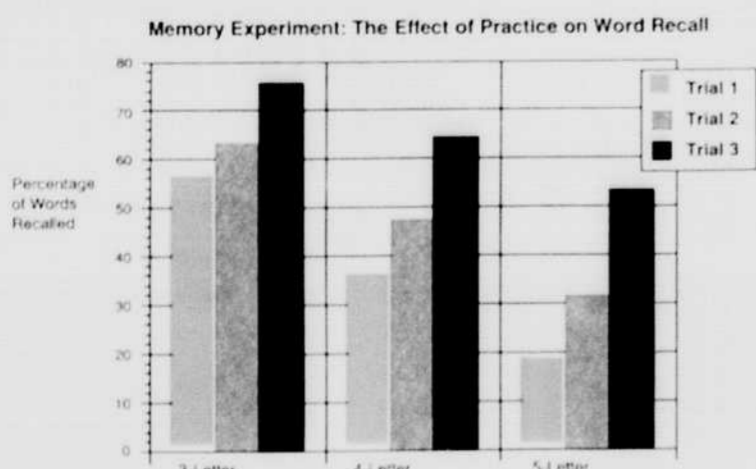
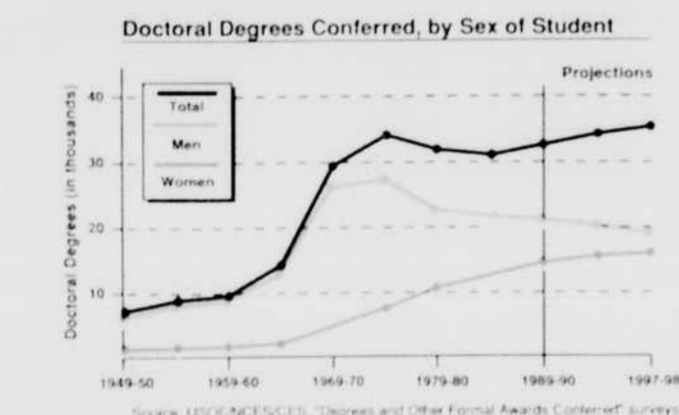


# how to create graphs & charts

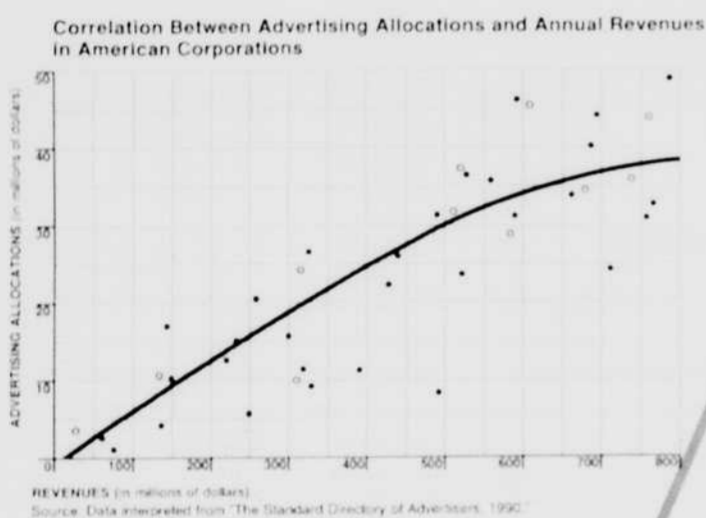
**Bar charts** > Bar charts are particularly good for comparing quantities. To create a useful chart, put units (percentage of words recalled) along the y-axis (vertical). On the x-axis (horizontal), show the entities you're comparing (3-letter words, 4-letter words, and 5-letter words).



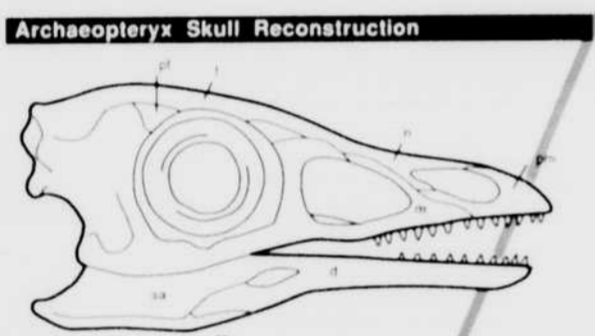
**Time-series charts** > They're used to show trends. The units you're comparing go on the y-axis, and the time (minutes, hours, days) goes on the x-axis.



