



HyperText Markup Language

HTML Skeleton

```
<!DOCTYPE html>
```

```
<html>
```

```
  <head>
```

```
    <meta charset="UTF-8">
```

```
    <title>Web Art</title>
```

```
  </head>
```

```
  <body>
```

```
    <h1>Web Art</h1>
```

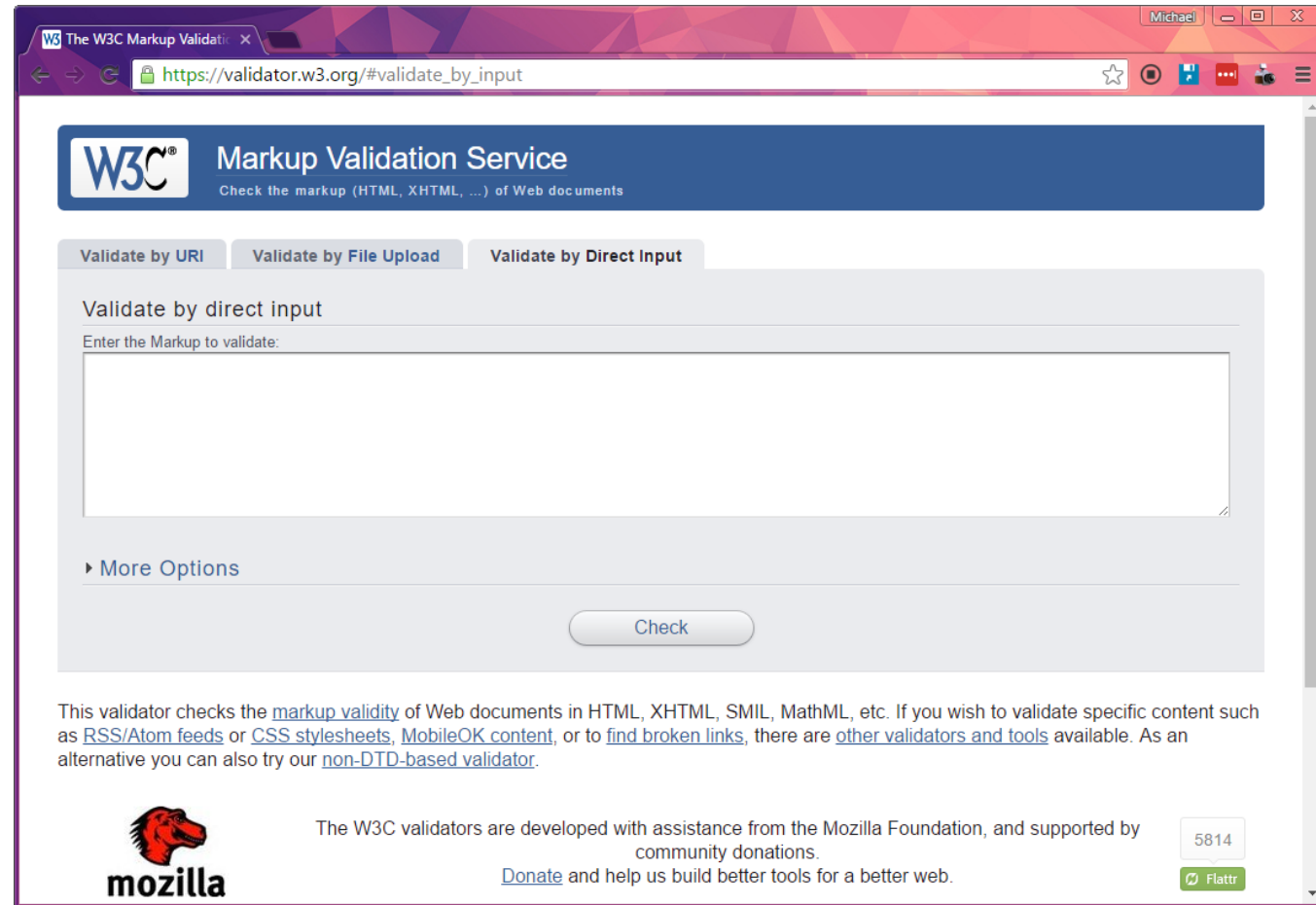
```
  </body>
```

```
</html>
```

Escape Characters

<	Less-than sign < <	¢	Cent sign ¢ ¢	‘	Left single quote ‘ ‘
>	Greater-than sign > >	£	Pound sign £ £	’	Right single quote ’ ’
&	Ampersand & &	¥	Yen sign ¥ ¥	“	Left double quotes “ “
"	Quotation mark " "	€	Euro sign € €	”	Right double quotes ” ”
		©	Copyright symbol © ©	×	Multiplication sign × ×
		®	Registered trademark ® ®	÷	Division sign ÷ ÷
		™	Trademark ™ ™		

