

import	Import functions from external module		opener	Gets reference to opener window	Object		message – to write	
export	Export functions to external modules		parent	Gets immediate parent of window	Object	error	Write an error message	NONE
new	Create instance of constructor		top	Gets root parent of window	Object		message – to write	
this	Refer to object it belongs to		closed	Gets if window has closed	bool	assert	Write an error message for false expressions	NONE
Window	Browser Object Model	returns	self	Gets current window	Object		expression – to evaluate	
alert	Display an alert dialog box	NONE	navigator	Gets Window Navigator	Object		message – to write	
	message – text to display		history	Gets Window History	Object	trace	Displays descending order of code executions	NONE
confirm	Display a confirmation dialog box	bool	location	Gets Window Location	Object		label – trace name	
	message – text to display		screen	Gets Window Screen	Object	count	Counts the number of times count has been called	NONE
prompt	Display a prompt dialog box	string / null	console	Gets Window Console	Object		label – counter name	
	text – text to display		document	Gets Window Document	Object		Starts a timer	NONE
	default – default text		frames	Gets all running Window Objects	Array	time	label – timer name	
print	Displays a print dialog box for current window	NONE	frameElement	Gets frame window runs in	Object / null	timeEnd	Ends a timer	NONE
open	Open a new window	Object / null			num		label – timer name	
	url – page to open		length	Gets number of framed windows	num	group	Start an indented message group	NONE
	name – target attribute or window name		outerHeight	Gets browser window height	num		label – group name	
	specs – comma-separated list of items		outerWidth	Gets browser window width	num	groupCollapsed	Start an indented message group, collapsed	NONE
	fullscreen, height, left, location, menubar, width, resizable, scrollbars, status, titlebar, toolbar, top,		innerHeight	Gets viewport height	num		label – group name	
	Close current window	NONE	innerWidth	Gets viewport width	num	groupEnd	Stop a message group	NONE
close	Stop current window from loading	NONE	screenLeft / screenX	Gets x-coordinate of window relative to screen	num		label – group name	
stop	Set focus to current window	NONE	screenTop / screenY	Gets y-coordinate of window relative to screen	num	table	Write a table	NONE
focus	Remove focus from current window	NONE	pageXOffset / scrollX	Gets pixels scrolled relative to upper-left corner	num		data – array of data	
blur	Move window to position	NONE	pageYOffset / scrollY	Gets pixels scrolled relative to upper-left corner	num	clear	columns – array of column names	
moveTo	x, y – coordinates		sessionStorage	Allows key/value pairs to be saved in a session	Object		Clear console	NONE
	Move window to relative position	NONE	localStorage	Allows key/value pairs to be saved locally	Object	Storage	Browser Storage	
moveBy	x, y – coordinates					setItem	Set stored item	string
resizeTo	Resize window to size	NONE	Navigator	Document Browser	bool		key – item name	
	width – in pixels		javaEnabled	Checks if Java is enabled	string		value – item value	
	height – in pixel		appName	Return browser name		getItem	Return stored item	string
resizeBy	Resize window to relative size	NONE	appName	*returns Netscape for modern browsers	string		key – item name	
	width – in pixels		appName	Return browser code name		key	Return stored item at index	string
	height – in pixel		product	*returns Mozilla for modern browsers	string		index – of item to get	
scrollTo	Scroll window to position	NONE	product	Return browser engine / product name		removeItem	Delete stored item	NONE
	x, y – coordinates		userAgent	*returns Gecko for modern browsers	string		key – item name	
scrollBy	Scroll window to relative position	NONE	userAgent	Return browser user-agent header	string	clear	Delete all items	NONE
	x, y – coordinates		appVersion	Return browser version	string	length	Get number of items in Storage	num
addEventListener	Attach event handler to window	NONE	platform	Return browser platform compiler	string	Document	Document Object	
	event – event type		language	Return browser language	string	getElementById	Return element with ID	Object / null
	function – function to call		cookieEnabled	Return browser cookie toggle	bool		id – to find	
	capture – handler type: default = false		onLine	Return browser online status	bool	getElementByTagName	Returns element collection with tag name	Object
removeEventListener	Remove event handler	NONE	geolocation	Return browser Geolocation object	Object		tag – to find	
	event – event type					getElementByClassName	Returns element collection with class name	Object
	function – function to remove						class – to find	
	capture – handler type: default = false					getElementByName	Returns element collection with name	Object
	* if attached twice, must do separately						name – to find	
setTimeout	Create timer to execute function or expression	num: timer id	href	Gets/Sets URL	string	querySelector	Returns first element with matching CSS	Object / null
	function – to execute		origin	Gets URL protocol, hostname, and port	string		selector – to match	
	milliseconds – time to wait		protocol	Gets/Sets URL protocol	string	querySelectorAll	Returns elements with matching CSS	Object / null
	params – function parameters		host	Gets/Sets URL host and port	string		selector – to match	
	*use anon function to allow all browsers		hostname	Gets/Sets URL host	string	hasFocus	Checks if document has focus	bool
clearTimeout	Clear a set timer	NONE	port	Gets/Sets URL port	string	fullscreenEnabled	Checks if fullscreen mode is available	bool
	timerID – timer to clear		pathname	Gets/Sets URL path	string	open	Opens document for writing	NONE
setInterval	Create interval to execute function or expression	num: interval id	search	Gets/Sets URL parameters	string	write	Rewrites an open document	NONE
	function – to execute		hash	Gets/Sets URL anchor	string		expression , ... – output stream	
	milliseconds – time to wait		History	Browser History		writeln	Rewrites an open document with newlines	NONE
	params – function parameters		back	Load previous page	NONE		expression , ... – output stream	
	*use anon function to allow all browsers		forward	Load next page	NONE	close	Close document from writing	NONE
clearInterval	Clear a set interval	NONE	go	Go to a specific page	NONE	createDocumentFragment	Create offscreen node	Node
	intervalID – interval to clear			number – page to load		createElement	Create element node	Node
getComputedStyle	Inspect CSS property values of element	Object	length	Gets number of URLs in history	num		type – element tag name	
	element – to inspect		Screen	Device Screen		createTextNode	Create text node	Node
