Algebra/Geometry Institute Summer 2003

Lesson Plan 2

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School: East Side High School
City: Cleveland, MS
Grade Level: 9-10 (Transition to Algebra)

1 Teaching Objective(s)

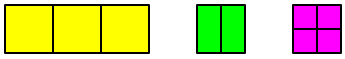
MS Framework Competencies:

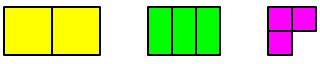
- 5a-Use manipulatives to model operations of polynomials
- The students will be able to model polynomial expressions using algebra tiles.
- The students will be able to use algebra tiles to model the addition of two or more polynomials.

2 Instructional Activities

- **Warm-up exercises:** Give several problems for students to simplify that stress the addition and subtraction of like terms. [e.g. 2a + 7b- 3a, -3c-(-5c)]
- The teacher will review the definitions of polynomial, monomial, binomial, trinomial, and standard form.
- The teacher will demonstrate the use and the value of algebra tiles using a set of overhead algebra tiles.

  (e.g.)  $= x^2$  $= x$  $=1$

- The teacher will model the use of algebra tiles to express a polynomial. For example: $(3x^2 + 2x + 4)$ 
- The students will break out into five groups and model at least five different polynomial expressions.
- The teacher will then put up several algebraic tile expressions on the overhead. The students will write each expression symbolically and in standard form.

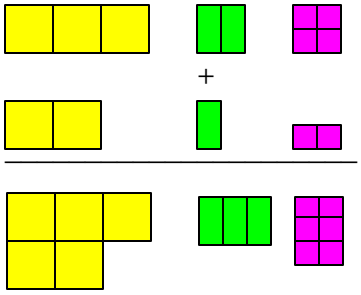
  (e.g)  Students would write $2x^2 + 3x + 3$

  (e.g)  Students would write $3x^2 + 4x + 4$

- The students, still in their groups, will make up a polynomial expression using the tiles and the other groups will have to identify the polynomial and write it in standard form.

- The teacher will then ask the students how they could add two polynomials together using the tiles. Teacher will model the student's suggestions using the overhead to show why the students are correct or incorrect.

- The teacher will model an example of the addition of two polynomials using the overhead tile set and a transparency. Example $(3x^2 + 2x + 4) + (2x^2 + x + 2)$



- The students will then add at least five problems with polynomials using the algebra tiles.
- **Homework:** Give students a handout that has at least five polynomials to be expressed by using a drawing representation of the algebra tiles, five tile representations to be written symbolically and in standard form, and five addition problems where the answers are to be shown by tile representations, and symbolic representations that are in standard form.

3 Materials and Resources

- McDougal Littell / Houghton Mifflin, *Mathematical Connections* 1997
- Algebra tiles (5) sets
- Overhead tile set
- Overhead
- Transparency

4 Assessment

- Teacher observation of activities
- Grading of homework activity
- Journal entry