Validator



The screenshot shows the W3C Markup Validation Service interface in a web browser. The browser's address bar displays the URL https://validator.w3.org/#validate_by_input. The page has a blue header with the W3C logo and the text "Markup Validation Service" and "Check the markup (HTML, XHTML, ...) of Web documents". Below the header, there are three tabs: "Validate by URI", "Validate by File Upload", and "Validate by Direct Input". The "Validate by Direct Input" tab is selected. Under this tab, there is a section titled "Validate by direct input" with the instruction "Enter the Markup to validate:" followed by a large text input area. Below the input area is a link that says "More Options". At the bottom of the input section is a "Check" button. Below the input section, there is a paragraph of text explaining the validator's capabilities and providing links to other resources. At the bottom of the page, there is a Mozilla logo, a statement about the service being developed with assistance from the Mozilla Foundation, a "Donate" link, and a Flattr button showing a count of 5814.

W3C The W3C Markup Validation Service

Check the markup (HTML, XHTML, ...) of Web documents

Validate by URI Validate by File Upload **Validate by Direct Input**


Validate by direct input


Enter the Markup to validate:

More Options

Check

This validator checks the [markup validity](#) of Web documents in HTML, XHTML, SMIL, MathML, etc. If you wish to validate specific content such as [RSS/Atom feeds](#) or [CSS stylesheets](#), [MobileOK content](#), or to [find broken links](#), there are [other validators and tools](#) available. As an alternative you can also try our [non-DTD-based validator](#).

 The W3C validators are developed with assistance from the Mozilla Foundation, and supported by community donations. [Donate](#) and help us build better tools for a better web.

5814 

https://validator.w3.org/#validate_by_input

Lists



Ordered Lists

```
<ol>
  <li>The Shawshank Redemption, 1994</li>
  <li>The Godfather, 1972</li>
  <li>The Godfather: Part II, 1974</li>
  <li>The Dark Knight, 2008</li>
  <li>Schindler's List, 1993</li>
</ol>
```

LIST STARTS { ``

```
<li>The Shawshank Redemption, 1994</li>
<li>The Godfather, 1972</li>
<li>The Godfather: Part II, 1974</li>
<li>The Dark Knight, 2008</li>
<li>Schindler's List, 1993</li>
```

} CHILD
ITEMS

LIST ENDS { ``



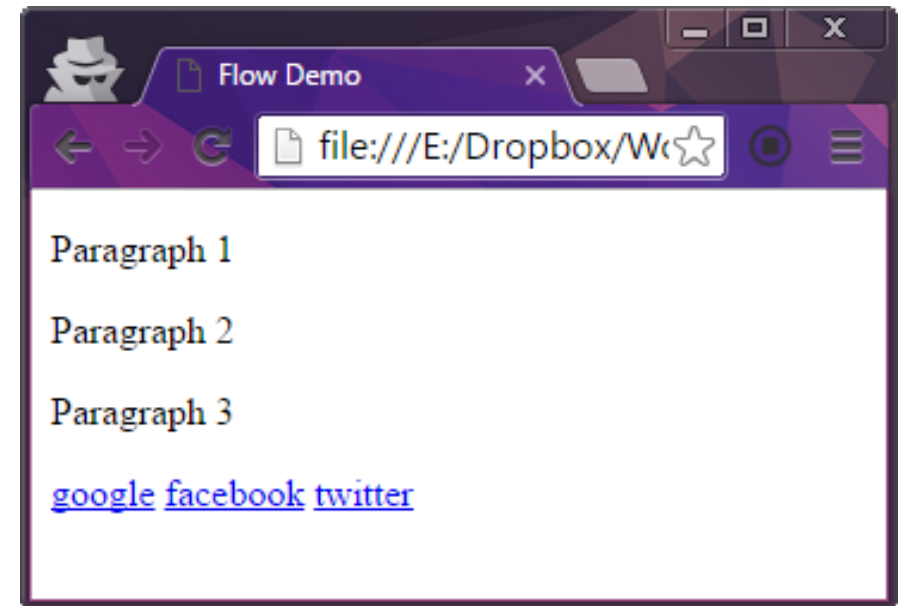
```
<ol>
  <li>The Shawshank Redemption, 1994</li>
  <li>The Godfather, 1972</li>
  <li>The Godfather: Part II, 1974</li>
  <li>The Dark Knight, 2008</li>
  <li>Schindler's List, 1993</li>
</ol>
```

