

# Spreadsheet Integration

Below is a list of possible ways teachers and students can utilize spreadsheets as part of a lesson plan.

## Budget

Definition: Students create a budget within the parameters established by the teacher.

Example: Students in a web publishing course must create a budget for an e-commerce site which sells collectable sports cards. The budget must include the startup and monthly costs to maintain the site.

## Checkbox Review

Definition: Students create a chart which displays the results of comparing two or more entities. These entities might include events, locations, people, objects, or services. The results are simple check marks of some kind.

Example: Students in a television production class are tasked with reviewing seven different camcorders. Factors for comparison might include tape storage, external microphone, still camera capabilities, and high definition.

## Closed-ended Questions

Definition: Students develop close-ended questions, collect the answers, and analyze the result to a survey they create. These questions must be either dichotomous, multiple choice, or ranking scale type questions.

Example: Students in a French language course conduct a survey related to international French culture. Results from the survey are calculated and student share the results they find interesting or relevant in small group discussions with other students.

## Compare and Contrast Chart

Definition: Students create a chart which displays the results from comparing two or more entities. These entities might include events, locations, people, objects, or services. The results are written in the form of short text answers in each cell of the chart.

Example: Students in an automotive technology class review five currently available hybrid vehicles. Factors for review might include average miles per gallon, battery storage system, gas tank size, greenhouse gas emissions, and cost.



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## Crossword Puzzle

Definition: Teacher or students create a crossword puzzle for important terms being studied.

Example: Teacher of a U.S. government course tasks students with creating a crossword puzzle related to North American Free Trade Agreement. Students must develop both the clues and answers. Students exchange blank puzzles with each other when completed.

## Expense Report

Definition: Students create an expense report for an event related to a concept being studied.

Example: Students in a business course are tasked with providing a budget for a sales person getting ready for a three day trip. Teacher provides students with a detailed itinerary.

## Functions

Definition: Teacher provides or students collect data for a spreadsheet, which then must have one or more functions entered to create relevant results. Examples of these functions might include mean, median, mode, and count.

Example: Students in a math class are given a data set which includes various census data for each state. Students then must write an essay, supported by data from the spreadsheet, about how the average state in the U.S. has changed.

## Perfect Picture

Definition: Teacher provides a spreadsheet containing data which students then must create a chart or graph that provides the appropriate visual presentation for the data.

Example: Students in a sociology course are given the statistical data which shows the negative impact an under funded public school system has on the local community. Students must utilize the appropriate style of chart or graph to support their contention that more funding is needed.

## Predicting the Future

Definition: Teacher provides or students collect data in a spreadsheet. Student then must make predictions about what the future data will be, based on the current data.

Example: Marketing students collect data related to the type of movies people of different ages watch, and how they watch them. From these results students must decide how they would invest 10,000 dollars in movie related corporations.



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## Puzzle Charts

Definition: Teacher creates a blank chart and a bank of cells which contain text in each cell. Students are instructed to move the text cells in to a logical location inside the chart.

Example: Students in a U.S. History class are given a spreadsheet containing 15 text cells related to the three major regions during the colonial America period of history. Students must organize the cells in a logical chart, which they can explain in an oral presentation.

## Rose Color Glasses

Definition: Students take results from a spreadsheet to create charts or graphs which are manipulated in such a way as to present data favoring a specific result. This can take the form of selectively choosing specific data for a chart, or altering the x and y axis in a graph.

Example: Students in an environmental science course take the statistical results of a new housing development in a rural area and create charts and graphs that show very little negative environmental impact on the local environment, despite the fact the numbers show a major negative impact.

## Simulations:

Definition: Teacher creates a spreadsheet containing formulas which react to information entered in specific cells. Based upon the information students enter in cells, other cells reveal preprogrammed responses.

Example: Teacher in a pharmacy tech course creates a simulation in which a patient has a medical condition which requires a combination of several prescription drugs. As students enter the type of prescription drug and the amount to be given, another cell containing a formula displays what effect it has on blood pressure, heart rate, and levels of oxygen and carbon dioxide in the patient's blood.

## Spin Doctor

Definition: Students take results from a spreadsheet to create a report which is skewed to one single point of view, to the detriment of all other possible interpretations.

Example: Students take data from a U.S. census report and prove a point contrary to what the data might actually show. One example would be to show the state of Virginia to be far and away the best state in the United States to live.



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## Timelines

Definition: Students create a timeline of important events using formatting features to form a spreadsheet application. Alternatively, the teacher provides a timeline which the students must put in the correct sequential order.

Example: Students in an American Literature class are instructed to create a timeline which focuses on ten important events related to Mark Twain. One student might focus on Mark Twain's novels, another on his occupations, and another on important historical events during his lifetime.

## Word Search Puzzle

Definition: Teacher or students create a word search puzzle which contains key terms being studied. The puzzle could serve as a spelling review based on a bank of terms, or could serve as hidden answers to a bank of questions.

Example: Students in an engineering course select twenty words related to nanotechnology which they place within a word search. Students also create clues which are used to reveal the twenty hidden words.

