

TweenLite

```
// Create a variable
var $box = $('#box');

// Create a tween
var tween = TweenLite.to($box, 2, {
  x: 100,
  ease: Power1.easeInOut,
  delay: 2,
  onComplete: myFunction,
  onCompleteParams: [element, 'param2']
});
```

```
// Default easing functions
ease: Power0.easeNone //no easing = Linear
ease: Power1, Power2, Power3, Power4, Back
      Bounce, Circ, Elastic, Expo, Sine
      .easeIn .easeOut .easeInOut
ease: RoughEase, SlowMo, SteppedEase
      .ease.config()
// http://greensock.com/ease-visualizer
```

```
paused: true/false, // Pause Tween
delay: 2, // Amount of delay in seconds
immediateRender: true/false, // Prevent
immediate rendering when using set()
or from()-based methods (eg. fromTo)
```

```
// Callback functions
onComplete: // When tween has completed
onStart: // When tween begins
onUpdate: // On every frame of the tween
```

```
// From Tween
TweenLite.from(
  element,
  duration,
  {fromVars}
);
```

```
// FromTo Tween
TweenLite.fromTo(
  element,
  duration,
  {fromVars},
  {toVars}
);
```

TimelineLite

```
// Create a timeline
var tl = new TimelineLite();

// Sequence multiple tweens
tl.to($box, 1, {x:50,y:0})
  .to($box, 1, {x:50,y:50})
  .to($box, 1, {x:-50,y:50})
  .to($box, 1, {x:-50,y:0});
```

```
// Add tween 0.7 seconds into the timeline
tl.to($box, 1, {scale: 0.5}, 0.7);
```

```
// Overlap tween with previous by 0.7 sec
tl.to($box, 1, {scale: 0.5}, '-=0.7');
```

```
// Offset/delay tween by 0.7 seconds
tl.to($box, 1, {scale: 0.5}, '+=0.7');
// Set tween without animating
tl.set($box, {scale: 0.5});
```

```
// Add Label 1 second into the timeline
tl.add('scaleBox', 1);
// Add tween to label position
tl.to($box, 1, {scale: 0.5}, 'scaleBox');
```

```
// Control timeline playback
tl.play(1.5); // Play from 1.5s
tl.play(-1); // Play 1s from end
tl.pause(); // Pause timeline
tl.resume(); // Continue playback
tl.seek(1.5); // Go to 1.5s or 'label'
tl.reverse(); // Reverse playback anytime
tl.timeScale(2); // Speed up timeline
tl.progress(0.5); // Skip to halfway
```

```
// staggerFrom, staggerTo, staggerFromTo
tl.staggerFrom($dots, 1, {
  autoAlpha: 0
}, 0.1); // Stagger tween start by 0.1
```

TimelineMax

```
// Create a timeline
var tl = new TimelineMax({options});
```

```
// TimelineMax Options
delay: 2, // Number of seconds before animation start
paused: true/false, // Default value is false
repeat: 2, // Number of repeats or -1 for infinite loop
repeatDelay: 1, // Number of seconds between repeats
yoyo: true/false, // If true > A-B-B-A, if false > A-B-A-B
smoothChildTiming: true/false, // Controls child tweens and timelines
useFrames: true/false, // Set timing based on frames (default seconds)
```

```
// Callback function
var tl = new TimelineMax({
  onStart: myFunc, // Run myFunc() when timeline starts
  onStartScope: Object, // What 'this' refers to inside of myFunc
  onStartParams: ['{self}', 'param2'] // {self} is timeline itself
});
```

```
// Available Callback functions
onStart, onStartScope, onStartParams, onComplete, onCompleteScope,
onCompleteParams, onUpdate, onUpdateScope, onUpdateParams,
onRepeat, onRepeatScope, onRepeatParams, onReverseComplete,
onReverseCompleteScope
```