Inline Text Elements

Block vs Inline

```
<!-- Block Elements -->
<p>Paragraph 1</p>
<p>Paragraph 2</p>
<p>Paragraph 3</p>

<!-- Inline Elements -->
<a href="http://www.google.com">google</a>
<a href="http://www.facebook.com">facebook</a>
<a href="http://www.twitter.com">twitter</a>
```



Block Elements

- h1 – h6
- p
- ol, ul, li
- header, footer
- nav
- section
- div
- And [more](#)

Inline Elements

- img
- a
- b, i, s, u
- sup, sub
- span
- audio, video
- And [more](#)



Semantic Text Elements

```
<p>  
  Do  
  <strong>not</strong>  
  think about it.  
</p>
```

```
<p>  
  That is  
  <em>totally</em>  
  the right way to do that.  
</p>
```



Stylistic Text Elements

```
<p>  
  <b>Call me Ishmael. Some years ago</b> -- never mind how long  
  precisely -- having little or no money in my purse, and nothing  
  particular to interest me...  
</p>
```

```
<p>  
  <i>Internet Art</i> by Rachel Greene  
</p>
```

Semantic vs Stylistic Elements

- Reasons to care about semantics:
 - Screen readers
 - Mobile
 - The robots
- More info: <http://stackoverflow.com/a/271776>

Navigation

New Elements

```
<!DOCTYPE html>
```

```
<html>
```

```
  <head>
```

```
    <meta charset="UTF-8">
```

```
    <title>Multipage Website</title>
```

```
  </head>
```

```
  <body>
```

```
    <header>
```

```
      <nav></nav>
```

```
    </header>
```

```
    <section></section>
```

```
    <footer></footer>
```

```
  </body>
```

```
</html>
```

```
<!DOCTYPE html>
```

```
<html>
```

```
  <head>
```

```
    <meta charset="UTF-8">
```

```
    <title>Multipage Website</title>
```

```
  </head>
```

Element for
introductions and/or
navigation



```
  <body>
```

```
    <header>
```

```
      <nav></nav>
```

```
    </header>
```

```
    <section></section>
```

```
    <footer></footer>
```

```
  </body>
```

```
</html>
```

```
<!DOCTYPE html>
```

```
<html>
```

```
  <head>
```

```
    <meta charset="UTF-8">
```

```
    <title>Multipage Website</title>
```

```
  </head>
```

```
  <body>
```

```
    <header>
```

```
      <nav></nav>
```

```
    </header>
```

```
    <section></section>
```

```
    <footer></footer>
```

```
  </body>
```

```
</html>
```

Element for holding
navigation links



```
<!DOCTYPE html>

<html>

  <head>
    <meta charset="UTF-8">
    <title>Multipage Website</title>
  </head>

  <body>
    <header>
      <nav></nav>
    </header>

    <section></section>

    <footer></footer>
  </body>

</html>
```

Thematically grouped
content



```
<!DOCTYPE html>

<html>

    <head>
        <meta charset="UTF-8">
        <title>Multipage Website</title>
    </head>

    <body>
        <header>
            <nav></nav>
        </header>

        <section></section>

        <footer></footer>
    </body>

</html>
```