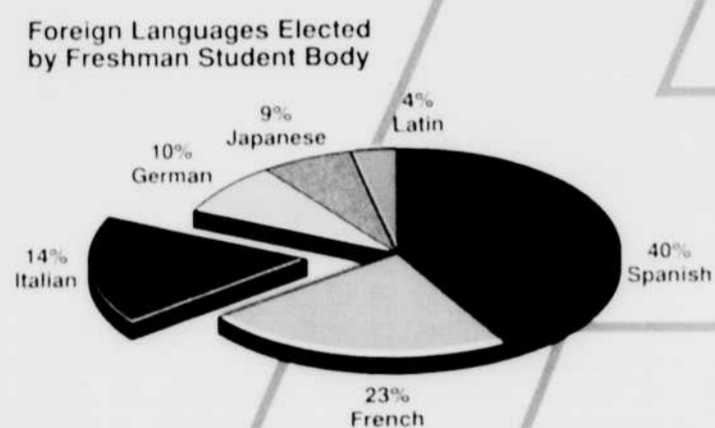
**Scatter plots** > These are used to graph many data points so you can see relationships among them. Scatter plots can be used to show correlation between two factors. In general, dependent variables go on the y-axis and independent variables go on the x-axis.



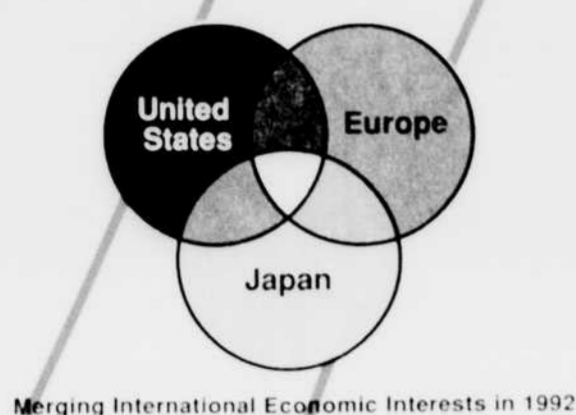
**Illustrations** > If you're explaining something that few people have seen before, you may want to illustrate your point.



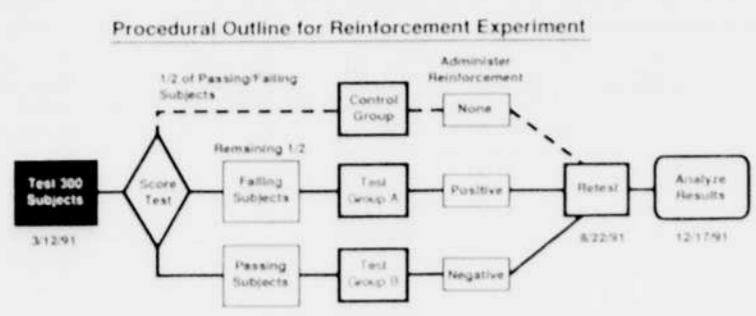
**Pie charts** > Pie charts are used to compare quantities. They're best used when the "slices" are substantially different, that is, when the things you're comparing represent markedly different quantities. If there are too many slices, you're probably trying to compare too many things.



**Summary diagrams** > Summary diagrams help to give the reader a visual model of the information being discussed. They summarize a concept, idea, or fact in a way that makes your writing more memorable or clear.



**Flow charts** > These charts can help you explain a process, for example, the different steps involved in conducting a lab experiment. You can give the reader a model for the entire experiment, in a succinct way that words alone couldn't describe.



Some things can't be said with words alone.

Sometimes you need more to make your point.

Charts and graphs can help to illustrate an idea, show trends, and otherwise make sense of a disorderly world.

Nice, you say. But you're probably thinking that creating them would be complicated.

Not really. There are many easy-to-use programs that can help. On this page, you can see some of the kinds of charts you can produce using those programs and a Macintosh. There are three basic types of programs you can use:

**Spreadsheet programs.** Almost all Macintosh spreadsheet programs—including Informix Wingz, Microsoft Excel, and Lotus 1-2-3 for Macintosh—offer charting capabilities. These programs are particularly good at turning financial, scientific, or engineering data into bar charts, pie charts, or trend charts. All you have to do is choose what kind of chart you want, and the Macintosh will create it automatically. You can even use these programs to create three-dimensional charts.

**Charting programs.** These programs—such as CA Cricket Graph and DeltaGraph—were written specifically for creating charts. In general, they can create an even wider variety of chart types than spreadsheet programs can. Both CA Cricket Graph and DeltaGraph are especially good for scientific and engineering graphs and charts.

**Drawing and painting programs.** These programs are designed for drawing illustrations or diagrams that are unique to your work and don't involve preexisting formats or styles. Claris MacPaint, Claris MacDraw, Aldus FreeHand, and Adobe Illustrator are some programs you might consider.

## Some advice on how to create charts.

• **Figure out what you're trying to say.** Each chart or graphic should have a clear purpose—and only one purpose. Are you trying to compare two things? Show a trend? Summarize a concept? Show a correlation?

