

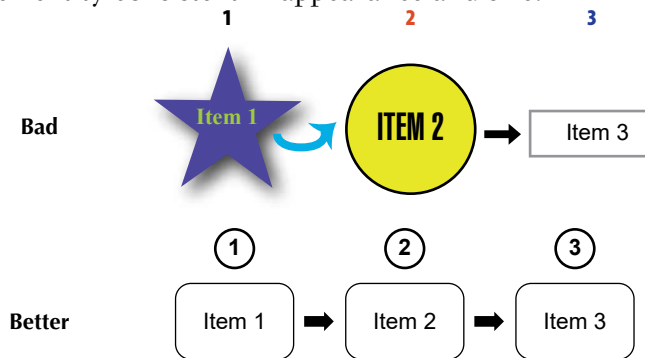
Best Practices for Line Art

GENERAL GUIDELINES

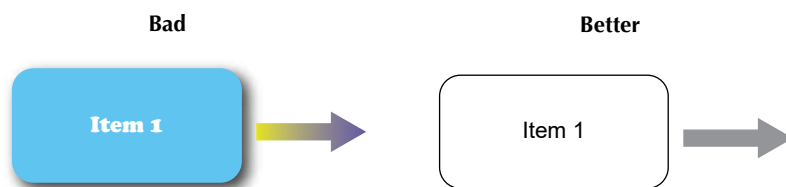
Avoid Extraneous Effects

We recommend that visual differentiations within a graphic be reserved to distinguish content rather than to add visual interest.

- In flowcharts, matrices, and other graphics composed of words and shapes, avoid using multiple shapes for equivalent entities. Strive to keep the shapes associated with a given entity consistent in appearance and size.



- Avoid raster effects (pixel-based effects) wherever possible. Effects in this category can include drop shadows, gradients, and inner or outer glows. If you must use a raster effect to achieve a desired appearance, please use it selectively and only as required. (If you are using a program that allows you to control the resolution of raster effects, make certain that resolution is 300 dpi or higher.)



- Avoid white or light colored text on a black or shaded background. If you must use white or light text, make certain that the background color achieves at least a 4.5:1 contrast ratio from the light text.

Consistency and Simplicity

By keeping text and abstract graphics like boxes and arrows that represent conceptually similar material at a consistent size and appearance, effects like enlarged size/weight or altered shading can be reserved to communicate emphasis. Further, it is generally easier to add visual interest to graphics that communicate simply than to make design “bells and whistles” consistent across disparate graphics.

Orientation

When designing figures, it is imperative to use portrait, not landscape, orientation. Bear in mind the page size of your book and how much material will fit on the page at a readable size (see below for specific dimensions).

ADOBE ILLUSTRATOR

Size and Dimensions

It is generally wise to create line art at or near the intended size in the final product. These considerations can be addressed simply within Illustrator by defining an Artboard at or near the size of the intended type page, setting all text at a consistent type size not smaller than 8 point, and/or visually confirming that all representational content is intelligible at that size.

- For 6" × 9" trim size books, set the artboard to 27 picas (324 points or 4.5") wide by 43 picas (516 points or about 7.17") deep.
- For 7" × 10" trim size books, set the artboard to 32 picas (384 points or about 5.33") wide by 49 picas (588 points or about 8.17") deep.
- For 8" × 10.5" trim size books, set the artboard to 34 picas (408 points or about 5.66") wide by 50 picas (600 points or about 8.33") deep.

Text

Set all text in a conventional sans serif typeface such as Arial or Myriad Pro. The ideal size for sans serif type within a graphic is usually 8.5 point. It is best to use a single type size throughout a graphic and to add emphasis with bold or italic styling. If different size type does appear in a single graphic, it should have a diageitic reason that will be evident to the reader.

For print production, text objects should always appear on top of graphic objects. A simple way to ensure that your files comply with this rule is to move all text objects to a single layer and move that layer to the top of the hierarchy in the Layers panel.

Text objects should generally cohere with the content itself. A sentence that turns over onto several lines to appear within a surrounding shape should be a single text object, not different objects for each line. Imposing alignment within a text object using tabs or multiple spaces is acceptable in cases of simple parallelism (numerical axis labels, for example), but is discouraged in less closely related text.