Used for meta/final
information, e.g.
copyright



Resources on Semantic Elements

- <https://codepen.io/mi-lee/post/an-overview-of-html5-semantics>
- <http://blog.teamtreehouse.com/use-html5-sectioning-elements>

```
<body>
  <header>
    <h1>📱 Web Art 📱</h1>
    <nav>
      <a href="index.html">Home</a>
      📱
      <a href="about.html">About</a>
      📱
      <a href="list.html">List</a>
    </nav>
  </header>

  <section>
    <h1>Welcome</h1>
    
  </section>

  <footer>
    Mike Hadley &copy; 2016
  </footer>
</body>
```

Absolute Paths

Absolute paths are full web addresses. They typically start with one of the following:

- http://www
- https://www
- //www

```
<a href="http://www.google.com">Google</a>
```




Relative Paths

Relative paths are web addresses relative to the current document. Examples:

- about.html
- images/cat-bullet.png
- ../other-page.html

```
<a href="about.html">About</a>
```

IFrame Embedded Content

(YouTube, Maps, Etc.)






Embedding Sites

```
<iframe src="https://en.wikipedia.org/wiki/Giant_panda"></iframe>
```

*not all sites can be embedded

Attributes

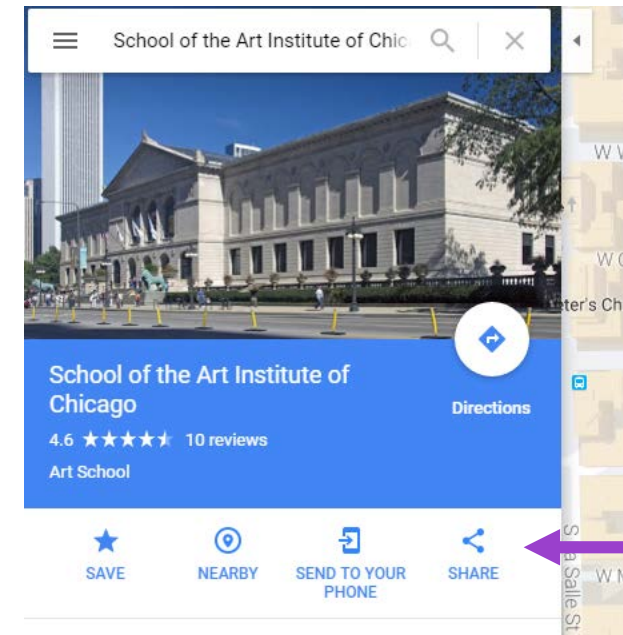
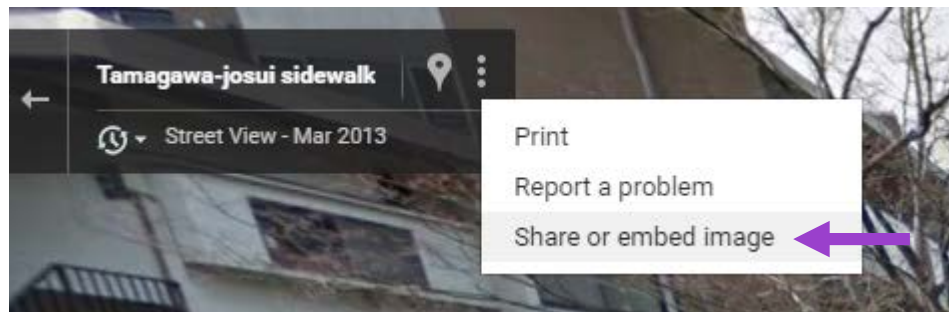
 = New in HTML5.