	pseudoElement – pseudo-class of element		height	Gets total height	num		text – for the node	
matchMedia	Query media rule features from CSS	Object	width	Gets total width	num	createAttribute	Create attribute node	Node
	query – for media rule		availHeight	Gets available height	num		name - attribute	
getSelection	Returns range of user-selected text	Object	availWidth	Gets available width	num	createComment	Create comment node	Node
requestAnimationFrame	Update animation before next repaint		colorDepth / pixelDepth	Gets color depth in bits per pixel	num		text – for the node	
atob	Decode a base64 encoded string	string	Console	Browser Console		normalize	Remove empty text node and join adjacent ones	NONE
	string – to be decoded		log	Writes a message	NONE	adoptNode	Takes and copies a node from another document	Node
btoa	Encode a string to base64	string		message – to write			node – from another document	
	string – to be encoded		info	Write an informational message	NONE	importNode	Import nodes from another document	Node
name	Sets/Gets Window Name	string		message – to write			node – to import	
			warn	Write a warning message	NONE		deep – if true, import child nodes	

createEvent	Create Event object type – of event	Object	hasAttribute	Checks if element has attribute attribute – to check	bool	lastElementChild	Gets element last child element node	Node / null
addEventListener	Attach event handler to document event – event type function – function to call capture – handler type: default = false	NONE	hasAttributes	Check if element has attributes	bool	parentNode	Gets element or node parent node	Node
			setAttribute	Assign attribute value attribute - name value – of attribute	NONE	previousSibling	Gets previous sibling node	Node / null
removeEventListener	Remove event handler event – event type function – function to remove capture – handler type: default = false * if attached twice, must do separately	NONE	getAttribute	Return element attribute name – of attribute	string / null	nextSibling	Gets next sibling node	Node / null
			removeAttribute	Remove element attribute attribute – to delete	NONE	childNodes	Gets child node collection	Object
						firstChild	Gets node first child node	Node / null
doctype	Gets document Doctype object	Object / null	insertAdjacentElement	Insert element into a position position – afterbegin, afterend, beforebegin, beforeend element – to insert	NONE	lastChild	Gets node last child node	Node
documentElement	Gets document element	Object				childElementCount	Gets number of child elements	num
head	Gets document head	Node	insertAdjacentHTML	Insert HTML code at position position – afterbegin, afterend, beforebegin, beforeend element – to insert	NONE	nodeName	Gets node name	string
characterSet	Gets document character encoding	string				nodeType	Gets node type	num
referrer	Gets loading document URL	string	insertAdjacentText	Insert text at position position – afterbegin, afterend, beforebegin, beforeend element – to insert	NONE	nodeValue	Sets/Gets node value	string / null
baseURI	Gets base URI	string				ownerDocument	Gets node owner document	Object
body	Sets/Gets document body content = to overwrite with	Object				namespaceURI	Gets element namespace URI	string / null
images	Gets images collection	Object				tagName	Gets element tag name in uppercase	string
forms	Gets forms collection	Object	remove	Remove element or node	NONE	textContent	Sets/Gets node and its children text	string
links	Gets links collection	Object	contains	Checks if node is a descendant of another node – to check	bool	innerHTML	Sets/Gets element HTML content	string
embeds	Gets embedded collection	Object	hasChildNodes	Check if element has child nodes	bool	innerText	Sets/Gets element text content	string
scripts	Gets scripts collection	Object	appendChild	Appends node to element node – to append	Node	outerHTML	Sets/Gets element HTML code	string
activeElement	Gets focused element	Element	insertBefore	Insert child node before existing child node – to insert child – that exists	Node	outerText	Sets/Gets node text	string
fullscreenElement	Gets fullscreened element	Element	cloneNode	Copies a Node deep – if true, copies child nodes	Node	clientHeight	Gets element visible height, including padding	num
designMode	Sets/Gets contentEditable attribute = on off	string	removeChild	Remove element child node – to delete	Node / null	clientWidth	Gets element visible width, including padding	num
defaultView	Gets Window Object	Object	replaceChild	Replace element child with new node new – to insert old – to remove	Node	scrollHeight	Gets element height including padding	num
domain	Gets document location domain	string / null				scrollWidth	Gets element width including padding	num
documentURI	Sets/Gets document location	Object / null	setAttributeNode	Replace element attribute nodes node – to add	Object	offsetHeight	Gets element visible height, excluding margin	num
URL	Gets document full URL	string	getAttributeNode	Return element attribute node name – of attribute	Object / null	offsetWidth	Gets element visible width, excluding margin	num
lastModified	Gets document datetime last modified	string	removeAttributeNode	Remove element attribute node node – to delete	Object	clientLeft	Gets element left border width	num
readyState	Gets document loading status	string	isEqualNode	Check if two nodes are equal node – to compare	bool	clientTop	Gets element top border width	num
implementation	Gets document DOM implementation	Object	isSameNode	Check if two nodes are the same node – to compare	bool	scrollLeft	Sets/Gets element horizontal scroll displacement	num
cookie	Sets a cookie and Gets all cookies cookie – expires, max-age, path, domain, secure	string	compareDocument	Compares node position node – to compare	num	scrollTop	Sets/Gets element vertical scroll displacement	num
			normalize	Remove empty text node and join adjacent ones	NONE	offsetLeft	Gets element left position	num
Element	HTML Element		attributes	Gets attribute collection	Object	offsetTop	Gets element top position	num
getElementsByClassName	Return element collection with class class – to find	Object	id	Sets/Gets element id	string	Attribute	Element Attribute; NamedNodeMap	
getElementsByName	Return element collection with tag tag – to find	Object	className	Sets/Gets element class	string	length	Return number of attributes	num
querySelector	Return element first child with CSS selector selector – to find	Element / null	classList	Gets CSS classnames	Object	item	Return attribute by index index – to find	Node / null
querySelectorAll	Returns all element children with CSS selector selector – to find	Object	style	Gets element style attribute value	Object	getNamedItem	Return attribute by name name – to find	Node
