

# JavaScript for WordPress

**Zac Gordon @zgordon**

<https://javascriptforwp.com/wcsea>

Go Here to Get Setup

**[javascriptforwp.com/wcsea](https://javascriptforwp.com/wcsea)**

# Are We Ready?!

- 1. Slides and Example Files**
- 2. Code Editor** (I'm using Atom)
- 3. JSONView Chrome Extension**
- 4. Local WordPress Install** (I'm using Local)
- 5. FakerPresser Plugin** (For dummy content)

# Workshop Overview

1. **JavaScript** [ JS 101, DOM, Events ]
2. **The WordPress REST API** [ Accessing, Arguments ]
3. **JS & API in WP Themes** [ Enqueuing, WP API ]
4. *Homework!*



**JS 101**

**Pop Quiz!**

# Partner Up!

- 1 Point for Explaining with Words
- 1 Point for Coding an Example

## Question 1/8

What is a **variable**?

## Question 2/8

What is an **array**?



## Question 3/8

What is a **function**?

## Question 4/8

What is an **object**?

## Question 5/8

What is a **loop**?

## Question 6/8

What is a **conditional**?

## Question 7/8

How do you **include**  
**JavaScript in HTML ?**

## Question 8/8

How do you **include**  
**JavaScript** in a WP Theme?

# JS 101

# Variable

A container for storing values (in memory)

```
var username = 'zgordon';
```

```
let username = 'zgordon';
```

```
const siteURL = 'https://site.com';
```



keyword	var	let	const
global scope	YES	NO	NO
function scope	YES	YES	YES
block scope	NO	YES	YES
can be reassigned	YES	YES	NO



Checkout FREE 5 Days of JavaScript

# Variable

A container for storing values (in memory)

```
var username = 'zgordon',  
    twitter = '@zgordon',  
    website = 'zacgordon.com';
```

# Array

A collection of values

```
var postIds = [ 1, 2, 3, 5 ];  
var usernames = [  
    'zgordon',  
    'admin'  
];
```

# Array

A collection of values (zero indexed)

```
var postIds = [ 1, 2, 3, 5 ];
```

```
postIds[ 0 ] // Equals 1
```

```
postIds[ postIds.length - 1 ] // Last item
```

# Functions

Let us write, call and reuse blocks of code

```
function getPosts() { // Function Declaration
    var posts = apiMagic(); // Will learn..
    return posts;
}
getPosts(); // Function Call
getPosts // Function Reference
```

# Function Parameters

Can pass data into functions

```
function getUser( id = 0 ) {  
    var user = apiMagic( id );  
    return user;  
}  
getUser( 1 );
```

# Fat Arrow Functions

Let us write, call and reuse blocks of code

```
var posts = getPosts( id => apiMagic( id ) );
```



# Objects

Container with properties (values) and methods (functions).

```
var post = {  
  title: 'Hello World!',      post.title;  
  render: function() {       post.render();  
    console.log( this.title );  
  }  
}
```



# Loops

Let us perform an action on a collection of items.

```
var postIds = [ 1, 7, 14, 34, 88, 117 ];
```

```
for ( let i = 0, max = postIds.length; i < max; i++ ) {  
    console.log( 'Post #' + postIds[ i ] );  
}
```

# For Of Loop

Lets us loop through an array

```
var postIds = [ 1, 7, 14 ];
```

```
for( let id of postIds ) {  
    console.log( id );  
}
```

# For Each Method

Lets us loop through an array

```
var postIds = [ 1, 7, 14 ];
```

```
postIds.forEach( id => {  
    console.log( id )  
} );
```

# Mapping

Mapping is a functional alternative to looping

```
var postIds = [ 1, 7, 14 ];
```

```
var newIds = postIds.map( id => {  
    console.log( id );  
});
```

# Conditional Statements

Tests to determine what code to run

```
var loggedIn = true;
if ( true === loggedIn ) {
    console.log( 'Show dashboard' );
} else {
    console.log( 'Please login' );
}
```

