Name: _____ Date: _____

Factoring Trinomials Completely
Algebra 1

In the previous lesson, we saw how to factor a trinomial of the form x^2+bx+c by employing the guess-and-check method. In each of those cases, the coefficient of the quadratic (x^2) term was always one, and thus not written. It is also possible to factor trinomials of the form ax^2+bx+c where the coefficient a is a number other than 1 by combining two factoring methods into the same problem.

***Exercise* #1:** Consider the trinomial $3x^2+15x+18$.

(a) What is the GCF of each term in the trinomial?

(b) Write the trinomial as a product involving its GCF.

(c) How does the trinomial inside of the parentheses now factor?

(d) Write $3x^2+15x+18$ in its completely factored form.

We can carry this two-step process out for all trinomials whose three monomial terms have a GCF other than one. In this course, after factoring a GCF out of the trinomial, the quadratic coefficient on the new trinomial will be one.

***Exercise* #2:** Factor each of the following trinomials completely. Remember to mentally check your factors by multiplying.

(a) $2y^2-12y+16$

(b) x^3-4x^2-12x

(c) $5x^2-45x+90$

(d) $9x^2+18x+9$