Attribute	Value	Description
<u>align</u>	left right top middle bottom	Not supported in HTML5. Specifies the alignment of an <iframe> according to surrounding elements
<u>frameborder</u>	1 0	Not supported in HTML5. Specifies whether or not to display a border around an <iframe>
<u>height</u>	<i>pixels</i>	Specifies the height of an <iframe>
<u>longdesc</u>	<i>URL</i>	Not supported in HTML5. Specifies a page that contains a long description of the content of an <iframe>
<u>marginheight</u>	<i>pixels</i>	Not supported in HTML5. Specifies the top and bottom margins of the content of an <iframe>
<u>marginwidth</u>	<i>pixels</i>	Not supported in HTML5. Specifies the left and right margins of the content of an <iframe>
<u>name</u>	<i>text</i>	Specifies the name of an <iframe>
<u>sandbox</u>	allow-forms allow-pointer-lock  allow-popups allow-same-origin allow-scripts allow-top-navigation	Enables an extra set of restrictions for the content in an <iframe>
<u>scrolling</u>	yes no auto	Not supported in HTML5. Specifies whether or not to display scrollbars in an <iframe>
<u>src</u>	<i>URL</i>	Specifies the address of the document to embed in the <iframe>
<u>srcdoc</u>	 <i>HTML_code</i>	Specifies the HTML content of the page to show in the <iframe>
<u>width</u>	<i>pixels</i>	Specifies the width of an <iframe>

```
<section>
  <h1>Embedding a Site</h1>
  <iframe
    src="https://en.wikipedia.org/wiki/Giant_panda"
    width="800"
    height="400"
    frameborder="0"></iframe>
</section>
```

Embedding Google Maps

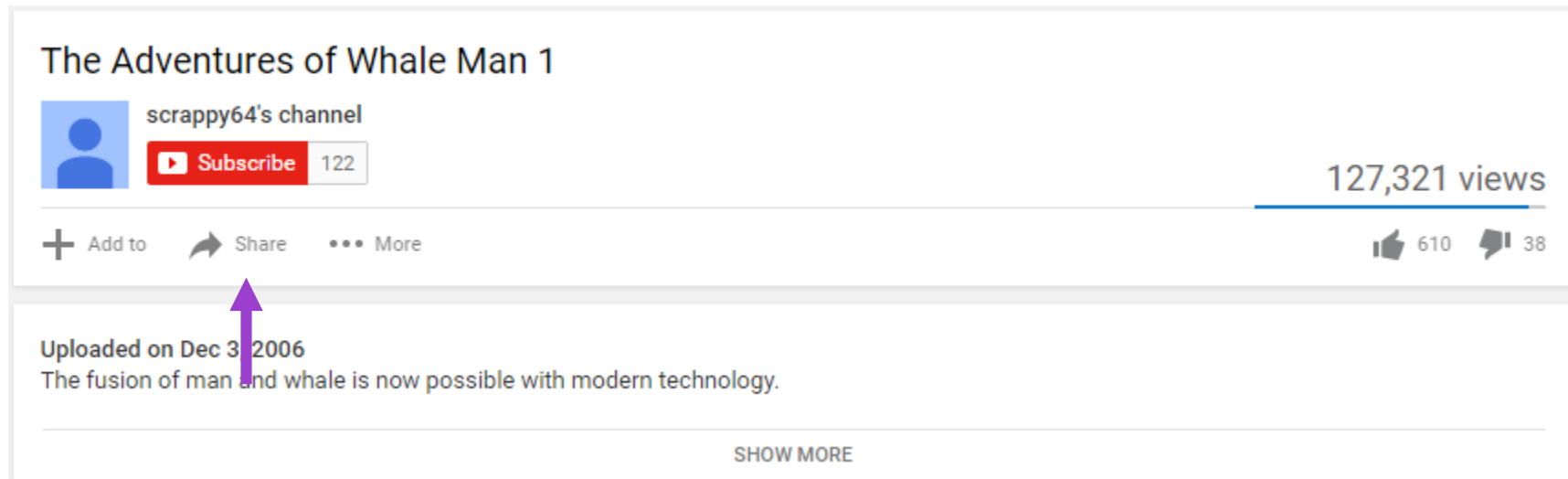
- Go to maps.google.com
- Find a [location](#)
- Click Share



```
<section>
  <h1>Embedding Maps</h1>
  <iframe
    src="https://www.google.com/maps/embed?pb=!1m0!3m2!1sen!2sus!4v147325614464
    6!6m8!1m7!1sgT28ssf0BB2LxZ63JNcL1w!2m2!1d35.70407437075822!2d139.5577317304
    603!3f287.76!4f-20.0100000000000005!5f0.7820865974627469"
    width="600"
    height="450"
    frameborder="0"
    style="border:0"
    allowfullscreen></iframe>
</section>
```

