

A large, stylized number '7' in a dark teal color, positioned in the top-left corner of the cover. It is partially overlaid by the 'SEVENTH EDITION' text.

SEVENTH EDITION

PUBLICATION Manual

of the American Psychological Association

A large, stylized, abstract graphic resembling a wave or a ribbon, rendered in shades of blue, teal, and orange, spanning across the bottom half of the cover.

THE OFFICIAL GUIDE TO APA STYLE

7

TABLES AND FIGURES

Tables and figures enable authors to present a large amount of information efficiently and to make their data more comprehensible. Tables usually show numerical values (e.g., means and standard deviations) or textual information (e.g., lists of stimulus words, responses from participants) arranged in an orderly display of columns and rows. A figure may be a chart, graph, photograph, drawing, or any other illustration or nontextual depiction. At times, the boundary between tables and figures may be unclear; in general, tables are characterized by a row–column structure, and any type of illustration or image other than a table is considered a figure. In this chapter, we discuss the purpose of tables and figures; principles for designing, preparing, placing, and reproducing them; and guidelines for creating and formatting tables and figures in APA Style, with examples of various types.

General Guidelines for Tables and Figures

7.1 Purpose of Tables and Figures

The primary purpose of any table or figure is to facilitate readers' understanding of the work. For example, tables and figures can be used to summarize information (e.g., a theoretical model, qualities of studies included in a meta-analysis), to present the results of exploratory data analysis or data mining techniques (e.g., a factor analysis), to estimate some statistic or function (e.g., a nomograph), or to share full trial-level data (for more on data sharing, see [Section 1.14](#)). Although tables and figures attract attention, they should not be used for mere decoration in an academic paper. Instead, every table and figure should serve a purpose.

7.2 Design and Preparation of Tables and Figures

When preparing a table or figure, first determine the purpose of the display and the relative importance of that purpose (see [Section 7.1](#)); then, select a format that supports that purpose (see [Sections 7.21](#) and [7.36](#) for sample tables and figures, respectively). For example, if the purpose is to illustrate a theoretical model, a chart is most likely the best option. Sometimes, multiple approaches are possible; for example, if your goal is to present group scores, a table would allow readers to see each group's exact scores, whereas a figure would emphasize similarities or differences between groups. When possible, use a standard, or canonical, form for a table or figure (examples are shown in [Sections 7.21](#) and [7.36](#)).

Design tables and figures with readers in mind. Communicate findings clearly while also creating attractive visual displays. Prepare tables and figures with the same care as the text of the paper; changes in text often demand changes in tables and figures, and a mismatch between data presented in the text versus in tables and figures may result in the need for a correction notice for published articles or in a lower grade for student assignments if the error is not corrected before publication or submission, respectively. Use the following principles when designing tables and figures:

- Label all columns in tables.
- Label all elements in figure images (e.g., label the axes of a graph).
- Place items that are to be compared next to each other.
- Place labels next to the elements they are labeling.
- In figure images, use sans serif fonts that are large enough to be read without magnification.
- Design the table or figure so it can be understood on its own (meaning readers do not have to refer to the text to understand it). Define abbreviations used in the table or figure even if they are also defined in the text (see [Section 7.15](#) for some exceptions).
- Tables or figures designated as supplemental materials should also contain enough information to be understood on their own.
- Avoid decorative flourishes, which are distracting and can interfere with readers' comprehension; instead, ensure that every element supports the goal of effective communication.

7.3 Graphical Versus Textual Presentation

Be selective in choosing how many tables and figures to include in your paper. Readers may lose track of your message if there are a large number of tables and figures; for example, if many tables and figures accompany a small amount of text, it can cause problems with page layout for published articles. Moreover, graphical presentation is not always optimal for effective communication. For example, the results of a single statistical significance test or a few group means and standard deviations can be presented in text.

The one-way ANOVA, $F(1, 136) = 4.86$, $MSE = 3.97$, $p = .029$, $\eta^2 = .03$, demonstrated . . .

Scores on the insomnia measure ($M = 4.08$, $SD = 0.22$) were . . .

