

# Site Design & More CSS

Essentials of Web Design

CSCI 1210

# Today's Lecture

## Lecture

Design Principles

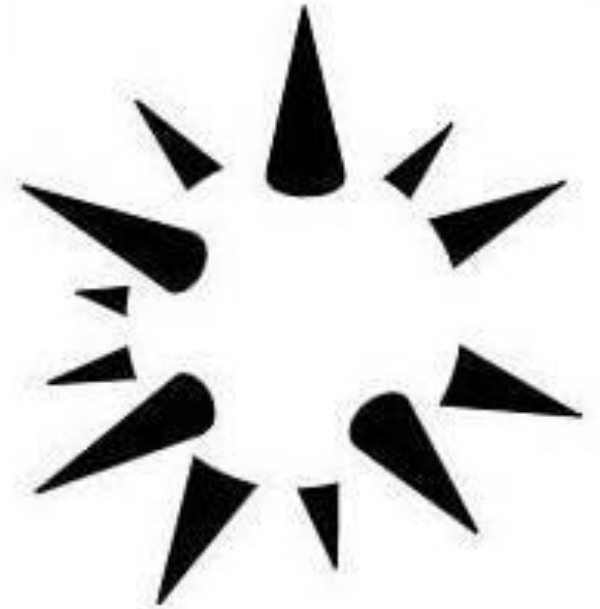
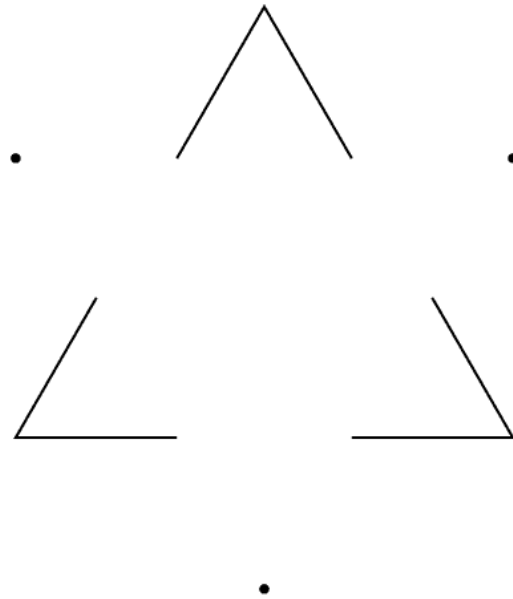
Web Design Tips

Advanced CSS

# Gestalt Web Design Principles

# Gestalt Web Design Principles

**Gestalt:** An organized whole that is perceived to be more than the sum of its parts.



# Gestalt Web Design Principles

## What do you see?

\*Don Quixote, fully titled *The Ingenious Gentleman Don Quixote of La Mancha*, is a Spanish novel by Miguel de Cervantes Saavedra. Published in two volumes, in 1605 and 1615, Don Quixote is considered one of the most influential works of literature from the Spanish Golden Age and the entire Spanish literary canon. As a founding work of modern Western literature and one of the earliest canonical novels, it regularly appears high on lists of the greatest works of fiction ever published, such as the Bokklubben World Library collection that cites Don Quixote as authors' choice for the "best literary work ever written"





# Gestalt Web Design Principles

Gestalt Psychology was founded by Max Wertheimer

Gestalt psychology is based on the observation that we often experience things that are not a part of our simple sensations (Boeree, 2000)

Over the years, other authors have adapted Gestalt Psychology to form the Gestalt Theory on Web Design

# Gestalt Web Design Principles

The central idea behind Gestalt is when we see a group of objects we perceive their entirety before seeing the individual objects. We see the whole as more than the sum of the parts (Bradley 2014)

The following are Gestalt Web Design Principles

For more, visit:

<http://www.smashingmagazine.com/2014/03/28/design-principles-visual-perception-and-the-principles-of-gestalt/>

# Gestalt Web Design Principles

Some key ideas behind the Gestalt Theory:

- Emergence (the whole is identified before the parts)

- Reification (our mind fills in the gaps)

- Multistability (the mind seeks to avoid uncertainty)

