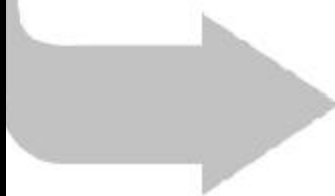


OBJECTIVES



- Learn important questions to ask
- Determine how you will be printing your project
- Learn key terminology
- Know what you need to know before you are ready to print

Preparing Your Document for Print

Introduction

Before you begin to create your printed project - before you type a headline, sketch an illustration, or take a photo, before you even turn on your computer - you have to know your final goals. We will go through the steps of preparing your document from inception to print. You will learn what important questions to ask before you start working and key terminology used in the printing industry.

Need Help?

The Help Desk is a service provided to all students, staff, and faculty at Mississippi State University at no charge. The consultants are here to help you with various computer-related information or problems. Check the Web site at <http://www.its.msstate.edu> for handouts and/or resolutions to common computer problems. If you cannot find an answer to your question on the Web or you do not have access to the Internet, please call us at **325-0631** (7:00 a.m. to 7:00 p.m. Monday through Friday). You can also e-mail us at helpdesk@msstate.edu or come by our office at **46 Magruder Street** (the blue house behind Rice Hall) with walk-in hours from 8:00 a.m. to 5:00 p.m. weekdays.

**BIM
PRINT**

Instructor

Amy Berryhill
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What are THE questions?

There are three important questions to ask before you start working:

1. What kind of project is it?
2. How much money can we spend?
3. When is it due?

The **kind of project** tells you the physical properties of the piece, such as general size, approximate number of pages, number of colors, etc. Is it a book? A brochure? An annual report? A single-page flyer? The physical properties will determine many factors in the production and printing of your work.

How much can I spend lets you know your budget for the project. You won't be able to hire a famous photographer or print in full color if it's a low-budget project. Whether the budget is high or low, you need to know the limitations so you can plan accordingly.

The **due date**, or **deadline**, tells you when the project needs to be finished. The deadline can be in a year, a month, a week, or ASAP! Some dates are flexible; some dates are very fixed. "We need it in the fall semester" is a flexible date; "We need it to hand out at a meeting on Friday" is a very fixed date. Once you know the *final* deadline, you can plan the due dates for other parts of the project so everything will be ready on time.

When to ask questions

If you are working for someone else, don't be afraid to ask questions. You don't seem like a novice just because you need clarification on some specifics - you actually seem pretty smart.

What kind of job is it?

Most people tell you the type of project you're going to work on when you are given the assignment. They say things like, "I need something for Discovery Day." You need to ask for more specifics, like if how much information they need in the project, then determine if it will be a brochure or a flyer or something else entirely. You won't be able to make any more decisions until your questions are answered.

What's the size of the paper?

This question may seem straightforward, but it can actually be a little tricky. Pick up a magazine and measure it. It's probably around 8 1/2 inches wide by 10 1/2 inches tall. Now open the magazine and measure again. This second measurement is the actual size of the *piece of paper*. The first measurement was the size of the *page*. If you are designing a brochure or flyer that will be folded, then you need to know the size of the paper *before* folding. Then you can figure out the size of the individual panels *after* folding.

How many pieces of paper?

Once you've decided what kind of job it is, you need to know how many pieces of paper for the project. If you plan to reproduce the project on the office laser printer or copy machine, you can print on both sides of the paper, in which case a 20-page report uses only 10 pieces of paper. However, if you're having your job professionally printed, you need to talk to the print shop about the final number of printed pieces of paper.

Working with signatures

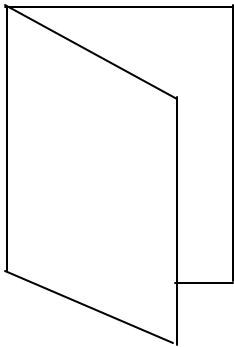
If your project is a multi-page document such as a brochure, newsletter, or book, you will need to check with your print shop about the number of pages you think you will have. Because projects like books and lengthy newsletters are printed in units called signatures, you may end up with extra, blank pages at the end of your piece if you don't plan carefully.