Strokes

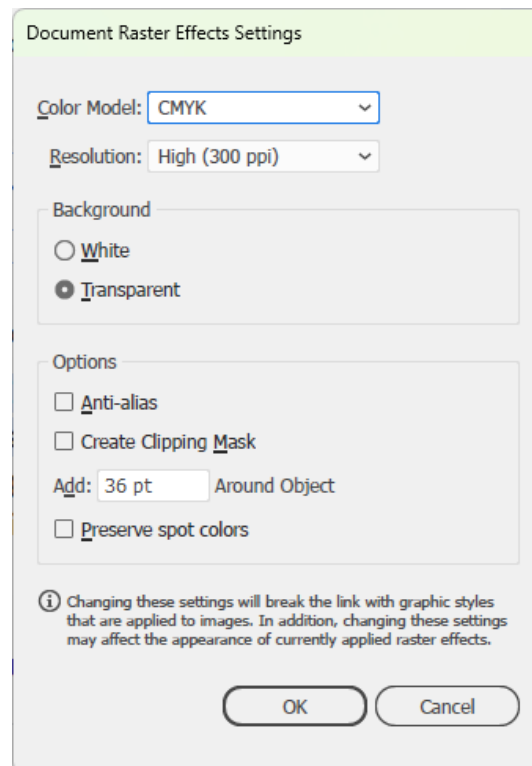
Stroke weights of less than 0.25 point may disappear or fail to “read” in printed products; instead treat 0.5 point as a reasonable minimum. Strokes that use a light shade of gray (or similar color) at a small weight may disappear. Generally, a 1 point weight can be treated as a minimum for any stroke lighter than 50% black (or equivalent color).

Shapes

For print production, shapes defined by a stroke often produce a better result than shapes defined by a fill. When filled shapes must appear, bear in mind that a limited number of differentiated shades may be achievable under some print conditions.

Vector-based effects (such as rounded corners or warps) applied to shapes are acceptable and can generally be retained as is; if necessary, such effects can be actualized with Expand Appearance functionality but should not be rasterized.

Raster-based effects (such as gradient fills and drop shadows) applied to shapes within Illustrator are usually acceptable but should be avoided where possible. If such effects are necessary, make certain that resolution for raster effects is set to 300 dpi. (You can access this setting through the Effect menu as Document Raster Effects Settings.)



MICROSOFT WORD

Size and Dimensions

Microsoft Word commonly defaults to an 8.5" × 11" (letter) page size. It is perfectly acceptable to retain that default size but please bear in mind that the final product is likely to use a smaller size page with larger margins. For that reason, avoid “maxing out” the available space. If your graphic must occupy the entire space, please make certain the text within the graphic is large enough to remain legible when the entire graphic is reduced in size.

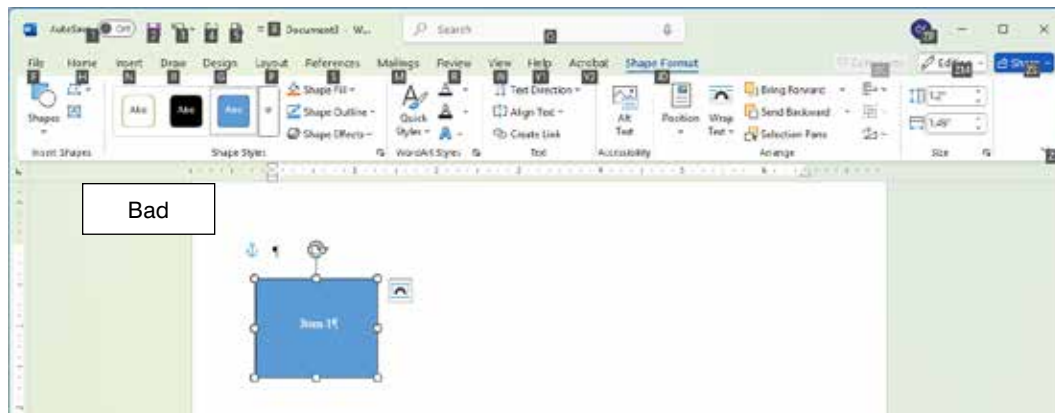
Text

Set all text in a conventional sans serif typeface. Arial is preferred and Calibri or Aptos are discouraged. It is best to use a single type size throughout a graphic and to add emphasis with bold or italic styling. If different size type does appear in a single graphic, it should have a diagetic reason that will be evident to the reader.