- Invariance (we're good at recognizing similarities and differences)



# Gestalt Web Design Principles

## LAW OF PRÄGNANZ (GOOD FIGURE, LAW OF SIMPLICITY)

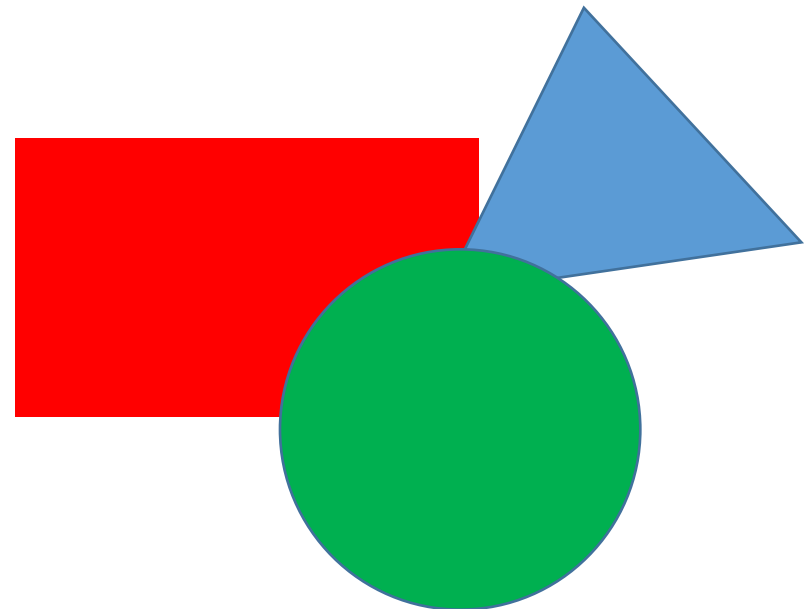
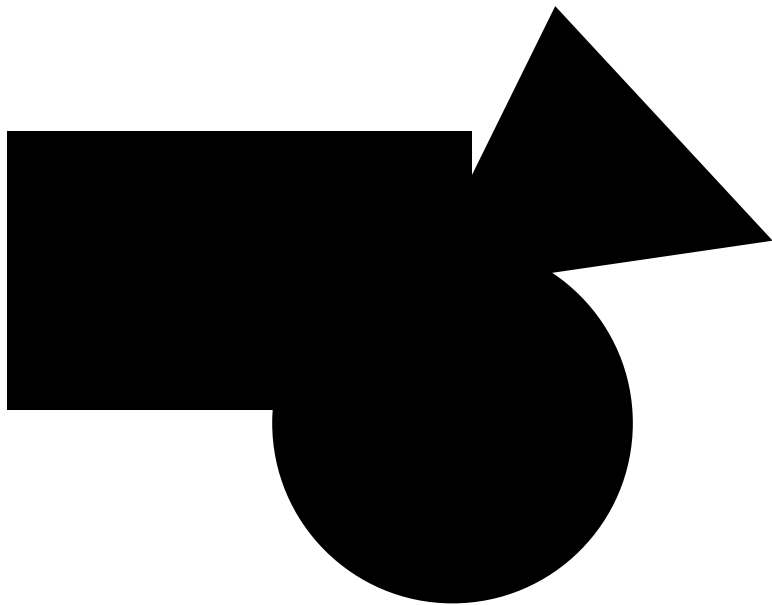
We prefer to see things that are simple, clear, and ordered

You're more likely to see the next image composed of the simple circle, square and triangle like you see on the right than as the complex and ambiguous shape the whole forms

In this case, seeing three distinct objects is simpler than seeing one complex object

# Gestalt Web Design Principles

LAW OF PRÄGNANZ (GOOD FIGURE, LAW OF SIMPLICITY)



# Gestalt Web Design Principles

## CLOSURE

In the left part of the next image, you are able to see a white triangle, even if the sides are not there

In the right part of the image below, you are able to see the panda, even if the panda is a set of several random shapes

This deals with our tendency to link individual elements to form a pattern

The key to closure is providing enough information so the eye can fill in the rest. If too much is missing, the elements will be seen as separate parts instead of a whole. If too much information is provided, there's no need for closure to occur