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GREENSOCKTUTORIALS.COM

TweenMax

```
// Inc. CSSPlugin, RoundPropsPlugin, BezierPlugin, AttrPlugin, EasePack,
DirectionalRotationPlugin, TweenLite, TimelineLite, and TimelineMax

var tween = TweenMax.to($box, 1, {
  x: '-=50', // Tween to the current x value minus 50
  y: '+=50', // Tween to the current y value plus 50
  onComplete: myFunction,
  ease: Back.easeOut
});
tl.add(tween, 2); // Add tween 2 seconds into the timeline
```

Plugins and File Size

```
// Core files
TweenLite (9kb)
TimelineLite (4kb)
TimelineMax (6kb)
TweenMax (34kb)
```

```
// Extras
EasePack (2kb)
jquery.gsap.js (2kb)
Draggable (12kb)
```

```
// Plugins
css (15kb)
bezier (4kb)
kinetic (3kb)
directionalRotation (1kb)
attr (1kb)
text (1kb)
scrollTo (1kb)
raphael (3kb)
colorProps (1kb)
cssRule (1kb)
easel (3kb)
roundProps (1kb)
```

```
Version: 1.17.0
Updated 2015-05-28
```

Nesting Timelines

```
// Create a main timeline
var mainTL = new TimelineMax({options});

// Create a function returning timeline
function getTimeline(){

  // Create sub timeline
  var timeline = new TimelineMax();

  // Add tweens to sub timeline
  timeline
    .to(elem, 1, {vars});

  return timeline;
}

// Make this all happen on page load
function init(){

  // Add sub timeline to main timeline
  mainTL
    .add(getTimeline(), 'scene-intro');
}

init();
```

Changing CSS Classes

```
// Remove class .loading from body
TweenLite.set($body, {className: '-=loading'});
// Add class .loading to body
TweenLite.set($body, {className: '+=loading'});
// Set only class .loading to body
TweenLite.set($body, {className: 'loading'});
```

GreenSock + jQuery

```
// Scale box up/down on hover
$box.hover(
  function() {
    TweenLite.to($(this), 1, {scale:1.2});
  },
  function() {
    TweenLite.to($(this), 1, {scale:1});
  }
);
```

<http://bit.ly/gsaphover>

```
// Move box 100px to the right on click
$box.on('click', function(e){
  TweenLite.to($(this), 0.3, {x:'+=100px'});
});
```

<http://bit.ly/gsapclick>

```
// Random value from a min/max range
var delay = getRandom(1, 2);
```

```
// Delay tween by a random number between 1 & 2
TweenLite.to($box, 1, {x:'80', delay: delay});
```

```
function getRandom(min, max) {
  return min + Math.random() * (max - min);
}
```

<http://bit.ly/gsapmath>

Got a GSAP Questions?

A:<http://greensock.com/forums/> B:[ihatetomatoes](http://www.ihatetomatoes.net/)

Each Loop

```
// Create a main timeline
var $box = $('#.box'),
    mainTL = new TimelineMax({options});

// Create a timeline for each box
$box.each(function(index, element){

  var $box = $(this).find('.boxSmall'),
      boxTL = new TimelineMax();

  // Add tweens to box timeline
  boxTL
    .to($box, 1, {vars});

  // Add boxTL to mainTL
  mainTL.add(boxTL);
});
```

<http://bit.ly/gsapmath>

Bonus Plugins and Tools

```
// Bonus Plugins for Club Members Only
DrawSVGPlugin (3kb) - SIMPLY GREEN
physics2D (3kb) - SIMPLY GREEN
physicsProps (3kb) - SIMPLY GREEN
throwProps (10kb) - SHOCKINGLY GREEN
scrambleText (4kb) - SHOCKINGLY GREEN
SplitText (7kb) - SHOCKINGLY GREEN
```

Learning Resources & People to Follow

```
http://greensock.com/get-started-js/
http://codepen.io/GreenSock/
http://codepen.io/chrisgannon/
http://codepen.io/sdras/
http://codepen.io/MAW/
https://www.youtube.com/ihatetomatoesblog
http://greensocktutorials.com/
https://www.nobledesktop.com/books/gsap
https://nobledesktop.com/classes/greensock
```