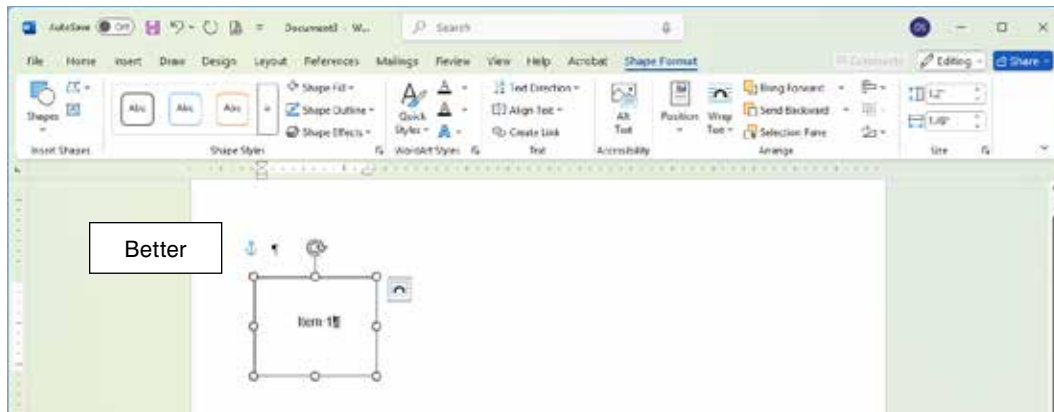
Insert Ribbon Items

The shapes, icons, and SmartArt templates that can be added from the Insert Ribbon options appear to be intended for screen display or home use and not for professional-quality print production. In their default state, many of these items include color, raster effects, or text styling that may be problematic in a single-ink print environment. It is often necessary to manually remove these “bells and whistles” to create a streamlined graphic in a print book. You are encouraged to alter the graphics yourself, but some simplification may have to be imposed in the production process if your efforts are insufficient.

In the screenshot below, a simple inserted rectangle shape by default appears with a solid blue fill, a solid black outline (stroke), and inserted text appears in white against the blue background.

