

# JavaScript in WordPress Core: Past, Present and Future

*Adam Silverstein*

@ROUNDEARTH



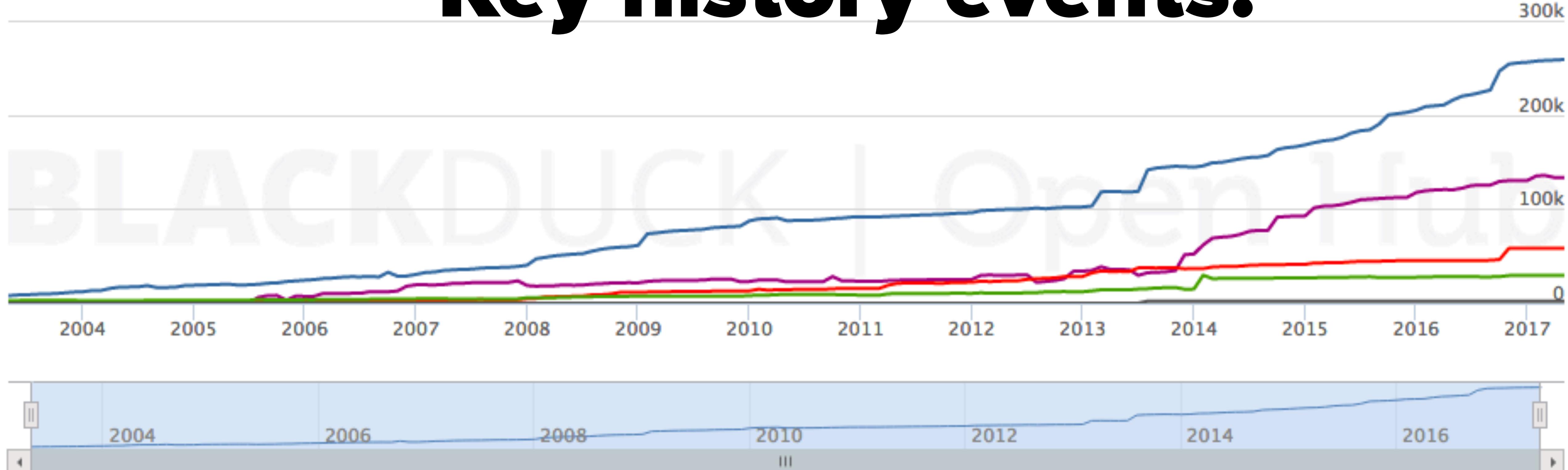
# **PART I: Past WordPress JavaScript**



# Why JavaScript?

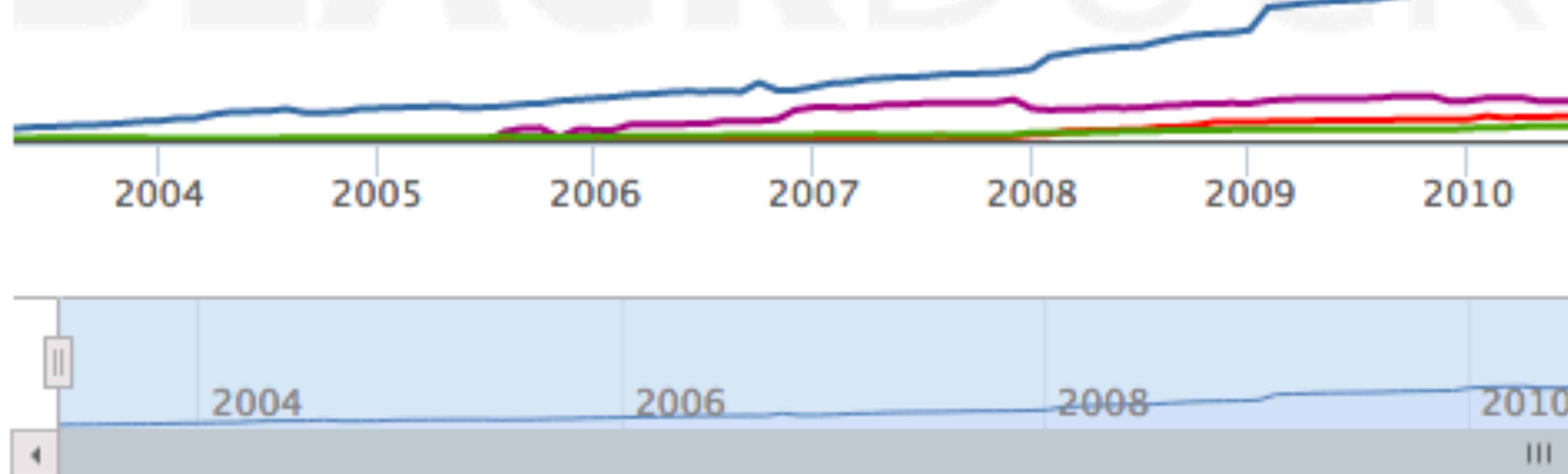


# Key history events:



## Language Breakdown

Language	Code Lines	Comment Lines	Comment Ratio	Blank Lines	Total Lines	Total Percentage
PHP	259,431	137,699	34.7%	60,834	457,964	59.7%
JavaScript	133,640	36,693	21.5%	30,068	200,401	26.1%
CSS	58,476	3,347	5.4%	10,857	72,680	9.5%
HTML	29,661	147	0.5%	3,608	33,416	4.4%



## Language Breakdown

Language	Code Lines	Comment Lines	Comment %
PHP	259,431	137,699	34.7%
JavaScript	133,640	36,693	21.5%

# **VERSION 1.0 JANUARY, 2004**

## **312 LINES OF JAVASCRIPT**

<https://htmlpreview.github.io/?https://github.com/adamsilverstein/db-wp/blob/master/slides.html>



## Create New Post

### Title

Hello World!

### Post

Quicktags: /str /em /del /ins link img ul ol li b-quote pre more n-page Dict. Close Tags

**PingBack** the URLs in this post ?

[Save as Draft](#) [Save as Private](#) [Publish](#) [Advanced Editing »](#)

**TrackBack** an URL : (Separate multiple URLs with spaces.)

### Categories

General

**VERSION 2.0 DECEMBER, 2005**

**1,115 LINES OF JAVASCRIPT**



# TinyMCE added in version 2.0 in Dec. 2005

wp20 ([View site »](#)) Howdy, adam+wp20. [[Sign Out](#), [My Acc](#)]

Dashboard **Write** Manage Links Presentation Plugins Users Options Import

[Write Post](#) [Write Page](#)

## Write Post

Title

Post

Discussion +

Password-Protect Post +

Post slug +

Categories +

Post Status +

Post Timestamp: +

Post author: +

Save and Continue Editing

Upload

File:  Choose File No file chosen

Title:

A screenshot of the WordPress 'Write Post' screen from December 2005. The TinyMCE editor is visible in the large central text area. The interface includes fields for Title, Post content, and various publishing options like Discussion, Password-Protect Post, Post slug, Categories, Post Status, Post Timestamp, and Post author. Buttons for Save and Publish are at the bottom, along with an Upload section for files.

## Write Post

**Title**

**Post**

**B I ABC** |

**G**

**Path:**

**Save and Continue Editing** **Save** **Publish**

**Upload**

**File:** [Browse...](#) No file selected.

**Title:**

**Description:**

**Upload**

**Optional Excerpt** +

**Trackbacks** +

**Custom Fields** +

**Discussion** +

**Password-Protect Post** +

**Post slug** +

**Categories** +

**Post Status** +

**Post Timestamp:** +

**Post author:** +

## WordPress bookmarklet

Right click on the following link and choose "Add to favorites" to create a posting shortcut.

Press It - wp20



**Wp-ajax added in version 2.1 in May 2017**



# Comments

Show Comments That Contain...

**Search**

(Searches within comment text, e-mail, URL, and IP address.)

[View Mode](#) | [Mass Edit Mode](#)

1. **Mr WordPress** | [wordpress.org](#) | IP:

Hi, this is a comment.

To delete a comment, just log in and view the post's comments. There you will have the option to edit or delete them.

May 24, 4:39 PM — [ [Edit](#) | [Delete](#) | [Unapprove](#) | [Spam](#) | [View Post](#) ]



[Documentation](#) — [Support Forums](#)

2.1 — 0.11 seconds



**jQuery in version 2.2 in May 2007**



*jQuery*



**VERSION 2.5 MARCH, 2008**

**3,458 LINES OF JAVASCRIPT**



# JavaScript all over in 2.5-3.3

**2.5:** *comment.js, common.js, editor.js, forms.js, link.js, media-upload.js, page.js, password-strength-meter.js, post.js, postbox.js, slug.js, tags.js, widgets.js, thickbox.js, wp-ajax-response.js, wp-lists.js.*

**2.6:** *gallery.js, theme-preview.js, word-count.js, wp-gears.js*

**2.7:** *dashboard.js, farbtastic.js, inline-edit-post.js, inline-edit-tax.js, plugin-install.js, comment-reply.js, hoverIntent.js*

**2,8:** *media.js, user-profile.js, utils.js, swfobject.js*

**2.9:** *image-edit.js, set-post-thumbnail.js, jquery.imgareaselect.js, json2.js*

**3.0:** *custom-background.js, nav-menu.js, wp-list-revisions.js*

**3.1:** *list-table.js, akismet.js, admin-bar.js, l10n.js, theme.js*

**3.2:** *wp-fullscreen.js*

**3.3:** *wp-pointer.js, wplink.js*

**3.4:** *customize-controls.js, customize-preview.js*



**VERSION 3.5 DECEMBER, 2012**

**15,507 LINES OF JAVASCRIPT**



# JavaScript “Magic”



# Customizer added in version 3.4 in June 2012

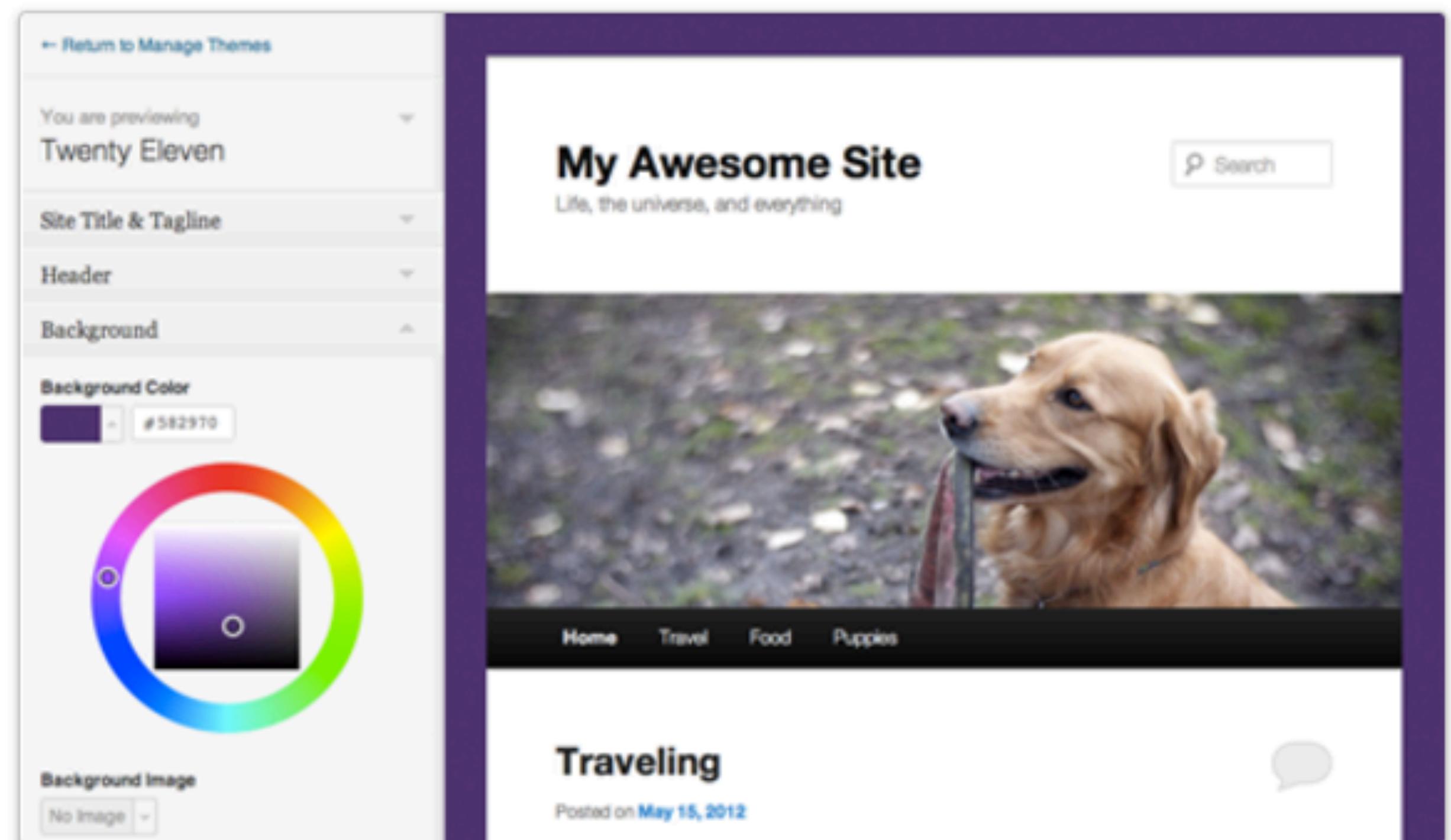
## Live Theme Previews

### Try on New Themes

Gone are the days of rushing to update your header, background, and the like as soon as you activate a new theme. You can now customize these options **before** activating a new theme. Note: this feature is available for installed themes only.

### Customize Current Theme

Satisfy your curiosity and try on a fresh coat of paint — you can also use the live preview mode to customize your current theme. Look for the Customize link on the Themes screen.



[Close](#)

Saved

You are previewing

Twenty Eleven

Site Title &amp; Tagline

Colors

Layout

Header Image

Background Image

Static Front Page

# WordPress 3.4

Just another WordPress site

[Home](#)   [Sample Page](#)

## Test Post

Posted on May 11, 2017

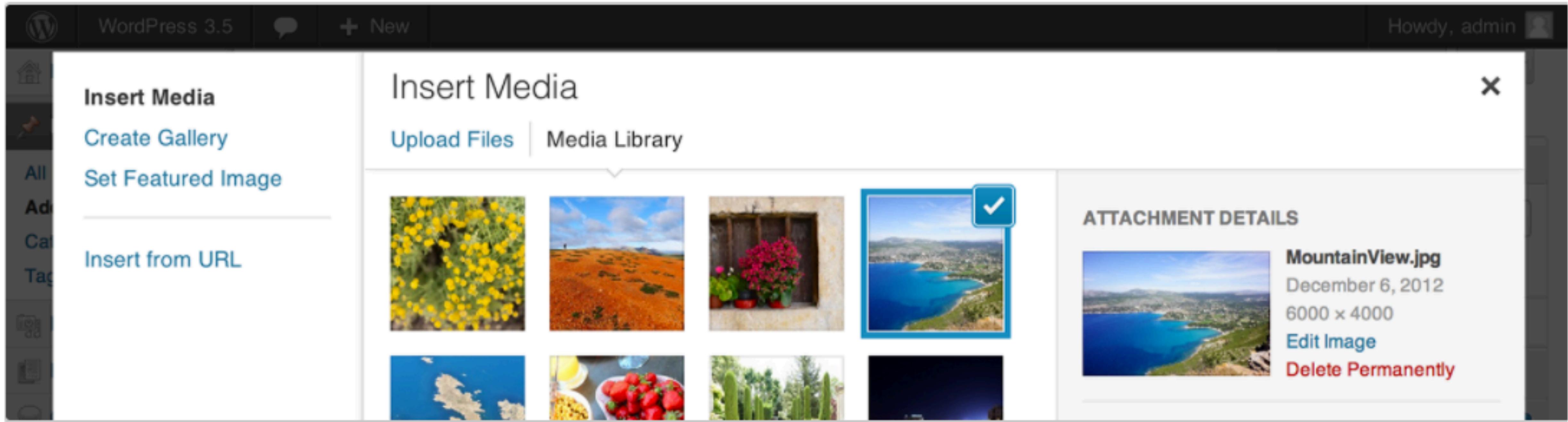
Search

## RECENT POSTS

- [Test Post](#)
- [Test](#)

[Collapse](#)

# Media manager in version 3.5, Dec 2012



## Beautiful Interface

Adding media has been streamlined with an all-new experience, making it a breeze to upload files and place them into your posts.

## Picturesque Galleries

Creating image galleries is faster with drag and drop reordering, inline caption editing, and simplified controls for layout.

# Compare Revisions of "Hello WordCamp!"

[← Return to editor](#) Compare any two revisions[Previous](#)[Next](#)

Current Revision by adam s  
1 min ago (1 Jun @ 02:35)

[Restore This Revision](#)

## Title

Hello WordCamp!

