Mathpix Markdown Syntax Reference

Inline math

Inline math can be represented using `$TeX$` or `\( TeX \)` delimiters.

Examples:

```
Compute \(f(x) = x^2 + 2\) if \(x=2\).
```

Compute $f(x) = x^2 + 2$ if $x = 2$.

```
Newton postulated that $\vec { F } = m \vec { a }$.
```

Newton postulated that $\vec{F} = m\vec{a}$.

Block mode math (non-numbered)

Delimiters: `$$...$$`

Example LaTeX:

```
$$
x = \frac { - b \pm \sqrt { b ^ { 2 } - 4 a c } } { 2 a }
$$
```

Rendered equation:

$$
x = \frac { - b \pm \sqrt { b ^ { 2 } - 4 a c } } { 2 a }
$$

Delimiters: `\[...\]`

Example LaTeX:

```
\[
y = \frac { \sum _ { i } w _ { i } y _ { i } } { \sum _ { i } w _ { i } } , i = 1,2 \ldots k
\]
```

Rendered equation:

$$
y = \frac { \sum _ { i } w _ { i } y _ { i } } { \sum _ { i } w _ { i } } , i = 1,2 \ldots k
$$

Delimiters: `\begin{equation*}...\end{equation*}`

Example LaTeX:

```
\begin{equation*}
l ( \theta ) = \sum _ { i = 1 } ^ { m } \log p ( x , \theta )
\end{equation*}
```

Rendered equation:

$$
l (\theta) = \sum _ { i = 1 } ^ { m } \log p (x , \theta)
$$

Delimiters: `\begin{align*}...\end{align*}`

Example LaTeX:

```
\begin{align*}
t _ { 1 } + t _ { 2 } = \frac { ( 2 L / c ) \sqrt { 1 - u ^ { 2 } / c ^ { 2 } } } { 1 - u ^ { 2 } / c ^ { 2 } } = \frac { 2 L / c } { \sqrt {
\end{align*}
```

Rendered equation:

$$
t _ { 1 } + t _ { 2 } = \frac { (2 L / c) \sqrt { 1 - u ^ { 2 } / c ^ { 2 } } } { 1 - u ^ { 2 } / c ^ { 2 } } = \frac { 2 L / c } { \sqrt {
$$

Block mode math (numbered)

Delimiters: `\begin{equation}...\end{equation}`

Example LaTeX:

```
\begin{equation}
m = \frac { m _ { 0 } } { \sqrt { 1 - v ^ { 2 } / c ^ { 2 } } }
\end{equation}
```

Rendered equation:

Align, split, gather equation environments

Delimiters: `\begin{align}...\end{align}`

Example LaTeX:

```
\begin{align}
^{|\alpha|} \sqrt{x^{\alpha}} \leq(x \bullet \alpha) /|\alpha|
\end{align}
```

Rendered equation:

Delimiters: `\begin{split}...\end{split}` Reason to use: split your equation into smaller pieces

Example LaTeX:

```
\begin{split}
a& =b+c-d\\
& \quad +e-f\\
& =g+h\\
& =i
\end{split}
```

Rendered equation:

Use `\\` to denote a new line and `&` to denote where the lines should align.
Need it numbered? Wrap it in `\begin{equation}...\end{equation}`
Delimiters: `\begin{gather}...\end{gather}` Reason to use: for displaying a set of consecutive equations that don't require special alignment

Example LaTeX:

```
\begin{gather}
a_1=b_1+c_1\\
a_2=b_2+c_2-d_2+e_2
\end{gather}
```

Rendered equation:

Delimiters: `\begin{gather*}...\end{gather*}` Reason to use: `gather` environment without an equation number

Example LaTeX:

```
\begin{gather*}
a_1=b_1+c_1\\
a_2=b_2+c_2-d_2+e_2
\end{gather*}
```

Rendered equation:

Equation references

You can use `\label{}`, `\ref{}` and `\eqref{}` to link to any numbered equation in your document:

```
In equation \eqref{eq:1}, we find the value of an
interesting integral:

\begin{equation}
  \int_0^\infty \frac{x^3}{e^x-1}\,dx = \frac{\pi^4}{15}
  \label{eq:1}
\end{equation}

\begin{equation}
  \| x + y \| \geq | \| x | | - \| y \| |
  \label{eq:2}
\end{equation}

Look at the Equation \ref{eq:2}
```

In equation (5), we find the value of an interesting integral:

Look at the Equation 6

In addition to using numbered block mode equation syntax for standard numbering (i.e. 1, 2, 3), you can use also include `\tag{}` inside of your LaTeX de

```
$$
\frac{x\left(x^{2 n}-x^{-2 n}\right)}{x^{2 n}+x^{-2 n}}
\tag{1.1}
$$
```

```
\begin{equation}
\max _{\theta} \mathbb{E}_{\mathbf{z} \sim \mathcal{Z}_{T}}\left[\sum_{t=1}^{T} \log p_{\theta}\left(x_{z_{t}} | \mathbf{x}_{\mathbf{z}_{<t}}\
\tag{1.2}
\end{equation}
```

Chemical diagram formulas (SMILES)

Chemical formulas can be represented using SMILES syntax.

