

MathML Tags in HTML 5

Description, syntax, usage, attributes and examples of the MathML tags in HTML 5
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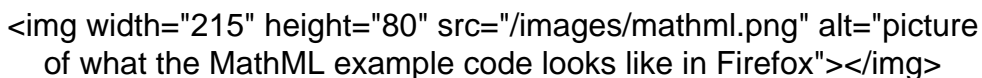
MathML Tags in HTML 5

Regular HTML code can be used to display mathematical symbols inline with other text using [HTML Unicode characters](#) (for which the [Unicode math symbols reference](#) may come in handy). `HTML 5` also supports `<dfn>MathML</dfn>`, which is used to describe mathematical formulas using XML code. MathML not only determines how a formula is display, but also describes the actual calculation.

Here is an actual working demo of the [MathML example code](#) below.

```
<math mode="display"> <mrow> <munder> <munder> <mrow> <mover> <mover> <mrow>
<mi style="font-family: Verdana, sans-serif">style</mi> </mrow> <mo style="font-size:
smaller">#</mo> </mover> <mtext style="font-size: larger; font-weight: bold">name</mtext>
</mover> <mo>=</mo> <mover> <mover> <mrow> <ms style="font-family: Verdana, sans-
serif">font-weight: bold</ms> </mrow> <mo style="font-size: smaller">#</mo> </mover>
<mtext style="font-size: larger; font-weight: bold">value</mtext> </mover> </mrow> <mo
style="font-size:smaller">#</mo> </munder> <mtext style="font-size:larger; font-weight:
bold"> attribute </mtext> </munder> </mrow> </math>
```

Note: Since support for MathML depends on the browser and available fonts, the appearance of the MathML demo above varies greatly. In Firefox on Windows with the [Fonts for MathML-enabled Mozilla](#) installed, the MathML example code above looks like this:



(Since this is an [image](#), the "attribute" link is *not* clickable.)

To install the MathML fonts in Windows 7, unzip the file then select all of the STIX*.otf files and drag/copy/drop them into the Fonts Page of the Control Panel.

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<math> Tag Syntax

Rules for coding MathML elements in HTML 5

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MathML Tag Attributes

global attributes	The common HTML attributes can be used on any of the MathML tags.
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Attributes of the <math> tag

<code>xmlns="http://www.w3.org/2000/svg"</code>	The <code>xmlns</code> attribute declares the namespace for all of the MathML elements. Since the <code>xmlns</code> attribute is inherited by child elements and descendants, it does not need to be coded on other tags in the content of the <code>math</code> element, unless they are in a different namespace such as the HTML namespace .
<code>mode="display"</code>	

Attributes of the <mo> tag

<code>form="prefix"</code> <code>form="postfix"</code>	
---	--

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MathML Examples

Examples of the `math` tag and other MathML tags in HTML 5

Diagram of attribute name and value with the various parts labeled

Here is an example of MathML code. The `xmlns` attribute on the `<math>` tag sets the default namespace for all of its descendants. Since the names of any HTML elements need to be in the HTML namespace, the [<a> tag](#) for the **attribute** link must also include an `xmlns` attribute.

See [MathML demo](#) above for how this code looks in *your* browser.

```
<math mode="display" xmlns="http://www.w3.org/1998/Math/MathML">
  <mrow>
    <munder>
      <munder>
        <mrow>
          <mover>
            <mover>
              <mrow>
                <mi style="font-family: Verdana, sans-serif">style</mi>
              </mrow>
              <mo style="font-size: smaller">&#xFE37;</mo>
            </mover>
            <mtext style="font-size: larger; font-weight: bold">name</mtext>
          </mover>
          <mo>=</mo>
          <mover>
            <mover>
              <mrow>
                <ms style="font-family: Verdana, sans-serif">font-weight:
→ bold</ms>
                <!-- <ms> automatically adds quotes -->
              </mrow>
            </mover>
          </mover>
        </mrow>
      </munder>
    </munder>
  </mrow>
```

```

        <mo style="font-size: smaller">#xFE37;</mo>
      </mover>
      <mtext style="font-size: larger; font-weight: bold">value</mtext>
    </mover>
  </mrow>
  <mo style="font-size: smaller">#xFE38;</mo>
</munder>
<mtext style="font-size: larger; font-weight: bold">
  <a href="../../attributes/index.html"
xmlns="http://www.w3.org/1999/xhtml">attribute</a>
  </mtext>
</munder>
</mrow>
</math>

