Curso JavaScript 6.0

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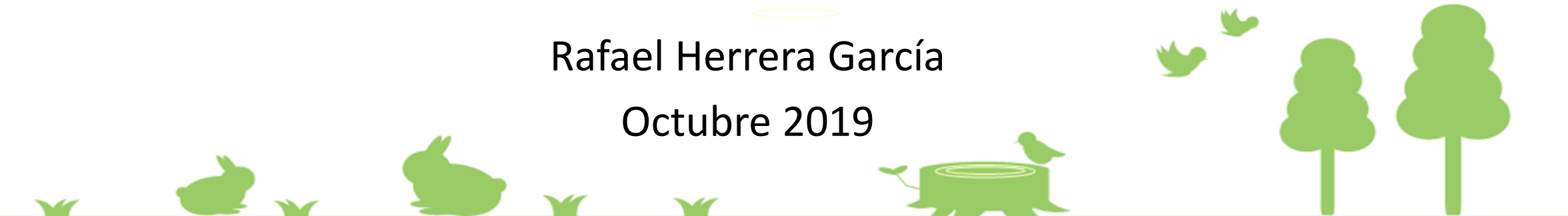
JavaScript and the DOM

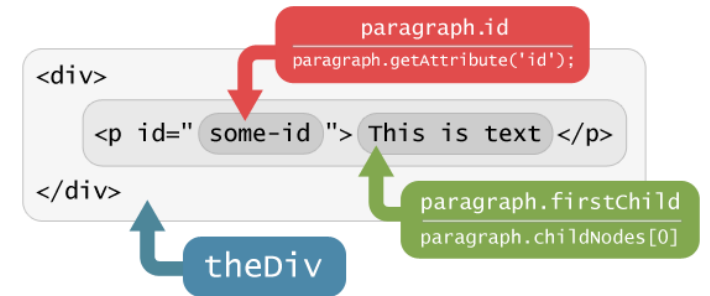
MERKLE | RKG

```
var theDiv = document.getElementsByTagName('div')[0];
var paragraph = theDiv.getElementById('some-id');
```


paragraph.id
paragraph.getAttribute('id');

```
<div>
    <p id=" some-id "> This is text </p>
</div>
```

paragraph.firstChild
paragraph.childNodes[0]
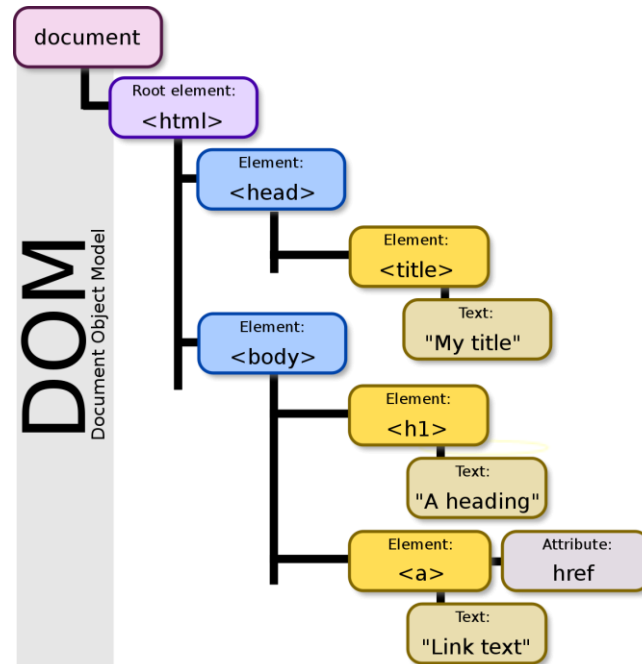
theDiv

JS

WEB DEVELOPMENT 101

DOM Manipulation

Tema 3

Document Object Model (DOM)

Introducción a DOM

- DOM es un modelo que permite manipular mediante Javascript un documento de hipertexto (HTML).

