

## Instructions for Setting up a Spreadsheet

In this lesson, I am using Microsoft Excel, but the same formulas and ideas should work in other spreadsheet programs. In this lesson, we are going to purchase a \$150,000.00 house with a 10% down payment of \$15,000.00. We will be borrowing \$135,000.00. We are purchasing this house on a 15-year loan, and the interest rate is 5.5%. Many people buy homes on 30-year loans, but we are using a 15-year loan to shorten the spreadsheet to 180 months. Your monthly payments will be \$1,104.05. When you complete your spreadsheet, you will notice your last payment will vary a little. You may think the payment is a little high on a \$150,000.00 house, but remember we are using a 15-year loan. Your payment would be lower on a 30-year loan, but the amount of interest you would pay is much higher.

Note: As this lesson is explained, all formulas will be in bold. That way you will not confuse any explanation given as part of a formula.

### Starting the spreadsheet

Let's label the spreadsheets, so in cell A1 type: Purchase \$150,000.00 house with 10% down on 15-year contract (the words will go across the cells, but that is okay for the label).

We will skip row two for a neater looking spreadsheet

Now we want labels, so place the following labels in cells:

A3: Month

B3: Interest Accrued

C3: Pre-payment Balance

D3: Payment

E3: Loan Balance

F3: Equity

G3: Tax Savings

H3: Principal

When you have keyed all the labels, right align and bold for a spreadsheet that is easier to read.

In cell A4, you will type 1. Then in cell A5 you will type  $=A4+1$

In cell B4, you will type  $=135000*(5.5\%/12)$ . Since we have a month after the initial purchase of the house, we accrue interest on the \$135,000.00. Before we can make the first payment, we actually owe more than the day we signed the papers. Therefore, we will add that interest to the \$135,000.00 in cell C4 to get the prepayment balance. In cell B5, you will type  $+E4*(5.5/12)$ . This represents the new loan balance times the interest.

Name \_\_\_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_

In cell C4, you will type  $=135,000+b4$ . In cell C5, you will type  $=e4$  (the loan balance from the previous month is the new pre-payment balance).

In cell D4, you will type 1104.05. This is your monthly payment.

In cell E4, you will type  $=c4-d4+b4$  (your prepayment balance - your payment + the interest you paid).

In cell F4, you will type  $=150000-e4$ . This is the house worth – loan balance. Take note: You made a down payment of \$15,000.00, and now your equity is less than \$15,000.00 the first month. This does not seem right, but that is the way it is because of the interest accrued before you made the first payment.

In cell G4, you will type  $=B4$ . The interest you pay is your tax savings. This would be calculated on the amount you pay in a calendar year for tax purposes, but on this spreadsheet you will see the accumulation of tax savings. In cell G5, you will type  $=g4+b5$ . The previous tax savings plus the interest paid this month gives you the current tax savings.

In cell H4, you will type  $=d4-b4$ . The amount you pay on the principal is the payment - interest. As we fill down the spreadsheet, you will notice that you will be paying less interest and more on the principal. The more you pay on the principal, the faster you build equity in a home.

Now we will use the fill down feature, and the spreadsheet does all the calculations for us for 15 years. Highlight the formula, and fill all the way down to row 183. The numbers should automatically calculate.

Now make sure you save this spreadsheet because we are going to use it for another lesson. What good is a spreadsheet if you don't gain information from it? This is what we will do in the next activity.