focus	Gives element focus	NONE	title	Sets/Gets title attribute	string	setNamedItem	Add/Replace attribute node node – to add	Node / null
blur	Remove element focus	NONE	lang	Sets/Gets lang attribute	string	removeNamedItem	Remove attribute node node – to delete	Node
requestFullscreen	Gives element fullscreen	NONE	dir	Sets/Gets dir attribute	string			
exitFullscreen	Remove element fullscreen	NONE	tabIndex	Sets/Gets tabindex attribute	num	name	Gets attribute name	string
matches	Check if element matches CSS selector selector – to match	bool	accessKey	Sets/Gets accesskey attribute	string	value	Sets/Gets attribute value	string
closest	Searches up for closest CSS selector selector – to find	Object / null	contentEditable	Sets/Gets contenteditable attribute	string	specified	Checks if attribute specified; false: error	bool
getBoundingClientRect	Returns element size and position relative to viewport	Object	isContentEditable	Checks if contenteditable is set	bool	Style	Element Style	
click	Simulate click event	NONE	offsetParent	Gets element nearest ancestor	Node / null	display	Sets/Gets display	string
addEventListener	Attach event handler to element event – event type function – function to call capture – handler type: default = false * if attached twice, must do separately	NONE	parentElement	Gets element parent element	Element	visibility	Sets/Gets visibility	string
			previousElementSibling	Gets previous sibling element	Element / null	opacity	Sets/Gets opacity	string
removeEventListener	Remove event handler event – event type function – function to remove capture – handler type: default = false * if attached twice, must do separately	NONE	nextElementSibling	Gets next sibling element	Element / null	filter	Sets/Gets filter	string
scrollIntoView	Scrolls element to visible area align – if true, align visible area top; false: bottom	NONE	children	Gets child collection	Object	position	Sets/Gets position	string
isDefaultNamespace	Check if element namespace is default URI – to check	bool	firstElementChild	Gets element first child element node	Node / null	top	Sets/Gets top	string
						right	Sets/Gets right	string
						bottom	Sets/Gets bottom	string
						left	Sets/Gets left	string
						zIndex	Sets/Gets z-index	string
						clip	Sets/Gets clip-path	string
						overflow	Sets/Gets overflow	string
							*includes X, Y	
						cssFloat	Sets/Gets float	string
						clear	Sets/Gets clear	string
						boxSizing	Sets/Gets box-sizing	string
						boxShadow	Sets/Gets box-shadow	string
						boxDecorationBreak	Sets/Gets box-decoration-break	string
						flex	Sets/Gets flex	string
							*includes Grow, Shrink, Basis	
						flexFlow	Sets/Gets flex-flow	string
							*includes flexDirection, flexWrap	

order	Sets/Gets order	string		*includes Property, Duration, TimingFunction, Delay		eval	value – to check Execute/Evaluate an argument (DO NOT USE) ---	
justifyContent	Sets/Gets justify-content	string						
alignItems	Sets/Gets align-items	string	animation	Sets/Gets animation	string			
alignContent	Sets/Gets align-content	string		*includes Name, Duration, TimingFunction, Delay, IterationCount, Direction, FillMode, PlayState		Error	JavaScript Errors	
alignSelf	Sets/Gets align-self	string				SyntaxError	Code syntax error	
background	Sets/Gets background	string				TypeError	Variable type error	
	*includes Color, Image, Position, Size, Repeat, Origin, Clip, Attachment		imageOrientation	Sets/Gets image-orientation		ReferenceError	Illegal reference	
isolation	Sets/Gets isolation	string	objectFit	Sets/Gets object-fit	string	RangeError	Number out of range	
outline	Sets/Gets outline	string	objectPosition	Sets/Gets object-position	string	URIError	encodeURI() error	
	*includes Width, Style Color Offset		caretColor	Sets/Gets caret-color	string	name	Gets error name	string
margin	Sets/Gets margin	string	cursor	Sets/Gets cursor	string	message	Sets/Gets error message	string
	*includes top, right, bottom, left		tabSize	Sets/Gets tab-size	string	Statements	JavaScript Instructions	
border	Sets/Gets border	string	pageBreakBefore	Sets/Gets page-break-before	string	var	Declare variable in global scope	
	*includes Top, Right, Bottom, Left		pageBreakInside	Sets/Gets page-break-inside	string	let	Declare variable in block scope	
borderImage	Sets/Gets border-image	string	pageBreakAfter	Sets/Gets page-break-after	string	const	Declare variable with constant reference	
	*includes Width, Style, Color, {Corner}Radius		orphans	Sets/Gets orphans	string	function	Declare function	
padding	Sets/Gets padding	string	widows	Sets/Gets widows	string	return	Stop function and return value	
	*includes Source, Slice, Width, Outset, Repeat		scrollBehavior	Sets/Gets scroll-behavior	string	class	Declare object template	
height	Sets/Gets height	string	Events	Element Event Listener		for	Declare for loop	
	*includes top, right, bottom, left		focusin	Element focused		for ... of	Iterate group values	
width	Sets/Gets width	string	focusout	Element blurred		for ... in	Iterate object properties	
	*includes min, max		fullscreenchange	Element fullscreened		while	Declare while loop	
color	Sets/Gets color	string	fullscreenerror	Element cannot be fullscreened		do ... while	Declare while loop that runs at least once	
verticalAlign	Sets/Gets vertical-align	string	mouseenter	Mouse pointer enters element		if ... else	Declare conditional statement	
textAlign	Sets/Gets text-align	string	mouseleave	Mouse pointer leaves element		switch	Declare switch statement	
textAlignLast	Sets/Gets text-align-last	string	touchstart	Touch pointer pressed		break	Break loop	
direction	Sets/Gets direction	string	touchmove	Touch pointer moved		continue	Break one iteration and continue to rest	
unicodeBidi	Sets/Gets unicode-bidi	string	touchend	Touch pointer released		try ... catch ... finally	Declare error handling	
textDecoration	Sets/Gets text-decoration	string	touchcancel	Touch interrupted		throw	Create custom error	
	*includes Line, Color, Style		animationStart	Animation started		debugger	Stop JavaScript execution and call debugger	
textTransform	Sets/Gets text-transform	string	animationIteration	Animation repeated		Operator	Javascript Operators	
textIndent	Sets/Gets text-indent	string	animationEnd	Animation ended		Arithmetic	Add (+), Sub (-), Mult (*), Div (/), Mod (%), Exp(**), Incr (++), Decr (--)	
textShadow	Sets/Gets text-shadow	string	transitionend	CSS transition completed		Assignment	=, +=, -=, *=, /=, %=, :	
textJustify	Sets/Gets text-justify	string	open	Event source connection opened		Comparison	==, ===, !=, !==, >, <, >=, <=	
textOverflow	Sets/Gets text-overflow	string	show	<menu> shown as context menu		Conditional / Ternary	cond ? x : y	
lineHeight	Sets/Gets line-height	string	preventDefault	Cancel event, if possible	NONE	Logical	&&, , !	
