Description and Illustration of Use: A LaTeX Template for the CMJ Classroom Capsule

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The College Mathematics Journal is an international, peer-reviewed journal publishing high-quality exposition on mathematical topics related to the undergraduate curriculum. A Classroom Capsule is a unique feature in *The College Mathematics Journal*. A Classroom Capsule is a short article between 1 and 3 pages in length that contains a new insight on a topic taught in undergraduate mathematics, preferably something that can be directly introduced into a college classroom as an effective teaching strategy or tool.

Manuscript Preparation

The College Mathematics Journal style incorporates the following LaTeX packages. These styles should *not* be included in the document header.

- times
- pifont
- graphicx
- color
- AMS styles: amsmath, amsthm, amsfonts, amssymb
- url
- hyperref

Use of other LaTeX packages should be minimized as much as possible. Math notation, like $c = \sqrt{a^2 + b^2}$, can be left in TeX's default Computer Modern typefaces for manuscript preparation; or, if you have the appropriate fonts installed, the `mathtime` or `mtpro` packages may be used, which will better approximate the finished article.

Web links can be embedded using the `\url{...}` command, which will result in something like http://www.maa.org. These links will be active and stylized in the online publication.

Headings (`\section{...}`) The first word in a section heading has an initial capital letter. The rest of the section heading is set lower case, with the exception of proper nouns. There is space above and below the heading, and the heading is bold.

(`\subsection{...}`) Subsections run into the text and the first word has an initial capital letter. The rest of the subsection heading is set lower case, with the exception of proper nouns. There is space above the heading and the heading is bold.

Graphics Figures for this JOURNAL can be submitted as either color or black & white graphics. If color graphics are included with the submission, they will be used for the online publication only and converted to black & white images for the print journal. If an author wishes to receive a quote to have color images printed, please let the Editorial Office know.

Please follow these guidelines to ensure that your figures look their best online and in print.

1. Line weight should be no less than .5 pt and rarely thicker than 1 pt. This can be a problem in TikZ where the default is less than .5 pt. See the documentation for TikZ for how to specify line weight.
2. Use the appropriate fonts (Times New Roman, italic, bold, etc. to match the text) and font size for figures (9 pt labels and 8 pt for axes).
3. The appropriate resolution for bitmaps (JPG, PNG, TIF, BMP) is a minimum of 300 dpi. High resolution bitmaps are acceptable as long as you use the correct fonts, font size, and line weight—bitmaps are not editable in the same way as EPS or SVG files are, so you must negate the need for them to be edited.
4. The text area for the print journal is 5 inches wide and 8 inches long. Figures cannot be greater than 5 inches wide.
5. **Do not scale your figures in your LaTeX document.** Scaling your figures in your LaTeX document can result in your line weights becoming too thin and your fonts becoming too small.
6. Line art will reproduce best if provided in vector form, preferably EPS or SVG.
7. Please **EXPORT** figures from programs like Mathematica or Maple. Do not use "save as."
8. Creating a PDF does not affect whether the graphic is a bitmap or vector; saving a scanned piece of line art as PDF does not convert it to editable vector line art.
9. If you are generating graphics using a TeX package, such as TikZ, please be sure to provide a PDF of the manuscript with the TeX file of the graphic. In the production process, TeX-generated graphics will eventually be converted to more conventional graphics so the JOURNAL can be delivered in e-reader formats.

Theorems, definitions, proofs, and all that

Following the defaults of the `amsthm` package, styling is provided for `theorem`, `definition`, and `remark` styles, although the latter two use the same styling.

Theorem 1 (MAA Theorem). *Theorems, lemmas, axioms, and the like are stylized using italicized text. These environments can be numbered or unnumbered, at the author's discretion.*

Proof. Proofs are set in roman (upright) text and conclude with an "end of proof" (q.e.d.) symbol that is set automatically when you end the proof environment. When the proof ends with an equation or other non-text element, you need to add `\qedhere` to the element to set the end of proof symbol; see the `amsthm` package documentation for more details. ■

Definition (Journal definitions). Definitions, remarks, and notation are stylized as roman text. They are typically unnumbered, but there are no hard-and-fast rules about numbering.

Remark. Remarks stylize the same as definitions.

Note that *The College Mathematics Journal* is meant to be accessible to a broad audience, so heavy use of theorem-like formalisms is generally discouraged.

References. Beginning in 2024 this JOURNAL will use the NLM reference style. BibTeX users should use `vancouver.bst` to typeset their references. If you do not use BibTeX, you should manually set your references in the NLM style. There are

several examples at the end of this template and more information can be found in `Vancouver.tex`. `VancouverExamples.bib` also gives a variety of examples of how to set up different types of material in a BibTEX database.

The Code. To cite a reference in-text use

```
\cite{key}
```

where `key` is the name of the reference used in your `.bib` file. In the place where you want to put your bibliography, type the following commands:

```
\bibliographystyle{vancouver}
\bibliography{VancouverExamples}
```

where `vancouver` is the name of a `.bst` file and `VancouverExamples` is the name of your `.bib` file.

Example with Citations. We will cite many authors in this paper whose work is notable, such as [**1, 2, 3, 4, 5, 6, 7, ?, 8, 9, 10**]. In addition, this work is important [**11**].

Manuscript Submission

The College Mathematics Journal is now accepting submissions through Taylor & Francis' Submission Portal (rp.tandfonline.com). The Submission Portal removes the need to have multiple system accounts and instead provides a centralized author dashboard displaying all your past and present submissions in the Taylor & Francis portfolio of journals.

Files needed for the submission portal To prepare your manuscript for submission, please have the following files ready to submit:

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- A manuscript that is anonymous, i.e., omitting all author names and other identifying information of the author(s).
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Questions concerning submission of papers can be addressed to the editor at cmj@maa.org.

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Manuscript Please be aware that *The College Mathematics Journal* uses a double-blind review process per the MAA's policy.

Author details Authors' affiliations are the affiliations where the research was conducted. If any of the named co-authors moves affiliation during the peer-review process, the new affiliation can be given as a footnote. Please note that no changes to affiliation can be made after your paper is accepted.

Mathematics subject classification

- Authors should also provide appropriate 2020 Mathematics Subject Classification terms for their paper.

- The "Mathematical Subject Classification Index (MSC)" is available at http://www.ams.org/msc/msc2020.html or in PDF form at https://www.mathscinet.ams.org/msc/pdfs/classifications2020.pdf.
- When submitting your manuscript, please provide at least one and up to three 5-digit MSC classifications that best describe your paper.

Funding information

If applicable, please supply all details required by your funding and grant-awarding bodies as follows:

- For single agency grants: This work was supported by the [Funding Agency] under Grant [number xxxx].
- For multiple agency grants: This work was supported by the [Funding Agency #1] under Grant [number xxxx]; [Funding Agency #2] under Grant [number xxxx]; and [Funding Agency #3] under Grant [number xxxx].

Acknowledgment. The authors wish to thank the Greek polymath Anonymous, whose prolific works are an endless source of inspiration. If you have funding, please acknowledge the funding agency and reference the grant.

Summary. Summaries for articles should entice the prospective reader into exploring the subject of the paper and should make it clear to the reader why this paper is interesting and important. It should highlight the concepts of the paper rather than summarize the mechanics. The summary is the first impression of the paper, not a technical summary of the paper. Excessive use of notation is discouraged as it can limit the interest of the broad readership of the MAA and can limit searchability of the article. Your summary should be 250 words or less.

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