# Include JS in HTML

```
<html>  
  <head>  
  </head>  
  <body>  
    <script>  
      console.log( 'JS Running!' );  
    </script>  
  </body>  
</html>
```

# Include JS in HTML

```
<html>
```

```
  <head>
```

```
  </head>
```

```
  <body>
```

```
    <script src="index.js"></script>
```

```
  </body>
```

```
</html>
```

# Include JS in WP Theme

```
function my_theme_scripts() {  
    wp_enqueue_script(  
        'main-js',  
        get_template_directory_uri() . '/js/main.js',  
        [ 'jquery', 'wp-api' ],  
        time(),  
        true );  
}  
add_action( 'wp_enqueue_scripts', 'my_theme_scripts' );
```



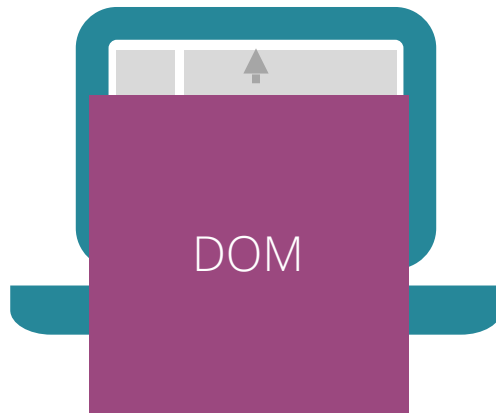
# **The DOM**

**The Document Object Model**

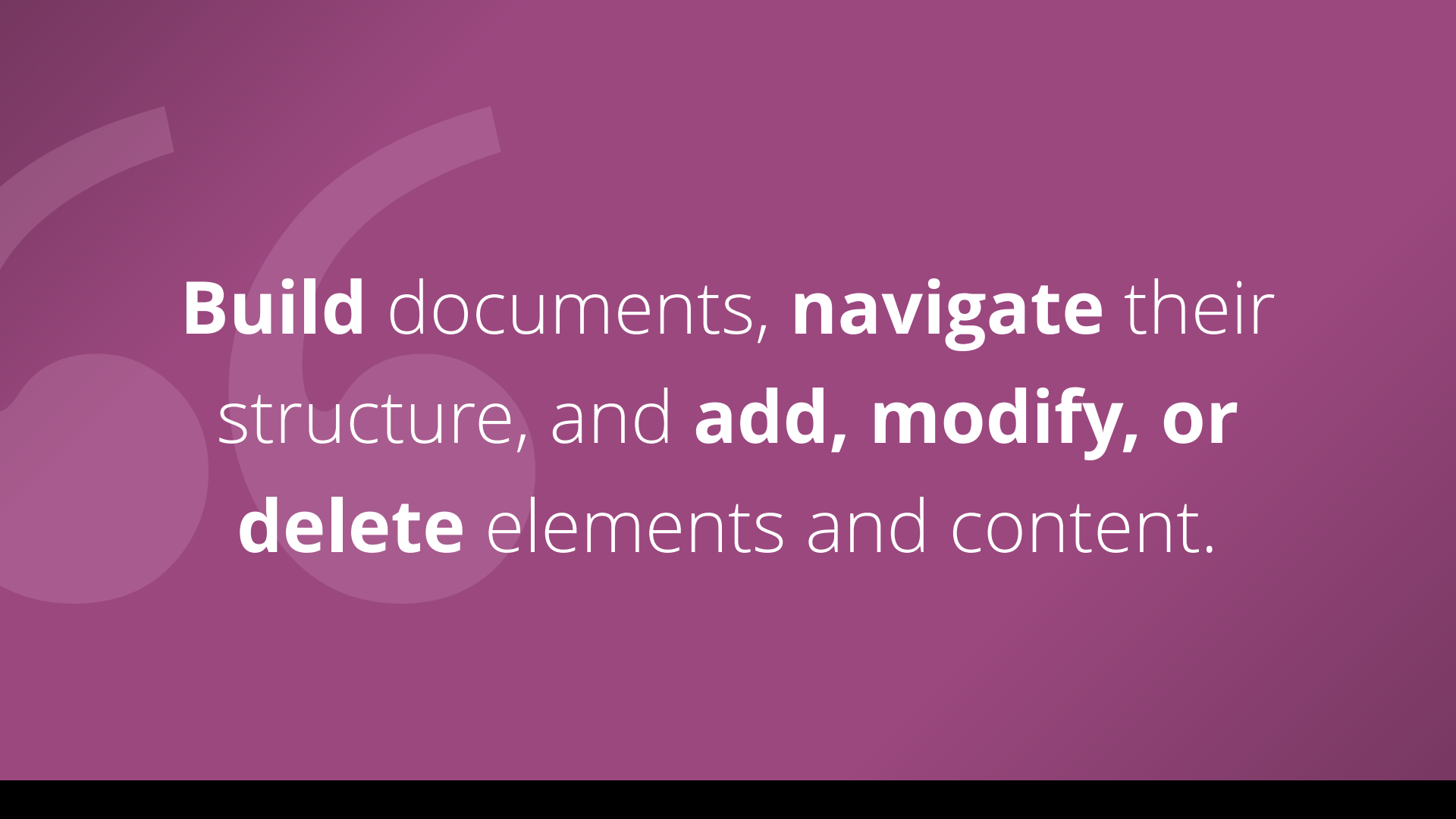


# The DOM is an API

For HTML (XML & SVG)



JavaScript



**Build** documents, **navigate** their structure, and **add, modify, or delete** elements and content.

# The DOM API Can

- **Select** HTML elements from a page
- **Navigate** from one element to surrounding elements
- **Add, edit** and **delete** HTML elements on a page
- **Build** HTML elements and add to a page



# Selecting & Setting HTML Elements

# Selecting HTML Elements

document.getElementById( 'main' )

document.getElementsByTagName( 'a' )

document.getElementsByClassName( 'post' )

# Selecting HTML Elements

```
document.querySelector( '.entry-title a' )  