Introducción a DOM

- El W3C define como un estándar a DOM para acceder a un documento.
- El W3C separa en tres categorías
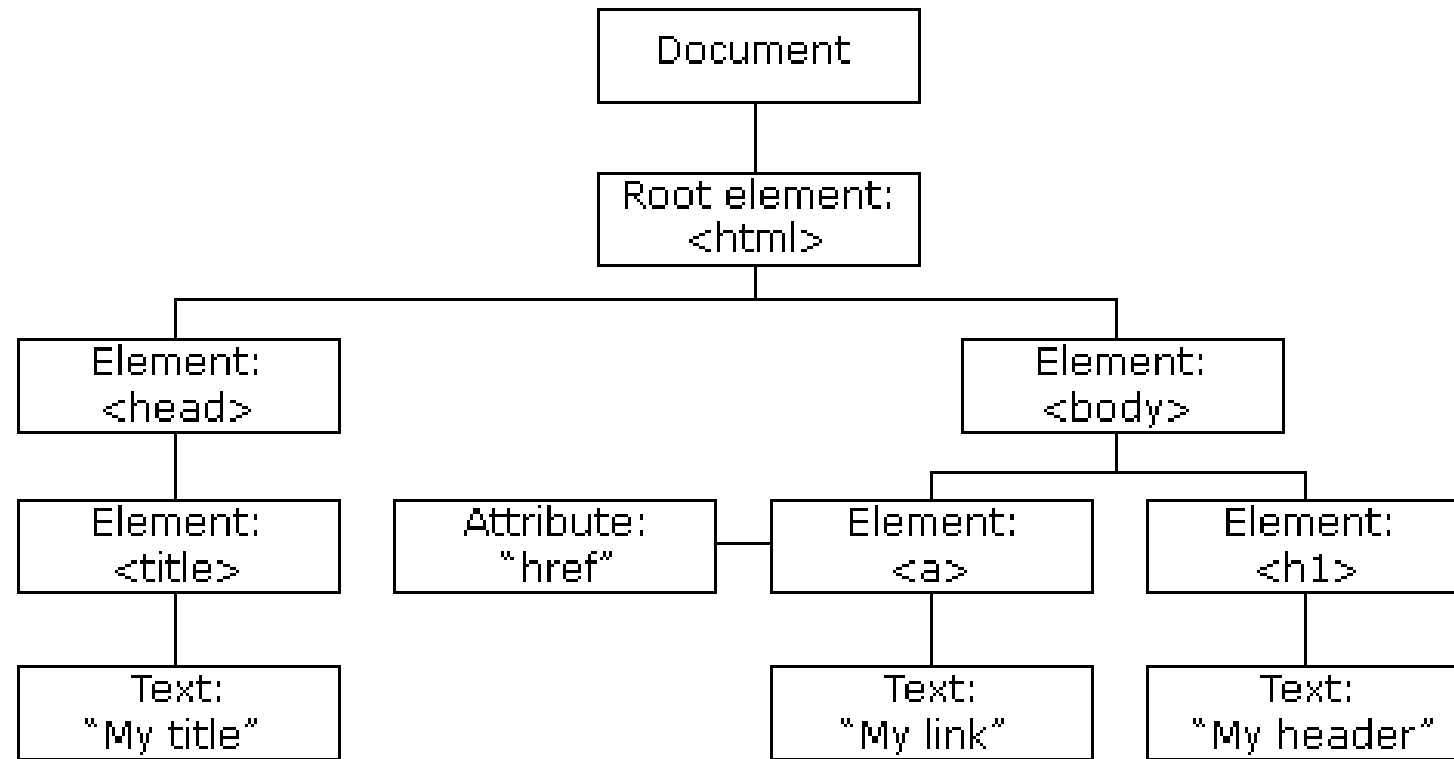 - Core DOM
  - XML DOM
  - ***HTML DOM***

Introducción a DOM

- HTML DOM define:
  - A los elementos de un documento HTML como objetos
  - Las propiedades de todos los elementos de un documento HTML
  - Los métodos de acceso a todos los elementos HTML
  - Los eventos de todos los elementos de un documento HTML.

Introducción a DOM

Introducción a DOM

- ¿Qué puedo hacer desde Javascript sobre un documento HTML?
  - Cambiar los elementos HTML
  - Modificar el estado de los atributos de los elementos HTML
  - Modificar los estilos (CSS) de elementos HTML
  - Eliminar elementos y atributos HTML
  - Agregar nuevos elementos HTML
  - Manejar los eventos que ocurren sobre elementos HTML
  - Agregar nuevos eventos y gestionarlos sobre elementos HTML
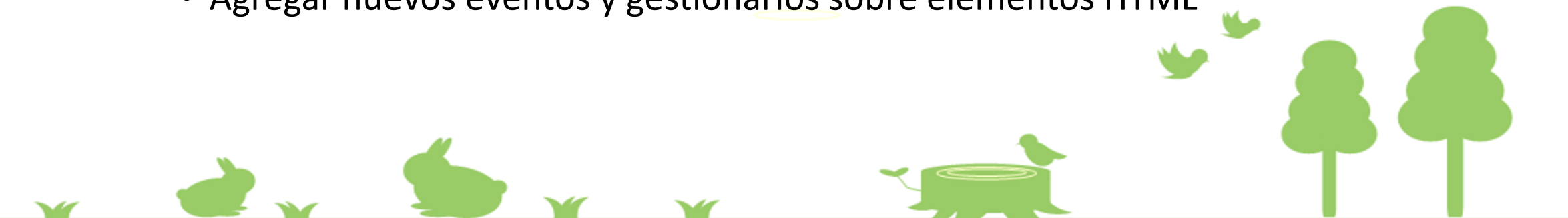
Introducción a DOM

- DOM tiene métodos y propiedades que pueden ser manipulados desde Javascript.