• **Choose the right chart.** After you determine what you want a chart to convey, all you have to do is choose the right type of chart. Some of the basic types are shown at left.

• **Keep it simple.** When creating a chart, try to limit the number of fonts you use to two or three. Avoid using many different patterns for bars and adding extra lines or decoration. Focus on the data, not on decorating.

• **Give the chart a meaningful title.** By labeling the chart, you can tell the reader what it's about. If the chart is complex, you may want to provide a main title for the chart, and below it add a subtitle that explains more. If it would help, you may also want to write a short caption to tell the reader even more.

• **Cite your source.** Often readers will want to know where you got your data. In small type—6 points or so—cite where the data came from.

• **Place your chart in a logical place in your document.** Once you've completed a chart or graphic, it's a simple matter to place it into your paper. All you have to do is copy it from the program you used to create it, and paste it into your paper.

Place your chart in a logical position in the paper. If the chart contains material that needs to be understood before the reader gets to a particular passage in your text, then place it before that text. If you want the reader to look at your chart while reading a particular passage, then place it in the middle of that passage. If your chart is supposed to summarize what's been covered, place it at the end of the passage.

A Helvetica  
A Palatino  
A ITC Bookman  
A Futuro Heavy  
A Times  
A New Century Schoolbook

Macintosh lets you choose from a wide variety of fonts and type sizes.

# how to print

Let's say you've been working on an assignment—perhaps a paper on the meaning of life, a problem set on the theory of relativity, a plan for your next great invention. You've spent days, weeks, maybe even months working on it.

It is—quite obviously—something you care a lot about. And you want it to look good.

Here's how a Macintosh computer can help. When you use a Macintosh, you're in complete control of how your work looks. You can easily change fonts, create graphics and charts, and move text around on the page.

And unlike the work you do on most other computers, what you create on the screen of a Macintosh is precisely what you'll see when you print. That's a huge advantage when you're trying to create something that makes sense—and looks good.

## Preparing your document: fonts, type sizes, and margins.

**Goal number one:** Make your document legible and logical, starting with the fonts you choose. Thousands of fonts are available for the Macintosh. Here's some advice on how to use them to your best advantage.

• In most cases, you'll want to use a serif font—Times, Palatino, ITC Bookman, New Century Schoolbook, and so forth—for the main text of your paper. (Serifs are the additional flourishes at the ends of letters.) These fonts are especially easy to read. The paragraph you're reading now is printed in a serif font—Times.

• To give your paper a visual "voice" that adds emphasis and clarity to your work, you can use a sans serif ("without serifs") font for titles, subtitles, and captions. For example, you might use Helvetica, a sans serif font, as we've done here.

• In general, you'll want to limit the number of fonts you use in a paper to two or three. Using more than that is likely to make your paper look like a hodgepodge instead of a cohesive whole.

• To make your paper easy to read, use 12-point type. If you have more text than you have space, you might consider using 10-point type, doing that will let you fit more words on each page. You probably won't want to use a smaller point size than that, however. Titles can be printed in 18-point type, or larger. And subtitles can be printed in 14-point type, probably using a different font.

• Use appropriate margins. Allow at least a one-inch margin on the left and right—and a little less than that for the top and bottom.

## The Print command.

Let's talk for a moment about what to do once you've formatted your work the way you like it. Here's how to print it.

Macintosh makes printing easy. All you need to do is choose the Print command from the File menu. You can't miss it—

it's in plain English. And because all Macintosh programs work in the same way (unlike programs for other computers), you don't have to memorize confusing print commands when you switch between software programs.

Just concentrate on doing your work the way you want to do it; Macintosh takes care of the rest.

## Where to print your work.

You have a lot of options for where you can print your work. Here are three:

• **Your school's library, computer center, or computer cluster.**

Many colleges have places where students can do their work on a Macintosh. Check your library, your computer cluster, even your dorm. Some colleges let students print documents free of charge; most offer printing for a fee, usually between \$ .20 and \$1.00 a page.

• **Your local copy store.** Many copy stores—such as Kinko's, Copymat, Krishna Copy, and Zebra Copy, to name just a few—offer laser printing at reasonable rates. Look in your phone book under "Desktop Publishing," "Photocopying," or "Copying" to find the closest copy store.

• **A friend's printer.** Not necessarily the best way to keep friends, but a good option if you have only an occasional paper or assignment to print.

## Or get your own Apple printer.

In an ideal world, of course, you'd have your own printer, and you wouldn't have to count on the library or the copy store to be open. After all, late-night printing seems to be the rule, not the exception, in college.

Apple has a full line of printers you can choose from. Three of them are particularly well suited to students: the Apple StyleWriter (shown above), the Personal LaserWriter 1S, and the Personal LaserWriter NT. They all offer exceptional printed results—at very affordable prices.