Factoring Concentration

OBJECTIVES:	
M055A.02	To factor a polynomial which has a common factor other than one
M055B.01	To factor the difference of two squares
M055B.02	To factor trinomials which are perfect squares
M055B.03	To factor trinomials of the form $x^2 + bx + c$
M055B.04	To factor trinomials of the form $ax^2 + bx + c, a \neq 0$
M055B.05	To factor polynomials by grouping

PREREQUISITE:
To know and use factoring rules

MATERIALS NEEDED:
42 index cards

INSTRUCTIONS TO THE TEACHER FOR <u>MAKING</u> ACTIVITY:
1. Write the problems on index cards. Write the answer on a separate card. (You may want to use the directions and the cards from Appendix 1 for this activity.)

2. This game can be played individually or in small groups.

3. The object of the game is to make the most matches.

4. Students may use paper and pencil to factor the problems.

DIRECTIONS TO THE STUDENT:
1. Place all the cards face down on a table or on the floor.

2. During each turn, turn over two cards.

3. If it is a correct match, pick up both cards and place them in the correct match pile.

4. If it is not a correct match, turn both cards back over and leave them in the same place.

5. The game continues until all cards are matched.

VARIATIONS:
1. The students can write their own problems.

2. The teacher can set a time limit for answering.

3. The teacher can have students work the problems without pencil and paper.

Write on card.

Problems:

$x^2 + x - 6$

$6x^5 - 12x^4 - 9x^3 + 3x^2$

$9x^2 - 4$

$4x^2 - 14x + 6$

$4x^2 - 20x + 25$

$3x^2 + 4x - 4$

$4x^2 - 9$

$15x^2 - 46x + 35$

$-15x^2 - 18x$

$x^4 + 3x^3 - 2x - 6$

$x^3 + 3x^3 - x - 3$

$10x^2 - x - 3$

$x^3 - x^2 - 6x$

$4x^2 + 7x - 15$

$25x^2 + 40x + 16$

$10x^2 + 23x + 12$

$100x^2 - 1$

$25x^2 - 16$

$2x^2 + 4x + 2$

$2x^3 + 3x^2 + x$

$9x^5 - 15x^4 - 6x^3 + 3x^2$

Write on separate card.

Answers:

$(x - 2)(x + 3)$

$3x^2(2x^3 - 4x^2 - 3x + 1)$

$(3x - 2)(3x + 2)$

$2(2x - 1)(x - 3)$

$(2x - 5)(2x - 5)$

$(x + 2)(3x - 2)$

$(2x + 3)(2x - 3)$

$(5x - 7)(3x - 5)$

$-3x(5x + 6)$

$(x + 3)(x^3 - 2)$

$(x - 1)(x + 1)(x + 3)$

$(5x - 3)(2x + 1)$

$x(x + 2)(x - 3)$

$(4x - 5)(x + 3)$

$(5x + 4)(5x + 4)$

$(2x + 3)(5x + 4)$

$(10x + 1)(10x - 1)$

$(5x - 4)(5x + 4)$

$2(x + 1)(x + 1)$

$x(2x + 1)(x + 1)$

$3x^2(3x^3 - 5x^2 - 2x + 1)$