(A) Lesson Context

BIG PICTURE of this UNIT:	• What is a Polynomial and how do they look? • What are the attributes of a Polynomial? • How do I work with Polynomials?		
CONTEXT of this LESSON:	Where we've been We have discussed the basic appearance of graphs of polynomial functions	Where we are How can we use algebraic skills & process to begin an analysis of polynomials when we DO NOT have a graphic representation with which to work?	Where we are heading What are the key attributes of a polynomial and how do these affect the shape?

(B) Lesson Objectives:

    a. Understand the connection between division of numbers and division of polynomials.
    b. Simply the "long division" process and work with the method of synthetic division in order divide polynomials.

(C) Opening Exericises: The Process of Long Division

(a) Divide 3825 by 51

(TERMS to highlight: divisor, quotient, remainder)

(b) Divide 41,764 by 32

(TERMS to highlight: divisor, quotient, remainder)

(D)Extension of Ideas: Long Division of Polynomials

(a) Divide $x^2 + 3x - 28$ by $x + 5$

(b) Divide $x^3 - 7x + 8$ by $x - 2$

(c) Divide $2x^2 - 5x - 3$ by $x - 4$

(E) Simplify Algorithms: Synthetic Division: (And compare the 2 processes)

(a) Divide $x^2 + 3x - 28$ by $x + 5$

(b) Divide $x^3 - 7x + 8$ by $x - 2$

(c) Divide $2x^2 - 5x - 3$ by $x - 4$

(F) **Further Practice with Synthetic Division**

(a) Divide $x^3 - 7x - 6$ by $x + 1$ ➜ conclusion?

(b) Divide $4x^3 - 5x^2 + 3x - 7$ by $x - 2$

Point to be made: different ways to express your final result

(c) Divide $13x - 2x^3 + x^4 - 6$ by $x + 2$ ➜ conclusion?

(d) Divide $12x^3 + 2x^2 + 11x + 16$ by $3x + 2$ ➜ what's different and how do we deal with it?

(G) **Further Practice**

From Nelson 12, Exercise 1.4, page 42, Q4,8,9 (HL challenge) & 10,11