Hello WordCamp!

## Content

<h2>This is my post...</h2>

<h2>This is my post...</h2>

I'm going to make some updates to this document. So we can brose thru the revisions!

I'm going to make some updates to this document. So we can brose thru the revisions!

<span style="font-size: 1rem;"><strong>More...</strong></span>

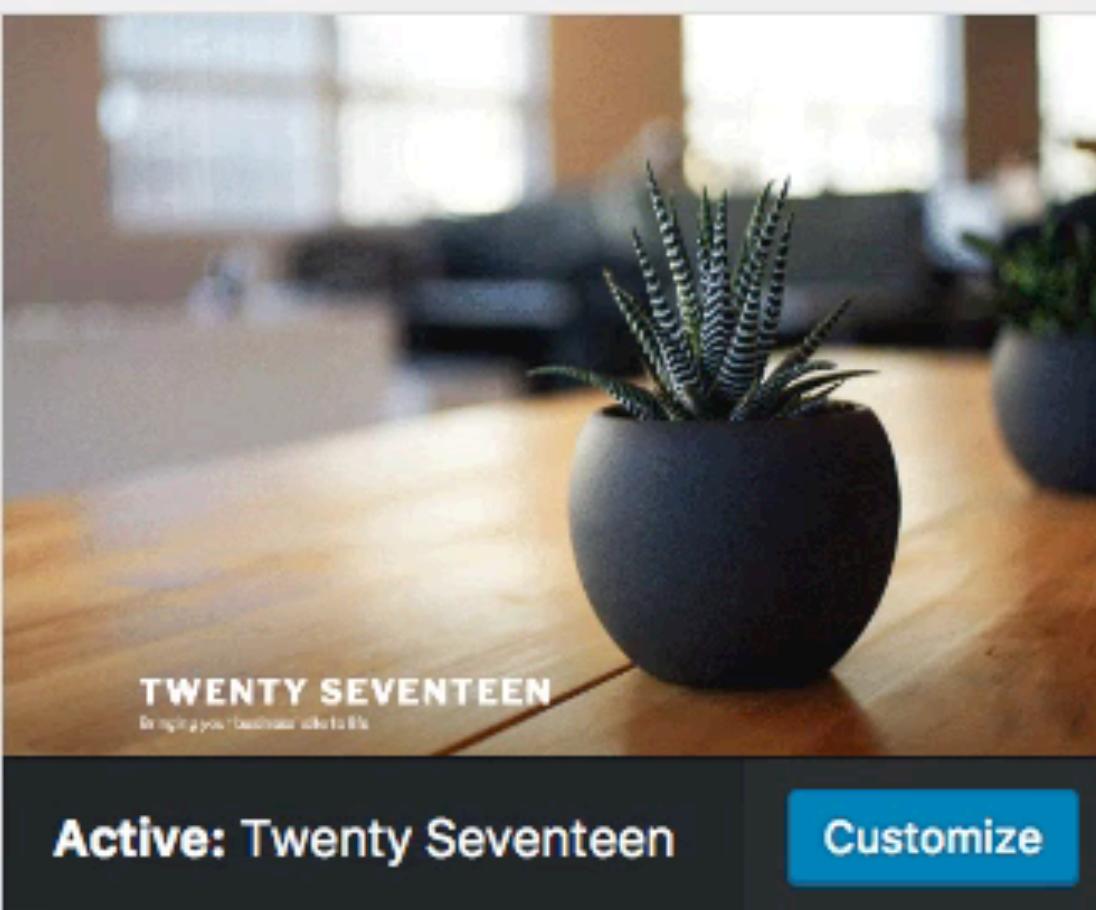
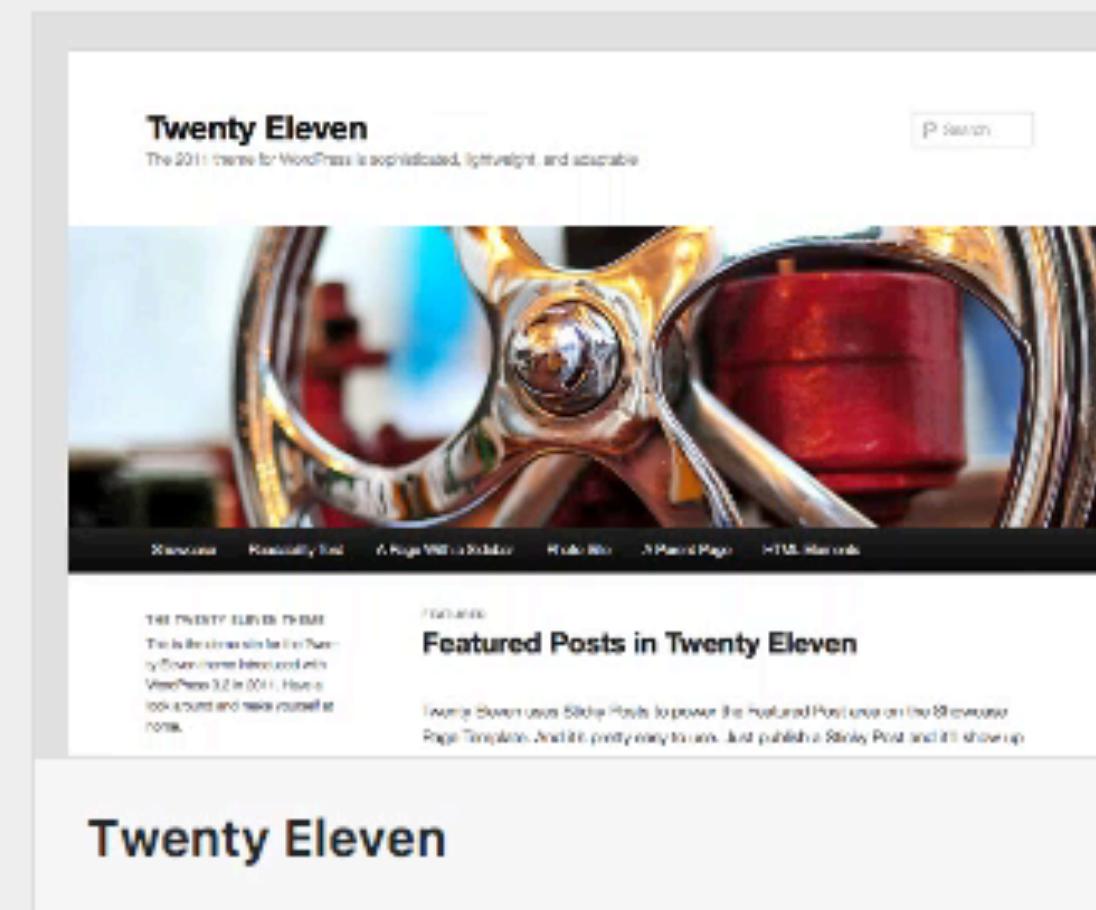
<span style="font-size: 1rem;"><strong>And see what changed...</strong></span>

<span style="font-size: 1rem;">Sed dicit necessitatibus in, id posse nominati eos. Ea vel dictas facilisi adipiscing, verear phaedrum sed ei, omnes oblique sanctus mea ex. Iudico pertinacia constituam cu eos. Te vel fugit libris, libris nemore no pri, graece oportere sea ea. Amet omnium epicuri cum te, sonet dignissim abhorreant pro ea, mei petentium constituam ad. Suscipit gloriatur necessitatibus has et.</span>

<span style="font-size: 1rem;">Sed dicit necessitatibus in, id posse nominati eos. Ea vel dictas facilisi adipiscing, verear phaedrum sed ei, omnes oblique sanctus mea ex. Iudico pertinacia constituam cu eos. Te vel fugit libris, libris nemore no pri, graece oportere sea ea. Amet omnium epicuri cum te, sonet dignissim abhorreant pro ea, mei petentium constituam ad. Suscipit gloriatur necessitatibus has et.</span>

[Dashboard](#)[Posts](#)[Media](#)[Pages](#)[Comments](#)[Appearance](#)[Themes](#)[Customize](#)[Widgets](#)[Menus](#)[Header](#)[Editor](#)[Plugins](#)[Users](#)[Tools](#)[Settings](#)[Gutenberg](#)[Media Guide](#)[Collapse menu](#)

## Themes 8

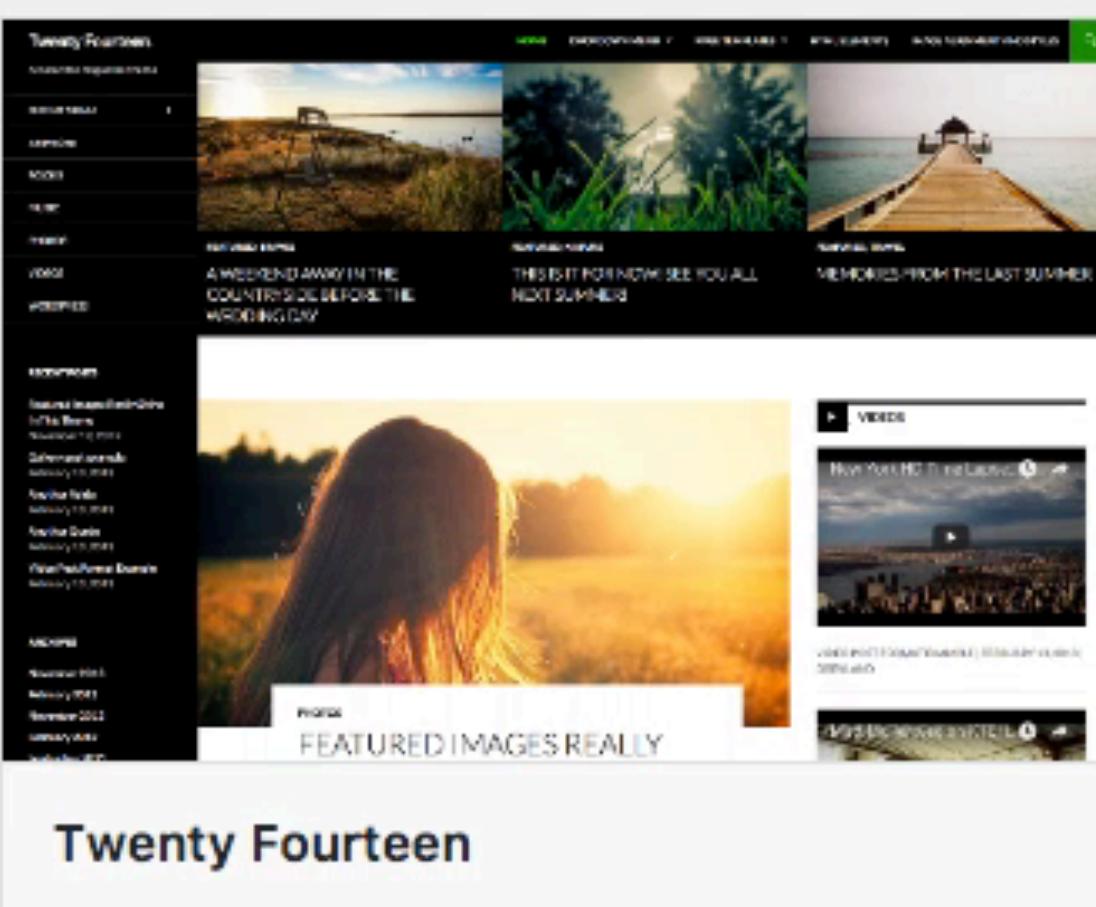
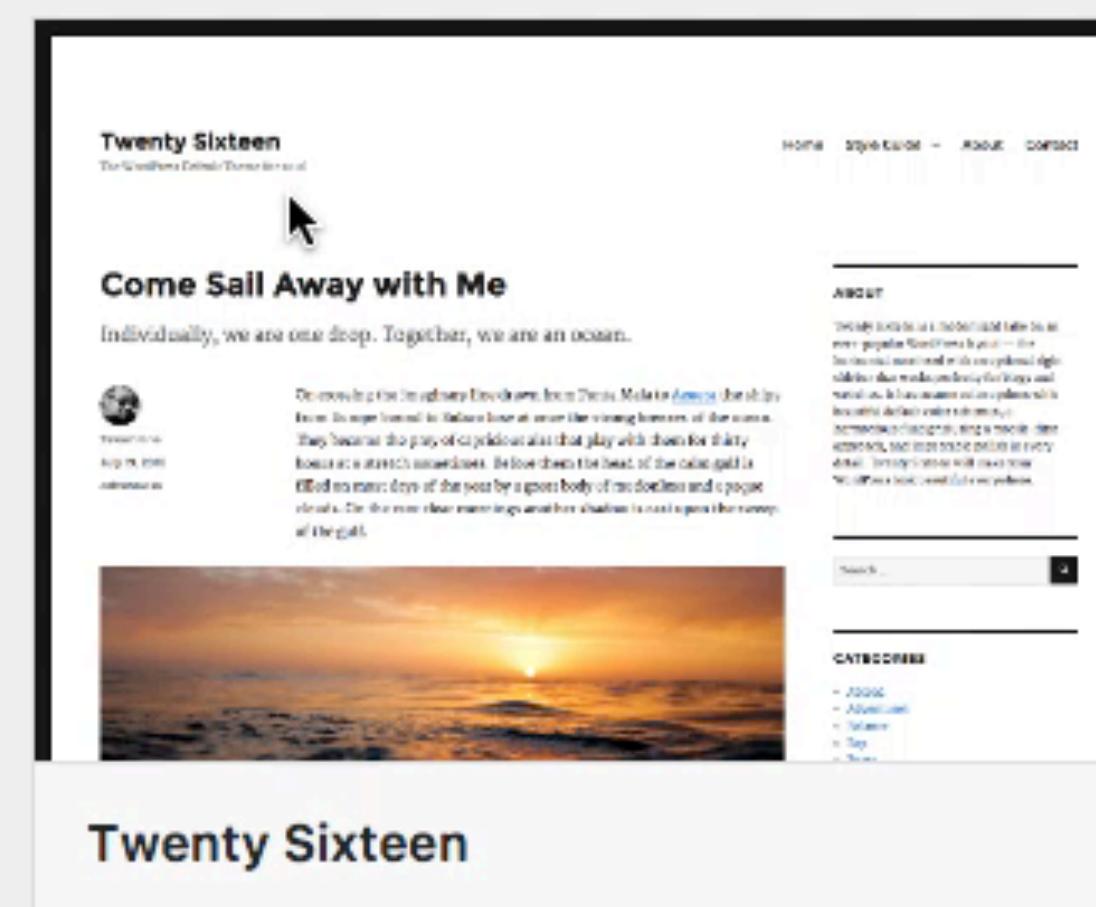
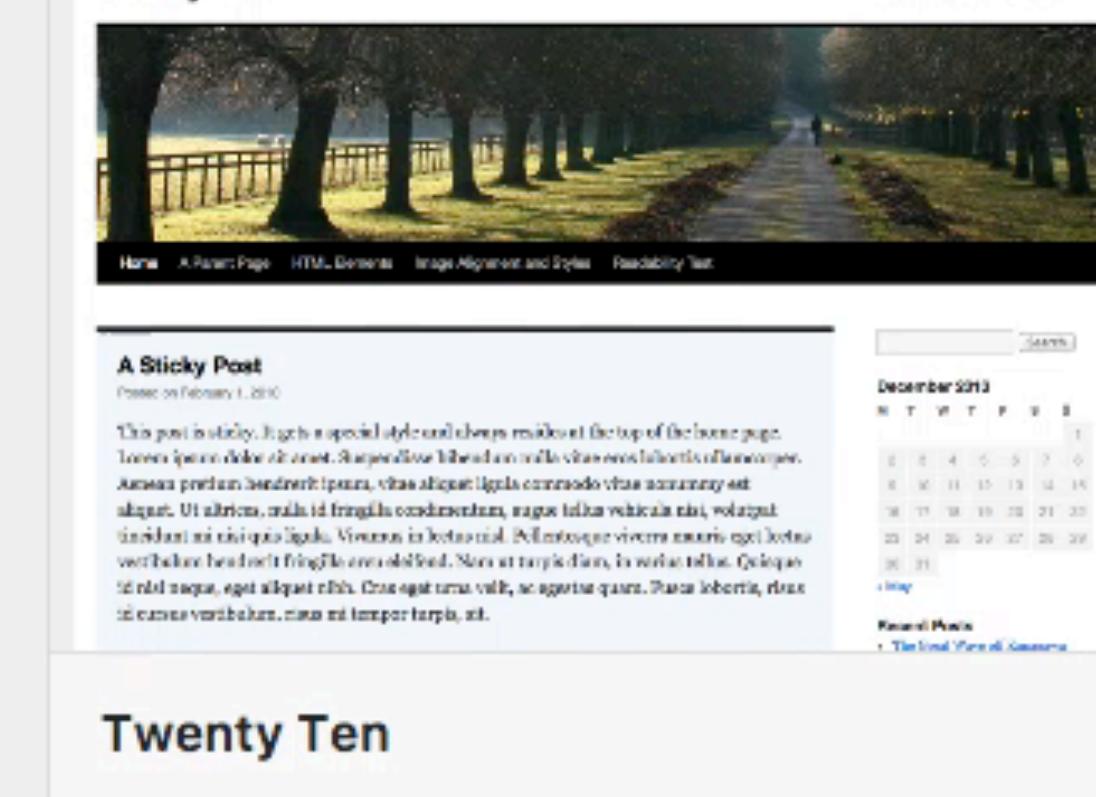
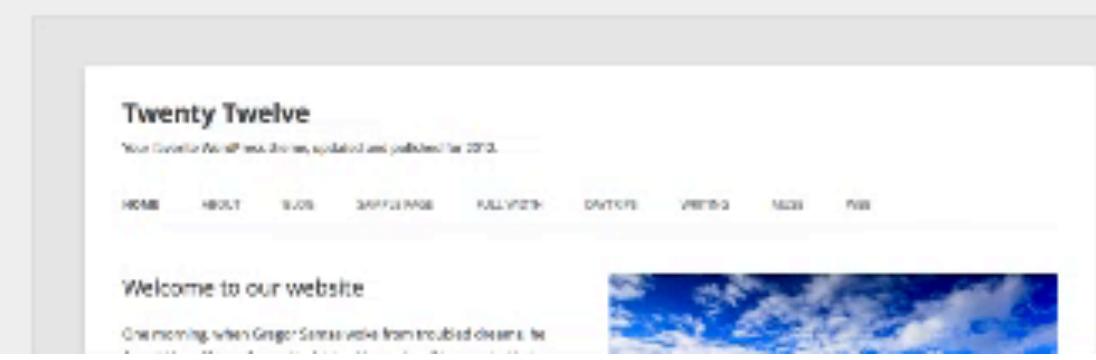
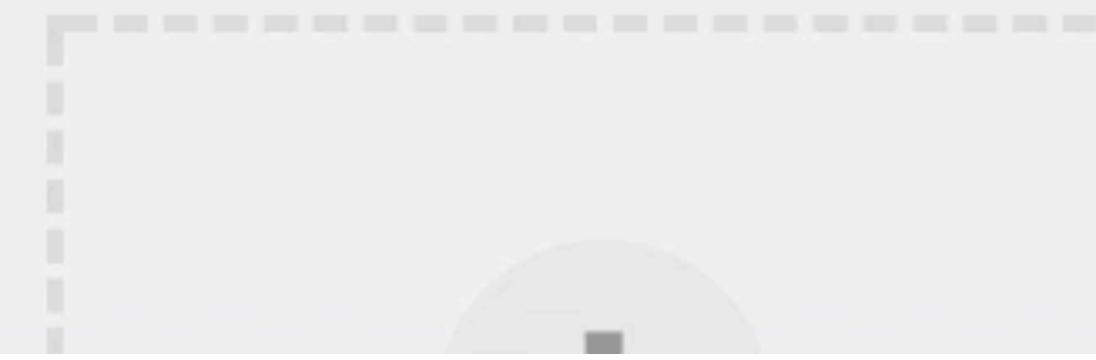
[Add New](#)**Active: Twenty Seventeen**[Customize](#)**Twenty Eleven****Twenty Fifteen**The WordPress default theme2015