```

The styles of the `mi`, `mo` and `mtext` tags could be put into a [CSS style sheet](#) rather than coding the `style` attribute on each tag:

```

@namespace mathml "http://www.w3.org/1998/Math/MathML"

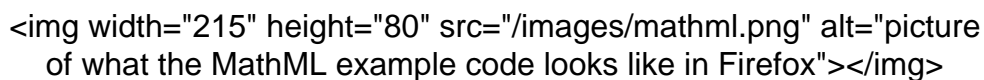
mathml|mi {
  font-family: Verdana, sans-serif;
}

mathml|mo {
  font-size: smaller;
}

mathml|mtext {
  font-size: larger;
  font-weight: bold;
}

```

Note: Since support for MathML depends on the browser and available fonts, the appearance of the code above varies greatly. In Firefox on Windows with the [Fonts for MathML-enabled Mozilla](#) installed, the MathML example code above looks like this:



(Since this is an [image](#), the "attribute" link is *not* clickable.)

To install the MathML fonts in Windows 7, unzip the file then select all of the STIX*.otf files and drag/copy/drop them into the Fonts Page of the Control Panel.

The Quadratic Formula

Here is another example with some actual mathematical formulas:

This formula is used to calculate the roots of a quadratic equation (`<math mode="display" style="display: inline">` `<mrow><mi>a</mi><mo>#</mo><msup><mi>x</mi><mn>2</mn></msup>` `<mo>` `<mi>b</mi><mo>#</mo><mi>x</mi>` `<mo>` `<mi>c</mi><mo>=</mo><mn>0</mn></mrow></math>):`

```

<math mode="display"> <mrow> <mi>x</mi> <mo>=</mo> <mfrac> <mrow> <mo>#</mo> <mi>b</mi> <mo>±</mo> <msqrt> <msup> <mi>b</mi> <mn>2</mn> </msup> <mo>-</mo> <mn>4</mn> <mo>#</mo> <mi>a</mi> <mo>#</mo> <mi>c</mi> </msqrt> </mrow> <mrow> <mn>2</mn> <mo>#</mo> <mi>a</mi> </mrow> </mfrac> </mrow> </math>

```

The first <math> tag has `style="display: inline"` to display the quadratic equation inline with the text of the paragraph. The second MathML formula gives the solution to that equation.

```

<p>This formula is used to calculate the roots of a quadratic equation
(<math mode="display" xmlns="http://www.w3.org/1998/Math/MathML"
style="display: inline">
<mrow><mi>a</mi><mo>#<!-- Unicode INVISIBLE TIMES
--></mo><msup><mi>x</mi><mn>2</mn></msup>
<mo> </mo><mi>b</mi><mo>#<!-- Unicode INVISIBLE TIMES --></mo><mi>x</mi>
<mo> </mo><mi>c</mi><mo>=</mo><mn>0</mn></mrow></math>):</p>

<math mode="display" xmlns="http://www.w3.org/1998/Math/MathML">
  <mrow>
    <mi>x</mi>
    <mo>=</mo>
    <mfrac>
      <mrow>
        <mo form="prefix">-<!-- Unicode MINUS SIGN --></mo>
        <mi>b</mi>
        <mo>+<!-- Unicode PLUS-MINUS SIGN --></mo>
        <msqrt>
          <msup>
            <mi>b</mi>
            <mn>2</mn>
          </msup>
          <mo>-<!-- Unicode MINUS SIGN --></mo>
          <mn>4</mn>
          <mo>#<!-- Unicode INVISIBLE TIMES --></mo>
          <mi>a</mi>
          <mo>#<!-- Unicode INVISIBLE TIMES --></mo>
          <mi>c</mi>
        </msqrt>
      </mrow>
    </mfrac>
  </mrow>
  <mrow>
    <mn>2</mn>
    <mo>#<!-- Unicode INVISIBLE TIMES --></mo>
    <mi>a</mi>
  </mrow>
</mfrac>
</mrow>
</math>

```

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Changes in HTML 5 - MathML

What's new in HTML 5

Support for MathML is one of the new features of HTML 5.

Differences between HTML 5 and earlier versions of HTML

MathML was not supported in older versions of HTML.

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THE END