

Directions: Arrange the digits 1-9 into three 3-digit whole numbers. Make the sum as close to 1000 as possible.

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	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>	<input type="text"/>
+	<input type="text"/>	<input type="text"/>	<input type="text"/>
<hr/>			

**“YOU CAN’T MAKE A PLANT
GROW BY PULLING ON IT.”**

NYSED Professional development
March, 2019

Population Density:

A Fast Track GRASP
Math Packet

Agenda

- Overview of Fast Track GRASP Math Packets
- Population Density Stations
- Feedback Protocol

Fast Track GRASP Math Packets

- Evaluating Algebraic Expressions & Solving Simple Equations
- Interpreting Features of a Graph
- Basics of Functions
- Exponents & Roots
- Geometric Attributes & the Pythagorean Theorem
- Statistics & Probability
- Rigid Transformations: Shapes on a Plane **Done!**
- Population Density & The Density of Matter **Done!**

Different Models

- GRASP distance learning (18 hours per module, plus 6 hours for language practice)
- Fast Track math classes
- Traditional ABE/HSE math classes
 - in class
 - additional independent work

Design

- Focused on high-priority topic areas on the TASC
- Develop underlying concepts
- Make connections to math in the world
- Give students practice applying concepts
- Provide TASC-style questions and explicit discussion of answer choices
- Vocabulary and language support for lower-level students and English Language Learners

Downloading the Fast Track GRASP Math Packets*

CollectEdNY

resources for New York State educators preparing adult students for high school equivalency and beyond

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Feedback on the FTGMPs

- Teachers:
- Google form survey (what works, what could be better, how's the length, etc.)

What do you notice? What do you wonder?

- Between 2000 and 2010 in New York State, the population density increased from 345 people per square mile to 352 people per square mile. The land area of New York State is about 55,000 square miles.

What do you notice? What do you wonder?

Notice/Wonder Population Density

- amount of p. per square mile grew
- this is NYS - I can relate
- Super curious - exactly 50,000 sq miles
- input - 345 about miles
- output 352
- ten year period
- area - must mean length times width
- population density is given "per square mile"
- recent
- might be able to relate this to ESL students

Wonderings about Pop. Density

- Is this census related?
- ~~Will~~ will the q. ask us to predict the pop. density at a later time?
- Is the 50,000 sq. miles needed or is it distracting info?
- How does a density of 345 p. per square mile play out in rural versus urban areas?
- Is the increase uniform across different geographic areas of state?
- Can I ask students to find the actual population of NYS?
- Are p. not leaving or are people coming in? What accounts for the increase?
- Does NYS include NYC?
- Is this due to changes in life expectancy?
- Does the phrase "population density" trip students up?
- ~~What~~ How were these figs calculated? If census, what about undocumented immigrants?
- How would students deal with the word ~~increase~~ "increase" - will they be confused and think it means to add?

What was pop. of NYS in 2000?
" " " " " 2010?

What is the average increase?
~~What is the~~
Write a function expressing a rate of change for increase.
What is the percent change in the population?

Population Density Stations

- There are 5 copies of the activity at each station. Please leave them at the table.
- Please write in a notepad and not in the packets.

6 stations:

- Beans & foxes
- What does “per” mean?
- Chickens & eggs
- U.S. population & area
- TASC-style questions
- Language of density