whiteSpace	Sets/Gets white-space	string	stopPropagation	Stop event parent propagation	NONE	Bitwise	AND (&), OR (), Not (~), XOR (^), Left shift (<<), Right shift (>>), Unsigned Right Shift (>>>)	
letterSpacing	Sets/Gets letter-spacing	string	stopImmediatePropagation	Stop all event propagation	NONE	Nullish Coalescing (??)	Return x if true, y if false (x ?? y)	
wordSpacing	Sets/Gets word-spacing	string	composedPath	Return event path	Array	Optional Chaining (?.)	Return undefined if nullish object	
wordBreak	Sets/Gets word-break	string	type	Get event type	string	typeof	Return type of variable, object, function	
wordWrap	Sets/Gets word-wrap	string	isTrusted	Check if user-invoked event, or script	bool	delete	Delete property from object	
userSelect	Sets/Gets user-select	string	cancelable	Check if event is cancellable	bool	spread (...)	Expand iterable into more elements	
font	Sets/Gets font	string	defaultPrevented	Checks if preventDefault was called	bool	in	Check if property is in object	bool
	*includes Style, Variant, Weight, Size, Family, SizeAdjust, Stretch		bubbles	Check if event bubbles up	bool	instanceOf	Check if object is instance of an object	bool
content	Sets/Gets content	string	composed	Check if event propagate across shadow DOM	bool	void	Evaluate and return undefined	
resize	Sets/Gets resize	string	target	Get event where event occurred	Object	yield	Pause/Resume generator function	
listStyle	Sets/Gets list-style	string	currentTarget	Get element with triggered event listener	Object	Boolean	JavaScript Boolean Object	
	*includes Type, Position, Image		timeStamp	Get time event triggered since document loaded	num	valueOf	Return primitive value	bool
hangingPunctuation	Sets/Gets hanging-punctuation	string	eventPhase	Gets event flow current phase	num	toString	Converts to string	string
hyphens	Sets/Gets hyphens	string	Global	JavaScript Globals (Window)		constructor	Gets function that created prototype	Object
quotes	Sets/Gets quotes	string	Infinity	Represent infinity		prototype	Allows new properties and methods	X USE
counterReset	Sets/Gets counter-reset	string	NaN	Represent non-legal number		Number	JavaScript Number Object	
counterIncrement	Sets/Gets counter-increment	string	undefined	Represent unassigned/undeclared value		MIN_VALUE	Smallest possible number (5e-324)	
columns	Sets/Gets columns	string	decodeURI	Decode URI	string	MAX_VALUE	Largest possible number (1.7976931348623157e+308)	
	*includes Width, Count, Span, Fill, Gap		decodeURIComponent	Decode URI component	string	MIN_SAFE_INTEGER	Smallest safe integer (-2e53 - 1) = -9007199254740991)	
columnRule	Sets/Gets column-rule	string	encodeURIComponent	Encode URI	string	MAX_SAFE_INTEGER	Largest safe integer (2e53 - 1 = 9007199254740991)	
	*includes Width, Style, Color		String	Convert value to string	string	EPSILON	1 minus smallest floating point number > 1 (2.220446049250313e-16)	
borderCollapse	Sets/Gets border-collapse	string	Number	Convert value to number	num / NaN	NEGATIVE_INFINITY	Negative Infinity	
borderSpacing	Sets/Gets border-spacing	string	parseInt	Get first integer parsed in string	num / NaN	POSITIVE_INFINITY	Positive Infinity	
tableLayout	Sets/Gets table-layout	string	parseFloat	Get first number parsed in string	num	NaN	Not a Number	
captionSide	Sets/Gets caption-side	string	isFinite	Check if value is finite	bool	isInteger	Checks if number is integer	bool
emptyCells	Sets/Gets empty-cells	string	isNaN	Check if value is not a number	bool	isSafeInteger	Checks if number is safe integer	bool
transform	Sets/Gets transform	string				isFinite	Checks if number is not NaN or Infinite	bool
transformOrigin	Sets/Gets transform-origin	string					value – to check	
transformStyle	Sets/Gets transform-style	string					value – to check	
perspective	Sets/Gets perspective	string					Checks if number is not NaN or Infinite	bool
	*includes Origin						value – to check	
backfaceVisibility	Sets/Gets backface-visibility	string					Checks if number is NaN	bool
transition	Sets/Gets transition	string						

parseInt	value – to check Get first integer parsed in string string – to parse radix – number system	num / NaN	charCodeAt	Return character UTF-16 Unicode at index index – to check	num	keys	thisVal – for map function Return array keys	Object
parseFloat	Get first number parsed in string string – to parse	num	codePointAt	Return character Unicode at index index – to check	num	entries	Return array key/value pairs	Object
toFixed	Format number with rounded decimal number – of decimal places	string	fromCharCode	Convert Unicode to character codes – to convert	string	at	Return element at index index – of element	value
toPrecision	Format number to length number – of digits	string	toLowerCase	Format string to all lowercase	string	indexOf	Return index of first instance of value value – to find start – position	num
toExponential	Format number to exponential notation number – of digits	string	toUpperCase	Format string to all uppercase	string	find	Return first matching element function – to run currentValue , index , array	value
toString	Convert number to string radix – number system	string	toLocaleLowerCase	Format string to all lowercase in current locale	string	findIndex	thisValue – passed to the function Return first matching element index function – to run currentValue , index , array	num
toLocaleString	Format to string with local language locale – language to format option – currency, currencyDisplay, style localeMatcher, maximumFractionDigits, maximumSignificantDigits, useGrouping, minimumFractionDigits, minimumIntegerDigits, minimumSignificantDigits	string	toLocaleUpperCase	Format string to all uppercase in current locale	string	lastIndexOf	thisValue – passed to the function Return index of last instance of value value – to find start – position	num