Books and newsletters are not printed on the same size paper as what you see as the final pages. Most books are created by printing 8 pages on one side of a large piece of paper and 8 more pages are printed on the other side. This is called a "16-page signature" because when that one printed piece of paper is then folded and trimmed, the result is 16 pages of a book held together at the fold. The folded set of pages is called the signature.

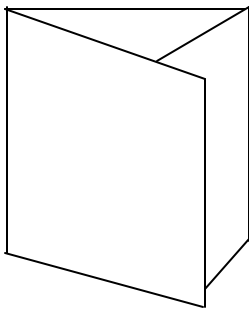
You need to think in signature units. If your signature is 16, then the number of pages in your project will need to be 16, 32, 48, 64, 80 (multiples of 16) and so on. If your signature is 8, the number of pages will need to be multiples of 8. So what happens if you find you have enough text for 67 pages? With a 16-page signature, you will have 13 blank pages at the end of the book. There are several ways to fix this: you can *add* 13 pages of copy and illustrations to fill up the blank pages. You can *cut* 3 pages of copy so the books fits into 64 pages. Or you can *ask the printer* to switch to an 8-page signature and then add copy for only 5 extra pages. You should find out the signature unit before you do too much work on a project. This will really help when you design the layout.

How many folds?

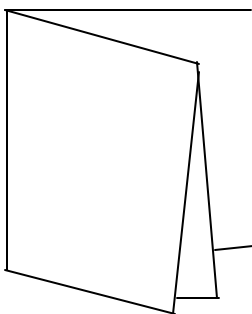
As with the magazine example, folding the paper changes the size of the individual pages. Each time you add a fold, you add more pages to the job.



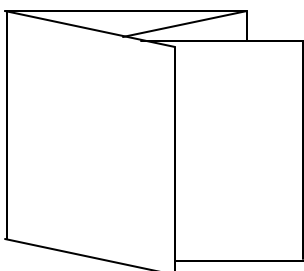
Take an ordinary piece of paper. Hold it so it is wider than it is tall (this is called landscape orientation). Fold it vertically so it looks like a little booklet. How many “pages” are there? The answer is four. This type of job is called a **four-page folder**.



Take another piece of paper, hold it in a landscape orientation (sometimes called “sideways”), and fold it two times to divide it into three equal segments. This rates six different pages and is called a **six-page folder**.



Take another piece of paper, hold it so it is taller than it is wide (this is called portrait orientation), and fold it horizontally in half. Now fold it again, vertically. This is called an **eight-page folder**.



Not only are there different numbers of folds for a piece of paper, but there are different ways you can fold the paper to create the same number of pages. For instance, the eight-page folder described above was created with a horizontal fold and then a vertical fold. But you can also create an eight-page folder by taking a piece of paper, holding it in a landscape orientation, and folding it three times vertically, creating eight equal pages.

If you want to create folds in your project, take a piece of paper and fold it up the way you want the finished project to look. If someone else will be printing the job, such as a local print shop, take this “mock-up” to them to make sure they can print it. Some types of folds are tricky and can't be done by machine - they have to be folded by hand, which is very costly. You don't want to be surprised by the cost. You may have to rearrange your folding depending on what the printer suggests.

How many copies?

The answer to “How many copies?” is pretty simple to figure out - it is how many *finished pieces* of the project you will have. The number of finished pieces is sometimes called the print run. The print run will often determine what kind of printing process you should choose. For example, if you need 500 copies of a full-color flyer, it might cost \$1000 to have it printed at a commercial print shop costing \$2 per flyer. It might be more economical to have 500 copies printed on a color photocopier, which might cost .50 cents a page, for a total cost of \$250. However, you may need 10,000 copies of this same page. Photocopying may bring the price down to .40 cents each, for a total cost of \$4,000, but at a printer, those 10,000 pages may cost only \$3,000 total. This is because once a job starts to run on a commercial printing press, there is very little difference between printing 500 copies and 10,000 copies. So the more copies you print, the less each individual unit will cost.