- Cualquier elementos HTML de un documento se puede tratar como un objeto.

- Un método es una acción a realizar o ejecutarse.

- Una propiedad es un dato que puede ser recuperado (get) o modificado(set).

El objeto document

- Es el objeto al que pertenecen todos los elementos de un documento HTML.

- Desde este objeto se puede acceder a los elementos y sus propiedades que están en un documento HTML.

Method	Description
document.getElementById(*id*)	Find an element by element id
document.getElementsByTagName(*name*)	Find elements by tag name
document.getElementsByClassName(*name*)	Find elements by class name
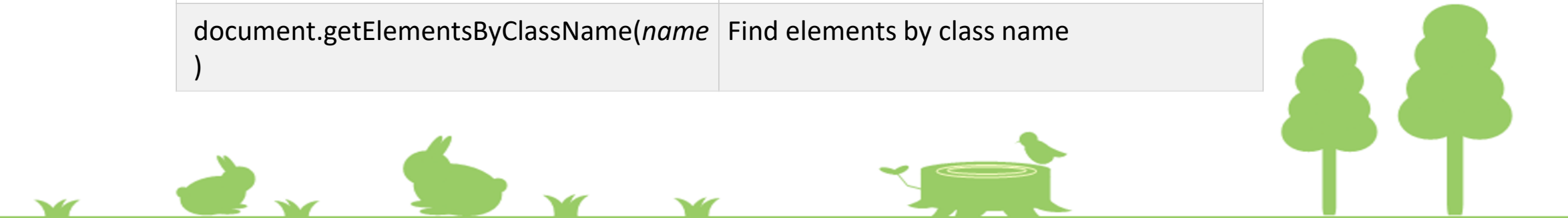
El objeto document

Property	Description
element.innerHTML = *new html content*	Change the inner HTML of an element
element.innerText = new text content	Change the text of an element
element.attribute = new value	Change the attribute value of an HTML element
element.style.*property = new style*	Change the style of an HTML element
Method	Description
element.setAttribute*(attribute, value)*	Change the attribute value of an HTML element
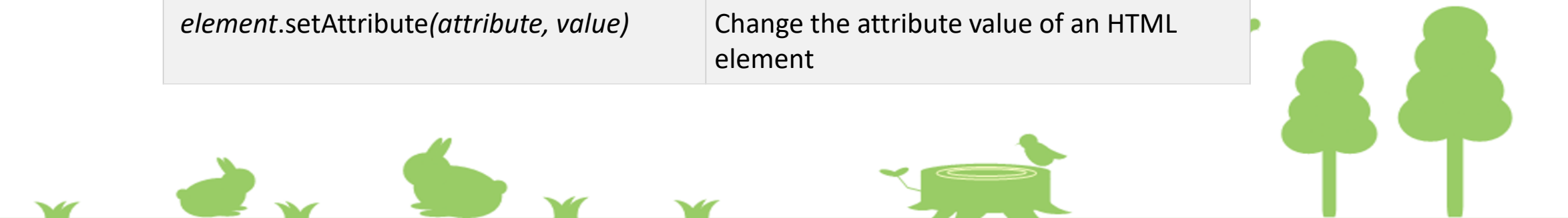
El objeto document

Method	Description
document.createElement(*element*)	Create an HTML element
document.removeChild(*element*)	Remove an HTML element
document.appendChild(*element*)	Add an HTML element
document.replaceChild(*new, old*)	Replace an HTML element
document.write(*text*)	Write into the HTML output stream

El objeto document

Property	Description	DOM
document.anchors	Returns all <a> elements that have a name attribute	1
document.baseURI	Returns the absolute base URI of the document	3
document.body	Returns the <body> element	1
document.cookie	Returns the document's cookie	1
document.doctype	Returns the document's doctype	3
document.documentElement	Returns the <html> element	3
document.documentMode	Returns the mode used by the browser	3
document.documentURI	Returns the URI of the document	3
document.domain	Returns the domain name of the document server	1
document.embeds	Returns all <embed> elements	3
document.forms	Returns all <form> elements	1
document.head	Returns the <head> element	3
document.images	Returns all <img> elements	1
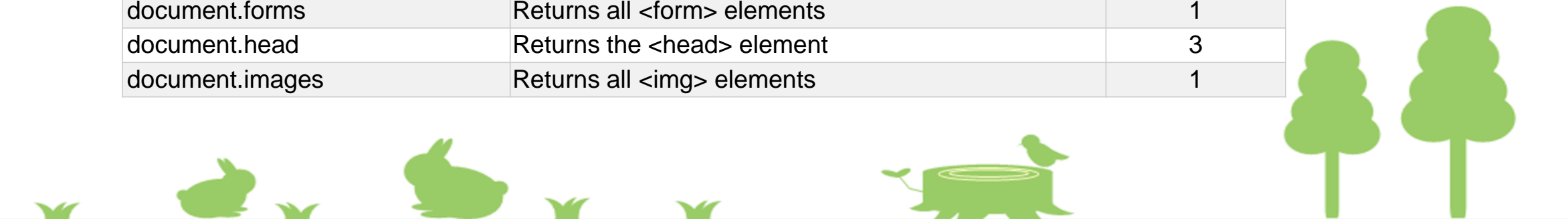
El objeto document