document.querySelectorAll( '.entry-title a' )  
  
var h1El = document.querySelector( 'h1' ),  
    aEl = h1El.querySelector( 'a' );
```



# Selecting HTML Elements

document.getElementById( 'main' )

document.getElementsByTagName( 'a' )

document.getElementsByClassName( 'post' )

document.querySelector( '.entry-title a' )

document.querySelectorAll( '.entry-title a' )

# Getting Element Attributes

```
var el = document.querySelector( 'a' ),  
    input = document.querySelector( 'input' );
```

el.innerText

el.href

el.innerHTML

el.dataset.custom

el.id

input.value

# Setting Element Values

```
var el = document.querySelector( 'a' );
```

```
el.href = 'https://javascriptforwp.com';
```

```
el.innerText = 'Link';
```

```
el.innerHTML = '<strong>Link</strong>';
```

```
input.value = 'zgordon';
```

# Setting CSS Classes

```
var el = document.querySelector( 'a' );
```

```
el.classList.add( 'post' );
```

```
el.classList.remove( 'post' );
```

```
el.classList.toggle( 'post' );
```

# **PRACTICE 1.1**

Getting & Setting Nodes w JS

# **“Traversing” HTML Elements**



**Checkout FREE 5 Days of JavaScript**

# **Creating HTML & Adding it to a Page**



# There Are No "HTML Elements" in the DOM





In the DOM

**Everything is a Node**

# Common Node Types

- Document [9]
- DocumentType [10]
- Element [1]
- Text [3]
- Comments [8]
- DocumentFragments [11]