SMILES formulas can be rendered inline via `<smiles>OC(=O)c1cc(Cl)cs1</smiles>` or block mode via:

````
```smiles
OC(=O)c1cc(Cl)cs1
```
````

which renders as:

Titles, Sections, Abstracts (LaTeX)

Note: The LaTeX `\title{}` will always render center-aligned and an `<h1>...</h1>` HTML tag can be aligned using the `align="..."` attribute, but the Mark

Note: In Mathpix Markdown, You can use the `\title{}` command wherever you want the title to appear in your document, as you would use the `\maketi`

Headings (Markdown)

Markdown	HTML	Rendered output
`# H1 Heading`	`<h1>H1 Heading</h1>`	**H1 Heading**
`## H2 Heading`	`<h2>H2 Heading</h2>`	**H2 Heading**
`## H3 Heading`	`<h3>H3 Heading</h3>`	**H3 Heading**
`## H4 Heading`	`<h4>H4 Heading</h4>`	**H4 Heading**
`## H5 Heading`	`<h5>H5 Heading</h5>`	**H5 Heading**
`## H6 Heading`	`<h6>H6 Heading</h6>`	**H6 Heading**
`H1 Heading=====`	`<h1>H1 Heading</h1>`	**H1 Heading**
`## H2 Heading----`	`<h2>H2 Heading</h2>`	**H2 Heading**

Fonts (Markdown)

Markdown	HTML	Rendered output
`**This is bold text**`	`<b>This is bold text</b>`	**This is bold text**
`__This is also bold text__`	`<strong>This is bold text<strong>`	**This is also bold text**
`*This is italic text*`	`<i>This is bold text</i>`	*This is italic text*
`_This is also italic text_`	`<em>This is bold text</em>`	*This is also italic text*
`~~Strikethrough~~`	`<s>Strikethrough</s>`	~~Strikethrough~~
`==This is marked text==`	`<mark>This is marked text</mark>`	***This is marked text***

Fonts (LaTeX)

Lists (Markdown)

Create an unordered list by starting a line with +, -, or *

```
+ Sub-lists are made by indenting 2 spaces:
  - Different characters in in the same sub-list will render the same characters:
    * Ac tristique libero volutpat at
    + Facilisis in pretium nisl aliquet
    - Nulla volutpat aliquam velit
+ Very easy!
```

Sub-lists are made by indenting 2 spaces:
Different characters in in the same sub-list will render the same characters:
Ac tristique libero volutpat at
Facilisis in pretium nisl aliquet
Nulla volutpat aliquam velit
Very easy!
Create an ordered list by writing 1,2,etc.

```
1. Lorem ipsum dolor sit amet
2. Consectetur adipiscing elit
3. Integer molestie lorem at massa
```

Lorem ipsum dolor sit amet
Consectetur adipiscing elit
Integer molestie lorem at massa

```
1. You can use sequential numbers...
1. ...or keep all the numbers as 1 and it will automatically increment your list.
```

You can use sequential numbers...
...or keep all the numbers as 1.
Or start your list with any number and the numbering will continue:

```
57. foo
2. bar
6. foo
```

foo
bar
foo

Lists (LaTeX)

You can also create lists using the LaTeX style `\begin{itemize} ... \end{itemize}` environment.

For example:

```
\begin{itemize}
  \item One entry in the list
  \item Another entry in the list
\end{itemize}
```

- One entry in the list
- Another entry in the list

You can read a full description of such lists here.

Hint

You can create a hint, which is a collapsible section, by using `+++ ... +++`.

For example:

```
+++ Click me...
Hello, world!
+++
```

▶ Click me...
Note that whatever text you want to be displayed next to the expand button should go on the same line as the first `+++`.

