After Effects Expressions
ARTD 150 / Deborah Ciccarelli

What is an expression?
A Javascript based script that can modify a parameter or drive the parameter.

How to add an expression to a layer/asset property
1. Twirl down the layer, and then find the property to which you want to apply the expression.
2. Option/Alt+Click on the stopwatch next to the property.
3. Type the expression into the script area

Loops
Expressions to loop a pre-comp, or loop a property of a layer
loopOut(type, number of keyframes);
loopOut("cycle", 0); //loop continuously from the last keyframe
loopOut(); //loop continuously from the last keyframe
loopOut("pingpong"); //repeats, alternating forward and backward
loopIn(type, number of keyframes);
loopIn(); //loop continuously prior to the first keyframe
loopIn("cycle", 6); //loops the first 6 keyframes (between 1 and 7)

Loop Continuously [after initial keyframes]
Add a ‘time remap’ effect and apply the expression to ‘time remap’
loopOut();
notes:
After applying the expression, extend the layer out point to the end of the composition (or to needed end point for looping)

Loop Continuously [before initial keyframes]
Add a ‘time remap’ effect and apply the expression to ‘time remap’
loopIn();
notes:
After applying the expression, extend the layer out point to the end of the composition (or to needed end point for looping)

Loop the Animation Back and Forth (forward and then reverse... repeat)
Add a ‘time remap’ effect and apply the expression to ‘time remap’
loopOut("pingpong");
notes:
After applying the expression, extend the layer out point to the end of the composition (or to needed end point for looping)
Generating Random

Expressions to randomly change a property
random(); //generates a random number between 0 and 1
seedRandom(\texttt{offset or seed. timeless = true or false});
seedRandom(999, true); //999 is used to generate the random number
generation (offset from default 0), timeless generation (once)

Random Opacity Blink (changes on every frame)
\textit{Apply the expression to the ‘opacity’ property (or any other single value property)}
transform.opacity * random();

Random Opacity Setting (set once, DOES NOT change on each frame)
\textit{Apply the expression to the ‘opacity’ property (or any other single value property)}
seedRandom(1, true);
transform.opacity * random();

Random Position Setting (set once, DOES NOT change on each frame)
\textit{Apply the expression to the ‘position’ property}
seedRandom(1, true);
transform.position = [ 720 * random(), 480 * random()];
\textbf{notes:}
720 refers to the composition width, or the desired range for the ‘x’ value of position
480 refers to the composition height, or the desired range for the ‘y’ value of position

Random Position Change at Specified Intervals (e.g. change position every half-second)
\textit{Apply the expression to the ‘position’ property}
holdTime = 0.5;
seed = Math.floor(time/holdTime);
seedRandom(seed, true);
transform.position = [ 720 * random(), 480 * random()];
\textbf{notes:}
\textit{holdTime of 0.5 refers to the desired interval time in seconds (0.5 = half a second)}
time returns the current time during playback in seconds
720 refers to the composition width, or the desired range for the ‘x’ value of position
480 refers to the composition height, or the desired range for the ‘y’ value of position

\textbf{HINTS:}
Expressions are case sensitive!
Expressions follow PEMDAS math operation (the order in which math operations should be followed, as below):
1. Parentheses
2. Exponents
3. Multiplication
4. Division
5. Addition
6. Subtraction