Connecting Math Learning to Science Content

RAEN Common Core Event

Spring 2019

Facilitated by Bob Reid and Randy Raux, Adult Education Teacher Leaders

Introductions

- Bob Reid, Madison-Oneida BOCES
- Randy Raux, Madison-Oneida BOCES

- Introductions - please share:
  - Name
  - Organization, Role, and how many years you have been working in Adult Education

How Can Math Learning Make a Difference in Science Scores?

- The most failed section of the TASC is the Math section (nearly 50% of New York adults fail the math section on their first try)
- While Science is failed at a much lower rate, there are still New York Adults who struggle with the Science section
- However, many of those who fail do so by small margins
- Extending math lessons that many adult education practitioners develop and deliver on a regular basis to key Science topics can help give students the extra boost they need to pass Science on their first try

Agenda: Morning

- General Housekeeping
- What's new with TABE 11 and 12? Any changes to the TRA for TASC forms M,N, & O?
- TASC Science Forms M,N, & O updates
- Fast Track Math Packets
  - Fast Track Math Activity
- Activity 1: Extending Solving Simple Equations to Science
  - Solving Simple Equations in Math
  - Extension: Newton's 2nd Law Activity
- Activity 2: Extending Solving Proportions to Science
  - Solving Basic Proportions
  - Science Extension: Solving Science Problems with Proportions

Agenda: Afternoon

- Recap of Morning Activities
- Activity 3: Chemical Formulas
  - Vocabulary: Identifying Parts of the Chemical Formula
  - Decoding Chemical Formulas
  - Counting Atoms
  - What's the Count?
  - Is it balanced?
- Activity 4: Balancing Chemical Formulas
- Discussion: In what other ways can Math lessons be extended for Science success?
- Recap

Housekeeping

- Sign in sheets
- Wi Fi
- CTLE Credit

What's New in Adult Education?

- TABE 11 & 12
- Fast Track
  - FAST Track GRASP Math Packets created by the CUNY Adult Literacy team in conjunction with NYSED
  - Other Fast Track opportunities
- TASC Readiness Assessment (TRA) Update
- TASC Science Forms M,N,O

TABE 11 & 12

- As of July 1, 2019 TABE 11 & 12 are the **only** TABE forms that will count for EPE and WIOA reporting!
- Each table/group will have TABE 9 & 10 practice questions and TABE 11 & 12 practice questions. Take a few moments to review the practice questions you have and answer:
  - What differences do you notice between TABE 9 & 10 and TABE 11 & 12?
  - What do you appreciate or like about TABE 11 & 12?
  - What concerns do you have about TABE 11 & 12?

(https://tabetest.com) (https://tasctest.com) (TABE Math Level A)

Fast Track

- How does Fast Track differ from traditional ABE/HSE learning opportunities?
  - New York State has made EPE funds available for programs that do not:
    - Require pre- and post- TABE testing
    - Require Measurable Skills Gains
    - Require xx hrs of instruction prior to post testing
  - Can be offered via classroom setting or GRASP (Home Study)
  - Only real requirement is taking the math TRA

- Why does this matter?
- Who has been offering Fast Track options within their programs?

TRA Update

- TRA Forms 6 & 7 are the current forms that correlate to TASC Forms M,N, O

Science Expected Performance Table

Total Points Earned	Expected TASC Test Performance Level	Likelihood of Passing TASC Test	Likelihood of not Passing TASC Test
0	Did Not Pass	19%	81%
1	Did Not Pass	19%	81%
2	Did Not Pass	19%	81%
3	Did Not Pass	19%	81%
4	Did Not Pass	19%	81%
5	Did Not Pass	22%	78%
6	Did Not Pass	28%	72%
7	Did Not Pass	39%	61%
8	Pass	58%	42%
9	Pass	76%	24%
10	Pass	90%	10%
11	Pass	96%	4%
12	Pass	99%	1%
13	Pass	99%	1%
14	Pass	99%	1%
15	Pass	99%	1%
16	Pass	99%	1%
17	Pass	99%	1%
18	Pass	99%	1%
19	Pass	99%	1%
20	Pass	99%	1%
21	Pass	99%	1%

TASC Science: Forms M,N, & O

Domain/ Reporting Category	Subdomain/Core Idea	Subdomain %	Domain %
Earth and Space Sciences	ESS1 Earth's Place in the Universe	10%	25%
	ESS2 Earth's Systems	10%	
	ESS3 Earth and Human Activity	5%	
Life Sciences	LS1 From Molecules to Organisms: Structures and Processes	15%	50%
	LS2 Ecosystems: Interactions, Energy, and Dynamics	15%	
	LS3 Heredity: Inheritance and Variation of Traits	12%	
	LS4 Biological Evolution: Unity and Diversity	8%	
Physical Sciences	PS1 Matter and Its Interactions	7%	25%
	PS2 Motion and Stability: Forces and Interactions	7%	
	PS3 Energy	6%	
	PS4 Waves and Their Applications in Technologies for Information Transfer	5%	

Form J,K,L

Form M,N,O

Comparing the blueprint for Forms J,K,L with Forms M,N,O…

- What do you notice?
- What does that tell us?

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	LS2 Ecosystems: Interactions, Energy, and Dynamics	15%	
	LS3 Heredity: Inheritance and Variation of Traits	12%	
	LS4 Biological Evolution: Unity and Diversity	8%	
Physical Sciences	PS1 Matter and Its Interactions	7%	25%
	PS2 Motion and Stability: Forces and Interactions	7%	
	PS3 Energy	6%	
	PS4 Waves and Their Applications in Technologies for Information Transfer	5%	

TASC Science: Forms M,N,O

- Let's review the TASC Science blueprints.
- Take about 5 minute to look through the blueprints. Jot down some notes on:
  - What do you notice?
  - What do you wonder?

Exploring Fast Track Math Packets

- Let's take a look at some of the Fast Track Math Packets
- Take about 10 minutes to work through the Rabbit Population lesson in the Fast Track Packet
  - What do you like about the Fast Track Packet?

(collectedny.org)

Activity 1: Simple Equations

- Part I: Solving Simple Math Algebra Equations
- Part II: Science Extension

Activity 2: Proportions in Science

- Part I: Understanding and Solving Proportion Problems
- Part II: Science Extension

Wrapping up the Morning

- Recap
- Resource Share
- Lunch

Activity 3: Chemical Formulas

- Part I: Vocabulary
- Part II: Decoding Chemical Formulas
- Part III: Counting Atoms
- Part IV: What's the Count
- Part V: Is it Balanced?

Activity 4: Balancing Chemical Formulas

- Now that we know how to tell if a chemical formula is balanced, we can practice what to do when a formula is not balanced.

Discussion

- Today we saw ways in which Math and Science can be taught hand in hand to increase the students likelihood of success in *both* content areas.

- What other ways can you think of to extend Math learning to Science success?

Recap

- Share out…
  - What did you take away from today?
  - What would you have liked to see more of?
- Other Questions, Concerns, or Comments?
- Please do not forget the evaluations!

Thank you!

- If you have further questions or comments, we can be reached at:
  - Bob Reid: breid@bcce.moric.org
  - Randy Raux: rraux@bcce.moric.org
- Safe travels, and…
- Thank you!