A table or figure is an effective choice to present the results of multiple statistical tests or many descriptive statistics (e.g., when reporting the results of numerous analyses of variance [ANOVAs] or summarizing participant demographic data). It may also be possible to combine several smaller tables or figures with similar content into one larger table or figure. Consider how the table or figure augments or supplements the text. For example, when the

components of a theoretical model are discussed in the text, a figure may help summarize the model; the value of the figure is the visual summary. However, tables or figures that are redundant with the text may be unnecessary.

7.4 Formatting Tables and Figures

Tables and figures follow the same structure: They have a table or figure number, a table or figure title, a body (for tables) or an image (for figures), and table or figure notes as needed. Tables and figures may be produced in many different file formats; publishers or instructors may limit the formats they accept.

Use the tables function of your word-processing program to create tables. If you copy and paste tables from another program (e.g., SPSS, Excel) into your word-processing program, you may need to adjust the formatting to comply with APA Style guidelines. Do not use the tab key or space bar to manually create the look of a table; this approach is prone to alignment errors and is especially problematic if the table will be typeset for publication.

Figures can be created in a variety of ways using many programs, such as Excel, PowerPoint, Photoshop, Illustrator, MATLAB, and Inkscape. Regardless of the program used to create the figure, the output should be of sufficient resolution to produce high-quality images. TIFF and EPS files are recommended for figures that are to be submitted for publication; file formats such as JPG or PNG are also acceptable for other works produced in APA Style (e.g., classroom assignments). Some types of figures require higher resolution than others; for example, line art requires finer detail than a photograph. Ensure that the format used supports the resolution needed for clear presentation of the image. Check the author guidelines for the journal or publisher to which you are submitting your work for specifications (for APA journals, see the Journal Manuscript Preparation Guidelines at <http://on.apa.org/WDtxdW>).

7.5 Referring to Tables and Figures in the Text

In the text, refer to every table and figure by its number—known as a callout (see [Sections 7.10](#) and [7.24](#), respectively, for how to assign numbers for

tables and figures that accompany the main text; see [Section 2.14](#) for how to assign numbers for tables and figures that appear in appendices). When you call out a table or figure, also tell readers what to look for in that table or figure.

As shown in Table 1, the demographic characteristics . . .

Figure 2 shows the event-related potentials . . .

. . . of the results of the testing (see Table 3).

. . . of the comparisons (see Figures 4 and 7).

Do not write “the table above” (or “below”) or “the figure on page 32.” Page numbers often shift during the writing process, which can lead to errors. For published work, final page numbers and the placement of tables and figures on the page are determined during typesetting. Referring to tables and figures by number rather than by location on the page also helps readers who access a work using assistive technologies such as screen readers. Authors seeking publication also should not write “place Table 1 here” or “put Figure 2 here”; the typesetter will determine the position of tables and figures in relation to the callouts.

7.6 Placement of Tables and Figures

There are two options for the placement of tables and figures in a paper. The first option is to place all tables and figures on separate pages after the reference list (with each table on a separate page followed by each figure on a separate page). The second option is to embed each table and figure within the text after its first callout. Follow the specifications of the journal publisher or of the classroom assignment for the placement of tables and figures. Placing all tables and figures on separate pages after the reference list may be preferable for manuscripts being submitted for publication to facilitate copyediting; either approach is appropriate for student assignments or when the placement for tables and figures has not been specified. Dissertations and theses may have different specifications for the placement of tables and figures; for example, in some university guidelines, multiple tables or figures may be placed on the same page at the end of the document as long as they fit. When formatting your dissertation or thesis, abide by the guidelines specified by your advisor and/or university. Authors seeking publication may need to submit figures as high-resolution files separate from

the manuscript regardless of where the figures are located within the manuscript.

Align all tables and figures with the left margin regardless of where they appear in the paper. When embedding a table or figure within the text, position it after a full paragraph, ideally the paragraph where it is first called out. Place the table or figure so that it fits on one page if possible (see [Section 7.18](#) for tables longer or wider than a page). If text appears on the same page as a table or figure, add a double-spaced blank line between the text and the table or figure so that the separation between the text and table or figure is easier to see. Put a short table or small figure at the beginning or end of a page rather than in the middle.