**ABOUT**  
The Twenty Fifteen theme is clean, bright, and minimalist. It's a "Theme for Everyone" designed to make it easy for everyone to get started with WordPress, and add their own style.

**ABOUT**  
Our 2015 default theme is clean, bright, and minimalist. It's a "Theme for Everyone" designed to make it easy for everyone to get started with WordPress, and add their own style.

**The Myth of the Pier**

Jarred after the fashion of the Middle Ages, they bore upon their shoulders a splendid pair of wings; but when especially ill-matched, their wings long were which were twisted in their flocks, and the insects which they made of them. Those insects were made of batons, and were thin, so, and even in the long, were straight, all curved, and crooked, and once having incident with open them.

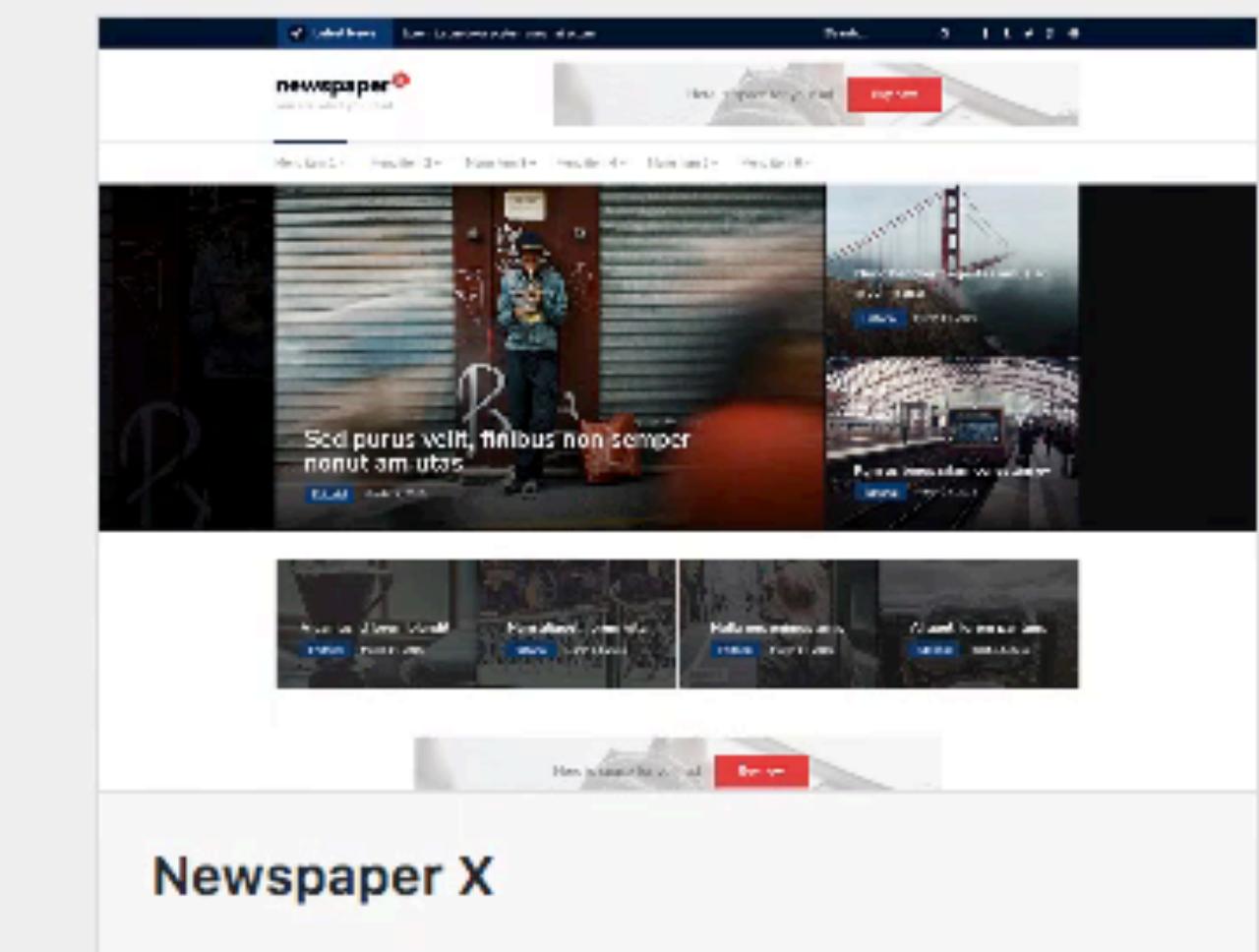
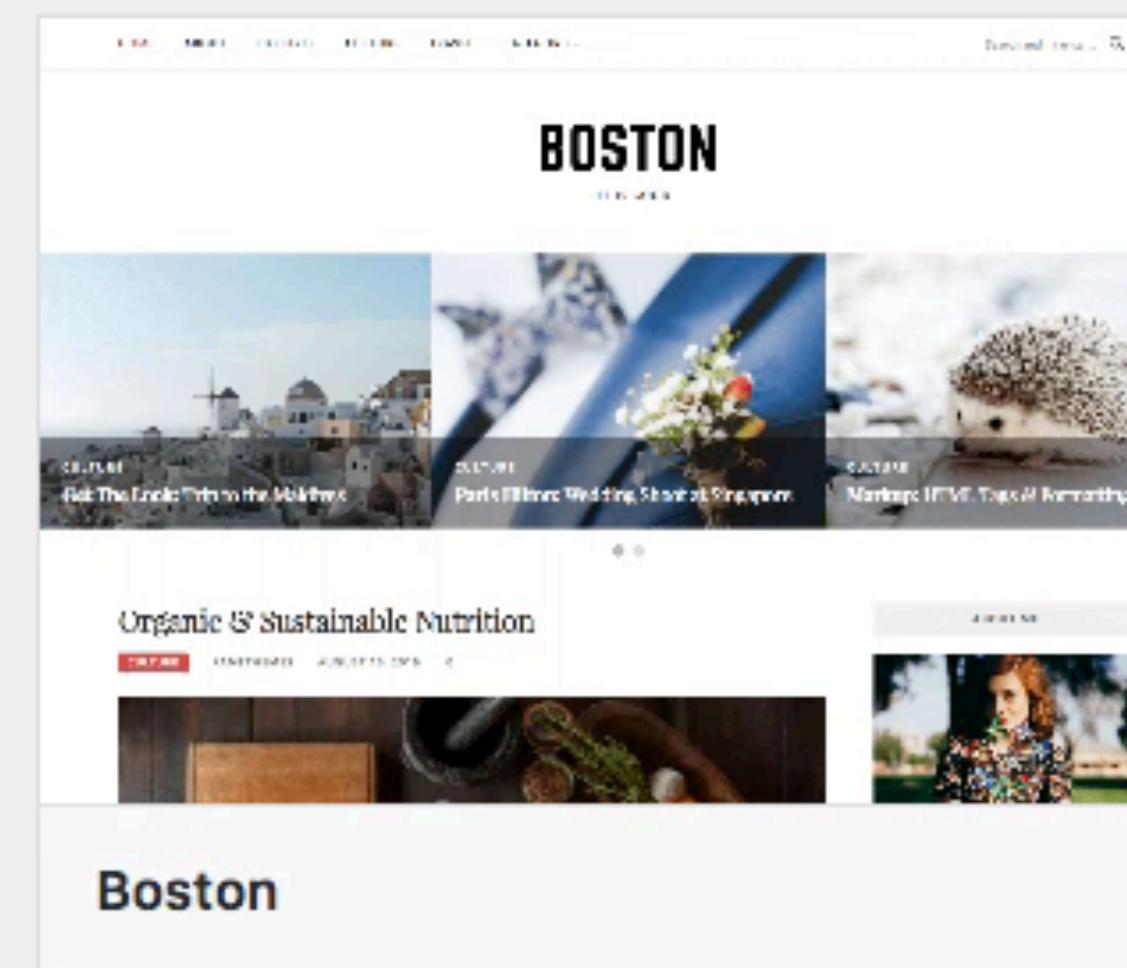
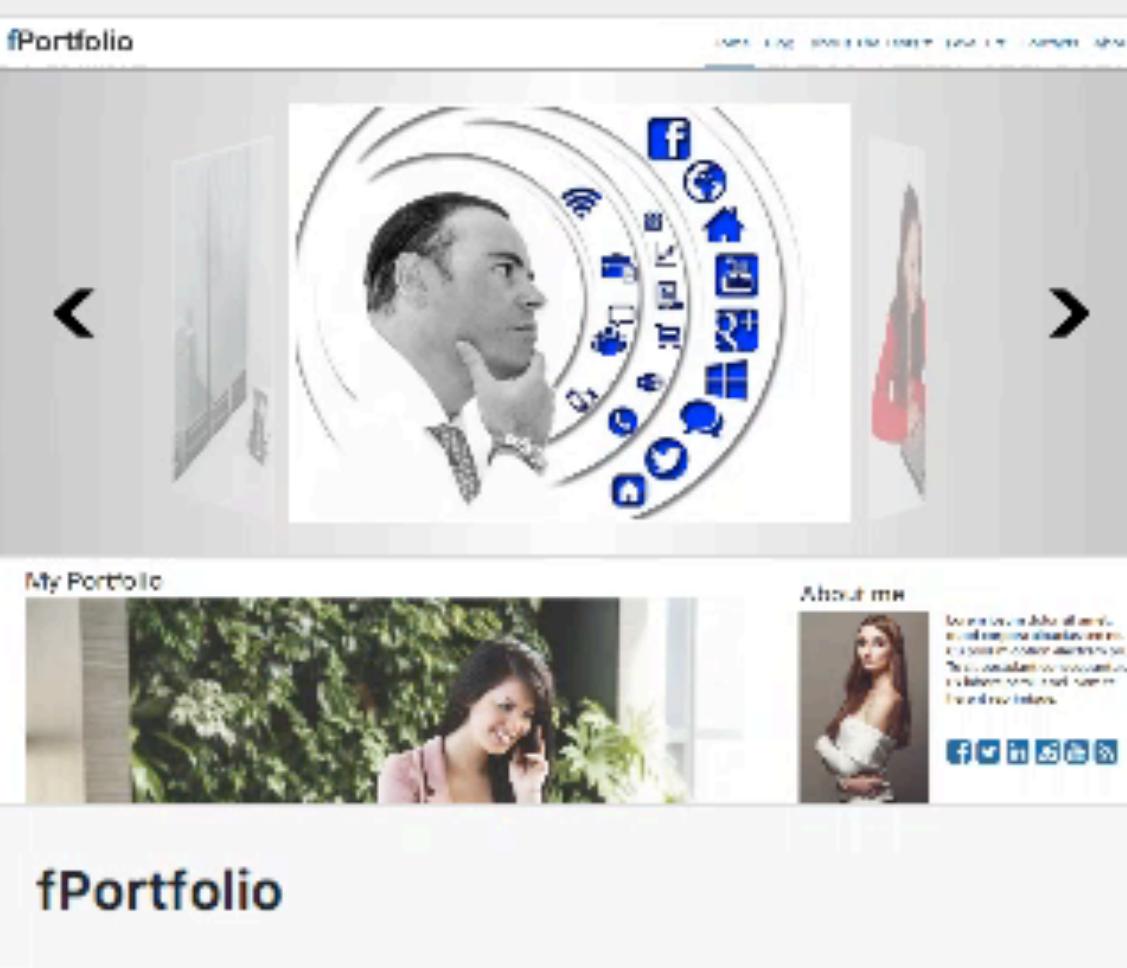
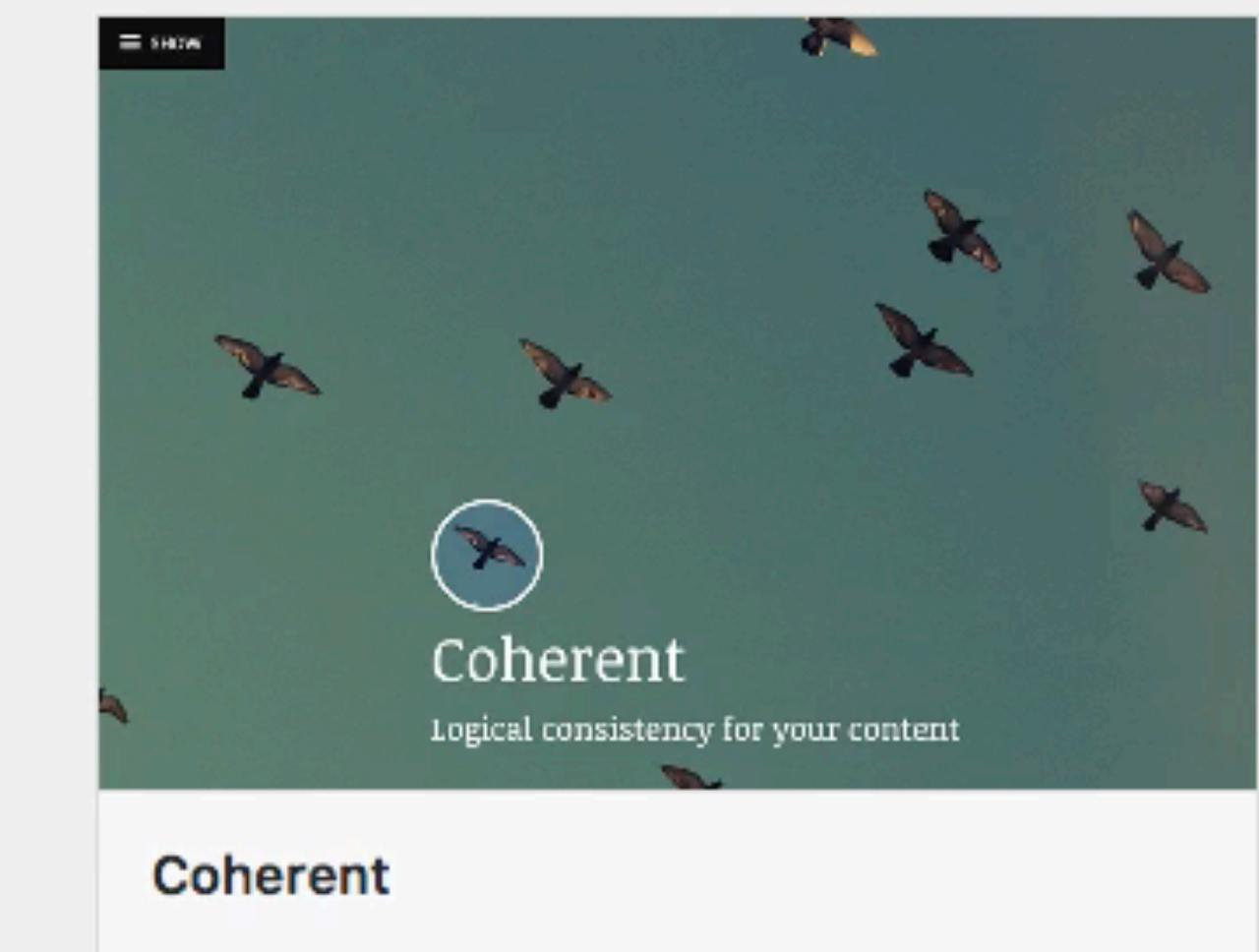
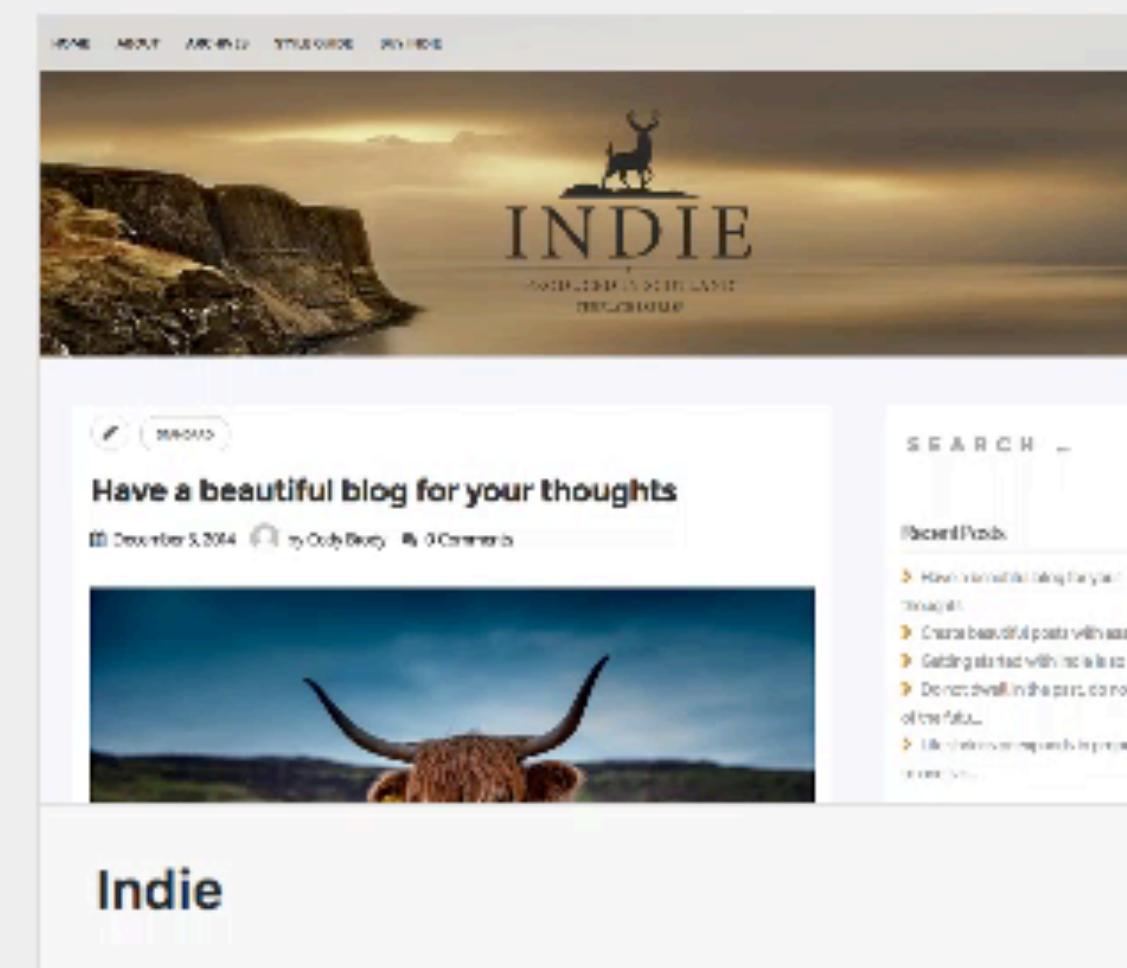
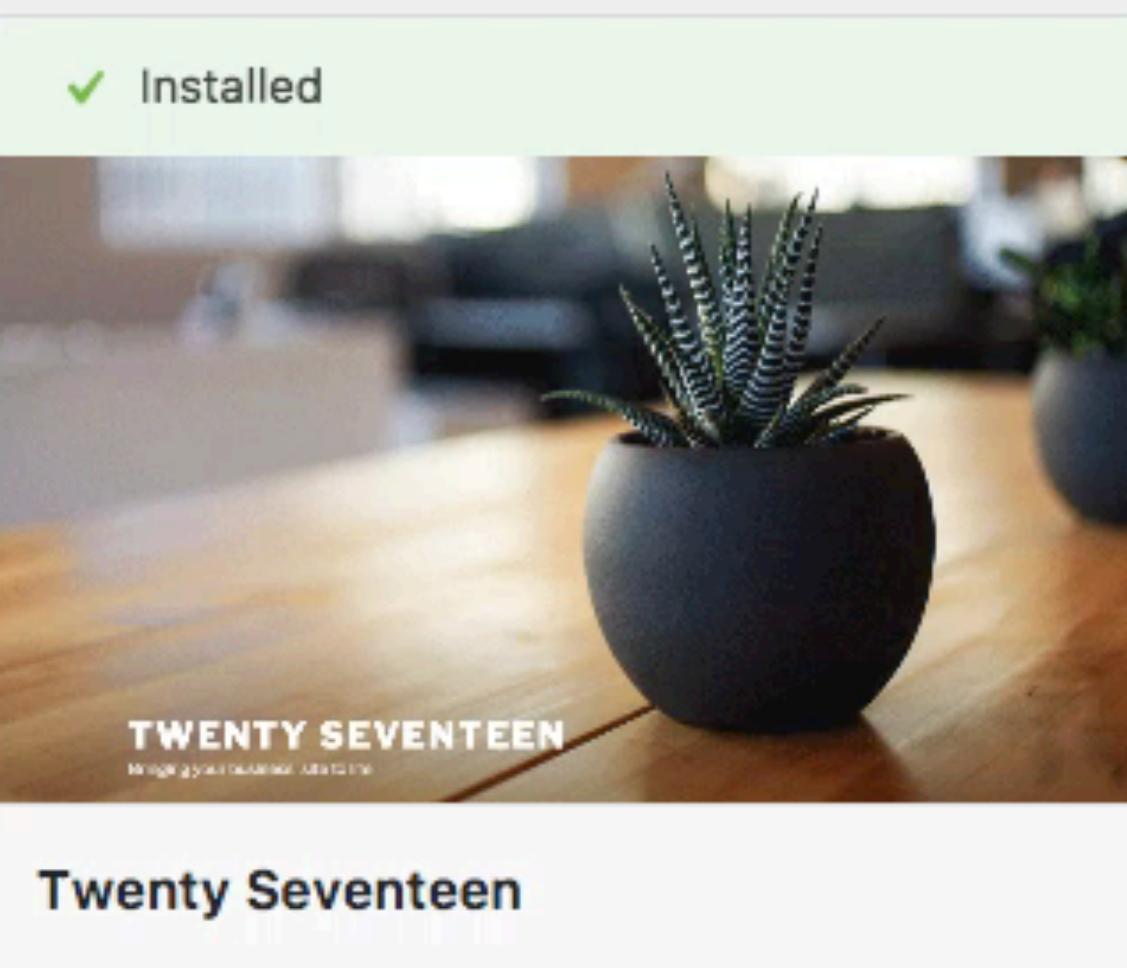
**Twenty Fifteen****Twenty Fourteen****Twenty Sixteen****Twenty Ten****Twenty Ten****Twenty Thirteen****Twenty Twelve****Twenty Nine**