valueOf	Return primitive value	number	toString	Format string to string	string	every	Checks if every element returns true function – to run currentValue , index , array	bool
constructor	Gets function that created prototype	Object	valueOf	Return primitive value	string	some	thisValue – passed to the function Check if any element returns true function – to run currentValue , index , array	bool
prototype	Allows new properties and methods	X USE	length	Get length of string	num	includes	thisValue – passed to the function Check if array contains a value value – to find start – position	bool
String	JavaScript String Object		constructor	Gets function that created prototype	Object	unshift	Add element to beginning of array elements – to add	num
concat	Join strings together strings – to join	string	prototype	Allows new properties and methods	X USE	shift	Remove first element	value
repeat	Repeat string a number of times number – of times to repeat	string	RegExp	JavaScript Regular Expressions /pattern/mod		push	Add element to end of array element – to add	num
split	Split string into substrings separator – string/regex to use limit – number of splits	Array	g	Modifier to find all matches		pop	Remove last element	value
slice	Extract substring start - position end – position	string	i	Modifier to find case-insensitive matches		splice	Add and remove elements index – to start num – of elements to remove	Array
substr	Extract substring from index start – position length – number of characters	string	m	Modifier to find multiline matches		slice	Extract elements from array start - position end – position	Array
substring	Extract substring from indices start - position end – position	string	[alpha]	Find characters between brackets		sort	Overwrite element order to ascending function – to define order	Array
replace	Replace a substring in string value – regex or string to find new – value to replace with	string	[digit]	Find digits between brackets		reverse	Overwrite element order in reverse	Array
replaceAll	Replace all substring in string value – regex or string to find new – value to replace with	string	[^item]	Find item not between brackets		reduce	Call a reducer function for elements function – to run total , currentValue , currentindex , array	value
trim	Remove whitespace around string	string	(x y)	Find alternatives specified		reduceRight	value – initial Call a reducer function for elements right to left function – to run total , currentValue , currentindex , array	value
trimStart	Remove whitespace at string start	string	.	Find single character except newline or line terminator		forEach	value – initial Call function for each element function – to run currentValue , index , array	undefined
trimEnd	Remove whitespace at string end	string	\W \w	Find (non) word character		map	thisValue – passed to the function Apply element to function into new array function – to run currentValue , index , array	Array
match	Match against a regular expression regex – to match	Array / null	\D \d	Find (non) digit character		copyWithin	thisValue – passed to the function Copy elements to another position target – index to copy to start – position end – position	Array
search	Return index of first match of regex regex – to search (string converted to regex)	num	\S \s	Find (non) whitespace character		fill	Overwrite elements with value value – to fill start - position end – position	Array
indexOf	Return index of first instance of substring value – to search for start – position	num	\B \b	Find match (not) at beginning/end of word		filter	Filter elements into new array function – to run currentValue , index , array	Array
lastIndexOf	Return index of last instance of substring value – to search for start – position	num	\0	Find NULL character				
localeCompare	Compare two strings in current locale string – to compare	num	\n	Find newline character				
includes	Check if string contains substrings value – to search for start – position	bool	\f	Find form feed character				
startsWith	Checks if string starts with substring value – to search for start – position	bool	\r	Find carriage return character				
endsWith	Check if string ends in substring value – to search for length – of string to search	bool	\t	Find tab character				
charAt	Return character at index index – to check	string	\v	Find vertical tab character				
			\xxx	Find octal character matching code				
			\xdd	Find hexadecimal character matching code				
			\udddd	Find Unicode character matching hexadecimal				
			n+	Match string with at least one <i>n</i>				
			n*	Match string with zero or more <i>n</i>				
			n?	Match string with zero or one <i>n</i>				
			n{X}	Match string with sequence of <i>X n</i> 's				
			n{X,Y}	Match string with sequence of <i>X</i> to <i>Y n</i> 's				
			n{X,}	Match string with sequence of at least <i>X n</i> 's				
			n\$	Match string with <i>n</i> at the end				
			^n	Match string with <i>n</i> at the beginning				
			?=n	Match string followed by <i>n</i>				
			?!n	Match string not followed by <i>n</i>				
			exec	Find match for string string – to search	Array			
			test	Check for a match in a string string – to search	bool			
			toString	Format RegExp as string	string			
			source	Get RegExp pattern	string			
			global	Get if global modifier is set	bool			
			ignoreCase	Get if case modifier is set	bool			
			multiline	Get if multiline modifier is set	bool			
			lastIndex	Get index of character after last match	num			
			constructor	Gets function that created prototype	Object			
			Array	JavaScript Array Object				
			isArray	Checks if object is array	bool			
			concat	Join two arrays arrays – to join	Array			
			flat	Join sub-array elements depth – nested array should be flattened	Array			