# Common Node Types

- Document [9]
- DocumentType [10]
- **Element [1]**
- **Text [3]**
- Comments [8]
- DocumentFragments [11]



```
<!DOCTYPE html>
<html>
<head>
  <title>The DOM</title>
</head>
<body>
  <h1>Title</h1>
  <p>Lorem <a title="Learn more"
href="#">to the</a> ipsum</p>
</body>
</html>
```

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<title>The DOM</title>
```

```
</head>
```

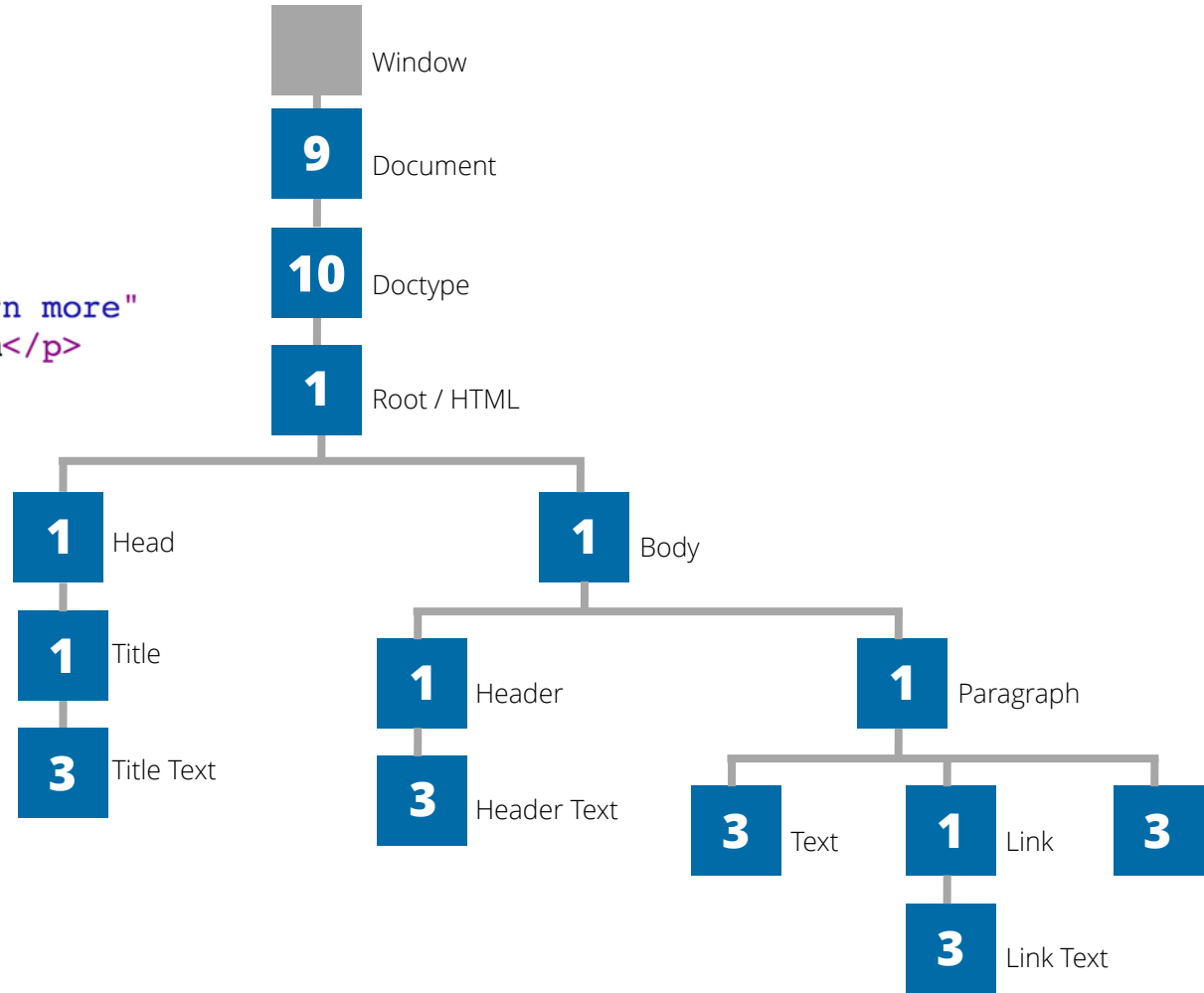
```
<body>
```

```
<h1>Title</h1>
```

```
<p>Lorem <a title="Learn more"  
href="#">to the</a> ipsum</p>
```

```
</body>
```

```
</html>
```



# Creating Nodes

```
document.createElement( 'p' )
```

```
document.createTextNode( 'Text' )
```

# Appending Nodes

```
parent.appendChild( el );
```

```
parent.insertBefore( el, elToGoBefore );
```

# Appending Text to Element Nodes

```
var p = document.createElement( 'p' ),  
    text = document.createTextNode( 'Text' );  
  
p.appendChild( text );
```



# Appending Nodes Example

```
var pEl = document.querySelector( 'p' ),  
    aEl = document.createElement( 'a' ),  
    aText = document.createTextNode( 'Link' );  
  
aEl.appendChild( aText );  
aEl.href = 'https://javascriptforwp.com';  
pEl.appendChild( aEl );
```

# Appending Nodes Example

```
var pEl = document.querySelector( 'p' ),  
    aEl = document.createElement( 'a' ),  
    aText = document.createTextNode( 'Link' );  
  
aEl.appendChild( aText );  
aEl.href = 'https://javascriptforwp.com';  
pEl.appendChild( aEl );
```

# Appending Nodes Example

```
var pEl = document.querySelector( 'p' ),  
    aEl = document.createElement( 'a' ),  