[Dashboard](#)[Posts](#)[Media](#)[Pages](#)[Comments](#)[Appearance](#)[Themes](#)[Customize](#)[Widgets](#)[Menus](#)[Header](#)[Editor](#)[Plugins](#)[Users](#)[Tools](#)[Settings](#)[Gutenberg](#)[Media Guide](#)[Collapse menu](#)

## Add Themes

[Upload Theme](#)

15

[Featured](#)[Popular](#)[Latest](#)[Favorites](#)[Feature Filter](#)



Saved

You are customizing  
developwordpress



Previewing theme  
Twenty Fifteen

Change

Site Identity



Colors



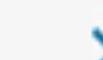
Header Image



Background Image



Menus



Widgets



Static Front Page



Additional CSS



developwordpress



Just another WordPress site



Home



Sample Page



New post



TAGS

boat cars cats chard

cheese chocolate

late gloat happy honey

moat oat oats



RECENT POSTS

another

more



test

# Sample Page

This is an example page. It's different from a blog post because it will stay in one place and will show up in your site navigation (in most themes). Most people start with an About page that introduces them to potential site visitors. It might say something like this:

Lorem ipsum dolor sit amet, minim molestie argumentum est at, pri legere torquatos instructior ex. Vis id odio atomorum oportere, quem modo fabellas sit at, dicat semper est ne. Apeirian detraxit pri eu. No solum accusam has. Ius ne harum mundi clita, eu pro ratione audiam.

...or something like this:

Lorem ipsum dolor sit amet, minim molestie argumentum est at, pri legere torquatos instructior ex. Vis id odio atomorum oportere, quem modo fabellas sit at, dicat semper est ne. Apeirian detraxit pri eu. No solum accusam has. Ius ne harum mundi clita, eu pro ratione audiam.

As a new WordPress user, you should go to [your dashboard](#) to delete this page and create new pages for your content. Have fun!

Hide Controls





Help ▾

Dashboard

Posts

Media

Library

Add New

Pages

Comments

Appearance

Plugins

Users

Tools

Settings

Collapse menu

## Media Library

Add New

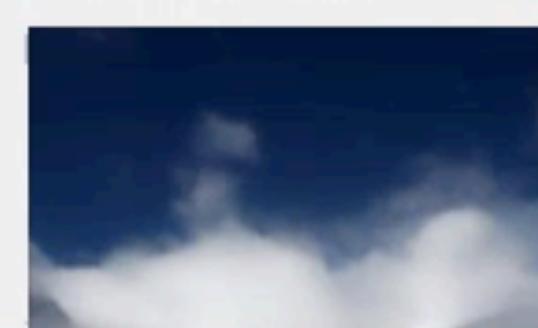
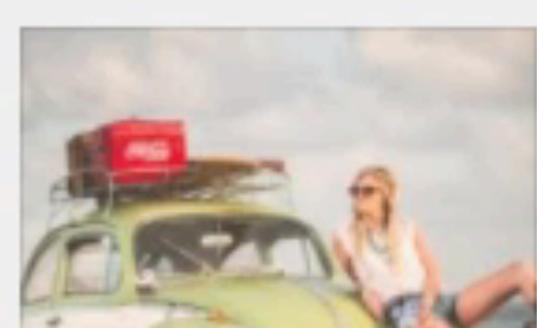
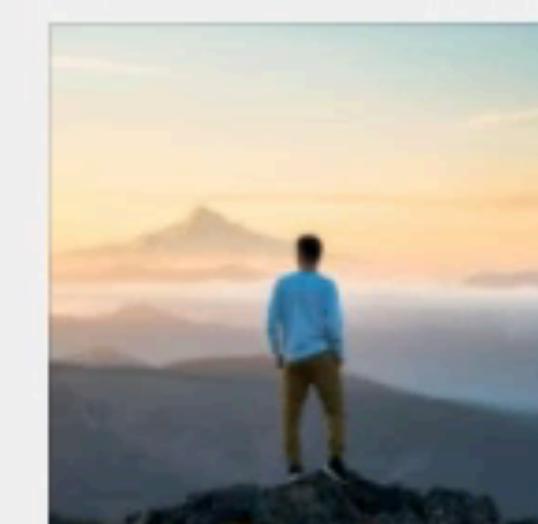
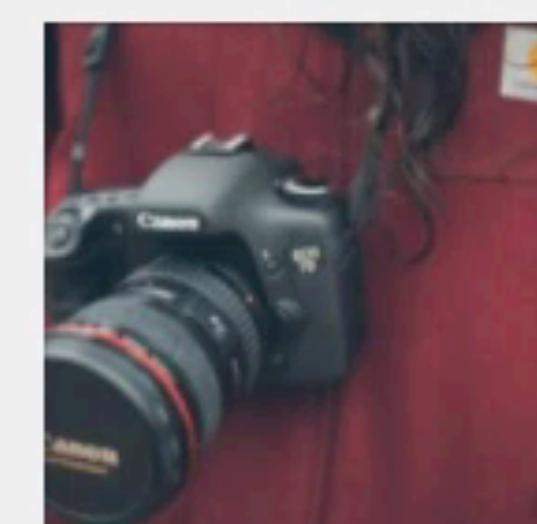
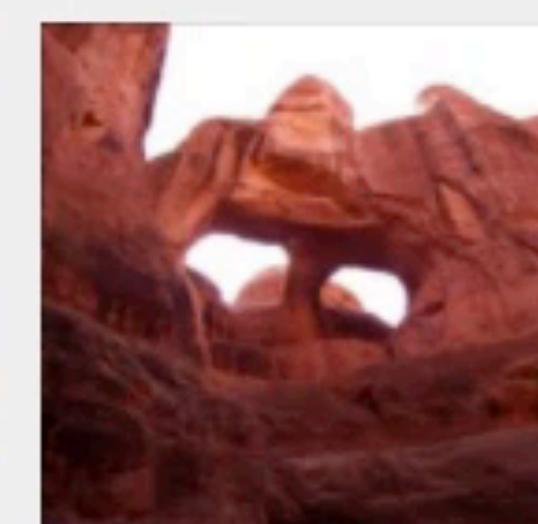
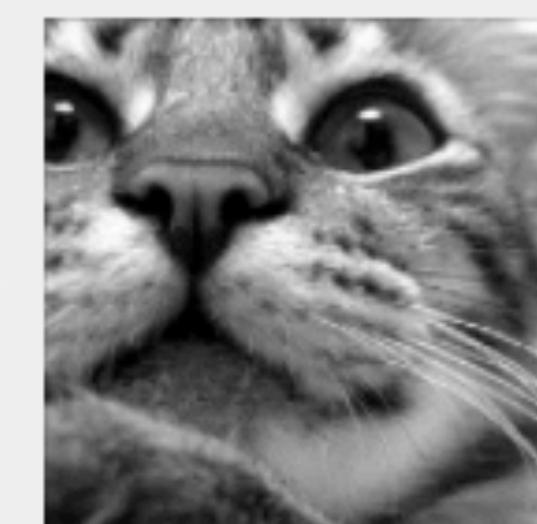
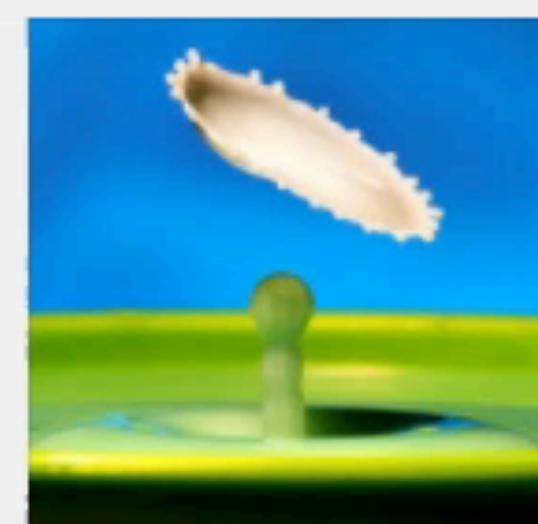
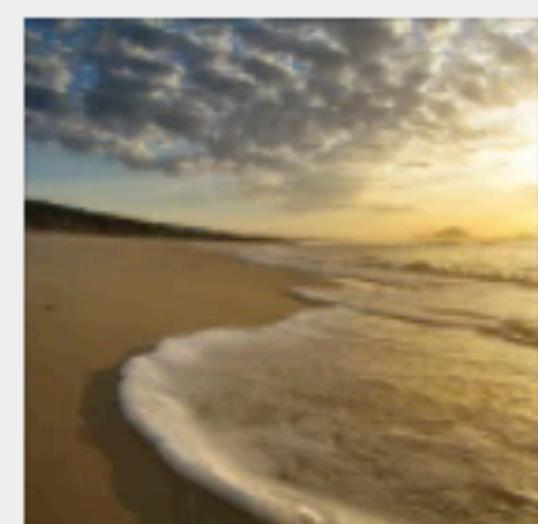
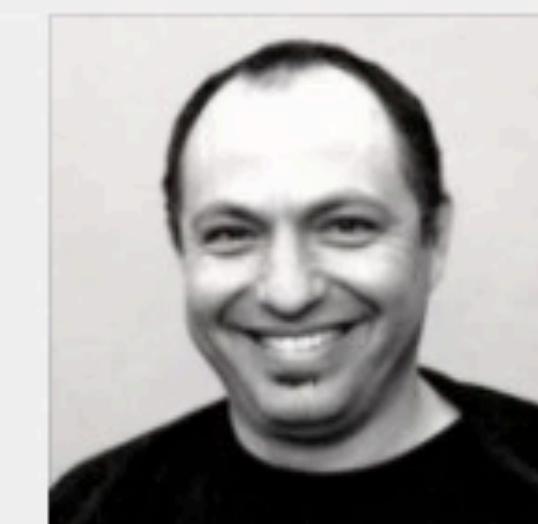
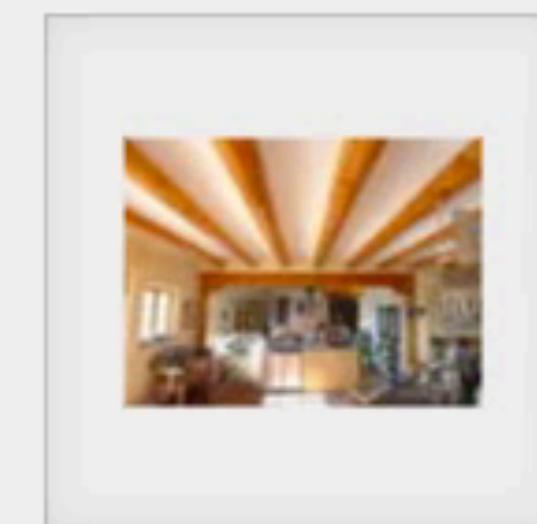
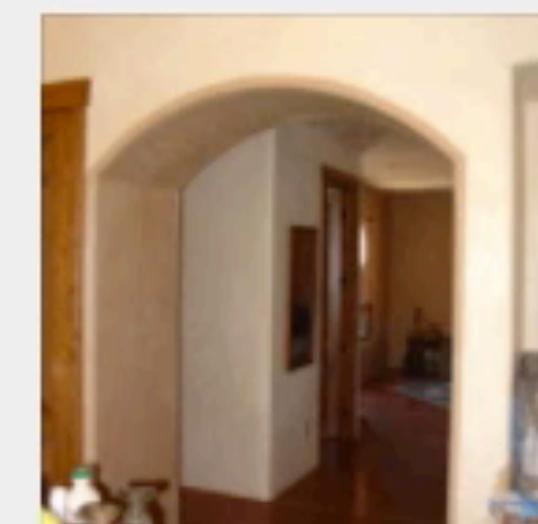
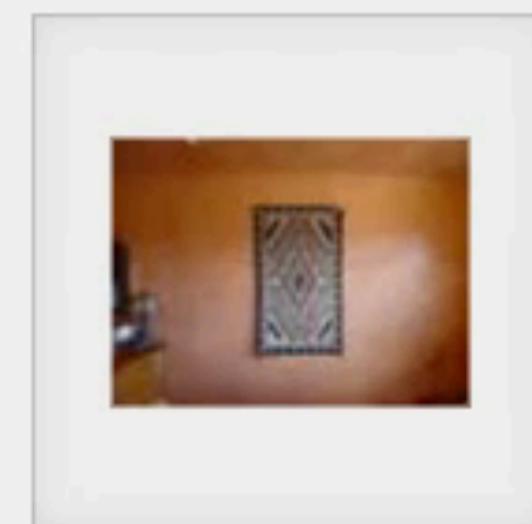
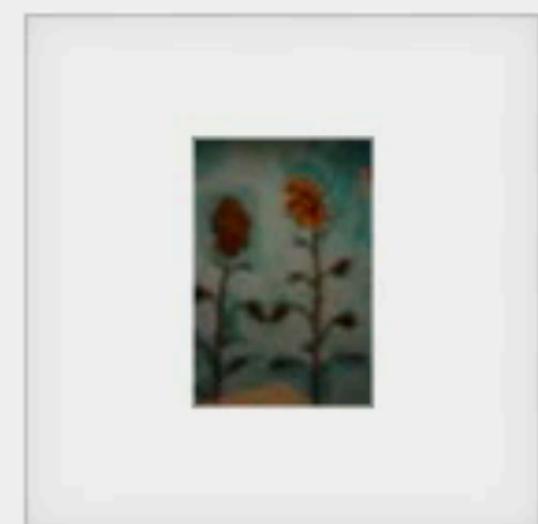