How many colors?

The question of color can be confusing. It's not about how many *colors* are on the page, but how many *inks* are needed to create those colors. For example, look at a page in a magazine. A single page may have many, many distinct individual colors on the page. That doesn't mean the magazine used all those colors in the printing process. All the colors were printed using only *four* ink colors (CMYK - cyan, magenta, yellow, black), mixed on the page to create all the colors that you see. This is called **four-color process printing**. When you are deciding on how many colors for a job, you are really deciding on how many inks. The more inks, the higher the cost.

The **color of the paper** does not count as a color. If you print your job using black ink on yellow paper, it still counts as only one color because the printer is using only one ink (black) on the press.

Process Color Printing: Four primary colors used to print in full color: Cyan, Magenta, Yellow and black (CMYK). Process printing uses various percentages of each primary color, shown on paper as a dot, to simulate many colors. From the average viewing distance, these dots blend together, to create the illusion of many colors. This method of printing is used to print full color brochures, posters, photographs, book jackets and more.

What kind of paper?

If you are printing your job using an ordinary desktop printer or a copier, many of paper questions will be easy to answer because only certain types of papers can be used in those printers or copiers. If you choose a professional print shop to reproduce your job, there are other things to consider about the paper, some of which you may need to discuss with the print shop.

Color

Most paper is white. However, there are hundreds of different shades of white. Some whites are very warm, almost yellow; others are cool, almost blue or gray. Your print shop may be able to give you samples of different paper colors. Paper supply companies provide print shops with paper books that show the different types of papers available.

Of course, you can also get paper in colors. Most professional printers have a wide variety of colors to choose from that will give more impact to flyers, invitations, and brochures. However, keep in mind that most photographs don't look very good on colored papers.

Coating

Papers are coated or uncoated, which refers to how smooth the surface of the paper feels. The degree of smoothness is created during the paper-making process at the paper mill.

Uncoated paper is rougher and tends to be porous - which means the ink soaks into the paper. Coated paper is smooth and range from somewhat dull to very glossy. On coated paper, photographs and illustrations look nice and crisp because the ink doesn't absorb into the paper, it sits on top of it.



Uncoated paper - ink absorbs into the paper.



Coated paper - ink does not absorb into the paper.

Let's not confuse coated paper with varnished or laminated paper. Varnishing or lamination is actually part of the printing process, where extra coating of clear shellac or plastic are applied to add even more gloss to a paper.

What kind of paper?

Paper Finishes

A paper's finish is the texture or smoothness of the paper. An antique finish is a rough texture. Eggshell or vellum finishes are smoother. There are also specialty finishes made to simulate the look of fabrics, such as tweed or linen. Keep in mind that if you use a paper with a textured finish, your text might not look as clean or the illustrations may look a little rough because the ink has to bend up and down around the nooks and crannies of the finish.

Weight

Paper is graded according to its weight, which refers to how much 500 sheets of paper in its standard size weighs. The typical bond paper for a laser printer or copy machine is listed as 24-pound; lighter bond paper is 20-pound.

Book paper is either coated or uncoated and can weigh between 30 and 110 pounds. Despite the name, book paper can be used for books, magazines, posters, flyers, or any job that doesn't need an exceptional quality paper.

Text is a high-quality coated or uncoated paper used for better-quality printing. Annual reports, magazine inserts, and nice brochures and programs. Common weights of text are 70- and 80-pound.

Cover stock is a heavier-weight paper that usually matches the colors of certain book papers. Cover stock can be used for book covers, business cards, postcards, and presentation covers. Typical cover weights are 60, 65, 80, or 100.

As a general rule, the heavier the paper the more it costs. If you are going to mail your printed piece, take into consideration the weight of the paper because it might affect the amount of postage you need.

Other paper considerations

There are a few other features to consider when looking at paper.

Strength is how well the paper holds up under stress. Paper bags and envelopes need a high degree of strength.