    aText = document.createTextNode( 'Link' );  
  
aEl.appendChild( aText );  
aEl.href = 'https://javascriptforwp.com';  
pEl.appendChild( aEl );
```

# Appending Nodes Example

```
var pEl = document.querySelector( 'p' ),  
    aEl = document.createElement( 'a' ),  
    aText = document.createTextNode( 'Link' );  
  
aEl.appendChild( aText );  
aEl.href = 'https://javascriptforwp.com';  
pEl.appendChild( aEl );
```

# Appending Nodes Example

```
var pEl = document.querySelector( 'p' ),  
    aEl = document.createElement( 'a' ),  
    aText = document.createTextNode( 'Link' );  
  
aEl.appendChild( aText );  
aEl.href = 'https://javascriptforwp.com';  
pEl.appendChild( aEl );
```

# "Hacker Style" Appending Nodes

```
var pEl = document.querySelector( 'p' ),  
    markup = '';
```

```
markup += '<a href="https://site.com">';  
markup += 'Link Text';  
markup += '</a>';
```

```
pEl.innerHTML = markup;
```

# "Hacker Style" Appending Nodes

```
var pEl = document.querySelector( 'p' ),  
    markup = '';
```

```
markup += '<a href="https://site.com">';  
markup += 'Link Text';  
markup += '</a>';
```

```
pEl.innerHTML = markup;
```

# "Hacker Style" Appending Nodes

```
var pEl = document.querySelector( 'p' ),  
    markup = '';
```

```
markup += '<a href="https://site.com">';  
markup += 'Link Text';  
markup += '</a>';
```

```
pEl.innerHTML = markup;
```



# "Hacker Style" Appending Nodes

```
var pEl = document.querySelector( 'p' ),  
    markup = '';
```

```
markup += '<a href="https://site.com">';  
markup += 'Link Text';  
markup += '</a>';
```