Property	Description	DOM
document.images	Returns all <img> elements	1
document.implementation	Returns the DOM implementation	3
document.inputEncoding	Returns the document's encoding (character set)	3
document.lastModified	Returns the date and time the document was updated	3
document.links	Returns all <area> and <a> elements that have a href attribute	1
document.readyState	Returns the (loading) status of the document	3
document.referrer	Returns the URI of the referrer (the linking document)	1
document.scripts	Returns all <script> elements	3
document.strictErrorChecking	Returns if error checking is enforced	3
document.title	Returns the <title> element	1
document.URL	Returns the complete URL of the document	1
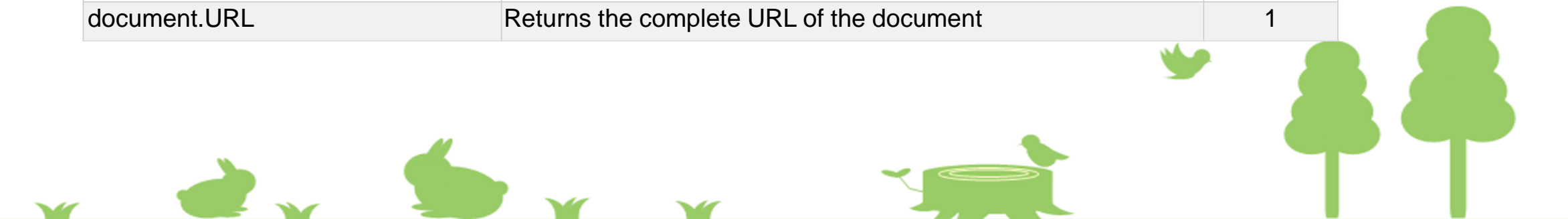
El objeto document

Method	Description
addEventListener()	Attaches an event handler to the document
adoptNode()	Adopts a node from another document
close()	Closes the output stream previously opened with document.open()
createAttribute()	Creates an attribute node
createComment()	Creates a Comment node with the specified text
createDocumentFragment()	Creates an empty DocumentFragment node
createElement()	Creates an Element node
createEvent()	Creates a new event
createTextNode()	Creates a Text node
execCommand()	Invokes the specified clipboard operation on the element currently having focus.
fullscreenEnabled()	Returns a Boolean value indicating whether the document can be viewed in fullscreen mode
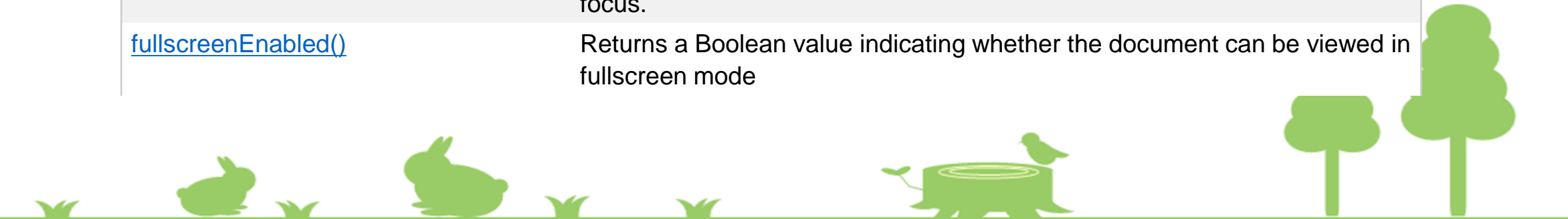
El objeto document

Method	Description
getElementById()	Returns the element that has the ID attribute with the specified value
getElementsByClassName()	Returns a NodeList containing all elements with the specified class name
getElementsByName()	Returns a NodeList containing all elements with a specified name
getElementsByTagName()	Returns a NodeList containing all elements with the specified tag name
hasFocus()	Returns a Boolean value indicating whether the document has focus
importNode()	Imports a node from another document
normalize()	Removes empty Text nodes, and joins adjacent nodes
normalizeDocument()	Removes empty Text nodes, and joins adjacent nodes
open()	Opens an HTML output stream to collect output from document.write()
querySelector()	Returns the first element that matches a specified CSS selector(s) in the document
querySelectorAll()	Returns a static NodeList containing all elements that matches a specified CSS selector(s) in the document
removeEventListener()	Removes an event handler from the document (that has been attached with the addEventListener() method)
renameNode()	Renames the specified node
write()	Writes HTML expressions or JavaScript code to a document
writeln()	Same as write(), but adds a newline character after each statement

El objeto element

- Cualquier etiqueta HTML es un elemento que puede ser manipulado.

