2011 MCAS Portfolio Appeal

WORK DESCRIPTION for High School Competency Portfolio in
MATHEMATICS

(Attach one WORK DESCRIPTION to each piece in the portfolio.)

Student’s Name: Student Name    Date work was produced: 5-17-11

The Mathematics competency portfolio must include:
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Please indicate the strand and learning standard documented in the attached work sample:

- [ ] Number Sense and Operations
  - 10.N.1
  - 10.N.2
- [ ] Patterns, Relations, and Algebra
  - 10.P.2
  - 10.P.4
  - 10.P.5
  - 10.P.7
- [ ] Geometry
  - 10.G.1
  - 10.G.2
  - 10.G.3
  - 10.G.4
  - 10.G.5
  - 10.G.6
  (Choose any three)
  - 10.G.7
  - 10.G.8
  - 10.G.9
  - 10.G.10
  - 10.G.11
- [ ] Measurement
  - 10.M.1
  - 10.M.2
  - 10.M.3
- [ ] Data Analysis, Statistics, and Probability
  - 10.D.1
  - 10.D.2

ON THE ATTACHED PIECE:

What score did the student receive? (Level of Accuracy = __100___ %)

How much was done **independently** by the student? (Level of Independence = __90___ %)

What type and how much assistance, coaching, and prompting did the student receive on the attached piece?

A BRIEF REVIEW OF EACH PROPERTY LISTED ON ASSIGNMENT SHEET

What was the student asked to do in order to complete the attached piece (i.e., what was the assignment)?

IDENTIFY THE PROPERTY ILLUSTRATED IN EACH EQUATION

Self-evaluation (optional) - continue on back, if needed: [___ EVIDENCE ___]

2011 MCAS PORTFOLIO APPEAL.
Directions: Name the property illustrated by each statement. (commutative, associative, multiplicative identity, additive identity, distributive, multiplication by zero)

1. \(9 \cdot (4 \cdot 5) = (4 \cdot 5) \cdot 9\)
2. \(25 \cdot 5 \cdot 0 = 0\)
3. \(5 \cdot 6 = 6 \cdot 5\)
4. \(25 \times 1 = 25\)
5. \(15 + 0 = 15\)
6. \((1 + 2) + 3 = 1 + (2 + 3)\)
7. \(2(5x + 3) = 10x + 6\)
8. \(5(32) = (32) \cdot 5\)
9. \(15 \cdot 1 = 15\)
10. \((4 + 15) \cdot 0 = 0\)
11. \(4(x - 2) = 4x - 8\)
12. \(7 + 2A = 2A + 7\)
13. \(8 - 9 = 9 - 8\)
14. \((6y + 9) \cdot 3 = 18y + 27\)
15. \(16 + 0 = 16\)
16. \((6 \cdot 5) \times 4 = 6 \times (5 \cdot 4)\)
17. \(19 + 0 = 19\)
18. \(A \times (B \times C) = (A \times B) \times C\)
19. \(17 \times 1 = 17\)
20. \(-2(n - 6) = -2n + 6\)

Student's Name: Student Name  Date: 5/17/11  10. N. 1

Student Comment: It is easy.
WORK DESCRIPTION for High School Competency Portfolio in MATHEMATICS

Student's Name: [Student Name] Date work was produced: 5-17-11

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Please indicate the strand and learning standard documented in the attached work sample:

- Number Sense and Operations: 10.N.1, 10.N.2

ON THE ATTACHED PIECE:

What score did the student receive? (Level of Accuracy = 100 %)

How much was done independently by the student? (Level of Independence = 90 %)

What type and how much assistance, coaching, and prompting did the student receive on the attached piece?

A FEW ILLUSTRATIVE PROBLEMS

What was the student asked to do in order to complete the attached piece (i.e., what was the assignment)?

SIMPLIFY ALGEBRAIC EXPRESSIONS USING THE COMMUTATIVE AND ASSOCIATIVE PROPERTIES

Self-evaluation (optional) - continue on back, if needed: ON EVIDENCE

2011 MCAS PORTFOLIO APPEAL
Simplify each expression using the associative and commutative property.

1. $3B + 9 + 4 + 3B$
   $3B + 3B + 9 + 4$ comm.
   $(3B + 3B) + (9 + 4) assoc.
   6B + 13$

2. $3A + (120 + 5)$ assoc.
   $3A + 125$

3. $4N + 9 + 6B + 18$
   $4N + GB + 9 + 18$ comm.
   $4N + GB + 9 + 18$ assoc.
   $4N + 0B + 27$

4. $99B + 5130 + B$
   $99B + B + 130$ comm.
   $(99B + B) + 130$ assoc.
   $100B + 130$

5. $(97 + 3) + 571$ assoc.
   $100 + 571$
   $671$

6. $231B + 100A + 31B$
   $231B + 31B + 100A$ comm.
   $(231B + 31B) + 100A$ assoc.
   $262B + 100A$

7. $60 + 151 + 40$
   $60 + 40 + 151$ comm.
   $(60 + 40) + 151$ assoc.
   $100 + 151 = 251$