Embedding YouTube

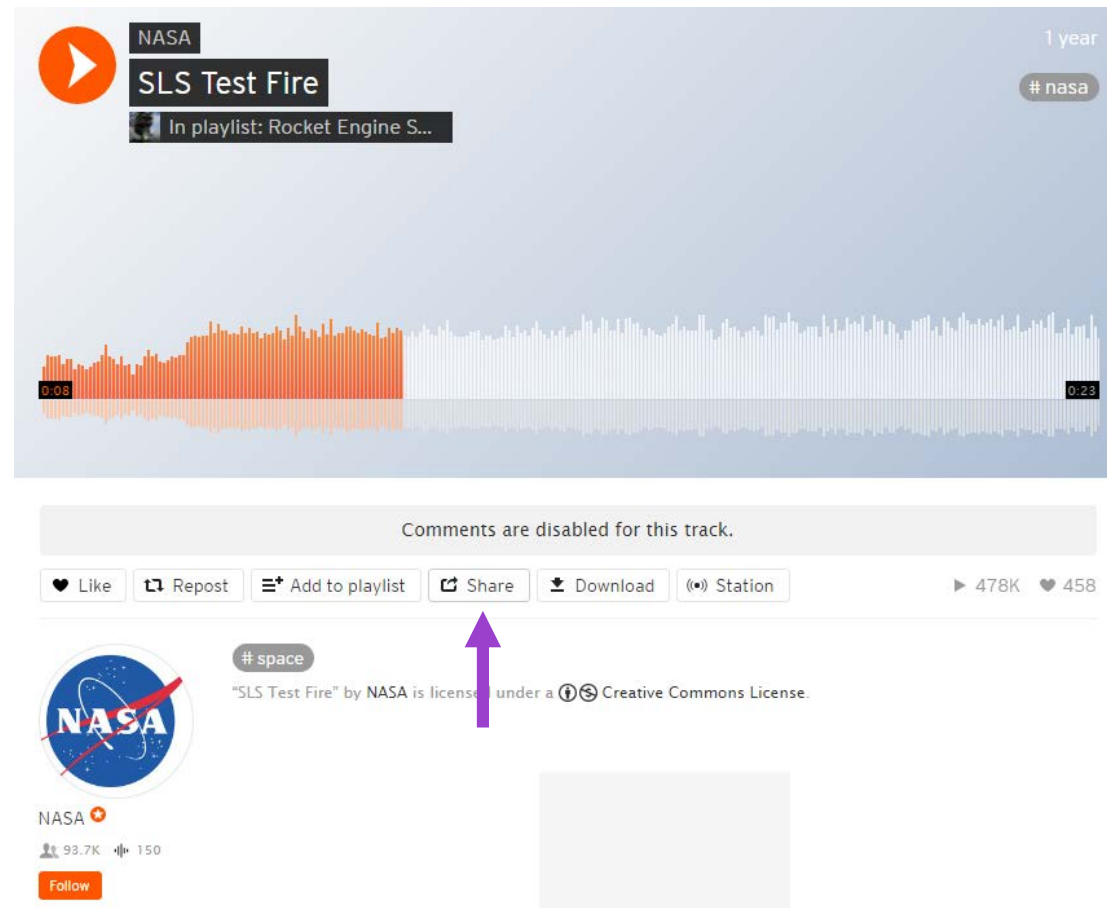
- More info and controls [here](#)




```
<section>
  <h1>Embedding YouTube</h1>
  <iframe
    width="560"
    height="315"
    src="https://www.youtube.com/embed/iRZ2Sh5-XuM?autoplay=1&start=3"
    frameborder="0"
    allowfullscreen></iframe>
</section>
```

Embedding SoundCloud

- More info and controls [here](#)



```
<section>
  <h1>Embedding SoundCloud</h1>
  <iframe
    width="500"
    height="100"
    scrolling="no"
    frameborder="no"
    src="https://w.soundcloud.com/player/?url=https%3A//api.soundcloud.com/
    tracks/3150016&auto_play=true&hide_related=false&show_comments=true&
    show_user=true&show_reposts=false&visual=false&show_artwork=false"></iframe
  >
</section>
```

Video and Audio



Video

- Tutorial on video in html: html5rocks.com

```
<video src="video/electric-sheep-1.mp4">  
  Your browser does not support the video element!  
</video>
```