			flatMap	Map array elements into flat array function – to run currentValue , index , array	Array			
			from	Return array made from object object – to convert map – function for elements	Array			

join	<i>thisValue</i> – passed to the function Convert array to string <i>separator</i> – to use	string	setMinutes	<i>hour, minute, second, millisecond</i> Assign minute	num	fround	Return nearest 32-bit single-precision float of x	num
toString	Format array to string	string	setSeconds	<i>minute, second, millisecond</i> Assign seconds	num	ceil	Return rounded up value of x	num
valueOf	Return primitive value	Array	setMilliseconds	<i>second, millisecond</i> Assign millisecond	num	floor	Return rounded down value of x	num
length	Get length of array	num	setUTCFullYear	<i>millisecond</i> Assign year in UTC	num	sign	Return sign of x	num
constructor	Gets function that created prototype	Object	setUTCMonth	<i>year, month, day</i> Assign month of the year in UTC	num	abs	Return absolute value of x	num
prototype	Allows new properties and methods	X USE	setUTCDate	<i>month, day</i> Assign day of the month in UTC	num	sin	Return sine of radian x	num
Typed Array	JavaScript Binary Data Buffer		setUTCHours	<i>Day</i> Assign hour in UTC	num	sinh	Return hyperbolic sine of x	num
Int8Array	Signed integer (byte) -127/128		setUTCMinutes	<i>hour, minute, second, millisecond</i> Assign minute in UTC	num	asin	Return arcsine in radians of x	num
Int16Array	Short integer -32768/32767		setUTCSeconds	<i>minute, second, millisecond</i> Assign seconds in UTC	num	asinh	Return hyperbolic arcsine of x	num
Int32Array	Signed long integer -2e31/2e31-1		setUTCMilliseconds	<i>second, millisecond</i> Assign year in UTC	num	cos	Return cosine of radian x	num
Uint8Array	Unsigned integer (octet) 0/255		toDate	<i>year, month, day</i> Convert date portion to string	string	cosh	Return hyperbolic cosine of x	num
Uint8ClampedArray	Unsigned integer (octet), defaulting 0 or 255 0/255		toISOString	Convert time portion to string	string	acos	Return arccosine in radians of x	num
Uint16Array	Unsigned short integer 0/65535		toTimeString	Convert to string	string	acosh	Return hyperbolic arccosine of x	num
Uint32Array	Unsigned long integer 0/2e32		toLocaleDateString	Convert date portion to string in locale	string	tan	Return tangent of radian x	num
Float32Array	Float (7 significant figures) 1.2x10e-38 / 3.4x10e38		toLocaleTimeString	Convert time portion to string in locale	string	tanh	Return hyperbolic tangent of x	num
Float64Array	Double (14 significant figures) 5x10e-324 / 1.8x10e308		toLocaleString	Convert to string in locale	string	atan	Return arctangent in radians of x	num
BigInt64Array	Big signed integer -2e63 / 2e63 – 1			<i>locale</i> – to format <i>options</i> – dateStyle, timeStyle, localeMatcher, timeZone, hour12, hourCycle, formatMatcher, weekday, year, month, day, hour, minute, second, timeZoneName		atanh	Return hyperbolic arctangent of x	num
BigUint64Array	Big unsigned integer 0 / 2e64		toUTCString	Convert to string in UTC	string	atan2	Return arctangent of quotient of (x,y)	num
of	Create from array <i>array</i> – to use	Object	toISOString	Convert to string in ISO	string	sqrt	Return square root of x	num
fill	Overwrite elements with value <i>value</i> – to fill <i>start</i> – position <i>end</i> – position	Object	toJSON	Convert to string in JSON	string	cbrt	Return Cubic root of x	num
find	Return first matching element <i>function</i> – to run <i>currentValue, index, array</i>	value	valueOf	Return primitive value	Date	pow	Return value of x to the power of y	num
some	Check if any element returns true <i>function</i> – to run <i>currentValue, index, array</i> <i>thisValue</i> – passed to the function	bool	constructor	Gets function that created prototype	Object	exp	Return value of E^x	num
constructor.name	Get typed array name	string	prototype	Allows new properties and methods	X USE	expm1	Return value of E^x - 1	num
BYTES_PER_ELEMENT	Get number of bytes used to store element	num	Object	JavaScript Objects		log	Return natural log of x	num
Date	JavaScript Date Object		.keys	Return keys	Array	log2	Return base-2 log of x	num
.now	Return milliseconds since January 1, 1970	num	toString	Format object as string	string	log10	Return base-10 log of x	num
getTime	Return time between origin and date	num	valueOf	Return primitive value	Object	log1p	Return value of natural log of 1 plus x	num
.UTC	Return time between origin and date in UTC	num	constructor	Gets function that created prototype	Object	clz32	Return count of leading zeros of 32-bit x	num
setTime	Assign date based on milliseconds since origin <i>milliseconds</i>	num	JSON	JavaScript Object Notation {key:value}		Geolocation	JavaScript Geolocation API	
parse	Convert string into milliseconds since origin <i>string</i> – to convert	num	parse	Parse string into Object <i>string</i> – to parse <i>function</i> – reviver to transform result	Object	getCurrentPosition	Return current device location	
getTimezoneOffset	Return local time difference from UTC	num	stringify	Format Object into JSON string <i>object</i> – to format <i>replacer</i> – function or array to transform result	string	watchPosition	Set a watcher and return watchID	
getFullYear	Return year	num		<i>space</i> – string or number for number of whitespace characters		clearWatch	Unregister watchPosition watchID	
getMonth	Return month of the year	num	Class	JavaScript Classes		coordinates	Get device position and altitude	
getDate	Return day of the month	num	extends	Inherit a class		position	Get device position	
getHours	Return hour	num	super	Refer to parent class		positionError	Get device geolocation error	
getMinutes	Return minute	num	static	Define static method		positionOptions	Set geolocation properties	
