CSS Transform functions

Beyond box placement, more detailed visual controls

- Shift visuals X/Y
- Rotation
- Scale (zoom in/out)
- 3d interactions

Translate (shift x/y coords)

Some Paragraph Text

```
.kitten {
  transform: translate( 2rem, 5rem );
}
```

So  Text

Translate details

- Values can be all units, including percentages
- Negative values are fine (when meaningful)
- Creates a positioned element
    - like `position` other than `static`
- `translateX()` and `translateY()`
    - also `translateZ()`
- pass multiple to `transform` as space-separated

```
.some-selector {
  transform: translate( 1rem, 5rem);
}
.other-selector {  /* Same effect as above */
  transform: translateX( 1rem ) translateY( 5rem );
}
```

Translate standalone property

`translate` was so popular in `transform`

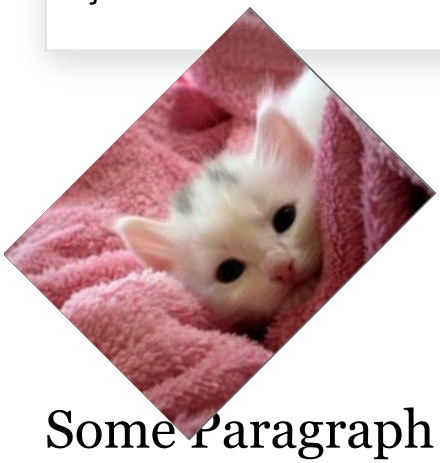
- It got a spin-off series!

```
.some-selector {
  translate: 1rem 5rem;
}
.other-selector {  /* Same effect as above */
  transform: translate( 1rem, 5rem );
}
```

- Standalone property
  - Makes mixing transforms easier
- No commas

CSS Rotation

```
.kitten {
  transform: rotate( -45deg );
}
```



Some Paragraph Text

Rotate Details

- Units are degrees, rads, grads, or turns
    - positive (clockwise-tilt) or negative
- `rotate()` is `rotateZ()`
    - exist: `rotateX()`, `rotateY()`, or `rotateZ()`
- Easier to work with one transform at a time
- inline vs block effects are exaggerated
    - rotating a block will still have full width

Combining Transformations

```
img.kitten { /* Note block vs inline-block */
  display: inline-block;  /* Consider impacts of wrapping */
}

p.kitten-label {
  display: inline-block;
  color: red;
  background-color: #FFFFFF60;
  border: 2px dashed red;
  transform:
    translateX(-173px)
    translateY(-65px)
    rotate(-45deg);
}
```

`rotate` also exists as standalone property

```
img.kitten { /* Note block vs inline-block */
  display: inline-block;  /* Consider impacts of wrapping */
}

p.kitten-label {
  display: inline-block;
  color: red;
  background-color: #FFFFFF60;
  border: 2px dashed red;
  translate: -173px -65px;
  rotate: -45deg;
}
```

Standalone rotate options

To rotate on a different axis, list the axis first:

```
rotate: x 45deg;
rotate: y 45deg;
rotate: z 45deg;
```

Scale

Resizes (zoom in/out)

- `scale()`
    - one arg: Scale both x and y by that multiplier
    - two arg: Scale X by first arg, Y by second

Notice that like all transformations, document flow is not impacted by visuals

Kitten grows scales

```
#kitten-unscaled {
  display: inline-block;
}

#kitten-scale-up {
  display: inline-block;
  transform: scale(2);
}

#kitten-scale-down {
  display: inline-block;
  transform: scale(0.5);
}
```

`scale` has a spin-off as a separate property

```
 #kitten-unscaled {
   display: inline-block;
 }

 #kitten-scale-up {
   display: inline-block;
/* transform: scale(2); */
   scale: 2;
 }

 #kitten-scale-down {
   display: inline-block;
/* transform: scale(0.5); */
   scale: 0.5;
 }
```

Rarely used transformations

I've only introduced the common ones

- `rotate3d()`
- `scale3d()`
- `translate3d()`
- `matrix()`
- `matrix3d()`
- `perspective()`