Property / Method	Description
accessKey	Sets or returns the accesskey attribute of an element
addEventListener()	Attaches an event handler to the specified element
appendChild()	Adds a new child node, to an element, as the last child node
attributes	Returns a NamedNodeMap of an element's attributes
blur()	Removes focus from an element
childElementCount	Returns the number of child elements an element has
childNodes	Returns a collection of an element's child nodes (including text and comment nodes)
children	Returns a collection of an element's child element (excluding text and comment nodes)
classList	Returns the class name(s) of an element
className	Sets or returns the value of the class attribute of an element

El objeto element

Property / Method	Description
click()	Simulates a mouse-click on an element
clientHeight	Returns the height of an element, including padding
clientLeft	Returns the width of the left border of an element
clientTop	Returns the width of the top border of an element
clientWidth	Returns the width of an element, including padding
cloneNode()	Clones an element
compareDocumentPosition()	Compares the document position of two elements
contains()	Returns true if a node is a descendant of a node, otherwise false
contentEditable	Sets or returns whether the content of an element is editable or not
dir	Sets or returns the value of the dir attribute of an element
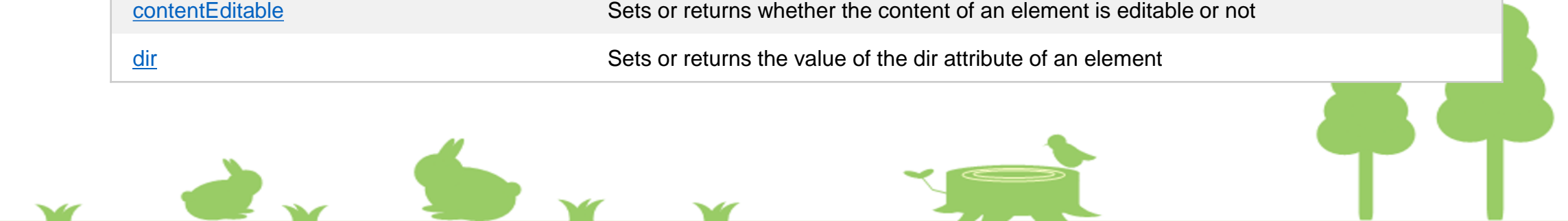
El objeto element

Property / Method	Description
exitFullscreen()	Cancels an element in fullscreen mode
firstChild	Returns the first child node of an element
firstElementChild	Returns the first child element of an element
focus()	Gives focus to an element
getAttribute()	Returns the specified attribute value of an element node
getAttributeNode()	Returns the specified attribute node
getBoundingClientRect()	Returns the size of an element and its position relative to the viewport
getElementsByClassName()	Returns a collection of all child elements with the specified class name
getElementsByTagName()	Returns a collection of all child elements with the specified tag name
hasAttribute()	Returns true if an element has the specified attribute, otherwise false
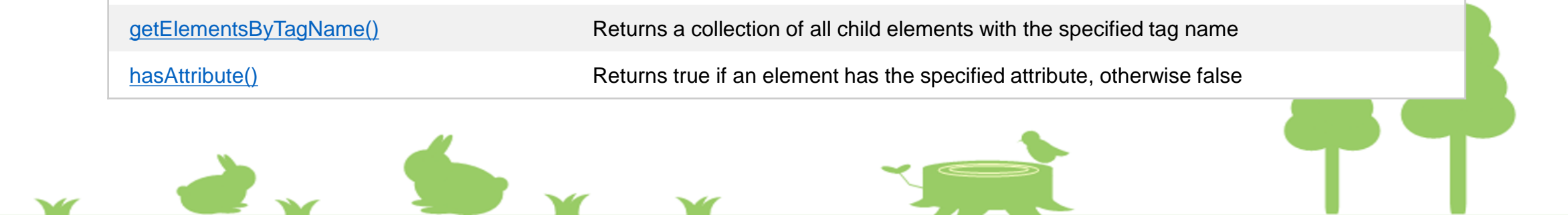
El objeto element