All media items

All dates

Bulk Select

Search media items...



X

Save & Publish



You are customizing  
wpdev

Active theme  
Twenty Seventeen

Change



Home

Site Identity >

Colors >

Header Media >

Menus >

Widgets >

Additional CSS >

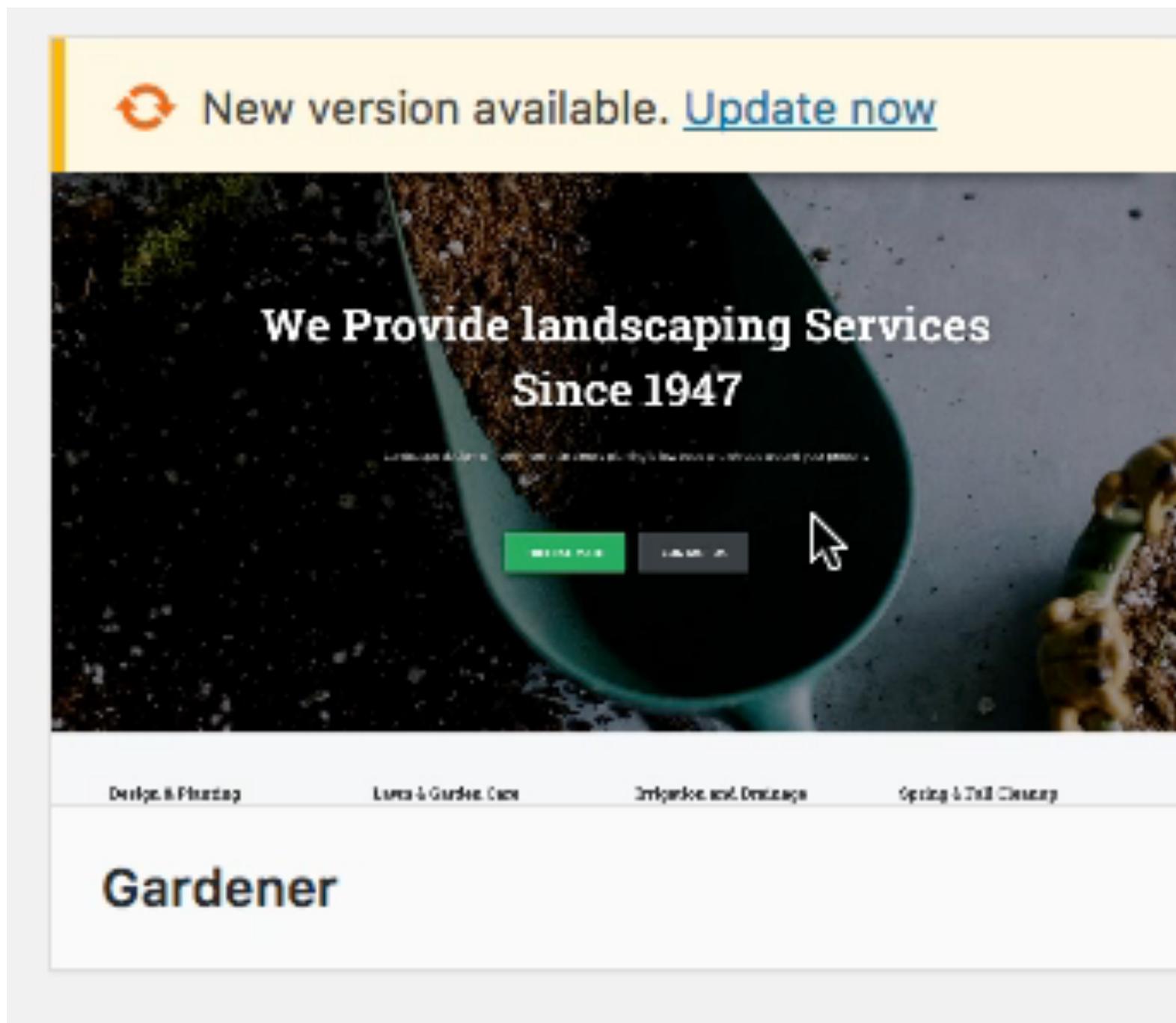
JUNE 1, 2017 BY ADMIN

## Test

Hello.

  Lorem ipsum dolor sit amet, minim molestie argumentum est at, pri  
  legere torquatos instructior ex. Vis id odio atomorum oportere, quem  
  modo fabellas sit at, dicat semper est ne. Apeirian detraxit pri eu. No  
  solum accusam has. Ius ne harum mundi clita, eu pro tation audiam.

# Shiny Updates in 4.6



**WordPress Importer** Import posts, pages, comments, custom fields, categories, tags and more from a WordPress export file.  
[Deactivate](#) | [Edit](#)  
Version 0.6.2 | By [wordpressdotorg](#) | [View details](#)

 There is a new version of WordPress Importer available. [View version 0.6.3 details](#) or [update now](#).



# Wp-api client added in version 4.7 Dec 2017

```
wp_enqueue_script( 'wp-api' );
```

## Models:

- \* Category
- \* Comment
- \* Media
- \* Page
- \* PageMeta
- \* PageRevision
- \* Post
- \* PostMeta
- \* PostRevision
- \* Schema
- \* Status
- \* Tag
- \* Taxonomy
- \* Type
- \* User

## Collections:

- \* Categories
- \* Comments
- \* Media
- \* PageMeta
- \* PageRevisions
- \* Pages
- \* Posts
- \* Statuses
- \* Tags
- \* Taxonomies
- \* Types
- \* Users



# Part II: Current WordPress JavaScript



# **40,048 lines of JavaScript in WordPress 4.8**



**VERSION 4.8 JUNE, 2017**

**40,048 LINES OF JAVASCRIPT**

**100 total JS files 17 using Backbone**



# Use WordPress without JavaScript (“nojs”)



**sort of...**



# Define “works”

## Media Library

[Add New](#)

The grid view for the Media Library requires JavaScript. [Switch to the list view.](#)

## Add Themes

The Theme Installer screen requires JavaScript.

**Featured Image**

Word count: 0

Last edited by adam s on May 19, 2017 at 3:51 pm

# Media, Customizer, etc.



## Add New Post

Enter title here

Add Media

Paragraph ▾ B I ≡ “ ≡ ≡ ≡ ≡ ≡ ≡ ≡

Visual Text



Save Draft

Preview

Status: Draft [Edit](#)

Visibility: Public [Edit](#)

Publish immediately [Edit](#)

Publish

### Featured Image

[Set featured image](#)

### Format

### Categories

### Tags



Add

Separate tags with commas

[Choose from the most used tags](#)

Word count: 0

# Add New Post

Enter title here

Add Media

Paragraph ▾ B I : “ ” = = = = =

Visual Text



Save Draft

Preview

Status: Draft [Edit](#)

Visibility: Public [Edit](#)

Publish immediately [Edit](#)

Readability: Needs improvement

SEO: Not available

**Publish**

## Featured Image

[Set featured image](#)

## Format

## Categories

## Tags

Word count: 0

## Yoast SEO

Need help? ▾

★ Go Premium



Readability

Enter your focus k...

+ Add keyword

## Add New Post

Word count: 0

[Add Media](#)[Add Coupon](#)

Paragraph ▾

**B***I*

&lt;img alt="

# Add New Post

 Add Media

 Add Embed

 Add Post Element

Paragraph ▾

**B**

*I*

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“

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≡

## Add New Post

Enter title here

 Add Media

Paragraph ▾

**B**

*I*

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<sup>1</sup>U

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# New in 4.8: Add an editor in JavaScript

*wp.editor.initialize()*

<https://make.wordpress.org/core/2017/05/20/editor-api-changes-in-4-8/>



# Media Manager

WordPress 3.5    + New    Howdy, admin

**Insert Media**

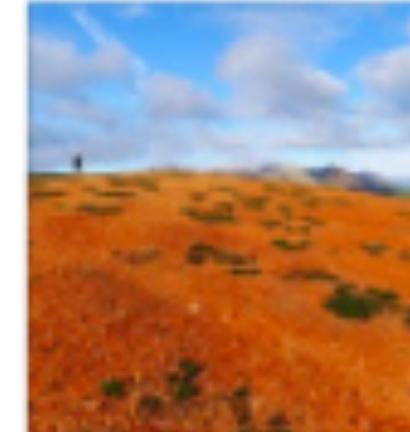
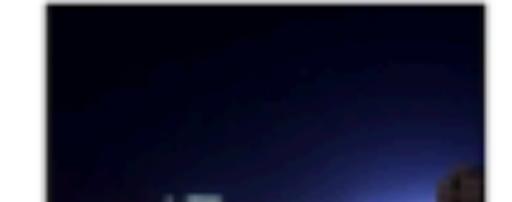
Upload Files | Media Library

**ATTACHMENT DETAILS**

 **MountainView.jpg**  
December 6, 2012  
6000 × 4000  
[Edit Image](#)  
[Delete Permanently](#)

**Insert Media**

**Upload Files** | **Media Library**

Dashboard

Posts

Media

Pages

Comments

Issues

Articles

Appearance

Plugins

Users

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Settings

Media Guide

Collapse menu 

# WordPress Media Backbone Guide

An introduction to Backbone design patterns and reusable elements in the WordPress Media experience. Knowledge of [Backbone](#) is a soft prerequisite.

## wp.Backbone.View

An extension of `Backbone.View`. All views in WordPress are built on top of this. A Subview Manager is baked in via `wp.BackboneSubviews`.

### Example

#### TEMPLATE MARKUP

```
<script type="text/template" id="tmpl-example-1-view-1">
    A view template.
    <div class="subview-container"></div>
</script>
<script type="text/template" id="tmpl-example-1-view-2">
    A subview template.
</script>
```

An element goes in a view where a subview will be rendered (here `.subview-container`).

`wp.template()` will find templates where `id="tmpl-{...}"`, so ID templates accordingly.