Thickness is how thick the paper is. Thick papers don't have to weigh a lot. Some books are printed on very thick but lightweight paper, which makes the book look like it has more pages.

Brightness is how light reflects off the paper. Some papers contain fluorescents so they appear brighter. This makes the paper sparkle more but can affect the color of printed images.

Opacity refers to how much the text or images printed on the other side of the page shows through. If you are creating a book with lots of text and illustrations, make sure the opacity is not too high or your readers

Binding

If you've got a printed project with more than one piece of paper, then you need to determine the binding for the job. Binding refers to the technique that holds the pages together.

A print shop will ask you what type of binding you want. They may also suggest one type over another depending on the number of pages in your job. Some print shops do their own binding and finishing; many send the printed job to a separate company that binds and finishes.



Spiral binding uses a metal or plastic spiral that coils through holes at the side of the paper.



Wir-O binding is similar to spiral binding, but instead of a single spiral, two wire teeth fit into rectangular holes in the paper. Wir-O is sturdier than spiral binding.



Saddle-stitch binding uses two or more staples inserted in the fold to hold both the cover and the pages together.



Perfect binding gathers all the signatures together. The spine is then ground or cut to create a flat edge, and the paper cover is glued around the spine.



Case binding sews the individual signatures together and glues them to a gauze strip, then glues on end papers and attaches them onto hard covers. This is the most common form of binding for hardcover books.

There are several more types of binding methods, but the ones listed are by far the most common.

To Copy or to Print?

As copiers, especially color copiers, become more sophisticated, it becomes harder to choose between traditional printing or photocopying. The decision is not an easy one to make. There are many different criteria you have to consider; here are some guidelines.

Consideration

Printing Press

Copy Machine

Quality

There is a clear difference between the look of a photocopied document and a real printed piece. If you need high-quality, go to press

- Large solid areas of color tend to look more uniform when printed
- Printed pieces usually start from originals printed with high-resolution imagesetters so the type and line are cleaner and crisper.

- Most photocopiers cannot handle photographs or subtle images well.
- The toner from a copier can flake off the paper much easier than the ink from a printing press.

Economy

The economics of photocopying and printing depend mostly on how many copies you need.

- A printing press has high setup costs, but the more you print, the less the cost per unit (finished piece).
- Printing is more economical for jobs over 1,000 copies.

- Photocopying usually has a fixed cost - each unit costs the same whether you make ten or one hundred copies.
- Photocopying is best for jobs under 500 copies.

Speed

There is a great difference in how quickly a job can be finished.

- Printing takes longer to get everything ready for the press.
- Digital printing is much faster than traditional printing.

- Photocopying is ready to start as soon as you bring in the material.

Materials

Photocopiers are very limited to the papers or other materials they can print onto. A printing press has far more choices.

- You can print onto plastic, vinyl, or many other materials for special effects.

- Photocopiers do not print well onto textured papers, and not at all onto plastic or vinyl.

Visiting the Printer

You should try to talk to the print shop that will be printing your job before you do too much work. Make an appointment to discuss your project. It will help if you are prepared to answer the many questions the print shop will have.

Questions...

- How many finished pieces do you need? Do you need some now or others later? You might ask if it's possible for the shop to print all the copies now and store the ones you'll need later.
- When do you need the project? Is this a flexible date? You might be able to save money if you can tell the printer you are willing to wait for a time when they're not too busy.
- How do you expect to provide the original materials for the projects? Are you bringing in a laser copy or will you have film from a high-resolution imagesetter?
- Do you want to provide a computer disk? If so, make sure the print shop can open your disk on their computer and that they use the same software. You may find that documents created by some inexpensive home-publishing software or word processor cannot be opened or printed by commercial print shops.
- Does your job require any special colors? For example, do you need a certain color to match the MSU wordmark? Or do you want colors to look like silver or gold?
- Describe the project. If it's a simple flyer that needs to be mailed, the print shop may suggest a certain weight paper that won't be too expensive to mail. However, if it's a flyer that will be handed out, they may suggest a heavier paper.
- Know your budget. If the price quoted for the job seems too high, ask if there are ways the print shop can lower costs, such as using a different paper, fewer ink colors, fewer copies, etc.