```
pEl.innerHTML = markup;
```

# **Practice 1.2 + 1.3**

Creating & Appending Nodes

# Events w JavaScript

# Types of Events

- Mouse events
- Keyboard events
- Form events
- Media events
- Drag and Drop events
- Window events
- Many more....



# Hooking into Events w JavaScript

1. **Inline** in HTML `<a onclick="alert('hi')">Alert</a>`
2. **Global** 1 Off `a.onclick = sayHi`
3. **Listeners** Best `a.addEventListener( 'click', sayHi, false )`

# Event Listeners

```
var linkEl = document.querySelector( 'a' );  
  
linkEl.addEventListener( 'click', displayClickInfo );  
  
function displayClickInfo() {  
    alert( 'Link clicked!' );  
}
```

# The Event Object

```
var linkEl = document.querySelector( 'a' );  
  
linkEl.addEventListener( 'click', displayClickInfo );  
  
function displayClickInfo( event ) {  
  
    alert( event );  
  
}
```

# The Event Object

```
link.addEventListener( 'click', showEvent );
```

```
function showEvent( event ) {  
    console.log( event );  
    console.log( event.type );  
    console.log( event.target );  
    console.log( event.preventDefault() );  
}
```





# Removing Event Listeners

```
var el = document.querySelector( 'a' );  
  
el.addEventListener( 'click', sayHi );  
el.removeEventListener( 'click', sayHi );
```

# Removing Event Listeners

```
var el = document.querySelector( 'a' );
```

```
el.addEventListener( 'click', sayHi );
```

```
el.remove(); // Listener still exists
```

```
el = null; // Listener does NOT exist
```

# **Practice 1.4**

Event Listeners Practice

# Workshop Overview

1. ~~JavaScript [JS 101, DOM, Events]~~

**2. The WordPress REST API [ Accessing, Arguments ]**

3. JavaScript & WP API in Themes [ Enqueuing, jQuery, API ]

4. *Homework!*

# **The WordPress REST API**

# *The WP REST API*

Allows us to get, save, edit, and remove content from WordPress using JSON & JavaScript.

# The WP REST API

Allows us to **get**, save, edit, and remove content from WordPress using JavaScript.

# The WordPress REST API

/wp-json/wp/v2/posts

/wp-json/wp/v2/revisions

/wp-json/wp/v2/categories

/wp-json/wp/v2/tags

/wp-json/wp/v2/pages

/wp-json/wp/v2/comments

/wp-json/wp/v2/taxonomies

/wp-json/wp/v2/media

/wp-json/wp/v2/users

/wp-json/wp/v2/types

/wp-json/wp/v2/statuses

/wp-json/wp/v2/settings

/wp-json/custom/v1/something

/wp-json/another/v3/else



# The WordPress REST API

To access all of the **posts** for your site:

<https://yoursite.com/wp-json/wp/v2/posts>

To access a **post with an ID** of “1” for your site:

<https://yoursite.com/wp-json/wp/v2/posts/1>

# The WordPress REST API

To access all of the **pages** for your site:

<https://yoursite.com/wp-json/wp/v2/pages>

To access a **page with an ID** of “5” for your site:

<https://yoursite.com/wp-json/wp/v2/pages/5>



You can also **customize**  
**what you get** back.

# The WordPress REST API

`https://yoursite.com/wp-json/wp/v2/posts`

`? per_page=10`

`&_embed`

`&search=hello%20world`

`&orderby=title`

`&order=asc`

<https://developer.wordpress.org/rest-api/reference/posts/#arguments>

# Practice 2.1

WP API in the Browser

# **WordPress API**

## **w AJAX + JS**

# ajax

Allows us to get content from a server or send content to a server using JavaScript.

# *ajax w WP API*

Allows us to get, save, edit and delete WordPress content using JavaScript and JSON.



# Ways to Make JS AJAX Calls

- **XMLHttpRequests()** [Web API]
- **fetch()** [Web API]
- **jQuery** [Library]
- **Axios** [Library]
- **WP API Specific** [In Core, Decoupled]



# WP API AJAX Behind the Scenes

1. **Define the URL** to use
2. **Make a request** to the URL
3. **Get JSON** back from
4. **Parse JSON** into Native JavaScript
5. **Use** Native JavaScript

# Pseudo AJAX

