

Prepare by studying the topics listed below, in conjunction with your notes, text, activities and other handouts, quizzes, and graded and practice HW problems. You'll be more successful if you strive to master concepts in general, rather than simply memorizing specific examples that we have already done. Studying together is also a plus.

Integers: (Remember the symbol \mathbf{Z} and the listing notation for the SET of integers.)

1. Know how to arrange integers (and fractions) on the number line and that LEFT is always LESS.
2. Explain the confusion of statements like “ -5 is a greater negative than -2 .” Rephrase correctly.
3. Given a specific integer arithmetic computation, write in words how to read it aloud.
4. Answer questions about integer arithmetic rules applied to variables on a number line; explain carefully.
5. Understand absolute value as both distance from zero physically, and as the positive version of a number. Treat the bars like parentheses in the Order of Operations (see text HW problems).
6. Solve problems like those assigned in 5-1 and 5-2 of the text, including Fact Families.
7. Work with models: Clown, temperature or mail stories, Fact Patterns.
 - (a) Work with models MUST use the original numbers and operations, no rewriting. (I.e., $2 - (-5)$ must be treated as 2 minus negative 5 , and NOT as 2 plus 5 .)
 - (b) Draw or verbally describe different sets of plus/minus chips that represent the same overall amount (such as $3 \oplus$ for positive 3 , but also $5 \oplus$ and $2 \ominus$). Explain the effect of zero pairs.
 - (c) Verbally explain how to use plus/minus chips to act out a given computation; drawings optional. State the numeric answer, too.
 - (d) For chip multiplication or division, recognize/create computations that are impossible to act out, explaining what goes wrong.
 - (e) Create Fact Patterns leading to a given computation, applying the guidelines.
 - (f) Describe the actions and answer of the Clown-on-a-Tightrope for a given integer computation.
 - (g) Write the precise integer computation and answer acted out by the Clown in a given story.
 - (h) Write the complete number sentence represented by a given temperature or mail story, including one with several steps (as in text HW).
 - (i) Write a temperature or mail story that models a given integer arithmetic computation.

Fractions:

1. Understand, SPELL, use: numerator, denominator, unit fraction, proper, improper.
2. Explain CAREFULLY what numerator, denominator MEAN. (Saying “in $2/5$, 5 is the whole” is wrong!)
3. Use the part of a whole meaning to explain which position in a fraction can/cannot be zero.
4. Solve tile, diagram, part-of-a-group problems as on Activity #1, text/HW, QHW #4.
5. State the Fundamental Law of Fractions (FLF) without using variables or formulas.
6. Demonstrate the FLF where needed: reducing to lowest terms, creating CDs, etc.
7. Show $+$, \times , \div symbols SEPARATELY on top and bottom when using the FLF, the mediant.
8. Find fractions equivalent to a given one, between two given ones. Order a set of several fractions by size.
9. Demonstrate different methods for determining whether two fractions are equal, or which is bigger: drawing, estimating, CDs, cross-multiplying, and numerator/denominator meanings.
10. Explain carefully when using meanings of numerator and denominator to compare fractions. Recognize, create examples where this method fails.
11. Know the term denseness; explain clearly what it says. (“Denseness is a fraction between others” is poor.)
12. Create, choose good estimates for given fractions; explain whether estimate is high or low.

Bring an approved calculator - I'll trade if you've got an unacceptable one!
Bring your own paper Fraction Tiles, labeled ONLY with colors. (I'll ask to inspect them.)