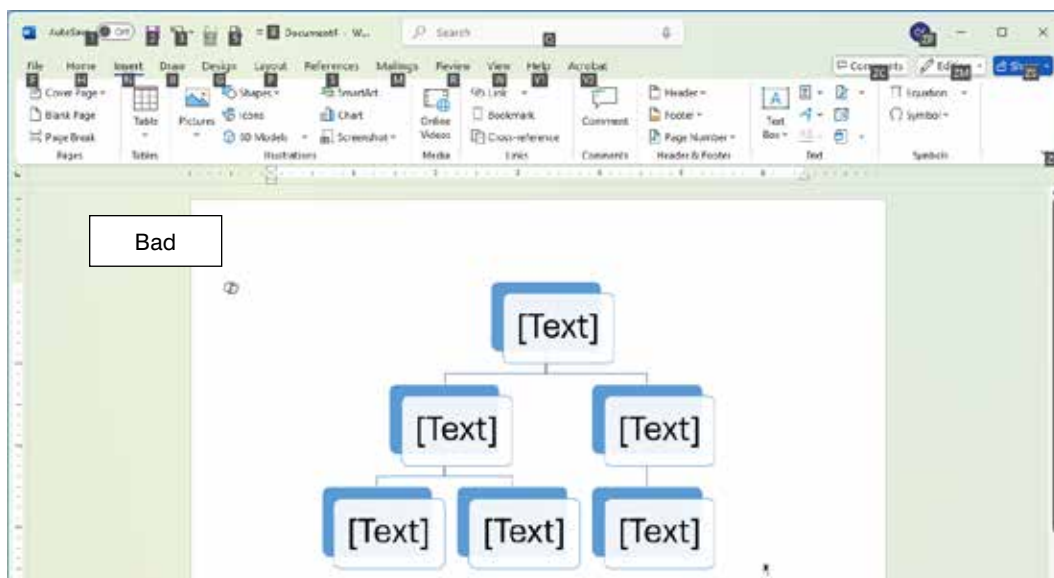


Even the alternate shape styles available in the Shape Format ribbon (appearing when the box is selected) all continue to include color and/or light type on a dark background. To adequately simplify even this most basic graphic, it is necessary to alter the individual properties of the shape. The Shape Fill must be set to “No Fill” or white and the text must be selected and the Text Fill set to black (the Arial font may be imposed at the same time).

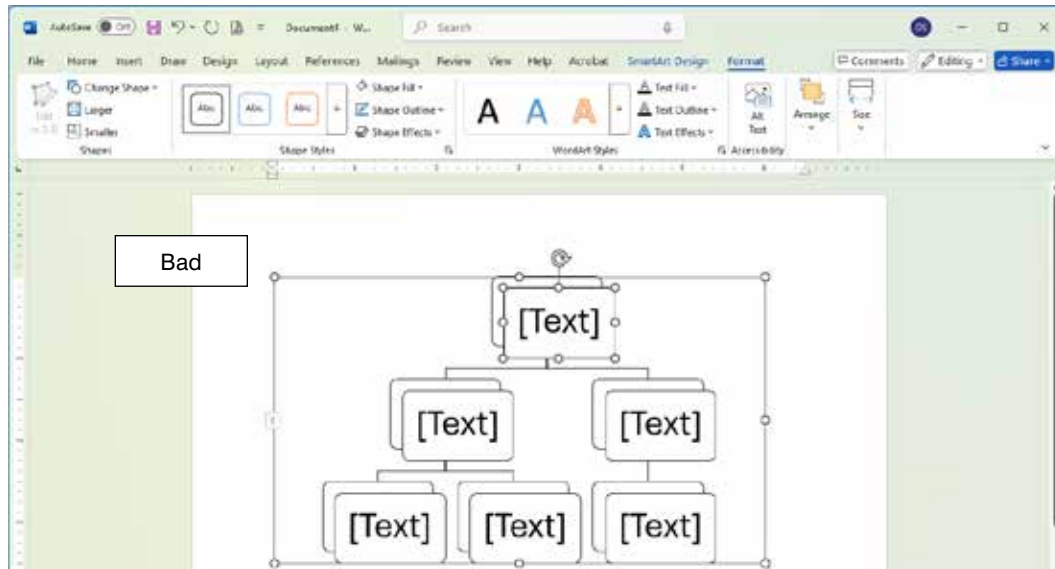


SmartArt

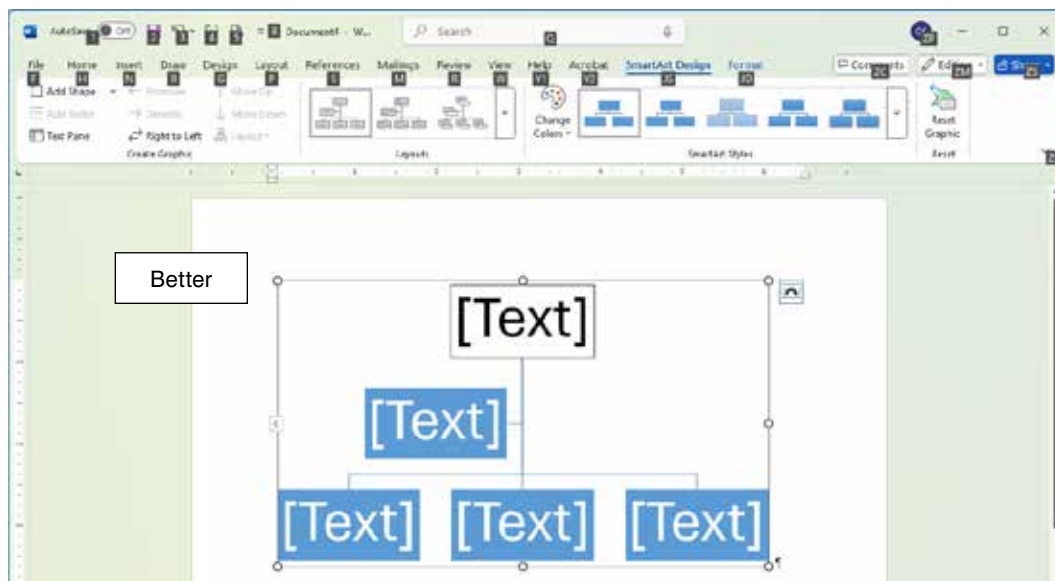
Although Microsoft’s SmartArt templates make it easy to create coherent groups of shapes, the default appearance of those shapes is rarely ideal for print production. To cite a single example, the SmartArt “Hierarchy” template in the screenshot that follows uses color and transparency, neither of which is essential to the communicative value of the graphic itself and neither of which will look good in a single-ink print environment.