# Gestalt Web Design Principles

## CLOSURE



# Gestalt Web Design Principles

## SYMMETRY AND ORDER

In the image below, you should see three pairs of curly brackets, even though there is more space between the curly brackets than there is between each pair

Since our eyes will quickly find symmetry and order, these principles can be used to effectively communicate information quickly

# Gestalt Web Design Principles

## SYMMETRY AND ORDER





# Gestalt Web Design Principles

## SYMMETRY AND ORDER



# Gestalt Web Design Principles

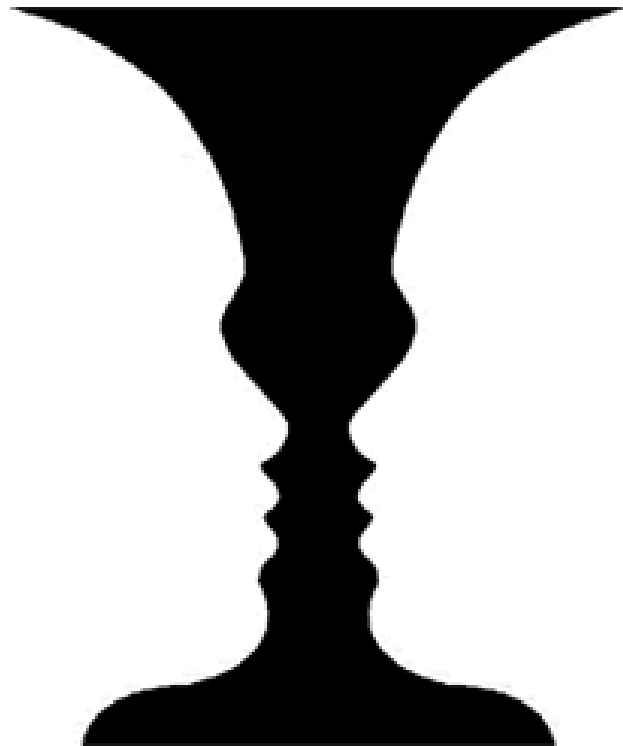
## FIGURE/GROUND

In the next image, do you see the vase or the face? If you perceive the black as a background, you see the face. If you perceive the white as the background, you see the vase. This creates an unstable relationship between the colors. The more stable the relationship, the better we can lead our audience to focus on what we want them to see

Figure/ground refers to the relationship between positive elements and negative space. The idea is that the eye will separate whole figures from their background in order to understand what's being seen. It's one of the first things people will do when looking at any composition