`wp.template()` expects Mustache-inspired templating tags (see [#22344](#)), so use them:

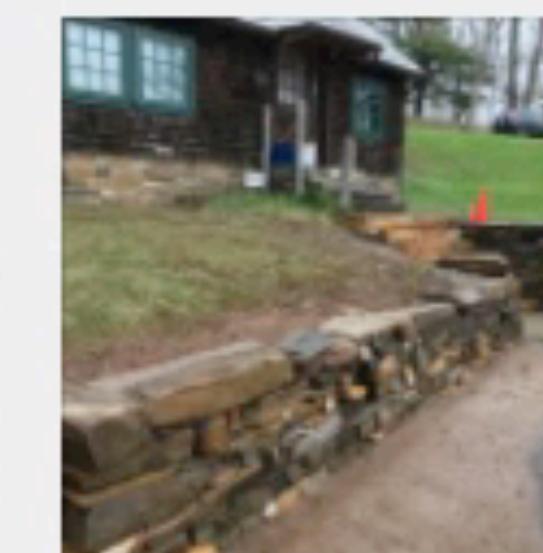
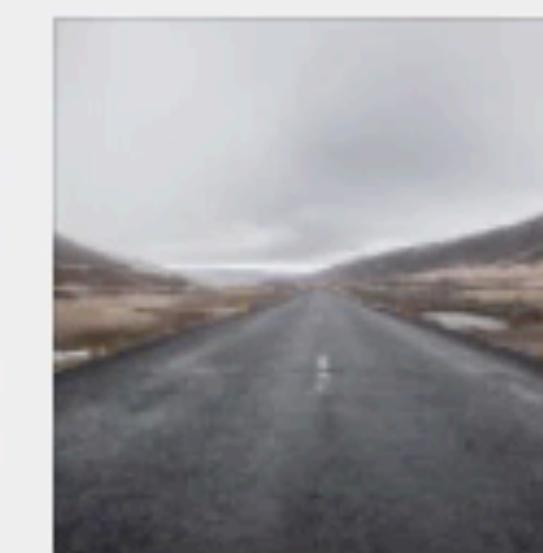
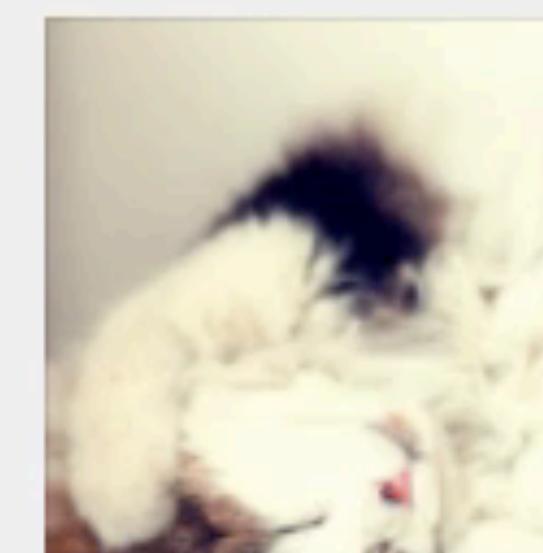
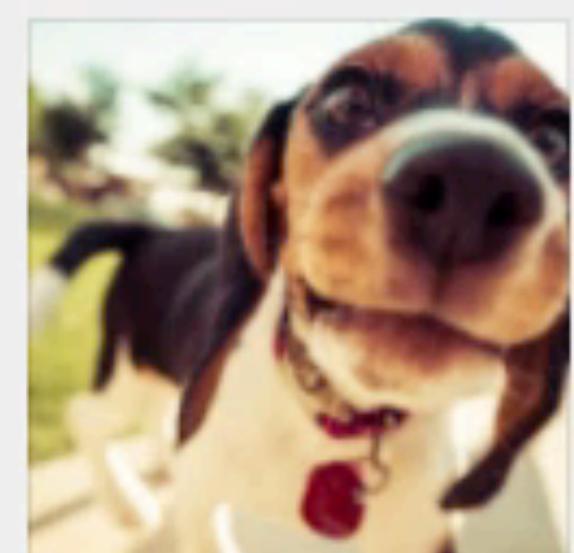
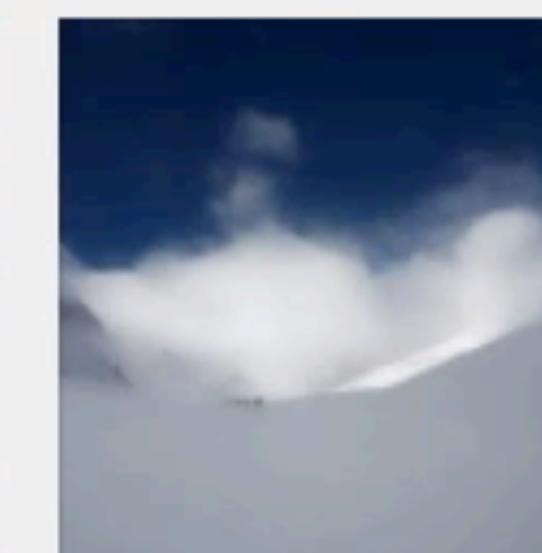
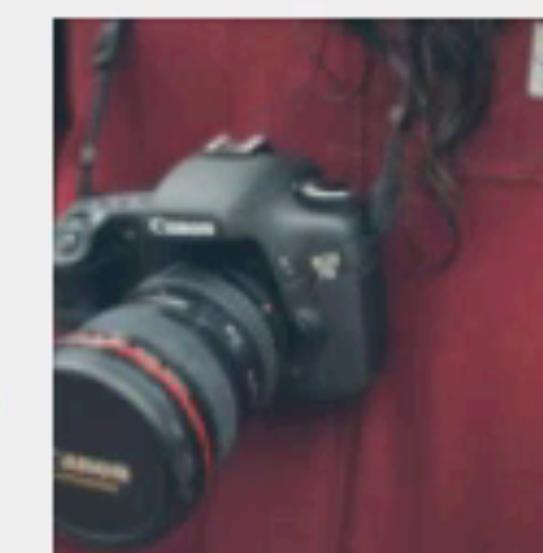
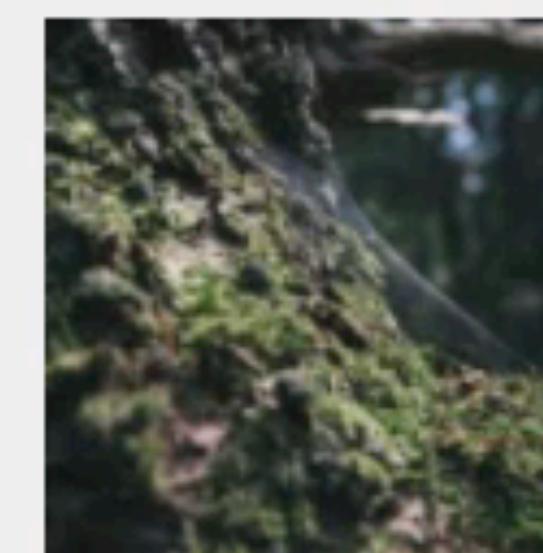
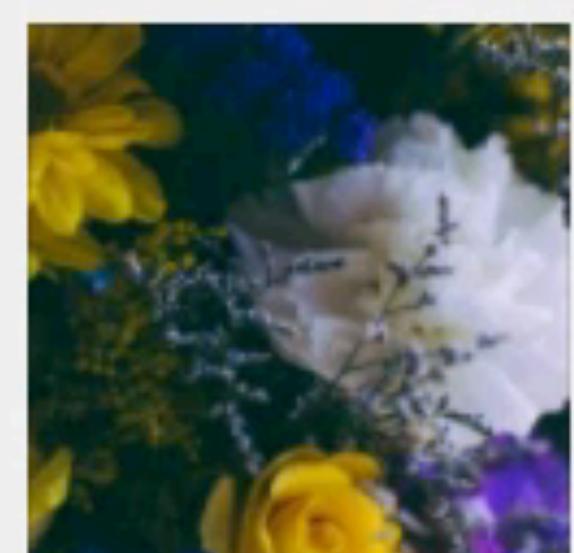
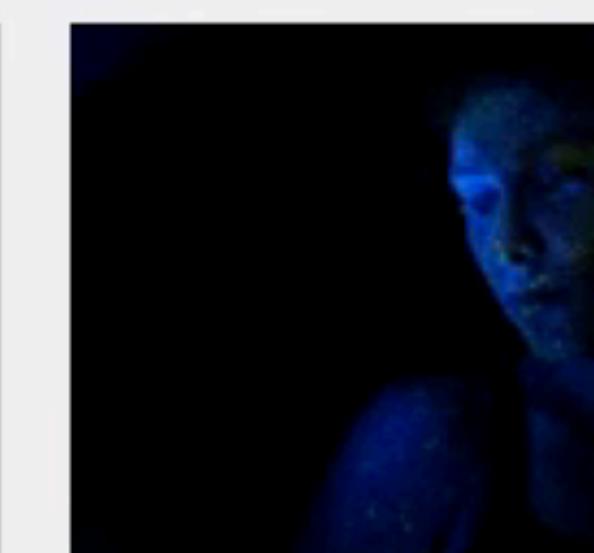
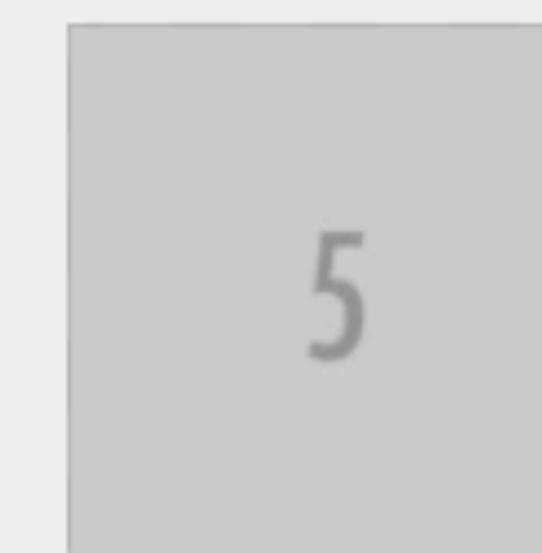
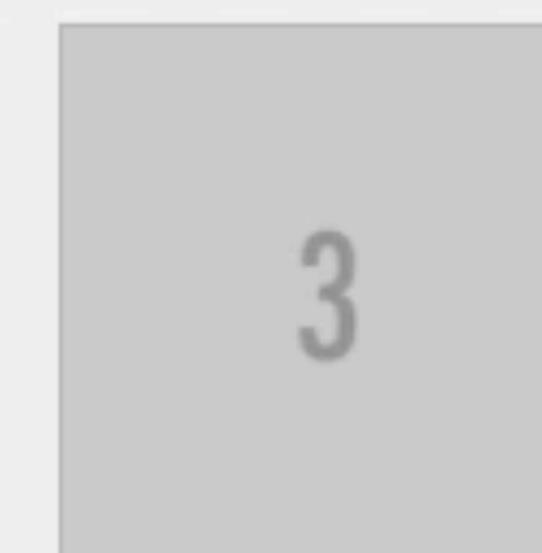
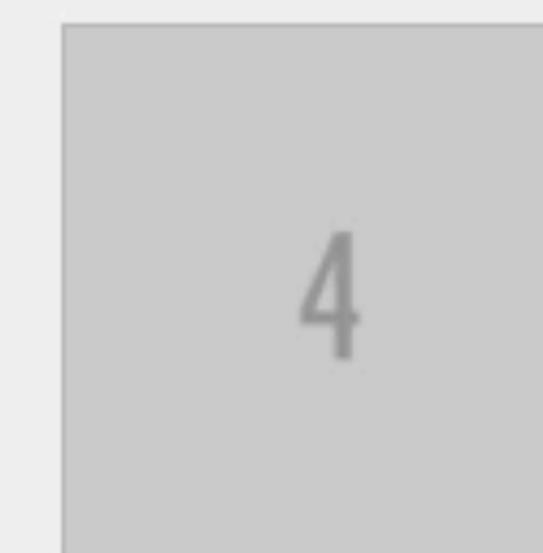
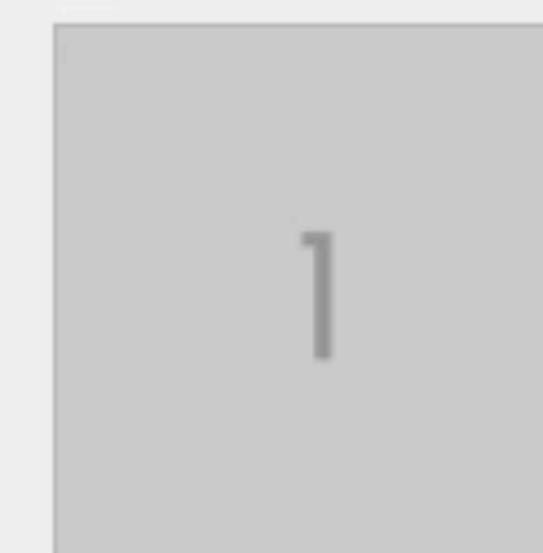
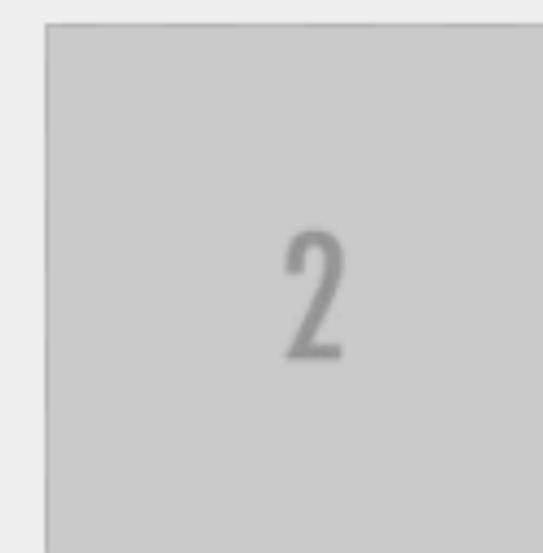
```
{{{ interpolating }}} , {{ 'escaping' }} , <# execution #>
```

#### JAVASCRIPT

```
$(document).ready( function() {
    // Create view and subview constructors.
    var ViewConstructor = wp.Backbone.View.extend({
        // assign a compiled template function.
```

[Dashboard](#)[Posts](#)[Media](#)[Library](#)[Add New](#)[Categories](#)[Tags](#)[Pages](#)[Comments](#)[Appearance](#)[Plugins](#)[Users](#)[Tools](#)[Settings](#)[Gutenberg](#)[Media Guide](#)[Collapse menu](#)

# Media Library

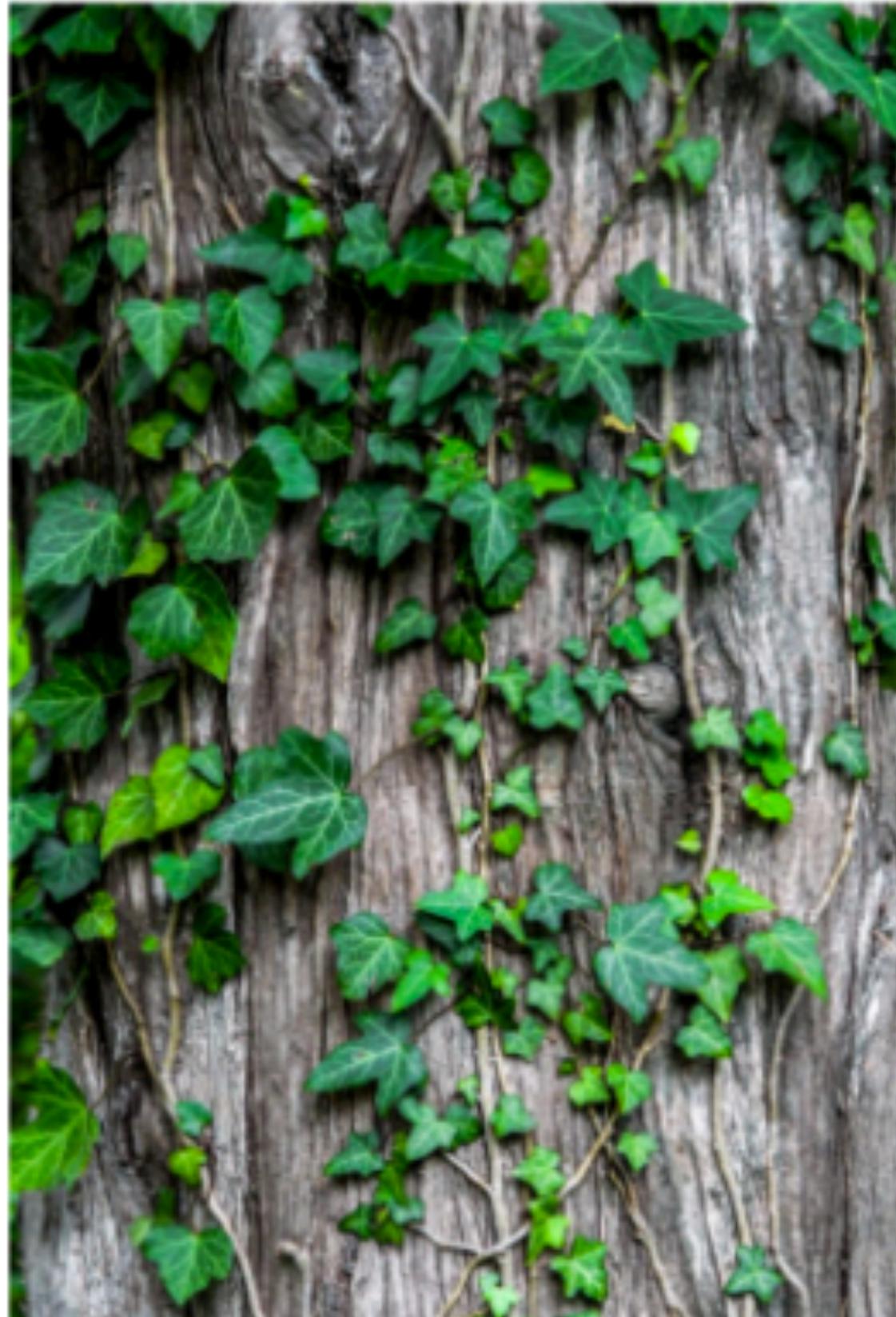
[Add New](#)[All media items](#)[All dates](#)[All Categories](#)[All Tags](#)[Bulk Select](#)Search media items.