Property / Method	Description
hasChildNodes()	Returns true if an element has any child nodes, otherwise false
id	Sets or returns the value of the id attribute of an element
innerHTML	Sets or returns the content of an element
innerText	Sets or returns the text content of a node and its descendants
insertAdjacentElement()	Inserts a HTML element at the specified position relative to the current element
insertAdjacentHTML()	Inserts a HTML formatted text at the specified position relative to the current element
insertAdjacentText()	Inserts text into the specified position relative to the current element
insertBefore()	Inserts a new child node before a specified, existing, child node
isContentEditable	Returns true if the content of an element is editable, otherwise false
isDefaultNamespace()	Returns true if a specified namespaceURI is the default, otherwise false
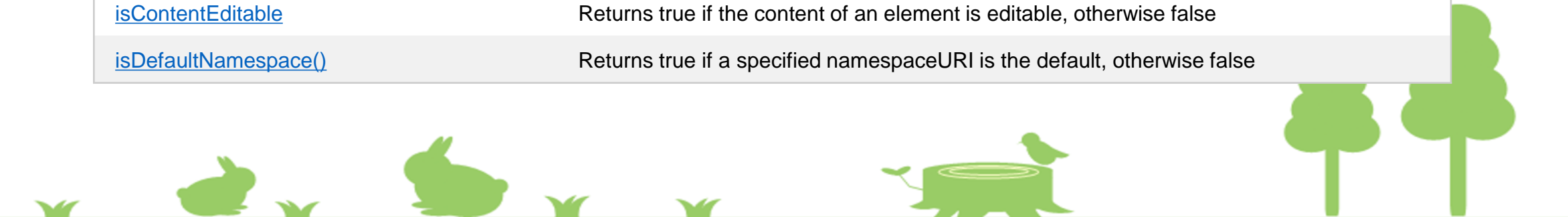
El objeto element

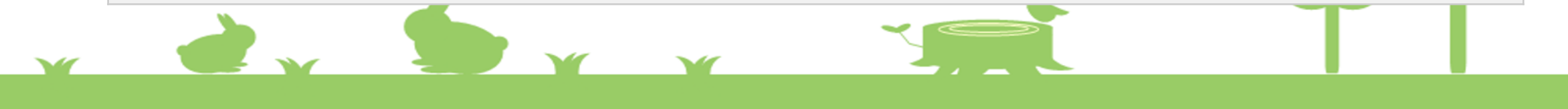| Property / Method	Description
isEqualNode()	Checks if two elements are equal
isSameNode()	Checks if two elements are the same node
isSupported()	Returns true if a specified feature is supported on the element
lang	Sets or returns the value of the lang attribute of an element
lastChild	Returns the last child node of an element
lastElementChild	Returns the last child element of an element
namespaceURI	Returns the namespace URI of an element
nextSibling	Returns the next node at the same node tree level
nextElementSibling	Returns the next element at the same node tree level
nodeName	Returns the name of a node
nodeType	Returns the node type of a node
nodeValue	Sets or returns the value of a node
normalize()	Joins adjacent text nodes and removes empty text nodes in an element

El objeto element

Property / Method	Description
offsetHeight	Returns the height of an element, including padding, border and scrollbar
offsetWidth	Returns the width of an element, including padding, border and scrollbar
offsetLeft	Returns the horizontal offset position of an element
offsetParent	Returns the offset container of an element
offsetTop	Returns the vertical offset position of an element
outerHTML	Sets or returns the content of an element (including the start tag and the end tag)
outerText	Sets or returns the outer text content of a node and its descendants
ownerDocument	Returns the root element (document object) for an element
parentNode	Returns the parent node of an element
parentElement	Returns the parent element node of an element
previousSibling	Returns the previous node at the same node tree level
previousElementSibling	Returns the previous element at the same node tree level
querySelector()	Returns the first child element that matches a specified CSS selector(s) of an element
querySelectorAll()	Returns all child elements that matches a specified CSS selector(s) of an element
remove()	Removes the element from the DOM

El objeto element

Property / Method	Description
removeAttribute()	Removes a specified attribute from an element
removeAttributeNode()	Removes a specified attribute node, and returns the removed node
removeChild()	Removes a child node from an element
removeEventListener()	Removes an event handler that has been attached with the addEventListener() method
replaceChild()	Replaces a child node in an element
requestFullscreen()	Shows an element in fullscreen mode
scrollHeight	Returns the entire height of an element, including padding
scrollIntoView()	Scrolls the specified element into the visible area of the browser window
scrollLeft	Sets or returns the number of pixels an element's content is scrolled horizontally
scrollTop	Sets or returns the number of pixels an element's content is scrolled vertically

El objeto element

Property / Method	Description
scrollWidth	Returns the entire width of an element, including padding
setAttribute()	Sets or changes the specified attribute, to the specified value
setAttributeNode()	Sets or changes the specified attribute node
style	Sets or returns the value of the style attribute of an element
tabIndex	Sets or returns the value of the tabindex attribute of an element
tagName	Returns the tag name of an element
textContent	Sets or returns the textual content of a node and its descendants
title	Sets or returns the value of the title attribute of an element
toString()	Converts an element to a string