8. $49X + 185 + X$
   $49X + X + 185$ comm.
   $(49X + X) + 185$ assoc.
   $50X + 185$

9. $3P + 17 + 6P + 3$
   $3P + 6P + 17 + 3$ comm.
   $(3P + 6P) + (17 + 3)$ assoc.
   $9P + 20$

10. $Y + 975 + 99Y$
    $X + 99X + 975$ comm.
    $(X + 99X) + 975$ assoc.
    $100X + 975$

11. $7D + 8 + 9D - 3$
    $70 + 90 + 8 - 3$ comm.
    $(70 + 90) + (8 - 3)$ assoc.
    $160 + 5$

12. $7X + 4 + 8X + 12$
    $7X + 8X + 4 + 12$ comm.
    $(7X + 8X) + (4 + 12)$ assoc.
    $15X + 16$

STUDENT COMMENT: EASY ASSIGNMENT.
2011 MCAS Portfolio Appeal

WORK DESCRIPTION for High School Competency Portfolio in MATHEMATICS

(Attach one WORK DESCRIPTION to each piece in the portfolio.)

<table>
<thead>
<tr>
<th>Student's Name:</th>
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<th>Date work was produced:</th>
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<th>10.N.2</th>
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ON THE ATTACHED PIECE:

What score did the student receive? (Level of Accuracy = 95 %)

How much was done independently by the student? (Level of Independence = 100 %)

What type and how much assistance, coaching, and prompting did the student receive on the attached piece?

WHAT TO DO IF NUMBERS UNDER THE RADICAL WERE NOT PERFECT SQUARES

What was the student asked to do in order to complete the attached piece (i.e., what was the assignment)?

EVALUATE THE POWERS AND SIMPLIFY THE RADICALS

Self-evaluation (optional) - continue on back, if needed: ON EVIDENCE

2011 MCAS PORTFOLIO APPEAL
Evaluate the powers and simplify the radical expressions.

1. \(2^3 = 2 \times 2 \times 2 = 8\)
2. \(5^2 = 5 \times 5 = 25\)
3. \(4^3 = 4 \times 4 \times 4 = 64\)
4. \(6^0 = 1\)
5. \(12^1 = 12\)
6. \(9^2 = 9 \times 9 = 81\)
7. \(2^4 = 2 \times 2 \times 2 \times 2 = 16\)
8. \(3^3 = 3 \times 3 \times 3 = 27\)
9. \(6^3 = 6 \times 6 \times 6 = 216\)
10. \(11^2 = 11 \times 11 = 121\)

\(\sqrt{6} \approx 2.449\)
\(\sqrt{8} = \sqrt{4 \times 2} = 2\sqrt{2}\)
\(\sqrt{144} = 12\)
\(\sqrt{25} = 5\)
\(\sqrt{27} = \sqrt{9 \times 3} = 3\sqrt{3}\)
\(\sqrt{6^2 + 2^2} = \sqrt{36 + 4} = \sqrt{40} = \sqrt{4 \times 10} = 2\sqrt{10}\)
\(\sqrt{81} = 9\)
\(\sqrt{16} = 4\)

\(\sqrt{12^2 + 5^2} = \sqrt{144 + 25} = \sqrt{169} = 13\)

\(\sqrt{64} = 8\)

Student’s Comment: Two problems were hard.
2011 MCAS Portfolio Appeal

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ON THE ATTACHED PIECE:

What score did the student receive? (Level of Accuracy = __________ %)

How much was done independently by the student? (Level of Independence = __________ %)

What type and how much assistance, coaching, and prompting did the student receive on the attached piece?

WHAT IT MEANS TO FIND THE NTH ROOT OF A NUMBER

What was the student asked to do in order to complete the attached piece (i.e., what was the assignment)?

SIMPLIFY VARIOUS

Self-evaluation (optional) - continue on back, if needed: ON EVIDENCE

2011 MCAS PORTFOLIO APPEAL
Simplify the following radical expressions.

1. \( \sqrt{x^2} = x \)

2. \( \sqrt{\frac{1}{x^2}} = \frac{1}{x} \)

3. \( \sqrt[4]{16} = \sqrt[4]{2^4} = 2 \)

4. \( \sqrt[4]{125} = \sqrt[4]{5^3} = 5^{\frac{3}{4}} \)

5. \( \sqrt[4]{75} = \sqrt[4]{5^3 \cdot 3} = 5^{\frac{3}{4}} \cdot \sqrt[4]{3} \)

6. \( \sqrt[4]{64} = \sqrt[4]{4^3} = 4^{\frac{3}{4}} \)

7. \( \sqrt[4]{32} = \sqrt[4]{2^5} = 2^{\frac{5}{4}} \)

8. \( \sqrt[4]{1} = 1 \)

9. \( \sqrt[4]{49} = \sqrt[4]{7^2} = 7 \)

10. \( \sqrt[4]{8} = \sqrt[4]{2^3} = 2^{\frac{3}{4}} \)

Student Comment: IT IS EASY.
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How much was done independently by the student? (Level of Independence = 100 %)

What type and how much assistance, coaching, and prompting did the student receive on the attached piece?