# Media & Rich Text Widgets

Image: Image widget

Title:

Image widget



Edit Image

Replace Image

Video: Video Widget

Title:

Video Widget



Edit Video

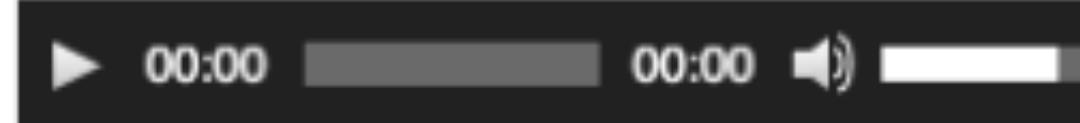
Replace Video

Delete | Close

Audio: Audio Widget

Title:

Audio Widget



[Delete](#) | [Close](#)

Text: Updated Text Widget

Title:

Updated Text Widget

Visual Text

B I ≡ ≡ ⌂

Now you can add formatting, like **bold** and *italic*!

You can also add lists, with and without numbers:

- Item 1
- Item 2

Best yet, you can [add links](#) without needing to write HTML!

# Customizer

You are customizing  
wpdev

Active theme  
Twenty Seventeen Change

Site Identity >

Colors >

Header Media >

Menus >

Widgets >

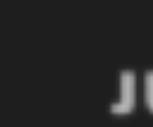
Additional CSS >

Save & Publish ?

 WPDEV





 Home > Test

JUNE 1, 2017 BY ADMIN OAuth ready

Test

Hello.

Lorem ipsum dolor sit amet, minim molestie argumentum est at, pri legere torquatos instructior ex. Vis id odio atomorum oportere, quem modo fabellas sit at, dicat semper est ne. Apeirian detraxit pri eu. No solum accusam has. Ius ne harum mundi clita, eu pro tation audiam.

# Editor

Add New Post

Enter title here

 Add Media

Paragraph ▾

**B**

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Visual

Text

X

r21591 | koopersmith | 2012-08-22 18:24:20 -0400 (Wed, 22 Aug 2012) | 2 lines

Please welcome Underscore.js and Backbone.js to core. fixes #21664.

*Underscore.js and Backbone.js are tools that will help us improve the quality of our JavaScript. Their consistent APIs, verbose documentation, and wide usage make them a particularly good fit for WordPress core and our community.*



# Supporting IE 11+ in WordPress 4.8+



# PART III: Future WordPress JavaScript



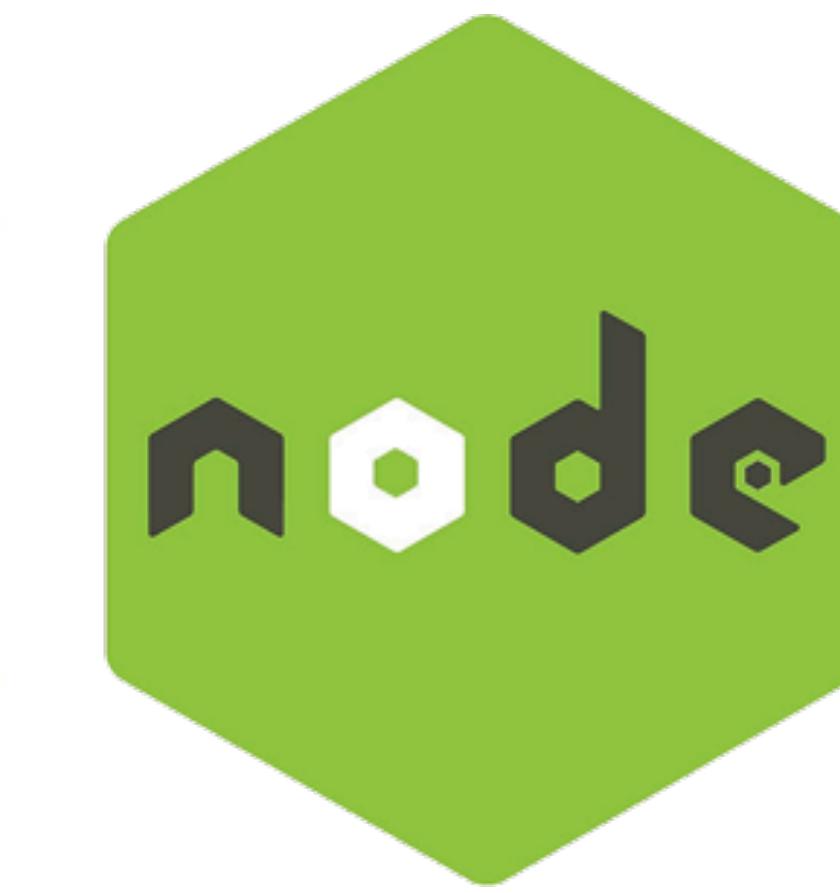
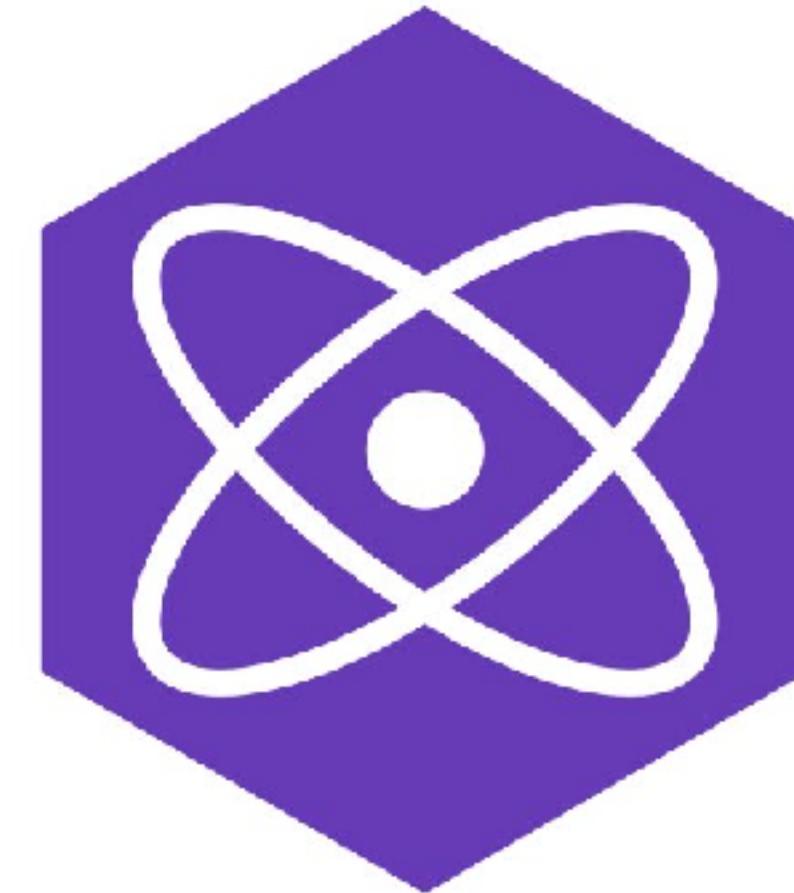
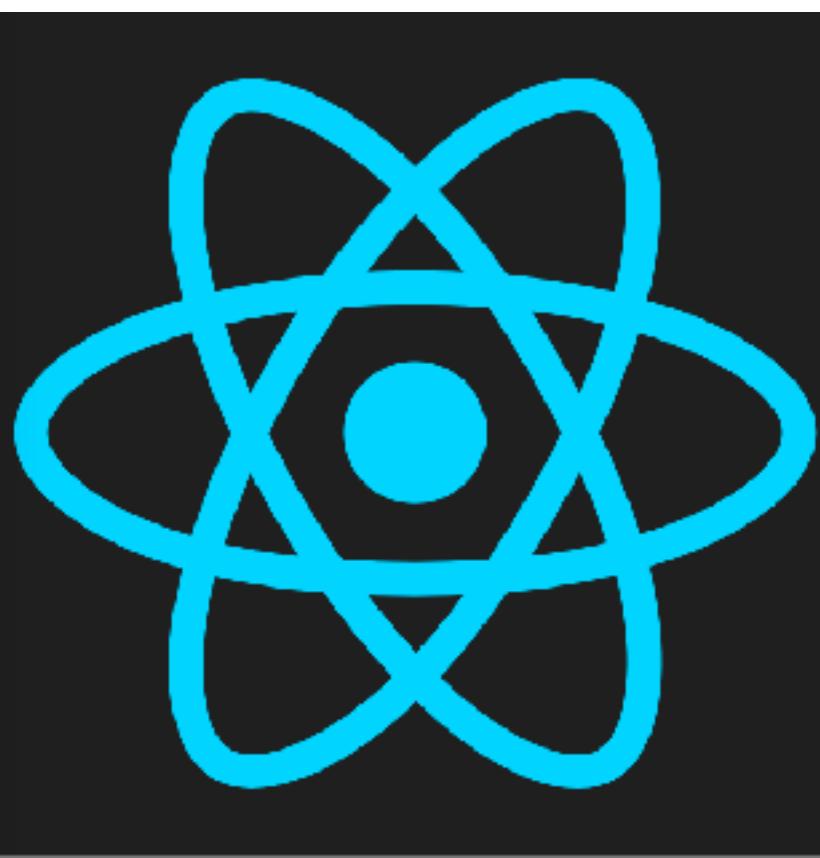
# A Story



# Next for JavaScript in core



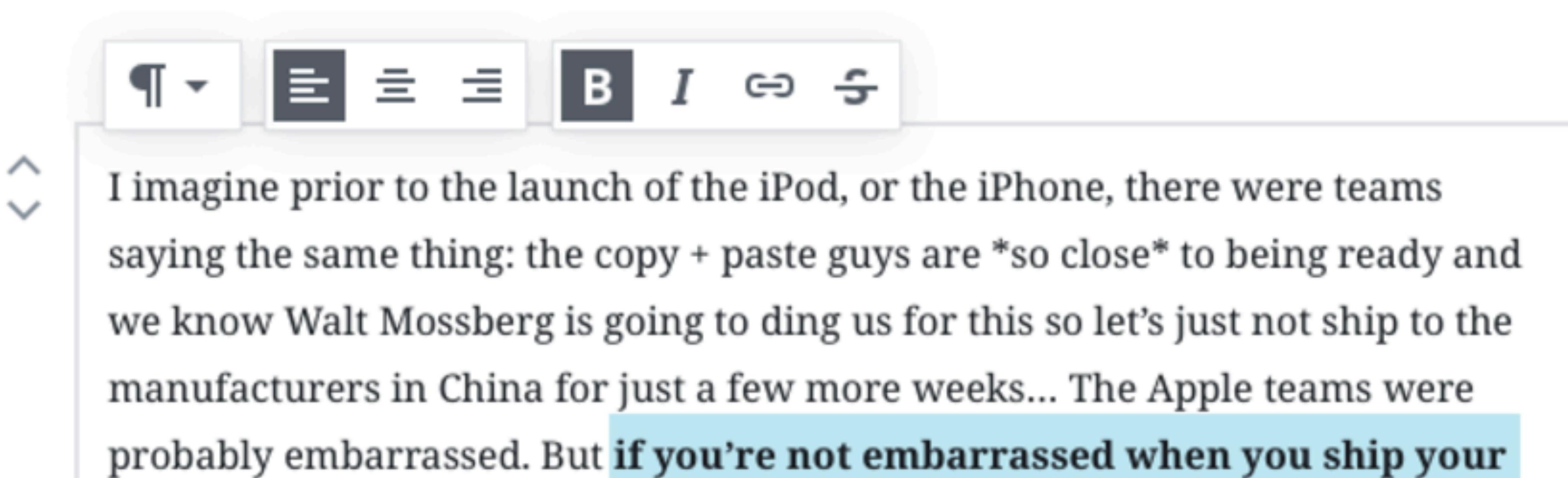
# Exciting times!



# The New Editor

Gutenberg

Prototyping since 1440.



I imagine prior to the launch of the iPod, or the iPhone, there were teams saying the same thing: the copy + paste guys are \*so close\* to being ready and we know Walt Mossberg is going to ding us for this so let's just not ship to the manufacturers in China for just a few more weeks... The Apple teams were probably embarrassed. But if you're not embarrassed when you ship your



Document

Block



## Status &amp; Visibility

Visibility

Public

Publish

October 21, 2017 2:34 am

Post Format

Standard

Stick to the Front Page



Pending Review



## Categories &amp; Tags

## Featured Image

## Excerpt

## Discussion

## Document Outline

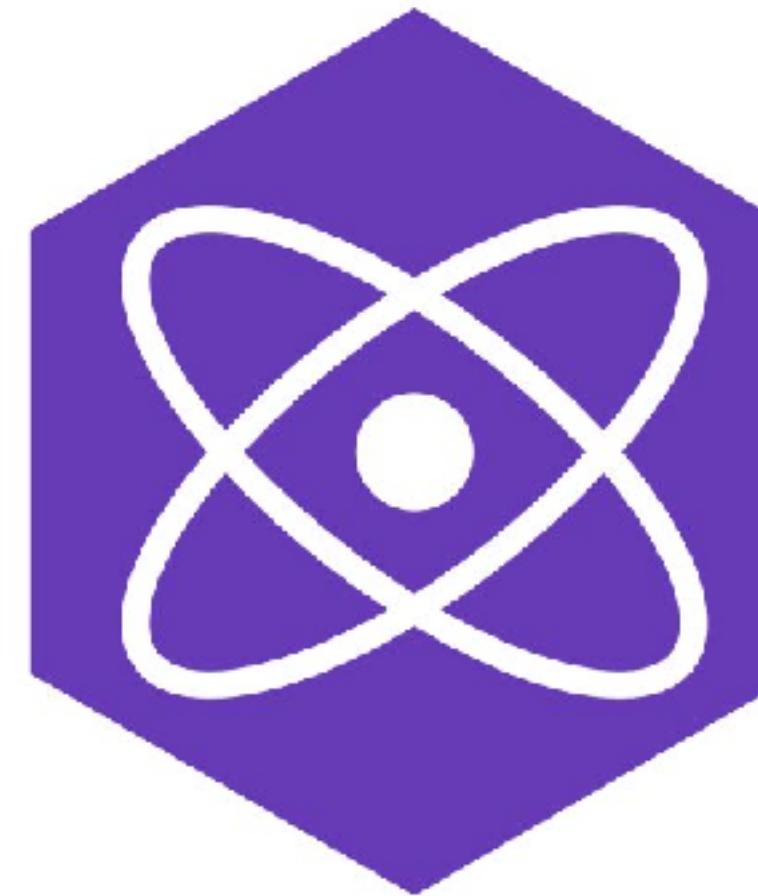
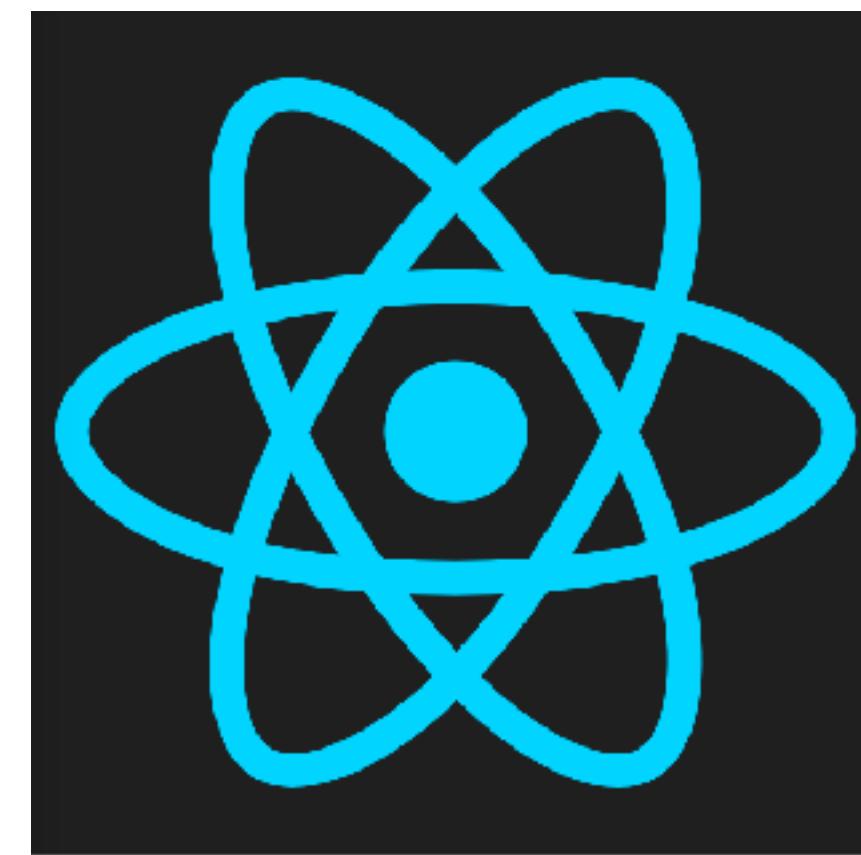
# Welcome to the Gutenberg Editor