Eventos

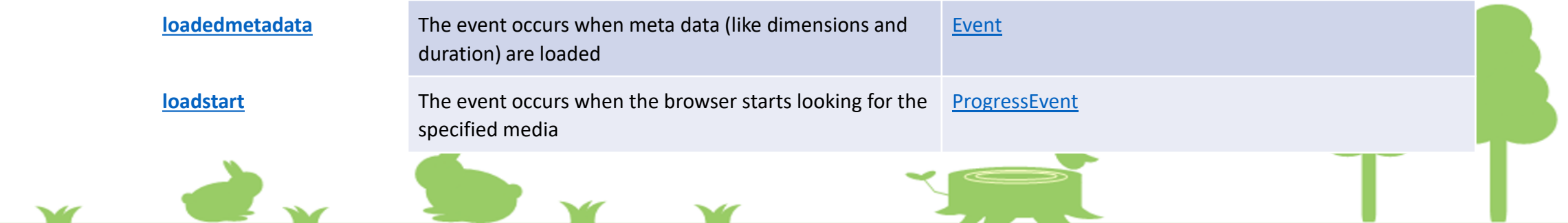| Event	Description	Belongs To
abort	The event occurs when the loading of a media is aborted	UiEvent, Event
afterprint	The event occurs when a page has started printing, or if the print dialogue box has been closed	Event
animationend	The event occurs when a CSS animation has completed	AnimationEvent
animationiteration	The event occurs when a CSS animation is repeated	AnimationEvent
animationstart	The event occurs when a CSS animation has started	AnimationEvent
beforeprint	The event occurs when a page is about to be printed	Event
beforeunload	The event occurs before the document is about to be unloaded	UiEvent, Event
blur	The event occurs when an element loses focus	FocusEvent
canplay	The event occurs when the browser can start playing the media (when it has buffered enough to begin)	Event
canplaythrough	The event occurs when the browser can play through the media without stopping for buffering	Event

Eventos

Event	Description	Belongs To
change	The event occurs when the content of a form element, the selection, or the checked state have changed (for \<input>, \<select>, and \<textarea>)	Event
click	The event occurs when the user clicks on an element	MouseEvent
contextmenu	The event occurs when the user right-clicks on an element to open a context menu	MouseEvent
copy	The event occurs when the user copies the content of an element	ClipboardEvent
cut	The event occurs when the user cuts the content of an element	ClipboardEvent
dblclick	The event occurs when the user double-clicks on an element	MouseEvent
drag	The event occurs when an element is being dragged	DragEvent
dragend	The event occurs when the user has finished dragging an element	DragEvent
dragenter	The event occurs when the dragged element enters the drop target	DragEvent
dragleave	The event occurs when the dragged element leaves the drop target	DragEvent
dragover	The event occurs when the dragged element is over the drop target	DragEvent

Eventos

Event	Description	Belongs To
dragstart	The event occurs when the user starts to drag an element	DragEvent
drop	The event occurs when the dragged element is dropped on the drop target	DragEvent
durationchange	The event occurs when the duration of the media is changed	Event
ended	The event occurs when the media has reach the end (useful for messages like "thanks for listening")	Event
error	The event occurs when an error occurs while loading an external file	ProgressEvent, UiEvent, Event
focus	The event occurs when an element gets focus	FocusEvent
focusin	The event occurs when an element is about to get focus	FocusEvent
focusout	The event occurs when an element is about to lose focus	FocusEvent
fullscreenchange	The event occurs when an element is displayed in fullscreen mode	Event
fullscreenerror	The event occurs when an element can not be displayed in fullscreen mode	Event

Eventos

Event	Description	Belongs To
hashchange	The event occurs when there has been changes to the anchor part of a URL	HashChangeEvent
input	The event occurs when an element gets user input	InputEvent, Event
invalid	The event occurs when an element is invalid	Event
keydown	The event occurs when the user is pressing a key	KeyboardEvent
keypress	The event occurs when the user presses a key	KeyboardEvent
keyup	The event occurs when the user releases a key	KeyboardEvent
load	The event occurs when an object has loaded	UiEvent, Event
loadeddata	The event occurs when media data is loaded	Event
loadedmetadata	The event occurs when meta data (like dimensions and duration) are loaded	Event
loadstart	The event occurs when the browser starts looking for the specified media	ProgressEvent

Eventos

| Event	Description	Belongs To
message	The event occurs when a message is received through the event source	Event
mousedown	The event occurs when the user presses a mouse button over an element	MouseEvent
mouseenter	The event occurs when the pointer is moved onto an element	MouseEvent
mouseleave	The event occurs when the pointer is moved out of an element	MouseEvent
mousemove	The event occurs when the pointer is moving while it is over an element	MouseEvent
mouseover	The event occurs when the pointer is moved onto an element, or onto one of its children	MouseEvent
mouseout	The event occurs when a user moves the mouse pointer out of an element, or out of one of its children	MouseEvent
mouseup	The event occurs when a user releases a mouse button over an element	MouseEvent