Optional Attributes

Attribute	Value	Description
<u>autoplay</u>	autoplay	Specifies that the video will start playing as soon as it is ready
<u>controls</u>	controls	Specifies that video controls should be displayed (such as a play/pause button etc).
<u>height</u>	<i>pixels</i>	Sets the height of the video player
<u>loop</u>	loop	Specifies that the video will start over again, every time it is finished
<u>muted</u>	muted	Specifies that the audio output of the video should be muted
<u>poster</u>	<i>URL</i>	Specifies an image to be shown while the video is downloading, or until the user hits the play button
<u>preload</u>	auto metadata none	Specifies if and how the author thinks the video should be loaded when the page loads
<u>src</u>	<i>URL</i>	Specifies the URL of the video file
<u>width</u>	<i>pixels</i>	Sets the width of the video player

```
<video
  src="video/electric-sheep-2.mp4"
  loop
  autoplay
  width="1000">
  Your browser does not support the video element!
</video>
```



```
<video loop autoplay>
  <source src="video/electric-sheep-1.webm" type="video/webm">
  <source src="video/electric-sheep-1.mp4" type="video/mp4">
  Your browser does not support the video element!
</video>
```




Audio

- Tutorial on audio in html: thinkful.com

```
<audio src="audio/nasa-sls-test-fire.mp3">  
  Your browser does not support the audio element.  
</audio>
```



Attributes

Attribute	Value	Description
<u>autoplay</u>	autoplay	Specifies that the audio will start playing as soon as it is ready
<u>controls</u>	controls	Specifies that audio controls should be displayed (such as a play/pause button etc)
<u>loop</u>	loop	Specifies that the audio will start over again, every time it is finished
<u>muted</u>	muted	Specifies that the audio output should be muted
<u>preload</u>	auto metadata none	Specifies if and how the author thinks the audio should be loaded when the page loads
<u>src</u>	URL	Specifies the URL of the audio file

```
<audio
  src="audio/nasa-chorus-radio-waves.mp3"
  type="audio/mp3"
  preload="auto"
  autoplay
  controls>
  Your browser does not support the audio element.
</audio>
```



Browser compatibility

Desktop	Mobile				
Feature	Chrome	Firefox (Gecko)	Internet Explorer	Opera	Safari
Basic support	3.0	3.5 (1.9.1)	9.0	10.50	3.1
<audio>: PCM in WAVE	(Yes)	3.5 (1.9.1)	No support	10.50	3.1
<audio>: Vorbis in WebM	(Yes)	4.0 (2.0)	No support	10.60	3.1 ^[1]
<audio>: Streaming Vorbis/Opus in WebM via MSE	?	36.0 (36.0) ^[2]	?	?	?
<audio>: Vorbis in Ogg	(Yes)	3.5 (1.9.1)	No support	10.50	No support
<audio>: MP3	(Yes) ^[4]	(Yes) ^[5]	9.0	(Yes)	3.1
<audio>: MP3 in MP4	?	?	?	?	(Yes)
<audio>: AAC in MP4	(Yes) ^[6]	(Yes) ^[7]	9.0	(Yes)	3.1
<audio>: Opus in Ogg	27.0	15.0 (15.0)	?	?	?
<audio>: FLAC	No support	51 (51)	No support	No support	No support
<audio>: FLAC in Ogg	No support	51 (51)	No support	No support	No support
<video>: VP8 and Vorbis in WebM	6.0	4.0 (2.0)	9.0 ^[8]	10.60	3.1 ^[9]
<video>: VP9 and Opus in WebM	29.0	28.0 (28.0)	?	(Yes)	?
<video>: Streaming WebM via MSE	?	42.0 (42.0) ^[35]	?	?	?
<video>: Theora and Vorbis in Ogg	(Yes)	3.5 (1.9.1)	No support	10.50	No support
<video>: H.264 and MP3 in MP4	(Yes) ^[4]	(Yes) ^[10]	9.0	(Yes)	(Yes)
<video>: H.264 and AAC in MP4	(Yes) ^[4]	(Yes) ^[11]	9.0	(Yes)	3.1
any other format	No support	No support	No support	No support	3.1 ^[12]

https://developer.mozilla.org/en-US/docs/Web/HTML/Supported_media_formats#Browser_compatibility