**Algebra Concepts – Lesson 3-4 (Visual Models for Fractional Parts)**

**Big Idea**

Many high school students struggle with fractions and equations involving fractions. This may be because they never learned to “see” what problems involving the equations were asking. Since the Algebra Concepts class has become skilled at using visual models, we will learn to show and solve fraction problems by showing them visually.

**Example 1**

Emily wants to start a garden with 15 plants. She wants to have

 tomato plants and  pepper plants. How many of each type of plant will Emily have?

**Build the model**

|-------------------------------------15 plants------------------------------------|

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |

|--------------------tomato---------------------|------------pepper------------|

Notice how we represent . There are 5 parts in our rectangle and tomato plants take up 3 of the parts. Similarly for , there are 5 parts in our rectangle an pepper plants take up 2 of the parts.

**Now let’s solve the problem.**

Step 1: Find the number that goes in each part of the rectangle so that the total is 15.

Step 2: Find the number of tomato plants if there are three parts tomato plant and we know what each part is worth (from Step 1).

Step 3: Find the number of pepper plants. There is more than one way to do this.

**Example 2:**

Darrell bought  of a pound of Swiss cheese for $1.50. How much did the Swiss cheese cost per pound?

|---------------------------------------?--------------------------------------------------|

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |

|--------------------------------$1.50-----------------------------|

How much is each part of the rectangle (each -pound) worth?

What is the whole pound of Swiss cheese worth?

**Build Your Own Model**

Dennis is playing poker with red chips, blue chips and white chips. There are 30 chips. If  of the chips are red,  are blue and  are white, how many chips of each color are there?

**Guided Practice**

1. Kevin bought a package of 40 holiday candies that contained  red candies and  green candies. How many of each type of candy were in the package?

|-------------------------------------40 candies----------------------------------------|

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |

|-------------------------------red--------------------------------|------green---------|

 ? ?

1. Elizabeth spent of the time she was awake on Monday going to school. If Elizabeth spent 6 hours going to school on Monday, how long was she awake?

 ?

|------------------------------------time awake---------------------------------------|

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |

|---------6 hours in school-----|

1. Mick deposits of the money he earns in a savings account. If Mick earns $84, how much does he deposit in his savings account? Build your own model.