A QUICK REVIEW OF THE RULES FOR OPERATING ON SIGNED NUMBERS

What was the student asked to do in order to complete the attached piece (i.e., what was the assignment)?

EVALUATE EXPRESSION CONTAINING VARIABLES AND ABSOLUTE VALUE

Self-evaluation (optional) - continue on back, if needed:

2011 MCAS PORTFOLIO APPEAL
Evaluate each expression if $A = 9$, $B = -5$, and $C = -6$

1. $|B - A|$
   
   $-5 - 9| = -14 = 14$

2. $|B + C|$
   
   $-5 - 6| = 11 = 11$

3. $|C - A|$
   
   $-6 - 9| = 15 = 15$

4. $|2A + 6|$
   
   $12(9) + 6| = |18 + 6| = 24$

5. $|3C - 7|$
   
   $13(-6) - 7| = -18 - 7| = -25 = -25$

6. $|3C + 7|$
   
   $13(-6) + 7| = -18 + 7| = -11 = -11$

7. $5|C - A|$
   
   $5|-6 - 9| = 5 - 15 = 5.15$

8. $2A - 10|$
   
   $2/9 - 10| = 2 - 10 = -2.1 = 2.1$

9. $2C + 10|$
   
   $12(-6) + 10| = -12 + 10 = -2$

10. $4|B - A|$

11. $2|B + C|$

12. $12(-5) + 10| = -4 - 10 = -14 = 14$

13. $2BC|$

   $2(-5)(-6) = -10 - 6 = 60$

---

**Student Comment:** It is easy.
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- Number Sense and Operations
- Patterns, Relations, and Algebra
- Geometry
- Measurement
- Data Analysis, Statistics, and Probability

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<th>✔️ 10.N.2</th>
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ON THE ATTACHED PIECE:

What score did the student receive? (Level of Accuracy = 93 %)

How much was done independently by the student? (Level of Independence = 90 %)

What type and how much assistance, coaching, and prompting did the student receive on the attached piece?

REVIEW OF RULES FOR ORDER OF OPERATIONS

What was the student asked to do in order to complete the attached piece (i.e., what was the assignment)?

Simplify numerical expressions using order of operation rules

Self-evaluation (optional) - continue on back, if needed: ON EVIDENCE

2011 MCAS PORTFOLIO APPEAL
Write the operation you would use first to evaluate each expression.

1. \( 4 \ (9 - 2) + 6 \times 5^3 \)  \( \text{Subtraction} / \)
2. \( 32 - 10 \times 6 \div 2 \)  \( \text{Multiplication} / \)
3. \( 24 + 5 \times 4^2 \)  \( \text{Exponent} / \)
4. \( 60 - 21 + 3 - 19 \)  \( \text{Subtract} / \)
5. \( 21 + 19 - 4 \div 2 \)  \( \text{Divide} / \)

Simplify each numerical expression.

6. \( 45 - 21 \times 2 - 3 \)  \( 7. \ 12 (10 + 2) - 144 \div 12 \)
8. \( 6 - 2 + 9 (3 \times 4 + 1) \)  \( 9. \ 15 - |2 - 5| + 1 \)
10. \( (12 + 4) \div 8 \)  \( 11. \ 9(|1 - 4| + 3) \times 2 \)
12. \( -2 + (6 + 4) \div (-2) \)  \( 13. \ -1 (9 - 6)^2 + 15 \)
14. \( 12 \div 3 \times 5 - 4^2 \)  \( 15. \ 4 (1 + 5)^2 \div 8 \)

Student Comments: Easy
6) $45 - 21 \times 2 - 3$
   $45 - 42 - 3 = \boxed{0}$

7) $12(10 + 2) - 144 \div 12$
   $120 + 24 - 12 = \boxed{132}$

8) $6 - 2 + 9(3 \times 4 + 1)$
   $6 - 2 + 9(13)$
   $6 - 2 + 117 = \boxed{121}$

9) $15 - \{2 - 5\} + 1$
   $15 - (-3) + 1$
   $15 + 3 + 1 = \boxed{19}$

10) $(12 + 4)^2 \div 8$
    $(16)^2 \div 8$
    $256 \div 8 = \boxed{4}$

11) $(1 - 4) + 3)^2$
    $1 - 3 + 3)^2$
    $1(3 + 3)^2$
    $9(0)^2$
    $9(0) = \boxed{0}$

12) $-2 + (6 + 4) \div (-2)$
    $2 + (10) \div (-2)$
    $-2 \times (-5) = \boxed{-10}$

13) $-4(9 - 6)^2 + 15$
    $-4(3)^2 + 15$
    $-4(9) + 15$
    $-9 + 15 = \boxed{6}$

14) $12 \div 3 \cdot 5 - 4^2$
    $12 \div 3 \cdot 5 - 16$
    $3 \cdot 42 \div 16 = \boxed{12.58}$

15) $4(1 + 5)^2 \div 8$
    $4(6)^2 \div 8$
    $4(36) \div 8$
    $144 \div 8 = \boxed{18}$