Unfortunately, modification of such a graphic using the Format ribbon cannot remove all the inherent problems.



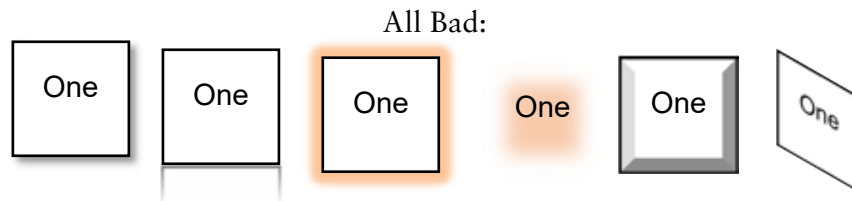
Instead, the SmartArt Design itself must be exchanged for a more straightforward template. Any changes to the arrangement of the content must then be repaired. With that done, options in the Format ribbon can be used to further simplify the resulting graphic to make it acceptable for print production.



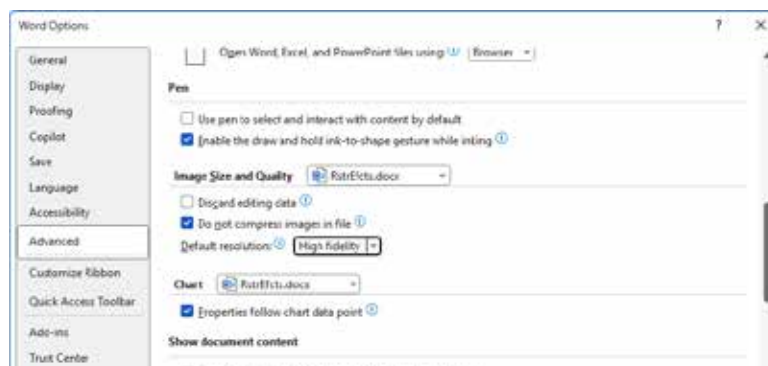
Given the potential difficulty in reworking SmartArt templates, it is often best to avoid their use when the desired effect can be achieved with simple shapes. If you must use a SmartArt template, prefer the most simple version and exclude any effects not directly tied to the communicative value of your graphic.

Raster Effects

The effects available in the Format ribbon including Shadows, Reflect, Glow, Soft Edges, Bevel, and 3-D Rotation are applied using raster (pixel-based) functionality. In some scenarios, the resolution of these effects may not be sufficient for print production and the effect may need to be removed or replaced.



While it is not possible to directly adjust the resolution of these effects, it is wise to set the default resolution of your document to “High Fidelity” or 330 ppi. This setting can be accessed via File > Options > Advanced > Image Size and Quality > Default resolution. Note that changing the default resolution of an existing file may not increase the resolution of some raster effects already in place.



Strokes (or Shape Outlines)

Strokes with a weight less than 0.25 point may disappear when a graphic is printed. If you are creating artwork on an 8.5" × 11" page size, please bear in mind that the weight you select will be reduced when the entire graphic is reduced to fit on the smaller destination page. For that reason, it is often wise to treat 1 point as the minimum weight for lines and outlines.

