

EVENT HANDLING

What is an event?				
Mouse	Key	Form	Field	Window
click	keydown	change	blur	load
dblclick	keyup	submit	focus	unload
mouseover	keypress	reset	change	resize
mouseout				error
mousedown				scroll
mouseup				
mousemove				

What if DOM objects contain DOM objects?

- And all the objects have a click event handler?
- Which one fires when you click the link?

The screenshot shows the eBay search interface. The search term 'justice league' is entered in the search bar. Below the search bar, there are several filters: 'Action Figures', 'batman', 'justice league set', and 'pl...'. A green arrow points from the question text down to the 'justice league' search term in the search bar.

ebay Shop by category justice league

Related: justice league set justice league unlimited justice league ...

Action Figures batman justice league set pl... Include description

Hi! Sign in or register | Daily Deals | Gift Cards | Sell | Help & Contact | SHOP GIFTS

My eBay Advanced

All Listings Auction Buy It Now

Sort: Best Match View: E

Categories

Toys & Hobbies

Comics & Graphic Novels (7,710)

TV, Movie & Video Games (242)

Other (2)

Sports (1)

Anime & Manga (11)

Mixed Lots (8)

Fantasy (8)

Military & Action Figures (5)

Disney & Urban Toys (2)

Transportation (6)

Historical Figures (1)

Brand

see all

DC Comics (2,846) DC Universe (1,400)

8,210 results for justice league

Follow this search

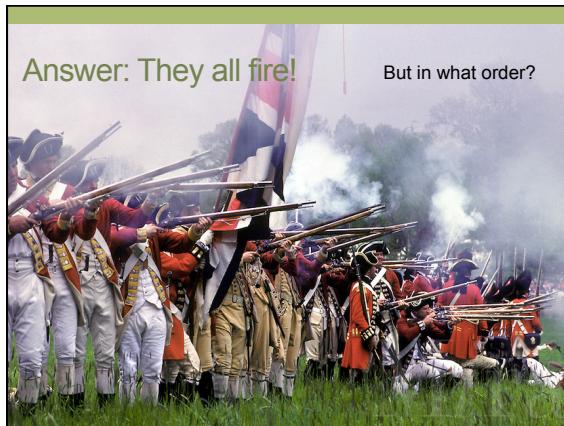
DC Comics Justice League Martian Manhunter Action Figure The New 52 \$32.95 Buy It Now Free shipping 10 watching

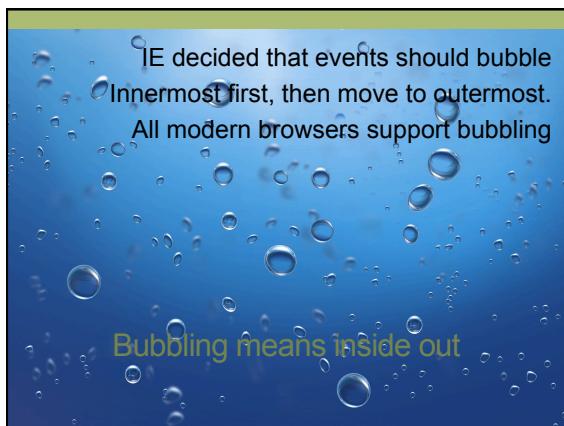
FAST IN FREE Get it on or before Thu, Nov 20

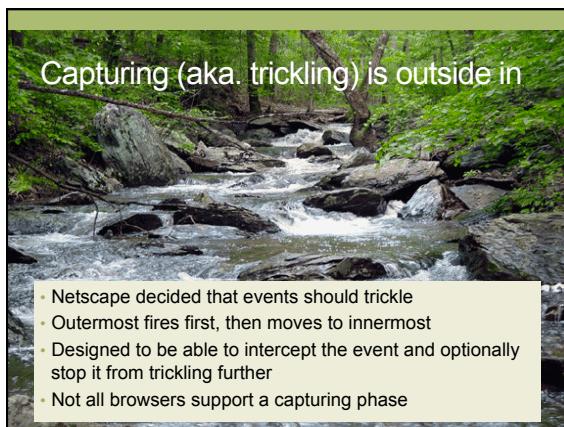
Buy It Now

Random Pick 10 Pcs DC UNIVERSE Justice League JLU Comics action Figure FK295 \$9.99 2h left (Today 11:23AM)