# Gestalt Web Design Principles

## FIGURE/GROUND



# Gestalt Web Design Principles

FIGURE/GROUND



**Hope for African  
Children Initiative**

# Gestalt Web Design Principles

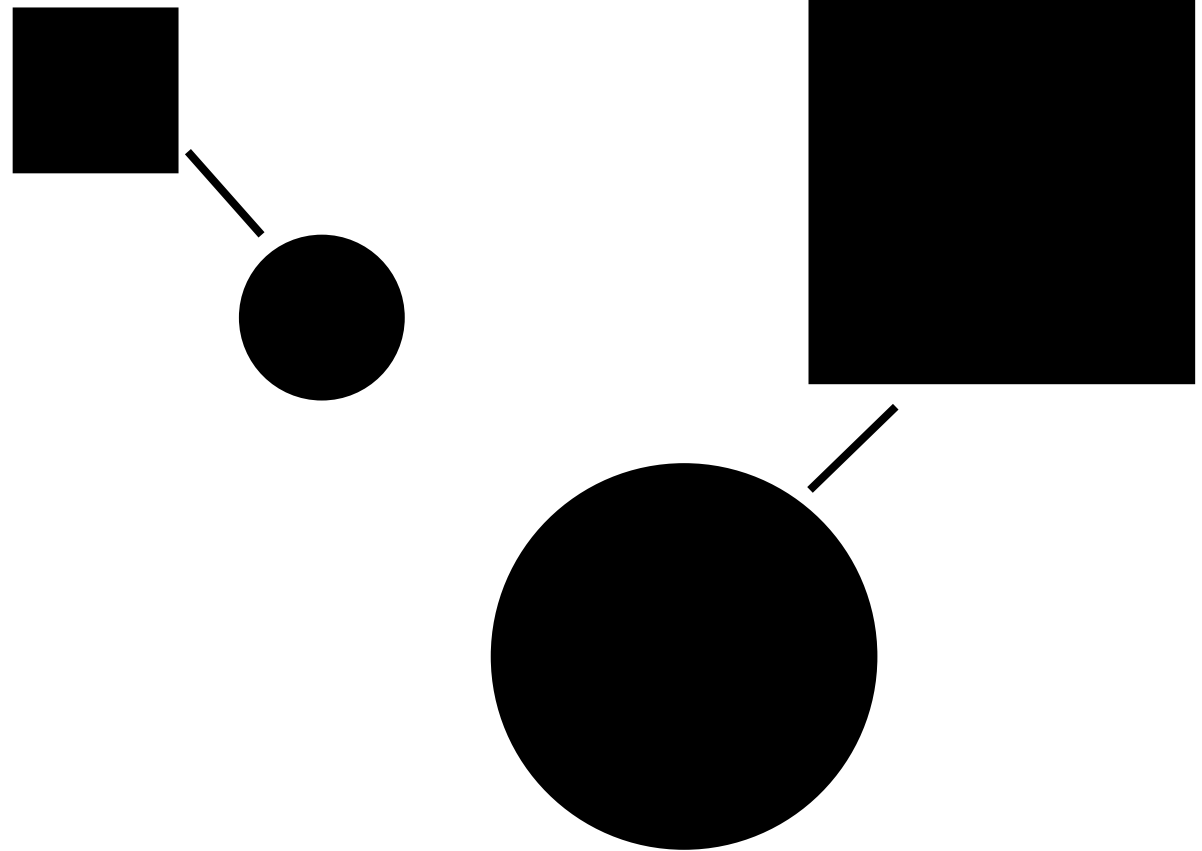
## UNIFORM CONNECTEDNESS

In the next image, the lines appear to connect the two pairs of elements. This connection leads us to perceive there is a relationship between the elements (even if one does not exist). Take note that the lines do not need to touch for the connection to be perceived

Of all the principles suggesting objects are related, uniform connectedness is the strongest. In the image, even though we see two squares and two circles, we see the square–circle pairs as more strongly related because they are visually connected

# Gestalt Web Design Principles

UNIFORM CONNECTEDNESS





# Gestalt Web Design Principles

## COMMON REGION

Another way to show a connection between elements is to enclose them in some way. Everything inside the enclosure is seen as related. Everything outside the enclosure is seen as separate. The circles in the image below are all the same, yet we see two distinct groups, with the circles in each enclosure related in some way