Code

Wrap inline code `in single backticks` (`` ` ``)

...or wrap code blocks in three backticks (`` ``` ``) or three tildes (~~~)

```
var foo = function (bar) {
  return bar++;
};
```

Include the programming language after the first three backticks or tildes for syntax highlighting:

```
var foo = function (bar) {
  return bar++;
};
```

(*All major languages supported via highlight.js.*)

You can also create a code block by indenting all lines:

```
    \\ some comments
    line 1 of code
    line 2 of code
    line 3 of code
```

Will render:

```
\\ some comments
line 1 of code
line 2 of code
line 3 of code
```

Tables (Markdown)

Colons can be used to align columns:

```
| Tables        | Are           | Cool  |
| :------------ |:--------------:| -----:|
| col 3 is      | right-aligned | $1600 |
| col 2 is      | centered      |   $12 |
| zebra stripes | are neat      |    $1 |
```

Tables	Are	Cool
col 3 is	right-aligned	$1600
col 2 is	centered	$12
zebra stripes	are neat	$1

There must be at least 3 dashes separating each header cell. The outer pipes (|) are optional, and you don't need to make the raw Markdown line up pr

```
Markdown | Less | Pretty
--- | --- | ---
*Still* | `renders` | **nicely**
1 | 2 | 3
```

Markdown	Less	Pretty
Still	`renders`	**nicely**
1	2	3

Tables (LaTeX)

The `tabular` environment is a powerful and important LaTeX command that provides many options for table rendering and multi row / column spanning

```
\begin{tabular}{<<table spec>>} <<table content>> \end{tabular}
```

This example shows how to create a table in LaTeX.

```
\begin{tabular}{| l | l | l | l |}
\hline
Day & Min Temp & Max Temp & Summary \\ \hline
Monday & 11C & 22C & A clear day with lots of sunshine.
However, the strong breeze will bring down the temperatures. \\ \hline
Tuesday & 9C & 19C & Cloudy with rain, across many northern regions. Clear spells
across most of Scotland and Northern Ireland,
but rain reaching the far northwest. \\ \hline
Wednesday & 10C & 21C & Rain will still linger for the morning.
Conditions will improve by early afternoon and continue
throughout the evening. \\
\hline
\end{tabular}
```

Read the full guide to LaTeX table support for more.

All tables in rendered HTML will be center aligned by default (unless other alignment method is set for those tables):

```
### Table md

| Tables       | Are          | Cool  |
| :------------ |:--------------:| -----:|
| col 3 is      | right-aligned | $1600 |
| col 2 is      | centered      |   $12 |
| zebra stripes | are neat      |    $1 |


### Tables latex

\begin{tabular}{ l c r }
  1 & 2 & 3 \\
  4 & 5 & 6 \\
  7 & 8 & 9 \\
\end{tabular}

\begin{table}
\begin{tabular}{ || c || }
  x1 & y1 \\
  x2 & y2 \\
\end{tabular}
\end{table}
```

Table md

Tables	Are	Cool
col 3 is	right-aligned	$1600
col 2 is	centered	$12
zebra stripes	are neat	$1

Tables latex

1	2	3
4	5	6
7	8	9

x1	y1
x2	y2

Quotes

Use a > to write a blockquote like this:

```
> This is my blockquote
```

> This is my blockquote

```
> This is my blockquote,
> It's taking up two lines.
```

> This is my blockquote, It’s taking up two lines.

```
> This is my nested blockquote,
>> it's pretty nifty.
```

> This is my nested blockquote,
>> it’s pretty nifty.

Links

Use the `[Title](url)` syntax to insert a link:

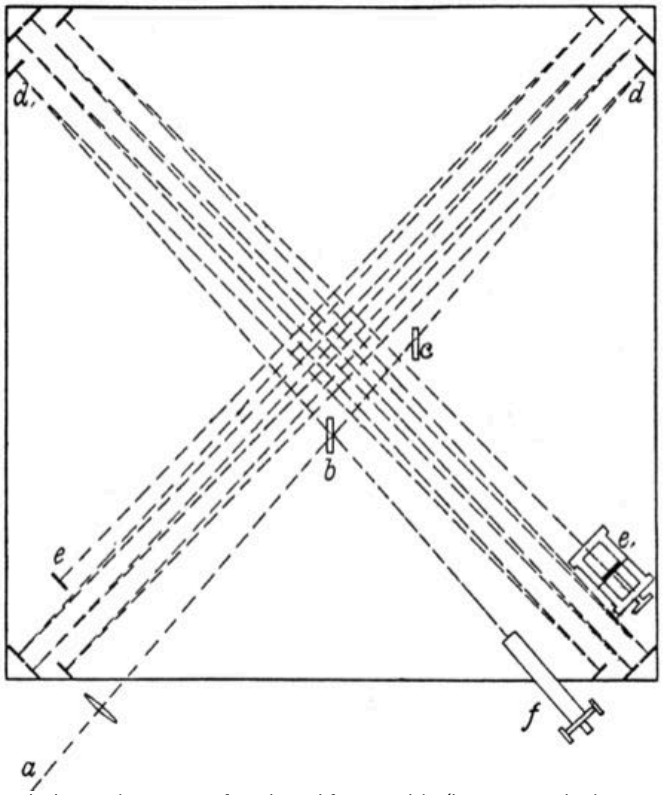
```
[This is a link to the Mathpix website](http://mathpix.com/)
```