```
var postsJSON = fetch('https://wp.dev/wp-json/wp/v2/posts'),  
    posts = JSON.parse( postsJSON );  
  
for( let post of posts ) {  
    renderPost( post );  
}
```

## AJAX with jQuery

```
$.ajax({  
  type: 'get',  
  url: 'https://site.com/wp-json/wp/v2/posts/',  
  data: {  
    per_page: 3,  
    order: 'asc'  
  },  
  success: function( response ) {  
    for( let post of response ) {  
      renderPost( post );  
    }  
  }  
});
```

# Practice 2.2 + 2.3

WP API with Ajax

# Workshop Overview

1. ~~JavaScript [JS 101, DOM, Events]~~

2. ~~The WordPress REST API [Accessing, Arguments]~~

**3. JavaScript & WP API in Themes [ Enqueuing, jQuery, API ]**

4. *Homework!*

# **JS + API**

## **Inside of WP**

# *Enqueuing JavaScript*

The process of loading JavaScript into a theme or the admin area via PHP functions.

**wp\_enqueue\_script()**

**wp\_localize\_script()**



# wp\_enqueue\_script()

```
function my_theme_scripts() {  
    wp_enqueue_script(  
        'main-js', // Unique name  
        get_template_directory_uri() . '/js/main.js', // Path  
        [ 'jquery', 'wp-api' ], // Dependencies  
        time(), // Version  
        true ); // Include in footer (v header)  
}  
add_action('wp_enqueue_scripts', 'my_theme_scripts', 999);
```

# wp\_localize\_script()

```
function my_theme_scripts() {  
    wp_enqueue_script( 'main-js', ... );  
    wp_localize_script(  
        'main-js', // File to localize  
        'myGlobalVars', // Name of localize object  
        [ // Array of properties  
            'siteUrl' => esc_url( home_url() ),  
            'siteName' => get_bloginfo( 'name' )  
        ]  
    );  
}  
add_action('wp_enqueue_scripts', 'my_theme_scripts', 999);
```

# wp\_localize\_script()

## functions.php

```
function my_theme_scripts() {  
    wp_enqueue_script( 'main-js', ... );  
    wp_localize_script( 'main-js', 'myGlobalVars', ... );  
}  
add_action('wp_enqueue_scripts', 'my_theme_scripts', 999);
```

## main.js

```
console.log( myGlobalVars.siteUrl );
```

# Practice 3.1

Enqueuing JavaScript  
in a Theme

# **jQuery + WordPress**



**WordPress** comes with  
Several **JS Libraries**  
**Available** to Us

# jQuery Dependency

```
function my_theme_scripts() {  
    wp_enqueue_script(  
        'main-js', // Unique name  
        get_template_directory_uri() . '/js/main.js', // Path  
        [ 'jquery' ], // Dependencies  
        time(), // Version  
        true ); // Include in footer (v header)  
}  
add_action('wp_enqueue_scripts', 'my_theme_scripts', 999);
```



The **\$** in jQuery  
is **NOT available**  
by **default**



```
jQuery( '.this-works' ).show();
```

## Immediately Evoked Function Expression (IIFE)

```
(function( $ ) {
```

```
    $(' .this-works' ).show();
```

```
})( jQuery );
```

# Practice 3.2

Using jQuery for AJAX

# Workshop Overview

1. ~~JavaScript [JS 101, DOM, Events]~~
2. ~~The WordPress REST API [ Accessing, Arguments ]~~
3. ~~JavaScript & WP API in Themes [ Enqueuing, jQuery, API ]~~

## ***4. Homework!***



Learn JavaScript More Deeply with Me!  
**[javascriptforwp.com/wcsea](http://javascriptforwp.com/wcsea)**