0 bids







To support all browsers, both were used

The screenshot shows the eBay search results for 'justice league'. A yellow box highlights the search results area. Numbered arrows point to specific elements:

- 1: The search bar at the top.
- 2: The 'Buy It Now' button for a listing.
- 3: The price '\$32'.
- 4: The 'watching' count '10 watching'.
- 5: The 'FREE' shipping badge.
- 6: The 'Match' dropdown menu.

What you need for event handling

- 1. An object to attach to
- 2. The event to listen for
- 3. A function to bind
- 4. The event object to pass

```

graph LR
    Object[The object] --> Event[The event]
    Object --> Binding[The binding]
    Event --> Function[The function]
    Binding --> Function
  
```

Four ways to wire them up

Type	Vehicle	Pros	Cons
IE 8 and below	<code>e.attachEvent('onevent', function () {...});</code>	Works in IE 8-	Only works in IE 8-
HTML attribute	<code><e onevent="f()" /></code>	Simplest	Least flexible
DOM Level 0 style	<code>e.onevent = function () {...};</code>	SOC	Old-school
DOM Level 2 style	<code>e.addEventListener(event, function () {...});</code>	Most capable and flexible	Most typing

IE 8 and below style

- Obviated by addEventListener() in IE9
- Completely removed in IE11

```
var btn = document.getElementById('btn');
btn.attachEvent('onclick', function (e) {
    // Do stuff
});
```



HTML Attributes

- Example:

```
<input type='button' onclick='doSomething()' value='Go' />
```

- Sets the event handler.
- Clobbers all old event handlers
- Can only have one event

DOM Level 0 Style

- Example:

```
var btn = document.getElementById('btn');
btn.onclick = function (e) {
    // Do stuff
}
```

- Once again, not additive.

DOM Level 2 Style

- Example


```
var btn = document.getElementById('btn');
btn.addEventListener('click', function (e) {
  // Do stuff
}, false);
```
- This is additive. It doesn't clobber!
- The third argument, a bool says if we should capture
 - true = capture
 - false = bubble (the default)

Note: No "on"!

So many choices! Which one to use?

- Fortunately this is an easy decision.

Use addEventListener()

- If you must support IE8-, use something like this:


```
if (x.addEventListener)
  x.addEventListener(...)
else
  x.attachEvent(...)
```

The Event object

Q: When you write a function to receive a parameter, how does that parameter get populated?

A: The caller passes it!

- Example:

```
function addMember(newHero) {
  sendNewHeroToServer(newHero);
  console.log(newHero.name + "was added.");
}

var r = new Hero("Red Tornado");
addMember(r);
```

So where is the call for your handler?

- You write the handler like this:

```
btn.addEventListener('click', function () {
  // Handle the click
}, false);
```

- Q: So who calls it?

- A: The target object!

- Unbeknownst to you, when the target calls the handler, it always passes an object to that handler...

- The event object!

- So the wireup should have a parameter to receive that object:

```
btn.addEventListener('click', function (evt) {
  // Handle the click
}, false);
```

The event object is awesome!

- Contains information about the event itself
- Some properties:

• clientX	• ctrlKey	• code
• clientY	• shiftKey	• keyCode
• screenX	• altKey	• keyIdentifier
• screenY	• metaKey	• target

- Some methods:

- `preventDefault()`
- `stopPropagation()`

- And many more ...

tl;dr

- Event handling can be done in four ways:
 1. In the HTML element itself (<div onclick="handler()">)
 2. DOM Level 0: theDiv.onclick = handler;
 3. DOM Level 2: theDiv.addEventListener('click', handler);
 4. ... and that other one we're trying to forget
- The event object has lots of good information about the event.