This is a link to the Mathpix website

Images (Markdown)

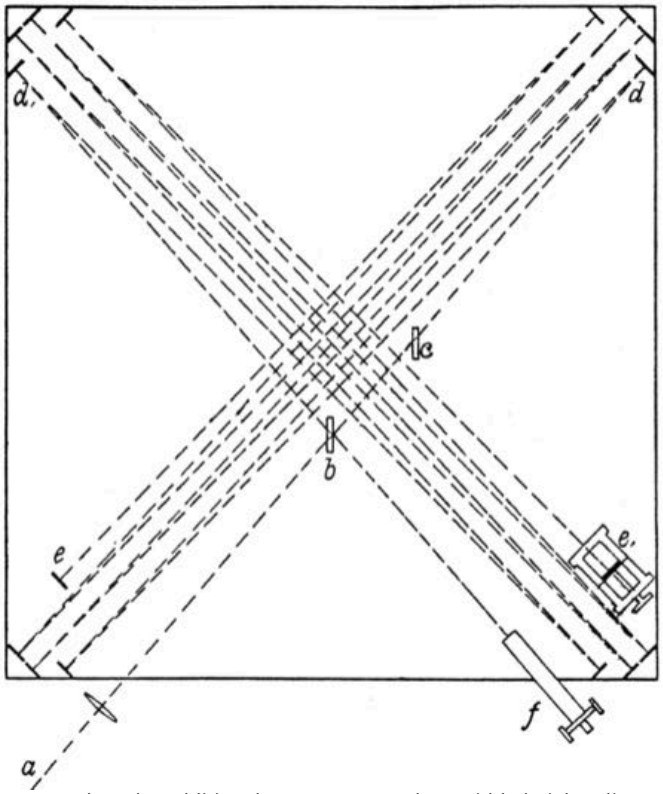
Use the `![Title](url)` syntax to insert an image:

```
![Michelson-Morley experiment](https://cdn.mathpix.com/snip/images/awccdJC5T8qaH8EAA7-Y0PpPG_RbMVLTc2_-YgewedE.original.fullsize.png)
```



Include text in quotes after the url for a tooltip (hover over the image to see):

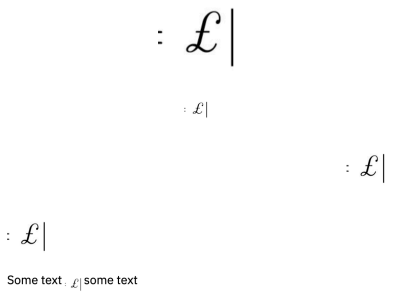
```
![Michelson-Morley experiment](https://cdn.mathpix.com/snip/images/awccdJC5T8qaH8EAA7-Y0PpPG_RbMVLTc2_-YgewedE.original.fullsize.png "Michelsc
```



Parse and render additional parameters such as width, height, alignment:

```
![foo](foo.png){ width=50% }
![foo](foo.png){ width="36px" }
![image](<src> "title"){width="20px",height="20px"}
![image](<src> "title"){width="20px",height="20px",right}
![image](<src> "title"){width="20px",height="20px", align="left"}
```

```
1  ![original image](https://cdn.mathpix.com/snip/images/CJ2UE_bWzpjLlxKUaO9o69DgpbCy8d-E8_uBe2-IORY.original.fullsize.png) {width=20%}
2
3  ![original image](https://cdn.mathpix.com/snip/images/CJ2UE_bWzpjLlxKUaO9o69DgpbCy8d-E8_uBe2-IORY.original.fullsize.png "has height") {width="34px", height="45px"}
4
5  ![original image](https://cdn.mathpix.com/snip/images/CJ2UE_bWzpjLlxKUaO9o69DgpbCy8d-E8_uBe2-IORY.original.fullsize.png) {width=10%, align="right"}
6
7  ![original image](https://cdn.mathpix.com/snip/images/CJ2UE_bWzpjLlxKUaO9o69DgpbCy8d-E8_uBe2-IORY.original.fullsize.png) {width=10%, height=10%, left}
8
9
10 Some text ![original image](https://cdn.mathpix.com/snip/images/CJ2UE_bWzpjLlxKUaO9o69DgpbCy8d-E8_uBe2-IORY.original.fullsize.png "title") {width="24px"} some text
```



Images (LaTeX)

You can also insert images using LaTeX's `figure` environment.