getSeconds	Return seconds	num	constructor	Method to create and initialize objects		HTMLCollection	Array-like live collection of HTML elements	
getMilliseconds	Return millisecond	num	Math	JavaScript Mathematical Tasks		item	Return element at index <i>index</i> – to view	Element
getDay	Return day of the week	num	PI	Pi (3.14)		namedItem	Return element with name or id <i>value</i> – name or id of element	Element
getUTCFullYear	Return year in UTC	num	SQRT1_2	Square root of 1/2 (0.707)		length	Get element count	num
getUTCMonth	Return month of the year in UTC	num	SQRT2	Square root of 2 (1.414)		NodeList	Array-like static collection of Nodes	
getUTCDate	Return day of the month in UTC	num	E	Eulers number (2.718)		entries	Return key/value pairs	Object
getUTCHours	Return hour in UTC	num	LOG2E	Base-2 log of E (1.442)		keys	Return keys	Object
getUTCMinutes	Return minute in UTC	num	LOG10E	Base-10 log of E (0.434)		values	Return values	Object
getUTCSeconds	Return seconds in UTC	num	LN2	Natural log of 2 (0.693)		item	Return node at index <i>index</i> – to view	Node
getUTCMilliseconds	Return millisecond in UTC	num	LN10	Natural log of 10 (2.302)		forEach	Execute callback function for each node <i>function</i> – to run <i>currentValue, index, array</i> <i>thisValue</i> – passed to the function	NONE
getUTCDate	Return day of the week in UTC	num	random	Return random number from [0,1)	num	length	Get node count	Num
setFullYear	Assign year <i>year, month, day</i>	num	min	Return minimum in x1, x2, ..., xN	num	MediaQueryList	Media Device Query information	
setMonth	Assign month of the year <i>month, day</i>	num	max	Return maximum in x1, x2, ..., xN	num	addListener	Create event handler when media query result changes	NONE
setDate	Assign day of the month <i>day</i>	num	trunc	Return integer of x	num	removeListener	Remove event handler from media query	NONE
setHours	Assign hour	num	round	Return rounded off value of x	num	media	Get media query list	string
						matches	Check if document matches query	bool

UIEvent	onload, onabort, onerror, onbeforeunload, onunload, onresize, onscroll, onselect *inherited by Input, Keyboard, Mouse, Wheel, Touch, and FocusEvent	
detail	Get event details, usually click count	num
view	Get event Window object	Object
InputEvent	oninput	
getTargetRanges	Return target ranges affected by input	Array
inputType	Return insertion or deletion	string
data	Return inserted characters	string
dataTransfer	Return inserted data information	Object
isComposing	Check if event is in composing state	bool
KeyboardEvent	onkeypress, onkeydown, onkeyup	
key	Get key	string
code	Get key code	string
location	Get key location	num
repeat	Check if key is held down	bool
shiftKey	Checks if Shift was pressed	bool
ctrlKey	Checks if Ctrl was pressed	bool
altKey	Checks if Alt was pressed	bool
metaKey	Checks if Meta was pressed	bool
isComposing	Check if event is in composing state	bool
MouseEvent	onclick, ondblclick, onmousedown, onmouseup, onmouseleave, onmouseover, oncontextmenu	
region	Get canvas hit region id	string
relatedTarget	Get triggering element	Element
button	Get button pressed	num
buttons	Get buttons pressed	num
shiftKey	Checks if Shift was pressed	bool
ctrlKey	Checks if Ctrl was pressed	bool
altKey	Checks if Alt was pressed	bool
metaKey	Checks if Meta was pressed	bool
screenX, screenY	Get screen coordinate	num
clientX, clientY	Get window client coordinate	num
pageX, pageY	Get document relative coordinate	num
offsetX, offsetY	Get element relative coordinate	num
movementX, movementY	Get relative coordinate from last mousemove	num
WheelEvent	onwheel *inherits MouseEvent	
deltaMode	Get measurement unit	num
deltaX, deltaY, deltaZ	Get scroll direction	Double
TouchEvent	ontouchstart, ontouchmove, ontouchmove, ontouchcancel	
touches	Get each finger Touch	Array
targetTouches	Get each currently touching finger Touch	Array
changedTouches	Get each finger Touch that has changed since last event	Array
shiftKey	Checks if Shift was pressed	bool
ctrlKey	Checks if Ctrl was pressed	bool
altKey	Checks if Alt was pressed	bool
metaKey	Checks if Meta was pressed	bool
FocusEvent	onfocus, onfocusin, onfocusout, onblur	
relatedTarget	Get triggering event	Element
DragEvent	ondrag, ondragstart, ondragend, ondrageneter, ondragover, ondragleave, ondrop *inherits MouseEvent	
dataTransfer	Get dragged/dropped data	Object
ClipboardEvent	oncopy, oncut, onpaste	
clipboardData	Get clipboarded data	object
PopStateEvent	onpopstate	
state	Get History entries	Object
PageTransitionEvent	onpageshow, onpagehide	
persisted	Check if cached by browser	bool
HashChangeEvent	onhashchange	
oldURL	Get document URL before change	string
newURL	Get document URL after change	string
ProgressEvent	onloadstart, onerror	
loaded	Get how much loaded	num
total	Get how much total to load	num
lengthComputable	Check if progress can be computed	bool
TransitionEvent	ontransitionend	

propertyName	Get transition name	string
elapsedTime	Get transition runtime in seconds	num
pseudoElement	Get transition pseudo-element	string
AnimationEvent	onanimationstart, onanimationiteration, onanimationend	
animationName	Get animation name	string
elapsedTime	Get transition runtime in seconds	num
pseudoElement	Get transition pseudo-element	string
StorageEvent	onstorage	
url	Get document changed item location	string
storageArea	Get Storage Object	Object
key	Get item key	string
oldValue	Get item old value	string
newValue	Get item new value	string
JavaScript / ECMAScript = lower camelCase		
Place scripts at the bottom of body to improve display speed, since interpretation slows it down		
External scripts speeds up loading if cached		
Comments = // or /* */		
\$ = main func in JS lib; _ = private var; a		