Tables and figures that support but are not essential to the text may be placed in one or more appendices. Tables and figures may appear within an appendix that also contains text, or a table or figure may constitute a whole appendix by itself (see [Section 2.14](#)). Tables and figures can also be placed in supplemental materials when they would enrich understanding of the material presented in the article but are not essential to a basic understanding or cannot be fully displayed in print (see [Section 2.15](#)). If tables or figures are included as supplemental materials, call them out in the text but describe them only briefly (e.g., write “see Table 1 in the supplemental materials for the list of stimuli”).

7.7 Reprinting or Adapting Tables and Figures

If you reprint or adapt a table or figure from another source in your paper (e.g., a table from your own published work, an image you found on the internet), you must include a copyright attribution in the table note or figure note indicating the origin of the reprinted or adapted material in addition to a reference list entry for the work. You may also need to obtain permission from the copyright holder to reprint or adapt the table or figure. [Table 7.14](#) in [Section 7.21](#) and [Figures 7.3](#), [7.14](#), and [7.21](#) in [Section 7.36](#) show copyright attributions for an adapted table when permission is not necessary, a reprinted figure when permission is not necessary, a reprinted figure in the public domain, and a figure reprinted with permission, respectively. See [Sections 12.14](#) to [12.18](#) for further information on copyright and permission and for more copyright attribution formats and examples.

Tables

7.8 Principles of Table Construction

Tables should be integral to the text but designed so that they are concise and can be understood in isolation. The principle of conciseness is relevant not only for tables included with the main text but also for tables to be placed in appendices and supplemental materials. Although supplemental tables may be longer and more detailed than tables that accompany the main text, they must be directly and clearly related to the content of the article (see [Section 2.15](#)).

All tables are meant to show something specific; for example, tables that communicate quantitative data are effective only when the data are arranged so that their meaning is obvious at a glance (Wainer, 1997). Often, the same data can be arranged in different ways to emphasize different features of the data, and which arrangement is better depends on your purpose. Above all, table layout should be logical and easily grasped by readers. Table entries that are to be compared should be next to one another. In general, different indices (e.g., means, sample sizes) should be presented in different rows or columns. Place variable and condition labels close to their values to facilitate comparison. See the sample tables ([Section 7.21](#)) for examples of effective layouts.

7.9 Table Components

The basic components of a prototypical table are shown in [Table 7.1](#) and are summarized as follows.

- **number:** The table number (e.g., Table 1) appears above the table in bold font (see [Section 7.10](#)).
- **title:** The table title appears one double-spaced line below the table number in italic title case (see [Sections 6.17](#) and [7.11](#)).
- **headings:** Tables may include a variety of headings depending on the nature and arrangement of the data. All tables should include column headings, including a stub heading (heading for the leftmost column).

Some tables also include column spanners, decked heads, and table spanners (see [Section 7.12](#)).

- **body:** The table body includes all the rows and columns of a table (see [Section 7.13](#)). A cell is the point of intersection between a row and a column. The body may be single-spaced, one-and-a-half-spaced, or double-spaced.
- **notes:** Three types of notes (general, specific, and probability) appear below the table as needed to describe contents of the table that cannot be understood from the table title or body alone (e.g., definitions of abbreviations, copyright attribution). Not all tables include table notes (see [Section 7.14](#)).

Table 7.1 Basic Components of a Table

Table 1
Numbers of Children With and Without Proof of Parental Citizenship

Grade	Girls		Boys	
	With	Without	With	Without
Wave 1				
3	280 ^a	240 ^b	281	232
4	297	251	290	264
5	301	260	306	221
Total	878	751	877	717
Wave 2				
3	201	189	210	199
4	214	194	236	210
5	221	216	239	213
Total	636	599	685*	622

Table notes:
Note. This table demonstrates the elements of a prototypical table. A *general note* to a table appears first and contains information needed to understand the table, including definitions of abbreviations (see Sections 7.14–7.15) and the copyright attribution for a reprinted or adapted table (see Section 7.7).
^a A *specific note* appears in a separate paragraph below the general note.
^b Subsequent specific notes follow in the same paragraph (see Section 7.14).
^{*} A *probability note* (for *p* values) appears as a separate paragraph below any specific notes; subsequent probability notes follow in the same paragraph (see Section 7.14).

