<canvas>: The Graphics Canvas element

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<canvas>: The Graphics Canvas element

Related Topics
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HTML Elements

Use the **HTML `<canvas>` element** with either the canvas scripting API or the WebGL API to draw graphics and animations.

Content categories	Flow content, phrasing content, embedded content, palpable content.
Permitted content	Transparent but with no interactive content descendants except for `<a>` elements, `<button>` elements, `<input>` elements whose `type` attribute is `checkbox`, `radio`, or `button`.
Tag omission	None, both the starting and ending tag are mandatory.
Permitted parents	Any element that accepts phrasing content.
Permitted ARIA roles	Any
DOM interface	`HTMLCanvasElement`

Attributes

This element's attributes include the global attributes.

`height`
: The height of the coordinate space in CSS pixels. Defaults to 150.

`moz-opaque` ⚠
: Lets the canvas know whether or not translucency will be a factor. If the canvas knows there's no translucency, painting performance can be optimized. This is only supported by Mozilla-based browsers; use the standardized `canvas.getContext('2d', { alpha: false })` instead.

`width`
: The width of the coordinate space in CSS pixels. Defaults to 300.

Usage notes

Alternative content

You may (and should) provide alternate content inside the `<canvas>` block. That content will be rendered both on older browsers that don't support canvas and in browsers with JavaScript disabled.

Required `</canvas>` tag

Unlike the `<img>` element, the `<canvas>` element **requires** the closing tag (`</canvas>`).

Sizing the canvas

The displayed size of the canvas can be changed using a stylesheet. The image is scaled during rendering to fit the styled size. If your renderings seem distorted, try specifying your `width` and `height` attributes explicitly in the `<canvas>` attributes, and not using CSS.

Examples

This code snippet adds a canvas element to your HTML document. A fallback text is provided if a browser is unable to render the canvas, or if can't read a canvas. Providing a useful fallback text or sub DOM helps to make the the canvas more accessible.

```
<canvas id="canvas" width="300" height="300">
  An alternative text describing what your canvas displays.
</canvas>
```

Then in the JavaScript code, call `HTMLCanvasElement.getContext()` to get a drawing context and start drawing onto the canvas:

```
<script>
var canvas = document.getElementById('canvas');
var ctx = canvas.getContext('2d');
ctx.fillStyle = 'green';
ctx.fillRect(10, 10, 100, 100);
</script>
```

Opaque canvas

If your canvas does not use transparency, you can tell the browser that your canvas is opaque, this will be used internally to optimize rendering. To do this, set `alpha` to `false` when getting the drawing context:

```
<script>
var canvas = document.getElementById('canvas');
var ctx = canvas.getContext('2d', { alpha: false });
</script>
```

Before the `alpha` option was standardized, you could use the `moz-opaque` ⚠ attribute on the canvas tag. However, this only works in Mozilla-based rendering engines and should be avoided; check bug 878155 to track when this attribute will be removed.

```
<canvas id="myCanvas" moz-opaque></canvas>
```

Specifications

Specification	Status	Comment
HTML Living Standard The definition of '<canvas>' in that specification.	LS Living Standard	
HTML5 The definition of '<canvas>' in that specification.	REC Recommendation	Initial definition

Browser compatibility

New compatibility tables are in beta

	Desktop						Mobile						
	Chrome	Edge	Firefox	IE	Opera	Safari	Android webview	Chrome for Android	Edge mobile	Firefox for Android	Opera for Android	Safari on iOS	Samsung Internet
Basic support	1	Yes	1.5 *	9	9	2 *	?	?	Yes	4 *	No	1	?
`height`	1	Yes	1.5 *	9	9	2 *	?	?	Yes	4 *	No	1	?
`moz-opaque` ⚠	No	No	3.5	No	No	No	No	No	No	4	No	No	No
`width`	1	Yes	1.5 *	9	9	2 *	?	?	Yes	4 *	No	1	?

Full support · No support · Compatibility unknown · Non-standard. Expect poor cross-browser support.

* See implementation notes.

See also

- MDN canvas portal
- Canvas tutorial
- Canvas cheat sheet
- Canvas-related demos
- Canvas introduction by Apple

Tags: Canvas, Element, HTML, HTML scripting, HTML5, Reference, Web

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