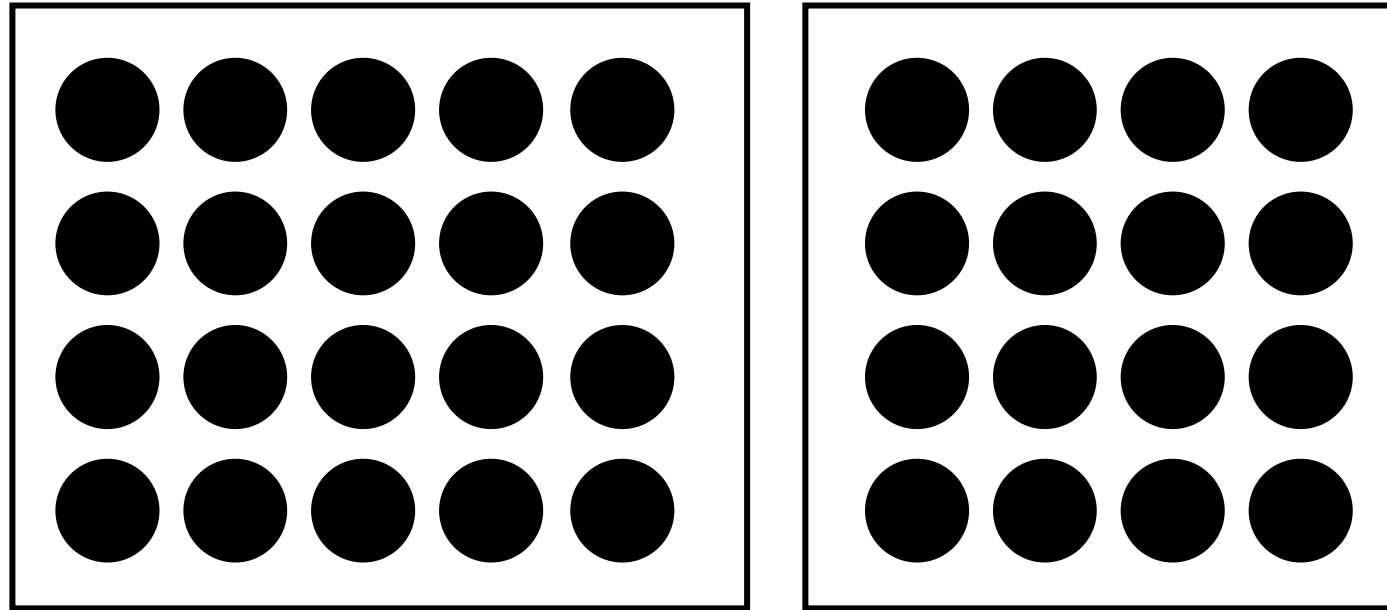
Some ways to accomplish this task is to:

- Draw a box around like elements

- Placing like elements on different backgrounds

# Gestalt Web Design Principles

## COMMON REGION



# Gestalt Web Design Principles

## COMMON REGION

Lorem ipsum dolor sit amet, gravida facilisi orci nulla. Erat dolor, sagittis blandit, maecenas quis mi suscipit, risus enim tincidunt erat. Eu justo, senectus ut mattis laoreet et. Nec ultricies ultrices iaculis non asperiores urna, nec ut dolor dignissim, sodales purus pretium eget, wisi integer

molestie arcu platea, urna ut in ipsum laoreet.

Nibh leo sit dui nonummy lorem augue, purus libero turpis integer, at erat conubia neque, praesent eleifend placerat ridiculus magna pulvinar ipsum. Dolor odio pretium eiusmod aliquid. Mauris amet voluptatem gravida, ullamcorper id dignissim consequat suscipit, risus pulvinar nam a nam, et

viverra sed, anim tincidunt quam.

# Gestalt Web Design Principles

## PROXIMITY

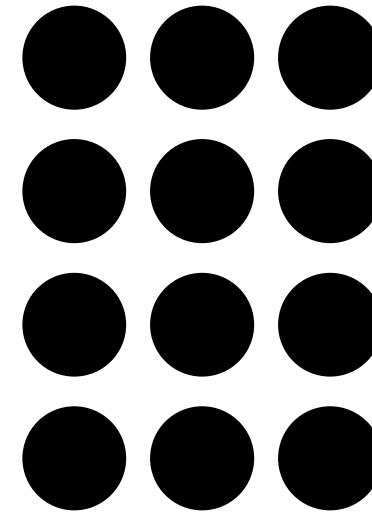
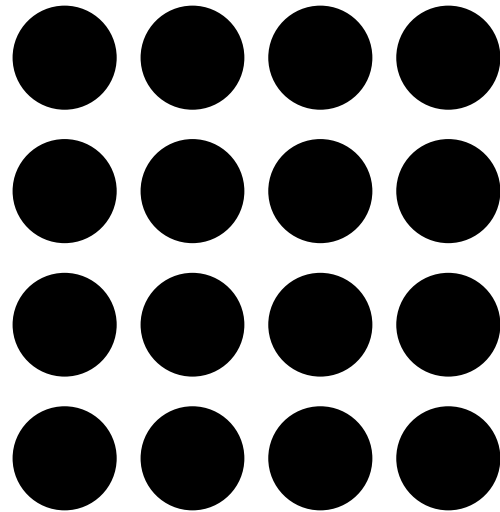
Similar to COMMON REGION, we can group elements together utilizing empty space to create the relationship