See [Section 7.21](#) for sample tables.

7.10 Table Numbers

Number all tables that are part of the main text (i.e., not part of an appendix or supplemental materials) using Arabic numerals—for example, Table 1, Table 2, and Table 3. Assign the numbers in the order in which each table is first mentioned in the text, regardless of whether a more detailed discussion of the table occurs elsewhere in the paper. Write the word “Table” and the

number in bold and flush left (i.e., not indented or centered). Tables that appear in appendices follow a different numbering scheme (see [Section 2.14](#)).

7.11 Table Titles

Give every table a brief but clear and explanatory title; the basic content of the table should be easily inferred from the title. Write the table title in *italic* title case below the table number and double-space the table number and title. Avoid overly general and overly detailed table titles.

Title quality	Example table title	Rationale
Too general	Relation Between College Majors and Performance	It is unclear what data are presented in the table.
Too detailed	Mean Performance Scores on Test A, Test B, and Test C of Students With Psychology, Physics, English, and Engineering Majors	The title duplicates information in the headings of the table.
Effective	Mean Performance Scores of Students With Different College Majors	The title is specific but not redundant with headings.

Abbreviations that appear in the headings or the body of a table may be parenthetically explained in the table title.

Hit and False-Alarm (FA) Proportions in Experiment 2

Abbreviations may also be defined in a general note to the table (see [Section 7.14](#)). Do not use a specific note to clarify an element of the title.

7.12 Table Headings

Headings establish the organization of information in the table and identify what is in each column. Column headings describe the entries below them. Table headings should be brief; if possible, the heading should be not much wider than the information in the column below it. Provide a heading for every column in a table, including the stub column or stub, which is the leftmost column of the table (see [Table 7.1](#) for an illustration).

The stub column usually lists the major independent or predictor variables. In [Table 7.1](#), for instance, the stub column lists the grades. For the stub column, the heading “Variable” is often used when no other heading is

suitable. Write the entries in the stub column in parallel form (see [Section 4.24](#) for guidance on parallel construction). Number entries in the stub column only in a correlation matrix (see [Tables 7.10–7.11](#) in [Section 7.21](#)) or when they are referred to by number in the text. To show subordination within the stub column, use indentation rather than creating an additional column (see, e.g., [Table 7.2](#), in which “Single,” “Married/Partnered,” etc. are indented under the heading “Marital Status”).¹ Set indentation using the paragraph-formatting feature of your word-processing program rather than by using the tab key. In typeset articles, the indentation is equal to one em space; this can be approximated in draft manuscripts by setting the paragraph indentation to 0.15 in. or inserting an em space from the special characters menu of your word-processing program.

The headings above the columns to the right of the stub column identify what is in each column. A column heading applies to just one column; a column spanner is a heading that covers two or more columns, each with its own column heading. Headings stacked in this way are called decked heads. Often, decked heads can be used to avoid repetition of words in column headings (see [Table 7.1](#)). If possible, do not use more than two levels of decked heads. More complex tables may require table spanners, which are headings within the body of the table that cover the entire width of the table, allowing for further divisions within the table when the column headings remain the same (see [Table 7.1](#)). Table spanners can also be used to combine two tables, provided they have identical column headings.

Any item within a column should be syntactically as well as conceptually comparable with the other items in that column, and all items should be described by the column heading. For example, a column with the heading “%” would contain only percentages; numbers in that column would not be followed by the percent symbol because the symbol is already in the heading (see [Table 7.2](#) in [Section 7.21](#)).

Use sentence case for all headings in a table (see [Section 6.17](#)). Center all table headings above their column(s). Stub headings, column headings, and column spanners should be singular (e.g., Measure, Item) unless they refer to a group (e.g., Children, Women), but table spanners may be singular or plural.

