Arkansas CTE

Advanced Spreadsheet: Grades 10, 11, 12

Adopted 2009

Creating Effective Spreadsheets

1.1 Define Terminology

1. Prepare a list of terms with definitions 1.1.1

1.2 Describe the use of spreadsheets in business

1. Construct a list of documents and their purpose (a business can produce with spreadsheet software) 1.2.1
2. Ensure data integrity 1.2.2

1.3 Explain how to create and modify data and change formats

1. Enter Multiple Lines of text within a cell 1.3.1
2. Use different types of date formats 1.3.2
3. Use different types of number formats 1.3.3
4. Insert data using autofill 1.3.4
5. Modify the sizes of cells and ranges 1.3.5

1.4 Explain how to manipulate worksheets

1. Insert and delete a worksheet 1.4.1
2. Rename, move and copy a worksheet 1.4.2
3. Change worksheet views 1.4.3

1.5 Format a workbook

1. Apply font, font color and fill color to cell range 1.5.1
2. Set a background image of a worksheet 1.5.2
3. Rotate and align cell content 1.5.3
4. Merge cell content and use format painter 1.5.4
5. Change a workbook's theme 1.5.5
6. Apply styles to a worksheet 1.5.6

1.6 Explain how to create, modify and format a table

1. Create and format table 1.6.1
2. Use Conditional Formatting 1.6.2
3. Use Conditional Formatting to change a cell's appearance based on its value 1.6.3

1.7 Format a worksheet for printing

1. Define the print area of a worksheet 1.7.1
2. Insert page breaks into a worksheet 1.7.2
3. Add print titles to a worksheet 1.7.3
4. Insert header and footer information 1.7.4

Working with Formulas and Functions

2.1 Define terminology

1. Prepare a list of terms with definitions 2.1.1

2.2 Create and use cell references in formulas

1. Write and use formulas that use: relative, absolute and mixed references 2.2.1

2.3 Explain how to work with Advanced Functions

1. Use the IF function 2.3.1
2. Use different types of DATE functions (DATE, DAY, MONTH, YEAR, NOW, TODAY) 2.3.2
3. Use different types of PMT Functions (FV, PMT, RATE, NPER, PPMT, IPMT, PV) 2.3.3
4. Use a nested function 2.3.4

Working with Charts and Graphics

3.1 Define terminology

1. Prepare a list of terms with definitions 3.1.1

3.2 Create different types of charts

1. Create an embedded chart, exploded pie, line, bar, 3 -D chart & XY Scatter chart 3.2.1
2. Format and edit: borders, legend, titles, axis', scale, labels, series, tick marks, and gridlines 3.2.2

3.3 Create a combination chart

1. Create a chart that includes two or more types of charts into one (i.e.: bar & line chart) 3.3.1
2. Insert a shape into a chart, manipulate its size, align and group with another shape. 3.3.2

Tables, Pivot Tables & PivotCharts

4.1 Define terminology

1. Prepare a list of terms with definitions 4.1.1

4.2 Plan a structured range of data

1. Create a data definition table that lists a field to be maintained for each record 4.2.1
2. Explain the use of tables in business 4.2.2

4.3 Create a Table

1. Create a table and rename the table 4.3.1
2. Manipulate by: adding records, finding, editing and deleting records 4.3.2
3. Sort data in a table using customized conditions 4.3.3

4.4 Filter data in a table

1. Explain the difference between filtering and sorting 4.4.1
2. Filter data using one column and multiple columns 4.4.2
3. Use multiple criteria filters within a column for text, number and date 4.4.3
4. Use subtotal and total lines in a table 4.4.4
5. Clear filters in a table 4.4.5

4.5 Create a PivotTable

1. Explain the use of PivotTables in business 4.5.1
2. Create a PivotTable, add fields, styles, and format 4.5.2
3. Change the view of a PivotTable by moving condition fields and layout options 4.5.3
4. Remove fields from a PivotTable 4.5.4
5. Expand and collapse filtered data in PivotTable 4.5.5
6. Manipulate PivotTable fields by sorting, adding additional value fields, and removing fields 4.5.6
7. Refresh a PivotTable 4.5.7

4.6 Create a PivotChart

1. Use data from a PivotTable to create a PivotChart to accompany information in a PivotTable 4.6.1

4.7 Create different views and print specific data from a PivotTable

1. Create a report filter to summarize data in field(s) for view and printing 4.7.1
2. Group PivotTable items to summarize information (dates, increments, etc.) 4.7.2

Managing Multiple Worksheets and Workbooks

5.1 Define terminology

1. Prepare a list of terms with definitions 5.1.1

5.2 Create a worksheet group

1. Explain the purpose of a worksheet group 5.2.1
2. Enter formulas in a worksheet group 5.2.2
3. Format a worksheet group 5.2.3
4. Ungroup worksheets 5.2.4
5. Copy worksheets 5.2.5
6. Enter a formula that references ranges in another worksheet 5.2.6
7. Enter a function that contains a 3 -D reference 5.2.7