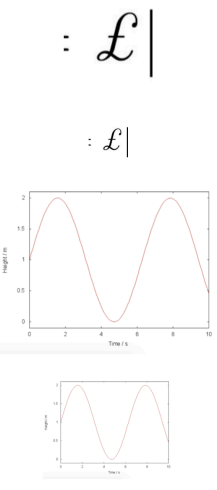
For example:

```
\begin{figure}[h]
\includegraphics[width=0.5\textwidth, center]{https://cdn.mathpix.com/snip/images/MJT22mwBq-bwqrOYwhrUrVKxO3Xcu4vyHSabfbG8my8.original.fullsiz
\end{figure}
```

You can read a full description of how to use here.

All images in rendered HTML will be center aligned by default (unless other alignment method is set for those images):

```
1  ![original image](https://cdn.mathpix.com/snip/images/CJ2UE_bWzpjLlxKUaO9o69DgpbCy8d-E8_uBe2-IORY.original.fullsize.png)
2
3  ![original image](https://cdn.mathpix.com/snip/images/CJ2UE_bWzpjLlxKUaO9o69DgpbCy8d-E8_uBe2-IORY.original.fullsize.png){width=10%}
4
5  \begin{figure}[h]
6  \includegraphics[width=0.5\textwidth]
   {https://cdn.mathpix.com/snip/images/MJT22mwBq-bwqrOYwhrUrVKxO3Xcu4vyHSabfbG8my8.original.fullsize.png}
7  \end{figure}
8
9  \includegraphics[width=0.3\textwidth]
   {https://cdn.mathpix.com/snip/images/MJT22mwBq-bwqrOYwhrUrVKxO3Xcu4vyHSabfbG8my8.original.fullsize.png}
```



Footnotes

You can write footnotes either by writing out "first", "second", "third", etc:

```
Footnote 1 link[^first]
```

Footnote 1 link[1]

```
Footnote reference[^second]
```

Footnote reference[2]

And you can reference the same footnote again like this:

```
My reference[^second]
```

My reference[2:1]

Or you can use numbers:

```
This is my next footnote[^3]
```

This is my next footnote[3]

```
You can reference multiple footnotes in a row[^3][^4]
```

You can reference multiple footnotes in a row[3:1][4]

You can also write inline footnotes:

```
Inline footnote^[Text of inline footnote] definition.
```

Inline footnote[5] definition.

Scroll to the bottom of the page to see how these footnotes render:

```
[^first]: Footnotes **can have markup**

    and multiple paragraphs.

[^second]: Footnote text.

[^3]: Hello I am the third footote!

[^4]: And I'm the 4th!
```

Horizontal divider lines

Create horizontal rules like this:

```
___
---
***
```

Page Breaking

You can encourage page break by using `\pagebreak` command. These page breaks are reflected when converting your document to LaTeX, PDF (with La

Misc.

Here are some other symbols supported:

```
(c) (C) (r) (R) (tm) (TM) (p) (P) +-
```

© © ® ® ™ ™ § § ±

Punctuation will get autocorrected:

```
test.. test... test..... test?..... test!....
```

test... test... test... test?.. test!..

```
!!!!!! ???? ,,  -- ---
```

!!! ??? , – —

Emoji’s

Classic markup:

```
:wink: :cry: :laughing: :yum:
```

😉 😢 😆 😋

Shortcuts (emoticons):

```
:-) :-( 8-) ;)
```

😃 😠 😎 😉

Subscripts and Superscripts

```
19^th^
```

19^{th}

```
H~2~O
```

H_2O

Using HTML

You can also use HTML tags. Here is an example of a header:

```
<h2 style="color:blue;">This is a Blue Heading</h2>
```

<h2 style="color:blue;">This is a Blue Heading</h2>

You can also render SVGs!

```
<svg id="function random() { [native code] }" xmlns="http://www.w3.org/2000/svg" version="1.1" width="200px" height="150px" viewBox="0 0 200 1
```

Footnotes **can have markup**
and multiple paragraphs. ↩
Footnote text. ↩ ↩
Hello I am the third footote! ↩ ↩
And I'm the 4th! ↩
Text of inline footnote ↩