JavaScript Pointer Events API

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Event Types

Pointer events are DOM events that are fired for pointing devices. They handle input from mice, pens, touch screens, and other pointing devices with a single event model.

The pointer events API provides the following event types:

Event	Description
`pointerdown`	When a pointer becomes active
`pointerup`	When a pointer is deactivated
`pointermove`	When a pointer changes coordinates
`pointerover`	When a pointer enters an element
`pointerout`	When a pointer leaves an element
`pointerenter`	When a pointer enters the hit test boundaries
`pointerleave`	When a pointer leaves the hit test boundaries
`pointercancel`	When a pointer event is canceled

```
<!DOCTYPE html>
<html>
<body>

<h2>JavaScript Pointer Events API</h2>
<p>From w3schools.com, Experiment by Teeratus_R</p>

<h4>Event Types</h4>

<div id="target" style="width:300px;height:150px;background:#f0f0f0;border:2px solid #333;paddin
  Click, move, or press here
</div>

<p id="demo"></p>

<script>
const target = document.getElementById("target");

target.addEventListener("pointerdown", function(e) {
  document.getElementById("demo").innerHTML +=
    "pointerdown - button: " + e.button + "<br>";
});

target.addEventListener("pointerup", function(e) {
  document.getElementById("demo").innerHTML +=
    "pointerup<br>";
});

target.addEventListener("pointermove", function(e) {
  // Only update on every 10th move to reduce noise
  if (e.clientX % 10 === 0) {
    document.getElementById("demo").innerHTML =
      "pointermove - X: " + e.clientX + ", Y: " + e.clientY;
  }
});
</script>

</body>
</html>
```

Example 1

Result View Example

Event Properties

Pointer event objects have properties that provide information about the pointer device:

```
<!DOCTYPE html>
<html>
<body>

<h2>JavaScript Pointer Events API</h2>
<p>From w3schools.com, Experiment by Teeratus_R</p>

<h4>Event Properties</h4>

<div id="target2" style="width:300px;height:150px;background:#e8f0fe;border:2px solid #333;paddi
  Click here to see pointer properties
</div>

<p id="demo2"></p>

<script>
document.getElementById("target2").addEventListener("pointerdown", function(e) {
  document.getElementById("demo2").innerHTML =
    "pointerType: " + e.pointerType + "<br>" +
    "pointerId: " + e.pointerId + "<br>" +
    "button: " + e.button + "<br>" +
    "buttons: " + e.buttons + "<br>" +
    "clientX: " + e.clientX + "<br>" +
    "clientY: " + e.clientY + "<br>" +
    "screenX: " + e.screenX + "<br>" +
    "screenY: " + e.screenY + "<br>" +
    "pressure: " + e.pressure + "<br>" +
    "tiltX: " + e.tiltX + "<br>" +
    "tiltY: " + e.tiltY + "<br>" +
    "twist: " + e.twist + "<br>" +
    "width: " + e.width + "<br>" +
    "height: " + e.height;
});
</script>

</body>
</html>
```

Example 2

Result View Example

Pointer Events API Benefits

Pointer events unify mouse, touch, and pen input into a single event model. Benefits include:

- **Cross-device compatibility**: Works with mouse, touch, and pen
- **Simplified code**: One event handler instead of separate mouse and touch handlers
- **Additional data**: Pressure, tilt, twist, and contact geometry for pen/stylus
- **Event capture**: The pointer can be captured to a specific element

```
<!DOCTYPE html>
<html>
<body>

<h2>JavaScript Pointer Events API</h2>
<p>From w3schools.com, Experiment by Teeratus_R</p>

<h4>Pointer Events API Benefits</h4>
<p id="demo3"></p>

<script>
// Check browser support for pointer events
let text = "Pointer Events API Support Check:<br><br>";

if (window.PointerEvent) {
  text += "✓ PointerEvent is supported in this browser<br><br>";
  text += "This means you can use:<br>";
  text += "- pointerdown, pointerup, pointermove<br>";
  text += "- Instead of separate mousedown/mouseup/touchstart handlers<br><br>";
  text += "Examples where pointer events help:<br>";
  text += "- Drawing applications (pen + touch + mouse)<br>";
  text += "- Drag and drop (any input device)<br>";
  text += "- Signature capture (pen pressure)<br>";
  text += "- Games (multiple touch points)";
} else {
  text += "✗ PointerEvent is NOT supported in this browser<br>";
  text += "Support falls back to mouse + touch events";
}

document.getElementById("demo3").innerHTML = text;
</script>

</body>
</html>
```

Example 3

Result View Example

CSS pointer-events Property

The CSS `pointer-events` property specifies whether an element responds to pointer events:

```
<!DOCTYPE html>
<html>
<body>

<h2>JavaScript Pointer Events API</h2>
<p>From w3schools.com, Experiment by Teeratus_R</p>

<h4>CSS pointer-events Property</h4>
<p id="demo4"></p>

<div id="parent" style="position:relative;width:300px;height:100px;background:#ddd;">
  <div id="blocked" style="width:100px;height:100px;background:red;opacity:0.5;">
    Clickable (default)
  </div>
  <div id="clickable" style="position:absolute;top:0;left:150px;width:100px;height:100px;backgro
    <span id="child" style="pointer-events:none;">Not clickable</span>
  </div>
</div>

<button onclick="togglePointerEvents()">Toggle pointer-events</button>
<p id="status"></p>

<script>
const child = document.getElementById("child");
let enabled = true;

function togglePointerEvents() {
  enabled = !enabled;
  child.style.pointerEvents = enabled ? "none" : "auto";
  document.getElementById("status").innerHTML =
    "pointer-events: " + (enabled ? "none" : "auto") +
    " (element " + (enabled ? "cannot" : "can") + " receive events)";
}

document.getElementById("parent").addEventListener("click", function() {
  document.getElementById("demo4").innerHTML = "Parent div clicked!";
});

// Show initial state
document.getElementById("status").innerHTML =
  "pointer-events: none (green area child cannot receive events)";
</script>

</body>
</html>
```

Example 4

Result View Example

Document

Document in project

You can Download PDF file.

Reference

- W3Schools JavaScript Pointer Events API