String, number, bigint, Boolean, undefined, null, symbol, object [object, array, date]		
Object comparisons always return false		
Str[0] = 'A' does not work		
Templates uses ``, interpolate with \${...} -> var, expr		
Numbers are always 64-bit floating points		
use literals over new keyword since it produces errors and lengthens execution time		
compare function - function(a, b){return a - b}; neg = a < b, pos = a > b, 0 = no change		
function(){return 0.5 - Math.random()} = random order		
Fisher Yates Method: random order shuffle, more accurate		
<pre> for (let i = points.length - 1; i > 0; i--) { let j = Math.floor(Math.random() * (i+1)); let k = points[i]; points[i] = points[j]; points[j] = k; } </pre>		
Math.max.apply(null, arr) = find highest number in array, same with min OR homemade:		
<pre> function myArrayMax(arr) { let len = arr.length; let max = -Infinity; while (len--) { if (arr[len] > max) { max = arr[len]; } } return max; } </pre>		
Compare object string property:		
<pre> cars.sort(function(a, b){ let x = a.type.toLowerCase(); let y = b.type.toLowerCase(); if (x < y) {return -1;} if (x > y) {return 1;} return 0; }); </pre>		
After ES2019, can no longer use unstable sort, must use stable sorts with sort method		
<pre> function getRandomInteger(min, max) { [min, max] = [min, max].sort(function(a, b){ return Math.floor(Math.random() * (b - a)) + a; }); return Math.floor(Math.random() * (max - min + 1)) + min; } </pre>		
Use for, for...of, or Array.foreach for arrays when order is important		
Labels? Can use break and continue		
Iterables: arrays, string, sets, maps		
myDate.constructor === Date and for Array to check if object type		
Hoisting only takes the declaration, not the initialization		
"use strict" enables strict mode – cant delete variables or functions, no undeclared vars, no dupe		
params, no octal num literals, no octal escape chars, no writing to read-only or get-only prop, no		
deleting undeletable props, no eval on vars, cant use "arguments" as varName, cant use with,		
eval cant create vars in scope it was called, this only refers to object that called function, future		
JS version keywords cant be used as varName		
Arrow function: name = (params) => {code} replaces name = function(params) {code}		
Can ignore () if only one param; this always refers to object that defined arrow func		
Class always needs a constructor() method		
Modules allows code breakup to separate files; reqs script type="module"		
JSON usually for web server data		

Use 2 indents, space around operators, camelCase, { next to group name, <80 chars per line,
lowercase filenames, avoid global vars,
use \ to break strings
with slows performance and clutters scopes
must use object[prop] in loop
name constructor functions with uppercase first letter
functions can be self-invoked by adding () after declaration
arguments.length shows number of args received when function invoked
rest parameter ... allows indefinite number of arguments
if a function has too many args, can be reached via arg object
objects are passed by reference, args are passed by values
In an object method, this refers to the object.
Alone, this refers to the global object.
In a function, this refers to the global object.
In a function, in strict mode, this is undefined.
In an event, this refers to the element that received the event.
Methods like call(), apply(), and bind() can refer this to any object.
Call() invokes method with owner as arg
Apply() similar to call, but takes args as an array
Bind() borrows a method from another object
Function closures can access parent functions after it has been closed
Classes are templates for objects
Classes always need a constructor, and aren't hoisted
Get and set can be used to create functions in classes
Use _ in constructor, name in get/set
Can only use static on classes, not objects
Callback functions are passed through arguments, usually for async funcs
Use promises instead of callbacks
Promise object has two props: state {pending, fulfilled, rejected} and
result {undefined, value, error}
.then uses a promise
Async before function returns a promise
Await can only be used in async
DOM Animation position container be relative, item be absolute
When passing params into addEventListener, use anonymous func
Event bubbling = innermost first, capturing = outermost first
To add new elem: create elem, append text node, append to existing node
similar when editing, removing
Web Form API: checkValidity(), setCustomValidity()
Props: validity, validationMessage, willValidate
validity prop contains a lot of properties, re-look
Worker API: create worker file, worker object, onmessage work
Fetch API: fetches http requests
Geolocation API: only works in https
Review XML and AJAX
JSON: {"key":val} : MIME = application/json with .json ext
Allowed: string, num, object, array, bool; not: func, date, undefined
Parse 2nd arg = reviver = func that checks each prop
In for-loop, use dot for key, bracket for value
Use window.location = "demo_json.php?x=" + myJSON; to send
https://www.w3schools.com/js/tryit.asp?filename=tryjson_html_table
JSONP uses <script> instead of XML to avoid cross-domain issues
Server file wraps result in func call; client uses func with same name
create script tag, set src, then append instead of statically creating one
JS Libs for graphs: plotly.js, chart.js, google chart
<script src="https://cdn.plot.ly/plotly-latest.min.js"></script>
<script src="https://cdnjs.cloudflare.com/ajax/libs/Chart.js/2.9.4/Chart.js">
<script src="https://www.gstatic.com/charts/loader.js"></script>
<script>
google.charts.load('current',{packages:['corechart']});
google.charts.setOnLoadCallback(drawChart);
// Your Function
</script>