Eventos

Event	Description	Belongs To
offline	The event occurs when the browser starts to work offline	Event
online	The event occurs when the browser starts to work online	Event
open	The event occurs when a connection with the event source is opened	Event
pagehide	The event occurs when the user navigates away from a webpage	PageTransitionEvent
pageshow	The event occurs when the user navigates to a webpage	PageTransitionEvent
paste	The event occurs when the user pastes some content in an element	ClipboardEvent
pause	The event occurs when the media is paused either by the user or programmatically	Event
play	The event occurs when the media has been started or is no longer paused	Event
playing	The event occurs when the media is playing after having been paused or stopped for buffering	Event
progress	The event occurs when the browser is in the process of getting the media data (downloading the media)	Event
ratechange	The event occurs when the playing speed of the media is changed	Event

Eventos

resize	The event occurs when the document view is resized	UiEvent, Event
reset	The event occurs when a form is reset	Event
scroll	The event occurs when an element's scrollbar is being scrolled	UiEvent, Event
search	The event occurs when the user writes something in a search field (for <input="search">)	Event
seeked	The event occurs when the user is finished moving/skipping to a new position in the media	Event
seeking	The event occurs when the user starts moving/skipping to a new position in the media	Event
select	The event occurs after the user selects some text (for <input> and <textarea>)	UiEvent, Event
show	The event occurs when a <menu> element is shown as a context menu	Event
stalled	The event occurs when the browser is trying to get media data, but data is not available	Event
submit	The event occurs when a form is submitted	Event
suspend	The event occurs when the browser is intentionally not getting media data	Event

Eventos

timeupdate	The event occurs when the playing position has changed (like when the user fast forwards to a different point in the media)	Event
toggle	The event occurs when the user opens or closes the <details> element	Event
touchcancel	The event occurs when the touch is interrupted	TouchEvent
touchend	The event occurs when a finger is removed from a touch screen	TouchEvent
touchmove	The event occurs when a finger is dragged across the screen	TouchEvent
touchstart	The event occurs when a finger is placed on a touch screen	TouchEvent
transitionend	The event occurs when a CSS transition has completed	TransitionEvent
unload	The event occurs once a page has unloaded (for <body>)	UiEvent, Event
volumechange	The event occurs when the volume of the media has changed (includes setting the volume to "mute")	Event
waiting	The event occurs when the media has paused but is expected to resume (like when the media pauses to buffer more data)	Event
wheel	The event occurs when the mouse wheel rolls up or down over an element	WheelEvent
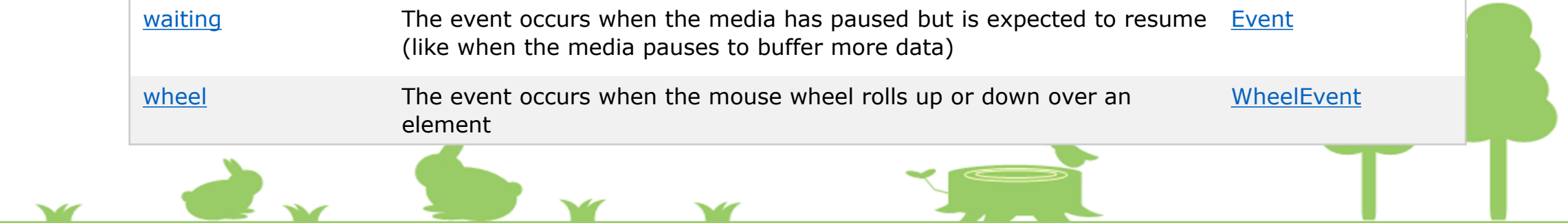
Objeto Event

Property/Method	Description
bubbles	Returns whether or not a specific event is a bubbling event
cancelBubble	Sets or returns whether the event should propagate up the hierarchy or not
cancelable	Returns whether or not an event can have its default action prevented
createEvent()	Creates a new event
composedPath()	Returns the event's path
currentTarget	Returns the element whose event listeners triggered the event
defaultPrevented	Returns whether or not the preventDefault() method was called for the event
eventPhase	Returns which phase of the event flow is currently being evaluated
isTrusted	Returns whether or not an event is trusted
preventDefault()	Cancels the event if it is cancelable, meaning that the default action that belongs to the event will not occur
stopImmediatePropagation()	Prevents other listeners of the same event from being called
stopPropagation()	Prevents further propagation of an event during event flow
target	Returns the element that triggered the event
timeStamp	Returns the time (in milliseconds relative to the epoch) at which the event was created
type	Returns the name of the event