## Of mountains & printing presses

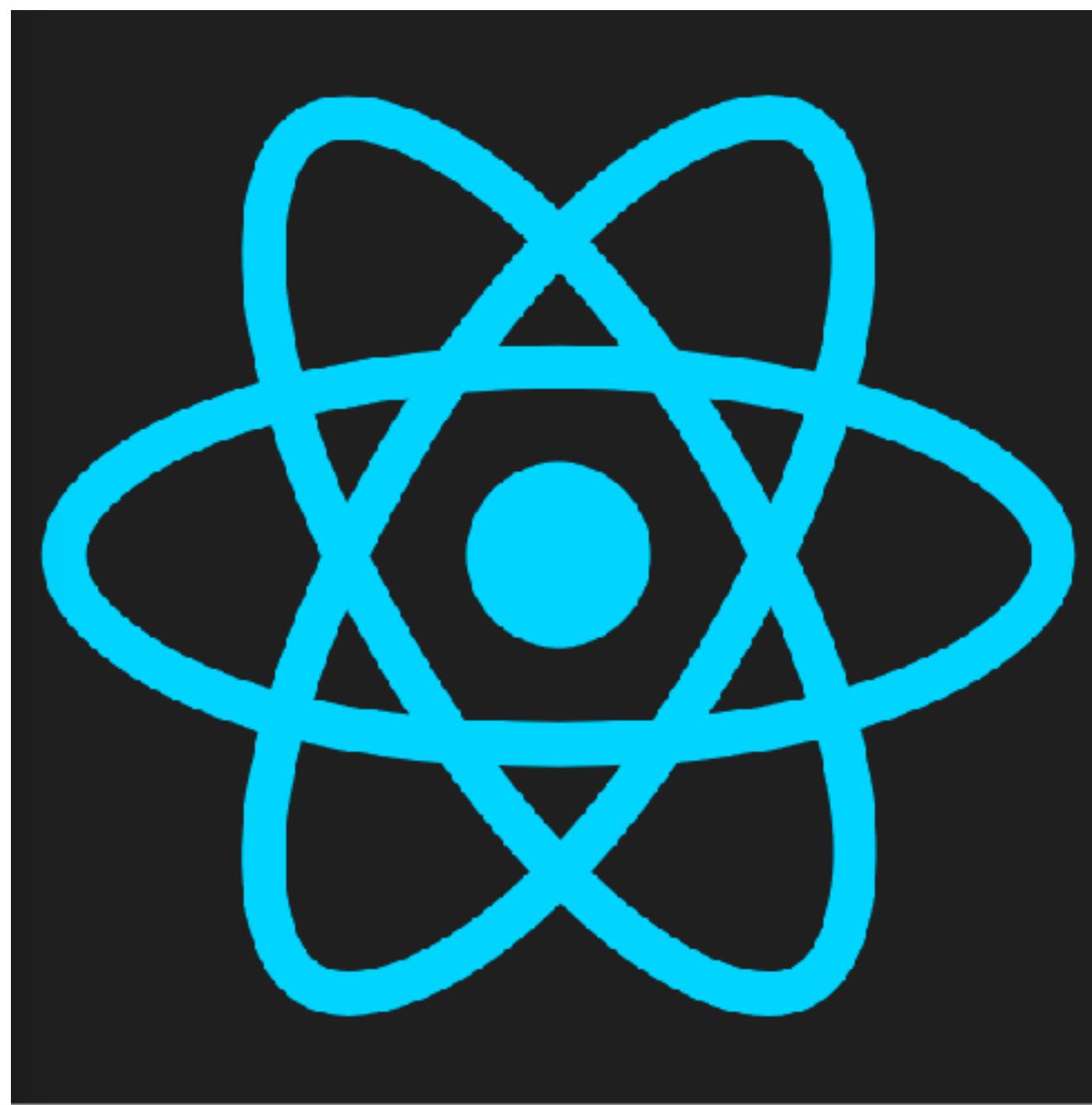
[KEEP ON READING!](#)

The goal of this new editor is to make adding rich content to WordPress simple and enjoyable. This whole post is composed of *pieces of content*—somewhat similar to LEGO bricks—that you can move around and interact with. Move

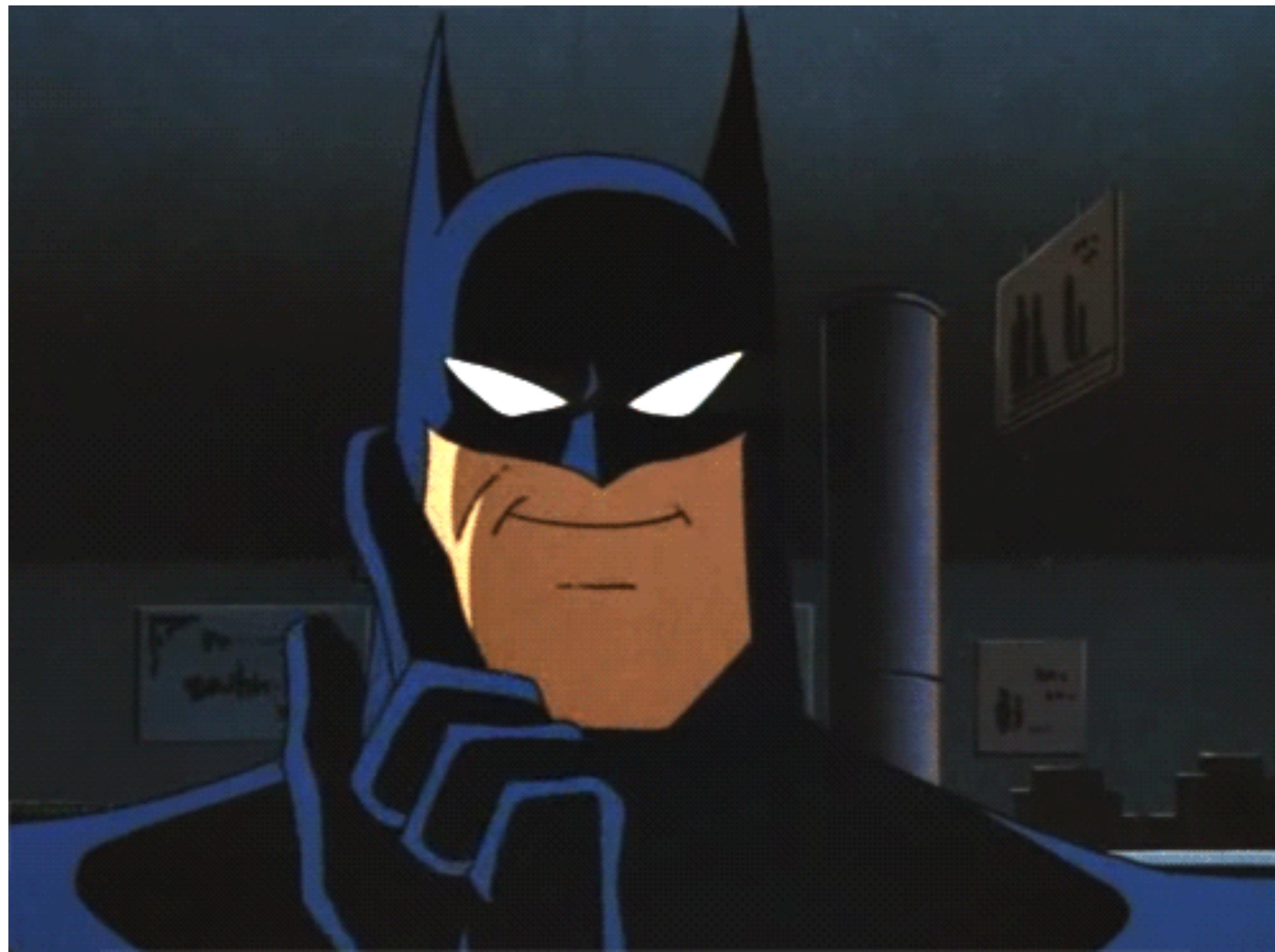
# Choosing a Framework



# React & Licensing



# Apache says No



# Matt says No!

MA.TT

UNLUCKY IN CARDS

## On React and WordPress

⌚ September 14, 2017

📁 Asides

— — — — —



# Relicensing React

*We're relicensing these projects because React is the foundation of a broad ecosystem of open source software for the web, and we don't want to hold back forward progress for nontechnical reasons.*



# Welcome, everyone!



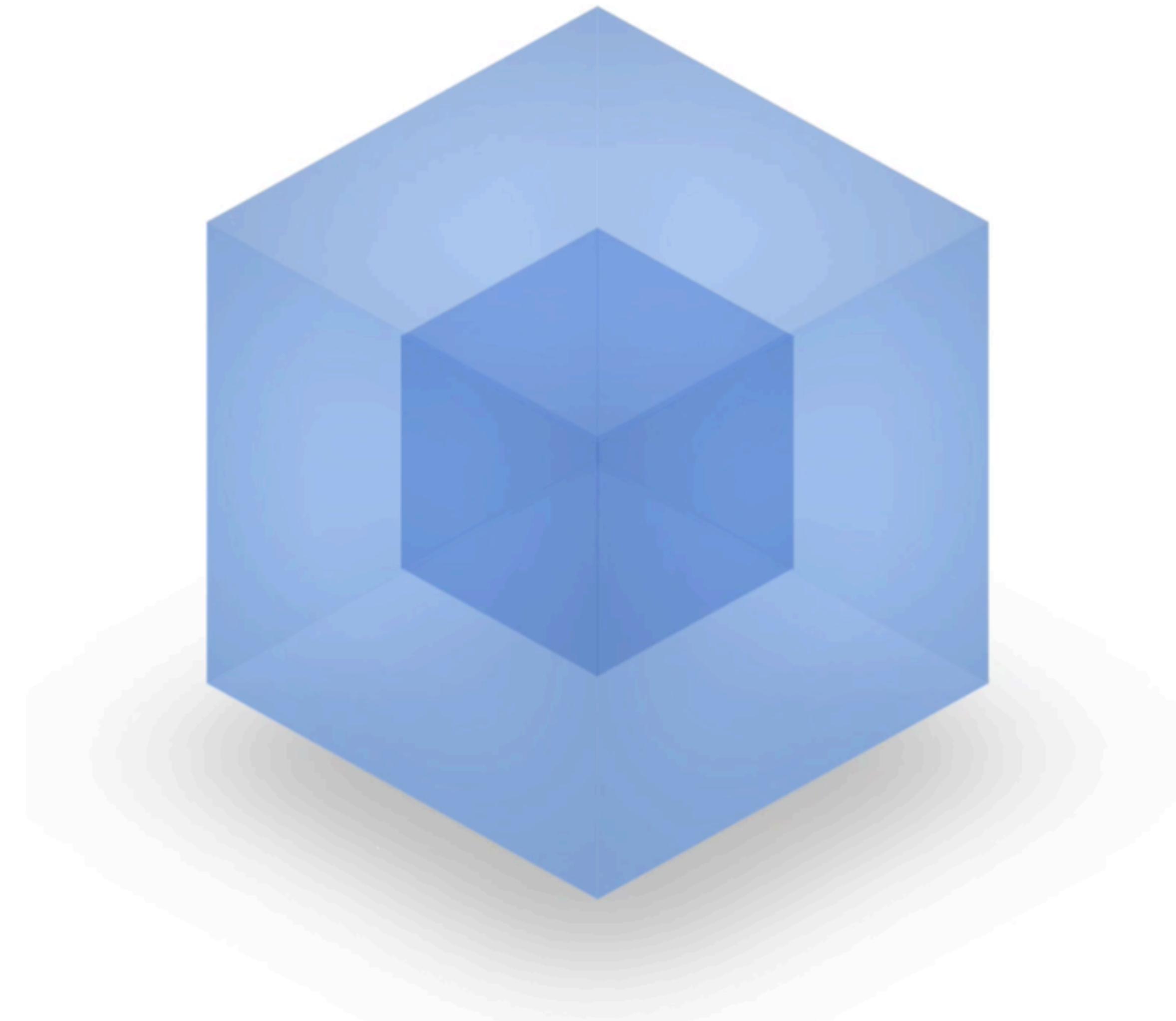
# **Framework agnostic**



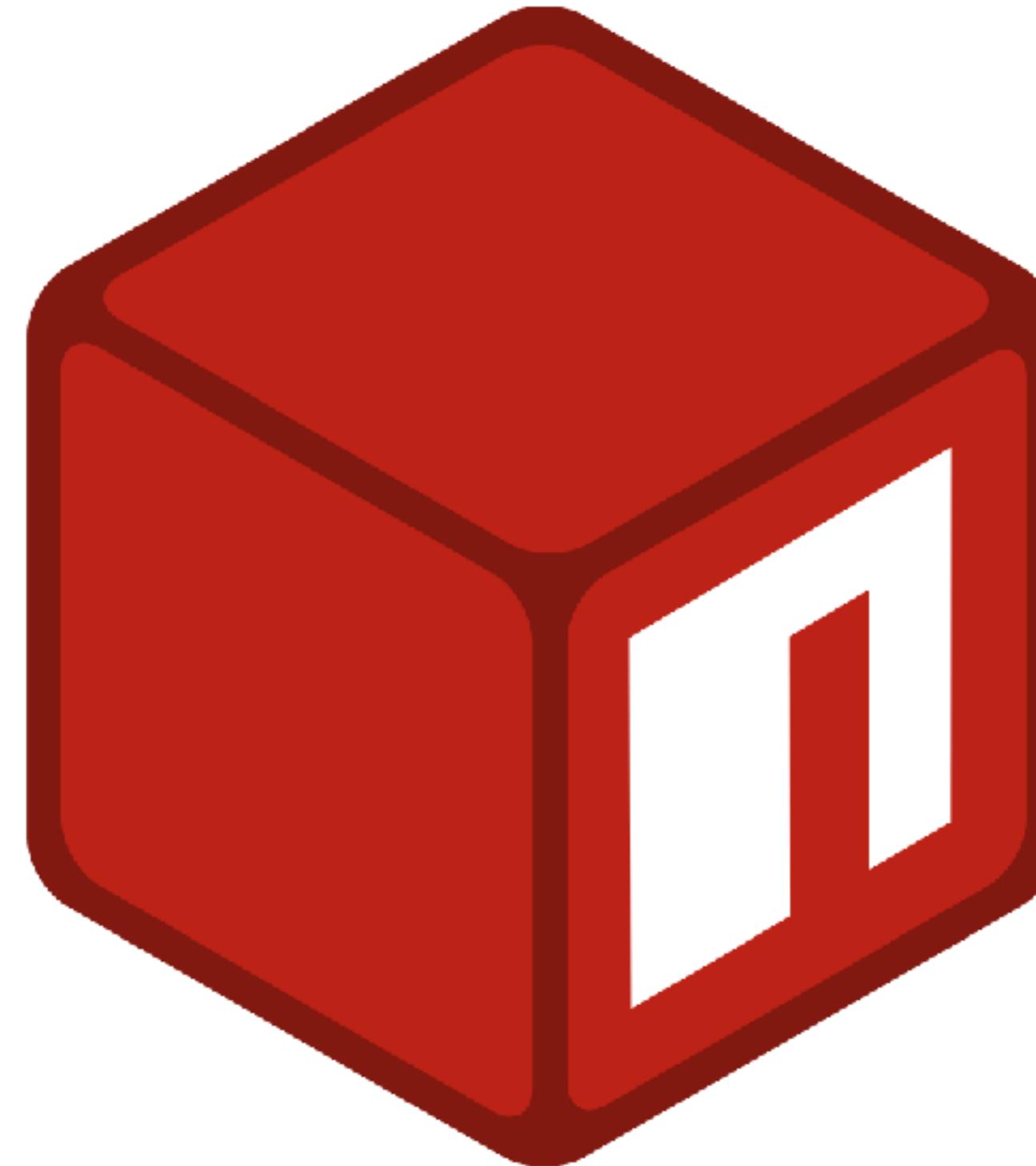
# **Component Interoperability**



# Adopting Webpack



# npm packages



<https://www.npmjs.com/org/wordpress>

<https://github.com/WordPress/packages>



## 4 packages

---

**name**

---

`@wordpress/ally`

`@wordpress/url`

`@wordpress/dom-ready`

`@wordpress/hooks`

# WP-JS-Hooks

---

A lightweight & efficient filter and action manager.

## API Usage

- `addAction( 'hookName', 'functionName', callback, priority )`
- `addFilter( 'hookName', 'functionName', callback, priority )`
- `removeAction( 'hookName', 'functionName' )`
- `removeFilter( 'hookName', 'functionName' )`
- `removeAllActions( 'hookName' )`
- `removeAllFilters( 'hookName' )`
- `doAction( 'hookName', arg1, arg2, moreArgs, finalArg )`

# Fin!

[github.com/adamsilverstein/  
JavaScript-in-WordPress](https://github.com/adamsilverstein/JavaScript-in-WordPress)



*adam@10up • @roundearth*