Professional printing doesn't have to cost a lot. Here are some things that can help you save money as you are creating your project.

- One-color printing cost the least. However, that one color doesn't have to be plain black and the paper doesn't have to be white. An ink color other than black may or may not cost a little more, but it would be safe to ask.
- Two-color costs less than four-color.
- If you're using more than one color ink, it can cost more if two colors are touching each other, like a blue border around a gold circle. This is called "tight registration" and takes extra time and care to accomplish correctly. If your colors are at least a quarter-inch away from each other, it may cost less to print.
- Images that "bleed" off the edge of the paper cost more to print.
- Printing full-color on one side of the paper and one color on the other can save money.
- Letting the print shop substitute less expensive paper or leftover paper from someone else's job can sometimes save money.

A little about graphics...

Graphics, whether they be photos or illustrations, really add to a printed document. However, even if the image looks great on the screen, it may not look good on the printed piece. This confuses a lot of people. When you use graphics in a document, you must include that file on the disk when you take it to the printer. Also, think about the image resolution. A graphic that you copy from the web and use in your document doesn't reproduce well at all when printed. This is because the resolution is not high enough to reproduce the image. You can see it well on the screen, because screen resolution is also low. If you have any questions at all concerning images, speak with the prepress personnel at the print shop. Usually, they are more than willing to help you get it right the first time.

Taking the Job to Printing

MSU Printing Services' Electronic Prepress

The Printing Department on the campus of Mississippi State University has seen many different types of jobs come into their shop. Their goal is to provide the customer with a cost-effective and high quality product. They have provided a few guidelines and suggestion to help attain that goal.

Basic Needs

You will need a disk containing your final, completed document. This disk must have the document, all graphics, fonts, and any other items related to the job. You will also need a laser proof/hard copy of what is on the disk, exactly as the files are saved. If the job is to be printed in more than one color, laser color separations must be furnished. Please be sure all proofs and computer files are of the last version without any changes to be made. Anytime your file has to be opened by someone in prepress, a charge is incurred.

Laser Proof

It is very important to provide a hard copy proof of your final product. It is used to compare to the final film that is output. The final proof must be a print from your final version of the computer file. Again, if more than one color is used, separated laser proof should be provided.

Disks

Your disk must contain the final and complete document with all its components before the disk can be used for film output. The disk must contain the following information.

- Complete document within the application it was created. (e.g. QuarkXpress, PageMaker, FreeHand, PC or Mac versions)
- All fonts that were used to create the document must be included on the disk in a font folder.
- All graphics used to create the document must be included on the disk in a graphics folder. Each graphic must be on the disk in the last form you have saved and placed in your document.
- An "Electronic Output Request" form must be completed at the time you place the order.

Proofing

When receiving a proof, make sure that you read it word for word. Your document is not proofed by anyone at printing, so it is up to you to catch any errors or corrections that need to be made.

Media Transfer

Zip disks, 230 Syquest, Compac disk, and 3 1/2" floppies

Programs that can be used

QuarkXpress
Photoshop
PageMaker
FreeHand

Files that can be accepted and used as ASCII or DOS files are WordPerfect, Microsoft Word, Microsoft Publisher, and some spreadsheets.



Print Information

User Services

Project Description: _____

Deadlines

First Draft: _____

Second Draft: _____

Due at the print shop (or publication): _____

Final Deadline Date: _____

Budget

Printing budget: _____

Photography or illustrations: _____

Other: _____

Job Details

Paper Size: _____

Page Size: _____

Number of Pages: _____

Number of Colors: _____

Folds: _____

Signature units: _____

Graphics: _____

Fonts: _____

Number of Final Copies: _____

Paper Description

Color: _____

Coating: _____

Finish: _____

Weight: _____

Special Paper Considerations: _____

Binding

Type of Binding: _____



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