7.13 Table Body

The main part of the table, the table body, contains information organized in cells. Information in a table body may be in the form of numbers, words, or a mixture of both. The body of the table (including table headings) may be single-spaced, one-and-a-half-spaced, or double-spaced, depending on which presentation most effectively conveys information to readers (e.g., single spacing may allow a table to fit on one page). If entries are longer than one line, use a hanging indent of 0.15 in. or one em space. In the stub column of the table, center the stub heading and align the entries flush left beneath it. If entries in this column are significantly shorter than the stub heading, it is permissible to center them beneath the stub heading (e.g., single-digit numbers in the stub column; see the partial table later in this section for an example). The entries in all other cells of the table should be centered (however, aligning them flush left is acceptable if doing so improves the readability of longer entries). Use sentence case for all word entries in the table body (see [Section 6.17](#)). Numbers that appear in the table body should be written as words or numerals according to the guidelines in [Sections 6.32 to 6.39](#); however, it is permissible to use numerals for all numbers in tables if this would be clearer or save space.

Decimal Values. Express numerical values to the number of decimal places that the precision of measurement justifies (see [Section 6.36](#)). If possible, carry all comparable values to the same number of decimal places. Numerical values should be centered in the column and may also be aligned on the decimal if desired (for the published version, the typesetter will typically center values and align on the decimal).

Empty Cells. If a cell cannot be filled because data are not applicable, leave the cell blank. Use a general or specific table note if you need to explain why the cell is blank or the element is inapplicable (see [Section 7.14](#)). If a cell cannot be filled because data were not obtained or are not reported, insert a dash in that cell and explain the use of the dash in the general note to the table (see [Section 7.14](#)). By convention, a dash in the main diagonal position of a correlation matrix (see [Tables 7.10–7.11](#) in [Section 7.21](#)) indicates the correlation of an item with itself, which must be 1.00, and is simply replaced by the dash with no explanation needed.

Conciseness. Be selective in your presentation. Do not include columns of data that can be calculated easily from other columns. For example, the following partial table is redundant because it shows both the number of responses per trial and the total number of responses; instead, show only whichever is more important to the discussion.

Participant	No. of responses		Total responses
	First trial	Second trial	
1	5	7	12
2	6	4	10

Citations in Tables. If a table contains citations to other works, follow the formats described in [Section 8.11](#). Use an ampersand (&) for the word “and” in all citations in tables to conserve space. [Table 7.4](#) in [Section 7.21](#) shows an example of a table containing citations to studies included in a meta-analysis.

7.14 Table Notes

Tables may have three kinds of notes, which are placed below the body of the table: general notes, specific notes, and probability notes. Table notes apply only to a specific table and not to any other table. If information in one table note is true for another table, repeat the information in the notes for both tables so that the tables can be understood on their own. Some tables do not require table notes at all.

General Note. A general note qualifies, explains, or provides information relating to the table as a whole and explains any abbreviations; symbols; special use of italics, bold, or parentheses; and the like. The general note also includes any acknowledgments that a table is reprinted or adapted from another source (see [Section 7.7](#)). General notes are designated by the word “Note” (italicized) followed by a period (see [Table 7.1](#) and the sample tables in [Section 7.21](#) for examples). Explanations of abbreviations and copyright attributions for reprinted or adapted tables appear at the end of the general note, in that order.

Figures

7.22 Principles of Figure Construction

All types of graphical displays other than tables are considered figures in APA Style. Ensure that all figures add substantively to readers' understanding and do not duplicate other elements of the paper. Also consider whether a figure is the best way to communicate the information. In some cases (particularly when quantitative information is being conveyed), a table may offer more precision than, say, a graph. If you focus on the principle of enhancing readers' understanding, other questions—for example, use of color, use of photographic images, or magnitude of cropping of a picture—should be relatively easy to resolve.

The standards for good figures are simplicity, clarity, continuity, and (of course) information value. A good figure

- augments rather than duplicates the text,
- conveys only essential information,
- omits visually distracting detail,
- is easy to read—its elements (e.g., type, lines, labels, symbols) are large enough to be seen and interpreted with ease,
- is easy to understand—its purpose is readily apparent,
- is carefully planned and prepared, and
- is consistent with and in the same style as similar figures in the same article.

