The Teaching Expertise Institute Podcast

Author: Nina Graham

Producer: Calvary Christian High School

Episode 4: One-Step Assessment

- **Focus Question:** How does one-step assessment make me more effective?

- **Answer:** One-step assessment is a way to conceptualize how we check for understanding. We haven't truly taught anything unless we check and confirm that our students understand what we sought to teach them. The one-step of one-step assessment is to relentlessly link our assessment to the learning goal in writing: during instruction, in our actual assessments, and in our gradebooks.

- **Take-aways:**
  - ✓ Real classroom demonstration
    - (Biology class with Mrs. Sarah Coleman)
  - ✓ Real classroom documents
    - (Test documents linked to learning standards)

Sources that informed the teaching strategy discussed in this episode:

- Hatano, G., & Inagaki, K. (1986). Two courses of expertise. In H. Stevenson, H. Azuma, & K. Hakuta (Eds.), *Child development and education in Japan* (pp. 262-272). New York: W. H. Freeman and Company.
- Sousa, D. (2006). *How the brain learns.* (3rd ed.). Thousand Oaks, CA: Corwin.
- Wormeli, Rick (2006). *Fair Isn't Always Equal: Assessing and Grading in the Differentiated Classroom.* Stenhouse.

Examples from Classroom of Amy Lute:
Test Document (White Paper) Student Test Analysis (Green Paper)

Matrix Quiz Results

Name: _____

N-VM3.6 Identify the Dim. of Matrices	N-VM3.8 Find Sums & Diffs	N-VM3.7 Find Products of Scal & Matrices	N-VM3.8 Find Products of Matrices	N-VM3.10 Find Det of 2x2, 3x3 Matrices	N-VM3.10 Find Inverse Matrices	A-REI3.8 Solve Sys of Eqs Using Matrices	N-VM3.9 Explain Operations on Matrices	G-SRT1.1 Explain Effect of Transform on coordinates	G-SRT1.1 Dilate a Polygon	N-
4 /5	6 /6	4 /4	4 /4	4 /4	2 /6	5 /5	9 /10	14 /14	2 /2	
80 %	100 %	100 %	100 %	100 %	33 %	100 %	90 %	100 %	100 %	

Directions: Use the matrix A, B, C, D, E to answer questions 1-10*******.

1. Write the dimension for each matrix beneath each of the matrices below.

STND N-VM3.6 4 /6

$A = \begin{bmatrix} -6 & 3 \\ 2 & 1 \end{bmatrix}$ $B = \begin{bmatrix} 2 & -4 & 5 \\ 3 & 1 & -2 \\ -1 & 6 & 0 \end{bmatrix}$ $C = \begin{bmatrix} 7 & -1 \\ 3 & 2 \end{bmatrix}$ $D = \begin{bmatrix} 6 & -4 & 1 \\ -5 & 2 & 3 \end{bmatrix}$ $E = \begin{bmatrix} -2 & 8 & 5 \\ 1 & -6 & 4 \end{bmatrix}$

3x3 2x2 2x3 2x3

Find each sum or difference

STND N-VM3.8 6 /6

2. A + C

$\begin{bmatrix} 1 & 2 \\ 5 & 1 \end{bmatrix}$

3. D - B

NOT POSSIBLE

4. E + D

$\begin{bmatrix} 4 & 4 & 6 \\ -4 & -4 & 7 \end{bmatrix}$

/4 scl

STND N-VM3.7 4 /4 scl

STND N-VM3.8 4 /4

Find each product.

5. -3D

$-3\begin{bmatrix} 6 & -4 & 1 \\ -5 & 2 & 3 \end{bmatrix} = \begin{bmatrix} -18 & 12 & -3 \\ 15 & -6 & -9 \end{bmatrix}$

6. 0.5E

$0.5\begin{bmatrix} -2 & 8 & 5 \\ 1 & -6 & 4 \end{bmatrix} = \begin{bmatrix} -1 & 4.25 & 2.5 \\ 0.5 & -3 & 2 \end{bmatrix}$

7. BD

NOT possible

8. CE

$\begin{bmatrix} -14+1 & 56+6 & 35-4 \\ -6+2 & 24+2 & 15+8 \end{bmatrix}$

$\begin{bmatrix} -15 & 62 & 31 \\ -4 & 12 & 23 \end{bmatrix}$

STND N-VM3.10 4 /4

Find the determinant of each matrix.

9. A

6 - 6 = 0

Zero

10. B

$\begin{bmatrix} 2 & -4 & 5 \\ 3 & 1 & -2 \\ -1 & 6 & 0 \end{bmatrix}$

9 - 82 + 29 = -44

0 + -8 + 90 = 82

(82) + 29 = 111

5 + -24 + 0 = -19

-29