CONCEPTS

Use information, apply conceptual knowledge, select appropriate procedures, complete two or more steps with decisions, complete routine problems, organize/display data, or interpret/use sample data.

9% STRATEGIC THINKING

Requires reasoning or developing a plan or sequence of steps to approach problem; some decision-making and justification; abstract, complex, or non-routine; often more than one possible answer.

0% EXTENDED THINKING

An investigation or application to real world; requires time to research, problem-solve, and process multiple conditions; requires non-routine manipulations across disciplines/content areas/multiple sources.

For a copy of our Math Assignment Analysis Guide, go to: [www.edtrust.org/equityinmotion](http://www.edtrust.org/equityinmotion)
Assignments were more than twice as likely to focus on procedural skills and fluency compared with conceptual understanding or application of a mathematical concept. Only 39% of assignments incorporated varied types of mathematical representations.

**Conceptual Understanding**
Students access concepts from a number of perspectives in order to see math as more than a set of mnemonics or discreet procedures.

**Procedural Skills and Fluency**
Students have speed and accuracy in calculation in order to have access to more complex concepts and procedures.

**Application**
Students use math in situations that require mathematical knowledge.

**Communicating Mathematical Understanding**
Less than one-third, 32% of math assignments provided an opportunity for students to communicate their thinking or justify their responses. The majority of assignments were answer-focused and did not ask students to justify or explain their thinking at any point within the task.

**Writing Demand of Assignments**
- 63%: No writing or communication
- 32%: Short phrases up to 2 sentences
- 4%: Paragraph or more

**Opportunity to Communicate Mathematical Understanding**
32%

**Motivation and Engagement**
Students were rarely given opportunities for choice in their assignments, 3%, and only 2% of tasks provided some aspect of relevancy using real-world experiences. Very few assignments went beyond superficial attempts to connect with real-world events or students’ own personal experiences.

**Choice and Relevancy**
- Students have choice in the assignment in one of the following areas: content, product, process, or mathematical tool / 3%
- The task is relevant. It focuses on a poignant topic, uses real-world materials, and/or gives students the freedom to make connections to their experiences, goals, interests, and values / 2%

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