5.3 Print a worksheet group

1. Preview and print a worksheet group. 5.3.1

5.4 Link workbooks

1. Explain when to link workbooks. 5.4.1
2. Explain how to open and switch between workbooks 5.4.2
3. Create an external reference formula to total multiple worksheets in a workbook 5.4.3
4. Update linked workbooks 5.4.4
5. Update the source workbook while the destination file is closed 5.4.5
6. Edit links in a workbook 5.4.6

5.5 Create a workspace

1. Create a file that saves information about all open workbooks 5.5.1

5.6 Create a hyperlink

1. Create and edit a hyperlink into a worksheet 5.6.1

5.7 Create a template

1. Create a workbook based on an existing template 5.7.1
2. Create a custom workbook template 5.7.2

5.8 Save a workbook as a web page

1. Save a workbook as a web page 5.8.1
2. Create a page title for the workbook's web page 5.8.2
3. Manipulate web page options for the workbook 5.8.3

Using Advanced Funtions, Conditional Formatting, and Filtering

6.1 Define terminology

1. Prepare a list of terms with definitions 6.1.1

6.2 Use logical functions

1. Use a structured reference that uses both the IF and AND functions together 6.2.1
2. Create a Nested IF function 6.2.2

6.3 Use lookup tables and functions

1. Use the VLOOKUP function to find an exact match 6.3.1
2. Use the VLOOKUP function to find an approximate match 6.3.2

6.4 Check for data entry errors

1. Highlight duplicate values with conditional formatting 6.4.1
2. Use the conditional formatting rules manager 6.4.2
3. Use the IFERROR function to find error values 6.4.3

6.5 Summarize data conditionally

1. Use the COUNTIF function to count values in a range with criteria specified 6.5.1
2. Use the SUMIF function to add values in a range with criteria specified 6.5.2
3. Use the AVERAGEIF function to average values in a range with criteria specified 6.5.3
4. Summarize data using COUNTIFS, SUMIFS, and AVERAGEIFS functions 6.5.4

6.6 Use advanced filtering

1. Explain criteria range syntax 6.6.1
2. Create a criteria ranges using AND, OR, BETWEEN, BEGINS WITH 6.6.2
3. Use advanced filtering with a list range and criteria range 6.6.3

6.7 Use database functions to summarize data

1. Use the DCOUNT formula to provide the number of cells containing numbers that meet specified criteria 6.7.1

Developing an Worksheet Application

7.1 Define terminology

1. Prepare a list of terms with definitions 7.1.1

7.2 Name cells and ranges

1. Explain the purpose of naming a cell(s) 7.2.1
2. Select a cell or range and name it 7.2.2
3. Enter a formula using a defined name 7.2.3
4. Add a defined name to an existing formula 7.2.4

7.3 Ensure data entered into a worksheet is correct

1. Create a validation rule that contains criteria conditions, an input message and error alert 7.3.1
2. Create a data validation feature to restrict a cell to accept only entries that are on a specified list 7.3.2

7.4 Protect a worksheet and a workbook

1. Lock and unlock cells in a worksheet 7.4.1
2. Protect a worksheet and a workbook 7.4.2
3. Add worksheet comments 7.4.3

7.5 Use Macros

1. Explain the use of and create a macro 7.5.1
2. Use security settings to protect against macro viruses 7.5.2
3. Record and run a macro 7.5.3
4. Create a transferdata macro 7.5.4
5. Use the macro editor 7.5.5
6. Create macro buttons 7.5.6
7. Save and open a workbook with a macro 7.5.7

Developing a Financial Analysis

8.1 Define terminology

1. Prepare a list of terms with definitions 8.1.1

8.2 Evaluate investment options

1. Calculate a periodic payment with the PMT function 8.2.1
2. Calculate a future value with the FV function 8.2.2
3. Calculate the length of an investment with the NPER function 8.2.3
4. Calculate the present value of an investment with the PV function 8.2.4
5. Calculate the interest rate of an investment with the RATE function 8.2.5

8.3 Work with loans and mortgages

1. Calculate the periodic payment for a loan using the PMT function 8.3.1
2. Create an Amoritization Schedule 8.3.2
3. Calculate yearly interest and principal payments using the SUMIF function 8.3.3

8.4 Project future income and expenses

1. Explain the difference between a linear trend and a growth trend 8.4.1
2. Explain how to interpolate a trend 8.4.2
3. Explain how to extrapolate a trend 8.4.3

8.5 Calculate different types of depreciation

1. Calculate straight line depreciation using the SLN function 8.5.1
2. Calculate declining balance depreciation using the DB function 8.5.2

8.6 Work with advanced calculations

1. Calculate the time value of money 8.6.1
2. Compare two series of cash flows 8.6.2
3. Calculate net present value using the NPV function 8.6.3
4. Calculate the internal rate of return on an investment using the IRR function 8.6.4

8.7 Audit a workbook

1. Trace error values in a workbook 8.7.1
2. Evaluate an individual formula in a worksheet 8.7.2