For figures of all types, check that

- images are clear,
- lines are smooth and sharp,
- font is simple and legible,
- units of measurement are provided,
- axes are clearly labeled, and
- elements within the figure are labeled or explained.

Be certain, for instance, to distinguish between error bars and confidence intervals. When using confidence intervals, clearly specify the size of the interval (e.g., 95%); when using error bars, provide the label for the error (e.g., standard error of the mean) in the figure image or note. In addition, check all figures to ensure that

- sufficient information is given in the legend and/or note to make the figure understandable on its own (i.e., apart from the text),
- symbols are easy to differentiate, and
- the graphic is large enough for its elements to be discernible.

Even when using high-quality graphics software to construct figures, examine figures carefully and make any necessary adjustments to follow these guidelines.

7.23 Figure Components

The basic components of a prototypical figure are shown in [Figure 7.1](#) and are summarized as follows:

- **number:** The figure number (e.g., Figure 1) appears above the figure in bold (see [Section 7.24](#)).
- **title:** The figure title appears one double-spaced line below the figure number in italic title case (see [Sections 6.17](#) and [7.25](#)).
- **image:** The image portion of the figure is the chart, graph, photograph, drawing, or other illustration itself (see [Section 7.26](#)).
- **legend:** A figure legend, or key, if present, should be positioned within the borders of the figure and explains any symbols used in the figure image (see [Section 7.27](#)).
- **note:** Three types of notes (general, specific, and probability) can appear below the figure to describe contents of the figure that cannot be understood from the figure title, image, and/or legend alone (e.g., definitions of abbreviations, copyright attribution). Not all figures include figure notes (see [Section 7.28](#)).

Figure 7.1 Basic Components of a Figure

table number: Table 1

table title: Numbers of Children With and Without Proof of Parental Citizenship

stub heading: heading that describes the leftmost column

table spanner: heading that covers the entire width of the table body, allowing for further divisions

stub column or stub: leftmost column of the table; usually lists the major independent or predictor variables

table notes: explanations to supplement or clarify information in the table body

column spanner: heading that describes the entries in two or more columns in the table body

decked heads: headings that are stacked, often to avoid repetition in column heads

column heading: heading that identifies the entries in just one column in the table body

cell: point of intersection between a row and a column

table body: rows and columns of cells containing the primary data of the table

Grade	Girls		Boys	
	With	Without	With	Without
Wave 1				
3	280 ^a	240 ^b	281	232
4	297	251	290	264
5	301	260	306	221
Total	878	751	877	717
Wave 2				
3	201	189	210	199
4	214	194	236	210
5	221	216	239	213
Total	636	599	685*	622

Note. This table demonstrates the elements of a prototypical table. A *general note* to a table appears first and contains information needed to understand the table, including definitions of abbreviations (see Sections 7.14–7.15) and the copyright attribution for a reprinted or adapted table (see Section 7.7).

^a A *specific note* appears in a separate paragraph below the general note.

^b Subsequent specific notes follow in the same paragraph (see Section 7.14).

^{*} A *probability note* (for *p* values) appears as a separate paragraph below any specific notes; subsequent probability notes follow in the same paragraph (see Section 7.14).

See [Section 7.36](#) for sample figures.

7.24 Figure Numbers

Number all figures that are part of the main text (i.e., not part of an appendix or supplemental materials) using Arabic numerals—for example, Figure 1, Figure 2, and Figure 3. Assign the numbers in the order in which each figure

is first mentioned in the text, regardless of whether a more detailed discussion of the figure occurs elsewhere in the paper. Write the word “Figure” and the number in bold and flush left (i.e., not indented or centered). Figures that appear in appendices follow a different numbering scheme (see [Section 2.14](#)).

7.25 Figure Titles

Give every figure a brief but clear and explanatory title; the basic content of the figure should be easily inferred from the title. Write the figure title in italic title case below the figure number and double-space the figure number and title. Avoid overly general and overly detailed figure titles (see [Section 7.11](#)).

7.26 Figure Images

The image part of the figure (e.g., graph, chart, diagram) should be saved in a resolution sufficient to allow for clear printing or viewing (see [Section 7.4](#)). Attend to the following considerations when creating images.

