

Chapter 3 Whole Numbers –(Basic Concepts – number facts)**Section 1**

Addition and subtraction of whole numbers in base ten and in other bases.

Section 2

Multiplication and division of whole numbers in base ten and in other bases.

For all four operations be able to **illustrate** on a **number line** and with **sets**.

Also know the **definitions** of subtraction and division and be able to use the definition of division to explain why you cannot divide by zero. [Note: “iff” means “if and only if”.]

$a - b = c$ iff $c + b = a$ & $a \div b = c$ iff $c \times b = a$ (where a, b, c are whole #s with $b \neq 0$)

Know the **properties** for addition and multiplication: Closure, Commutative, Associative, Identity, and Distributive. Be able to name and give examples of each property.

Section 3

Ordering #, definition of less than ($a < b$ iff there exists a whole # c , such that $a + c = b$) and rules for working with **exponents**. Be able to explain why the rules for exponents work.

See lecture notes for section 3.3 in Blackboard Learning Module 3.

Chapter 4 Whole Numbers – (Later concepts – algorithms for multi-digit numbers)**Section 1**

Mental Math using properties, compatible numbers, compensation, left to right methods, special factors.

Estimation using front-end techniques (range, one-column with adjustment), rounding (truncate, 5 or more round up, round to compatible #s), and cluster estimation.

Section 2

Written algorithms for whole numbers in base ten. Concentrate on **standard** and **alternative** algorithms such as **lattice addition and multiplication, scratch addition, and subtract from the base**. Use this link for scratch addition <http://www.coolmath4kids.com/addition/>

Section 3

Standard and alternative algorithms for addition, subtraction, and multiplication in **other bases**. (Standard & lattice methods, and standard & subtract from the base.)

Chapter 5 Number Theory**Section 1**

Prime and composite numbers, divisibility tests and why they work. Create a test for a composite number based on its factors. Study summary of divisibility tests (in Bb Module 5).

Section 2

Prime factorization of #s, least common **multiples** (LCM), and greatest common **factors** (GCF).

Word problem using LCM or GCF (in module 5, see worksheet of problems from 6th grade text).

Review your notes and quizzes. Practice the concepts by doing problems from the chapter reviews. Check your understanding by doing the chapter tests as practice tests.

Use websites for these chapters from <http://people.uncw.edu/spikek/links.htm>