NYSED/CUNY Fast Track GRASP Math Packets

(Available for free download at http://www.collectedny.org/ftgmp)

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These modules were designed to be used in any of the following program models:

- Distance Learning: For only those EPE programs with NYSED approval: 24 contact hours per packet
  - May also include 6 hours of in-person class time
  - As an additional supplement to classroom instruction providing the students in class have not been given the packets for independent work
- NYSED-approved Fast Track classes (may be used as lessons in math classes)
- ABE/HSE math classes (in class or as additional independent work)

If you have any questions about the administration of a Fast Track Program or a GRASP Distance Learning Program, please contact Rosemary Matt, NYS Director of Accountability at **Rosemary.Matt@cayuga-cc.edu.**

The packets provide practice in the high-priority topic areas on the TASC, as identified by subject experts from the New York State Department of Education. Students develop underlying concepts as an introduction to each topic and then practice applying what they have learned in context. Students work through TASC-style questions followed by guidance on test-taking skills and explanation of answer choice design. Each packet provides instruction on the language of the math topic, which is helpful for all students, and especially for lower-level students and English Language Learners.

Each subject area is divided into part one and part two, for a total of 16 packets.

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The modules are listed below with examples of the topics included:

GEOMETRY

Density - Part 1 & Part 2

Area and Population Density

- area
- population density
- rate: per = “for every”

Volume and the Density of Matter

- volume
- density of matter
- measurement conversion

Lines, Angles, & Shapes: Measuring Our World - Part 1 & Part 2

- geometry definitions (parallel, perpendicular, angles, lines, perimeter vs area vs volume)
- categories of shapes and composite shapes
- similar triangles
- Pythagorean Theorem

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Rigid Transformations: Shapes on a Plane - Part 1 & Part 2

- coordinate grid
- rigid transformations: reflection, translation, rotation
- congruence

PROBABILITY AND STATISTICS

Being Counted: Probability & Statistics - Part 1 & Part 2

- practice with ratios, fractions, and percents
- measures of central tendency (mean, median, mode) and range
- data visualizations: histograms, dot plots, two-way relative frequency tables, etc.
- basic probability (sample space, tree diagrams)
- random sampling & experimental design

ALGEBRA & FUNCTIONS

The Power of Exponents - Part 1 & Part 2

- factors/multiples
- squares/square roots, cubes/cube roots
- fractional (½ & ⅓) and negative exponents
- rules for exponents
- exponential growth & decay

Tools of Algebra: Expressions, Equations, Inequalities - Part 1 & Part 2

- match expressions/equations with context/situations
- area models for combining like terms & the distributive property
- explain steps when solving simple equations
- calculate volume formulas
- inequality notation
- systems of equations (guess and check, using a graph)

Tools of Algebra: Linear Functions - Part 1 & Part 2

- what is and what is not a function
- four views of linear functions (written description, rule/equation, graph, table)
- rate of change/slope and starting amount/y-intercept (in context)
- function notation
- creating and interpreting linear functions

Tools of Algebra: Nonlinear Functions - Part 1 & Part 2

- features of graphs of quadratic, and exponential functions
- matching situation to graph/graph to situation
- comparing linear and nonlinear functions
- matching graph to function

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