Size and Proportion of Elements. Each element in a figure must be large enough and sharp enough to be legible. Use a simple sans serif font (e.g., Arial, Calibri, Lucida Sans Unicode; see [Section 2.19](#)) within the image portion of the figure with enough space between letters to avoid crowding. Letters should be clear, sharp, and uniformly dark and should be sized consistently throughout the figure; the font size should be no smaller than 8 points and no larger than 14 points. As a general guideline, plot symbols should be about the size of lowercase letters that appear in a label within the figure. Also consider the weight (i.e., size, density) of each element in a figure in relation to that of every other element, and make the most important elements the most prominent. For example, curves on line graphs and outlines of bars on bar graphs should be bolder than axis labels, which should be bolder than the axes and tick marks.

Spelling, Capitalization, and Numbers Within Figure Images. Use title case for axis labels. Abbreviate the words “number” to “no.” and “percentage” to “%.” Words within figure images other than those on the axis labels or in the figure legend may be written in either title case or sentence

case (see [Section 6.17](#)), depending on the contents of the figure. In general, labels, phrases, or words that serve as headings would be better set in title case, whereas other descriptive phrases, sentences, or paragraphs within a figure would be better set in sentence case. Numbers that appear in the image portion of a figure should be written as words or numerals according to the guidelines in [Sections 6.32 to 6.39](#); however, it is permissible to use numerals for all numbers in a figure if this would be clearer or save space. Statistics, Greek letters, and units of measurement do not need to be defined in a figure note (see [Section 7.15](#)).

Shading. Limit the number of different shadings used in a single graphic. If different shadings are used to distinguish bars or segments of a graph, choose shadings that are distinct; for example, the best option to distinguish two sets of bars is no shading (“open”) and black or gray (“solid”). If more than two shadings are needed, use patterns, again making sure that the patterns are distinct—for example, use no (open) shading, solid black or gray, and stripes for three shadings. If error bars or other information overlaps with shaded areas (e.g., double-sided error bars in a bar graph), ensure that the overlapping information can be clearly distinguished from the shading.

Color. Color can serve both communicative and decorative purposes in figures. Authors seeking publication should avoid the use of color except when it is necessary for understanding the material because of the relatively high cost of color reproduction for printed materials (authors may bear some of this cost; for APA journals guidelines, see <http://on.apa.org/WDtxdW>). For example, photographs, fMRI images, and gene staining results often use color. If color representation is not crucial for understanding and the article is to be published both in print and online, convert the figure to grayscale or consider placing the figure online as supplemental material. Some journals offer the option to publish a figure in color online and in grayscale in print at no cost; when using this option, ensure that the figure can still be understood even when it is printed in grayscale. It is the author’s responsibility to ensure that the final representation is accurate. However, authors submitting a manuscript to an online-only journal may use color more liberally (e.g., colored bars rather than gray and white bars in a bar graph). Likewise,

students preparing a figure for a course assignment may use color provided that the assignment will be delivered in a format that supports it.

When selecting colors for a figure, ensure that there is plenty of contrast so that people living with a color-vision deficiency (often referred to as “color blindness”) or people who do not see color in a typical way can understand the information and tell the colors apart. Best practice is to use a contrast checker such as the free Colour Contrast Analyser (<https://developer.paciellogroup.com/resources/contrastanalyser>) to evaluate the contrast ratio and confirm that your content passes the standards for WCAG 2.0 AA or later.² Adequate contrast ratios ensure that the figure is not only accessible to readers with color-deficient vision but also understandable by all readers if the figure is printed or photocopied in grayscale. Another strategy to achieve adequate contrast is to use a pattern in combination with color so that the differentiation of elements does not rely on color alone (e.g., in a line graph, different lines may be in different colors and also of different styles, such as solid, dashed, and dotted). When many colors must be used and it is not possible to achieve high contrast among all of them, label colored areas directly in the image or use lines to connect the object to its label rather than placing the label in a legend, if possible, so that readers do not have to match colors in the figure to colors in the legend. See the APA Style website (<https://apastyle.apa.org>) for an example of how people with certain color-vision deficiencies see color and how the colors used in figures can be adjusted to accommodate them.

