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Alignment Between the California Common Core Content Standards for Higher Mathematics (9-12) and the California State University Entry-Level Mathematics Placement Assessment

# The California Common Core Higher Mathematics Standards (9-12) and the CSU Entry Level Mathematics Placement Test are moderately aligned.

*Summary of Attainment of Acceptable Alignment Levels for Four Content-Focused Criteria as Rated by Six Reviewers*

| Standards | Alignment Criteria | | | |
|---|---|---|---|---|
| | Categorical Concurrence (Content) | Depth of Knowledge Consistency (DOK) | Range of Knowledge | Balance of Representation |
| 1. Number and Quantity | YES | YES | NO | WEAK |
| 2. Algebra | YES | YES | NO | YES |
| 3. Interpreting Functions | YES | YES | NO | YES |
| 4. Geometry | NO | WEAK | NO | YES |
| 5. Statistics and Probability | NO | YES | NO | YES |

# Depth of Knowledge Alignment is at the Lowest Levels of Cognitive Demand

*Number and Percentage of CSU ELM Assessment Items and California Common Core Higher Mathematics (9-12) Objectives Within Each Level of Cognitive Demand (DOK Level) (Marzano Scale)*

| | Level 1 Retrieval | | Level 2 Comprehension | | Level 3 Analysis | | Level 4 Knowledge Utilization | |
|---|---|---|---|---|---|---|---|---|
| | # ELM Items ------------- # CC Objs | % ELM Items ------------- % CC Objs | # ELM Items ------------- # CC Objs | % ELM Items ------------- % CC Objs | # ELM Items ------------- # CC Objs | % ELM Items ------------- % CC Objs | # ELM Items ------------- # CC Objs | % ELM Items ------------- % CC Objs |
| ELM | 19 | 42 | 19 | 42 | 7 | 15.5 | 0 | 0 |
| CCSSM | 36 | 17 | 101 | 49 | 65 | 31 | 3 | 1 |

## The majority of the Common Core's Algebra objectives are at the lowest levels of cognitive demand (DOK). Percentage of objectives requiring higher order thinking is higher in Functions, Geometry, and Stats & Probability.

*Depth of Knowledge Level of the CA-CCSSM (9-12) Objectives as Rated by Six Reviewers*

| Category | DOK Level | % Objs w/in Std by DOK Level | Categorical Concurrence |
|---|---|---|---|
| 1. Number and Quantity | 1 | 56 | YES |
|  | 2 | 40 |  |
|  | 3 | 3 |  |
| 2. Algebra | 1 | 31 | YES |
|  | 2 | 51 |  |
|  | 3 | 17 |  |
| 3. Interpreting Functions | 1 | 7 | YES |
|  | 2 | 67 |  |
|  | 3 | 22 |  |
|  | 4 | 1 |  |
| 4. Geometry | 1 | 4 | NO |
|  | 2 | 36 |  |
|  | 3 | 59 |  |
| 5. Statistics and Probability | 1 | 2 | NO |
|  | 2 | 44 |  |
|  | 3 | 47 |  |
|  | 4 | 5 |  |
| Total | 1 | 17 |  |
|  | 2 | 49 |  |
|  | 3 | 31 |  |
|  | 4 | 1 |  |

## More than 40% of the ELM's Algebra Items are at a Level of Cognitive Demand (DOK) Lower than the Common Core's Algebra Objectives, as are 51% of the ELM's Geometry Items

*Depth-of-Knowledge Consistency Between the CA-CCSSM (9-12) and the CSU ELM as Rated by Six Reviewers; Number of Assessment Items: 45*

| Standards | DOK of Item with regard to the Standard | | | DOK Consistency |
|---|---|---|---|---|
|  | % Under | % At | % Above |  |
| Title | M | M | M |  |
| 1. Number and Quantity | 44 | 41 | 14 | YES |
| 2. Algebra | 43 | 37 | 20 | YES |
| 3. Interpreting Functions | 44 | 32 | 24 | YES |
| 4. Geometry | 51 | 36 | 13 | WEAK |
| 5. Statistics and Probability | 25 | 42 | 33 | YES |
| Total | 42 | 37 | 21 |  |