Gridlines and 3-D Effects. Avoid the use of gridlines in figures unless the gridlines will substantially aid readers in understanding the content, such as when many data points need to be compared across the x-axis. Likewise, avoid including 3-D effects for mere decoration (e.g., 3-D bar graphs) because they may make the figure more difficult to read. However, 3-D effects can be used to convey essential information (e.g., 3-D representations of stimuli).

Panels. The decision of whether to divide a figure into panels or create a separate figure for each panel will depend on the nature of the information being presented. Although panels help readers directly compare information, they also increase the density of the information being presented on the page;

as always, prioritize clear communication when constructing any figure. If the figure includes multiple panels, it is optional to label them. If panels are unlabeled, refer to panels by their position (e.g., the top panel, the left panel, the middle panel). To label panels, assign each one a capital letter (e.g., A, B) and place the label at the top left of the panel. Refer to the panels as “Panel A,” “Panel B,” and so forth. In the main text, refer to a panel as “Figure 5A” or “Panel A of Figure 5.” In the figure general note, explain each panel. See [Figures 7.18](#) and [7.19](#) in [Section 7.36](#) for examples of figures with labeled panels.

Citations in Figures. If a figure contains citations to other works, follow the formats described in [Section 8.11](#). Use an ampersand (&) for the word “and” in all citations in figures to conserve space.

7.27 Figure Legends

A legend (also called a key) explains any symbols, line styles, or shading or pattern variants used in the image portion of the figure (see [Figures 7.2–7.3](#) in [Section 7.36](#) for examples). The legend is an integral part of the figure; therefore, its lettering should be of the same kind and proportion as that appearing in the rest of the figure. Capitalize words in the legend using title case (see [Section 6.17](#)). Only figures that have symbols, line styles, or shadings needing definition should include legends. When possible, place legends within or below the image instead of to the side to avoid having empty space around the legend.

7.28 Figure Notes

Figure notes contain information needed to clarify the contents of the figure for readers. As with tables, figures may have three kinds of notes: general, specific, and probability.

A general note should explain units of measurement, symbols, and abbreviations that are not included in the legend or defined elsewhere in the figure (see [Section 7.15](#) for information on abbreviations and symbols that do not require definitions). Make certain that the symbols, abbreviations, and terminology in the note and legend match the symbols, abbreviations, and terminology in the figure, in other figures in the paper, and in the text.

Explain the use of shading, color, and any other design element that carries meaning. Provide individual descriptions of panels for multipanel figures. If a graph includes error bars, explain in the image or general note whether they represent standard deviations, standard errors, confidence limits, or ranges; it is also helpful to provide sample sizes. Also include within the general note any acknowledgment that a figure is reprinted or adapted from another source (see [Section 7.7](#)). Place explanations of abbreviations and copyright attributions for reproduced figures last in the general note.

Position any superscripts for specific notes near the element being identified. It is preferable to report exact p values; however, if statistically significant values are marked with asterisks or daggers in the figure, explain them in a probability note (see [Section 7.14](#)). For guidelines on formatting figure notes, see [Section 7.14](#).

7.29 Relation Between Figures

Similar figures or figures of equal importance should be of equal size and scale. Combine figures that are alike to facilitate comparisons between their content. For example, two line graphs with identical axes might be combined horizontally into a single figure, or multiple figures might be combined into one figure with multiple panels (see [Section 7.26](#)).

7.30 Photographs

Photographs are a type of figure with special considerations. Authors seeking publication must check publisher guidelines to ensure the photograph is submitted in the correct file type. Photographs may be printed in grayscale or in color, depending on the contents of the photograph and the venue of publication. Color photographs should include enough contrast to ensure that contents will be understandable if reproduced in grayscale. Photographs in most student papers can be in color and saved in any widely available photo format (see [Section 7.26](#) for more information on the use of color in figures).

It is essential that photographic images be submitted at appropriate levels of resolution (as specified by the publisher). Because reproduction softens contrast and detail in photographs, starting with rich contrast and sharp detail will improve the final version of the image. The camera view and the lighting