This is especially true when the elements in the group are closer to each other than they are to any elements outside the group

The objects don't need to be similar in any other way beyond being grouped near each other in space in order to be seen as having a proximity relationship

# Gestalt Web Design Principles

## PROXIMITY



# Gestalt Web Design Principles

## PROXIMITY

Lorem ipsum dolor sit amet, gravida facilisi orci  
nulla. Eu justo, senectus ut mattis laoreet et.  
Nec ultricies ultrices iaculis non asperiores  
urna

Aenean fusce donec, arcu  
elit, placerat arcu laoreet  
libero eu vitae. Erat dolor,  
sagittis blandit, maecenas  
quis mi suscipit, risus enim  
tincidunt erat.



# Gestalt Web Design Principles

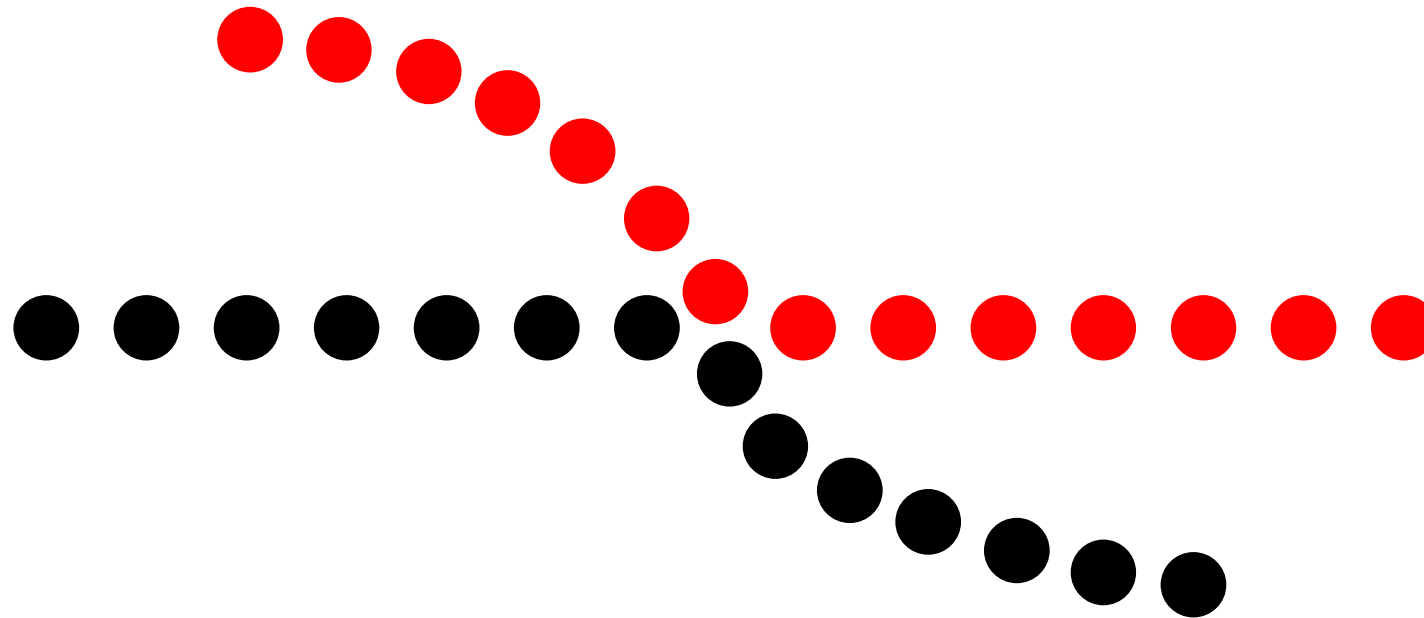
## CONTINUATION

It's instinct to follow a river, a path or a fence line. Once you look or move in a particular direction, you continue to look or move in that direction until you see something significant or you determine there's nothing significant to see

Another interpretation of this principle is that we'll continue our perception of shapes beyond their ending points. In the next image, we see a line and curve crossing instead of four distinct line and curve segments that meet at a single point

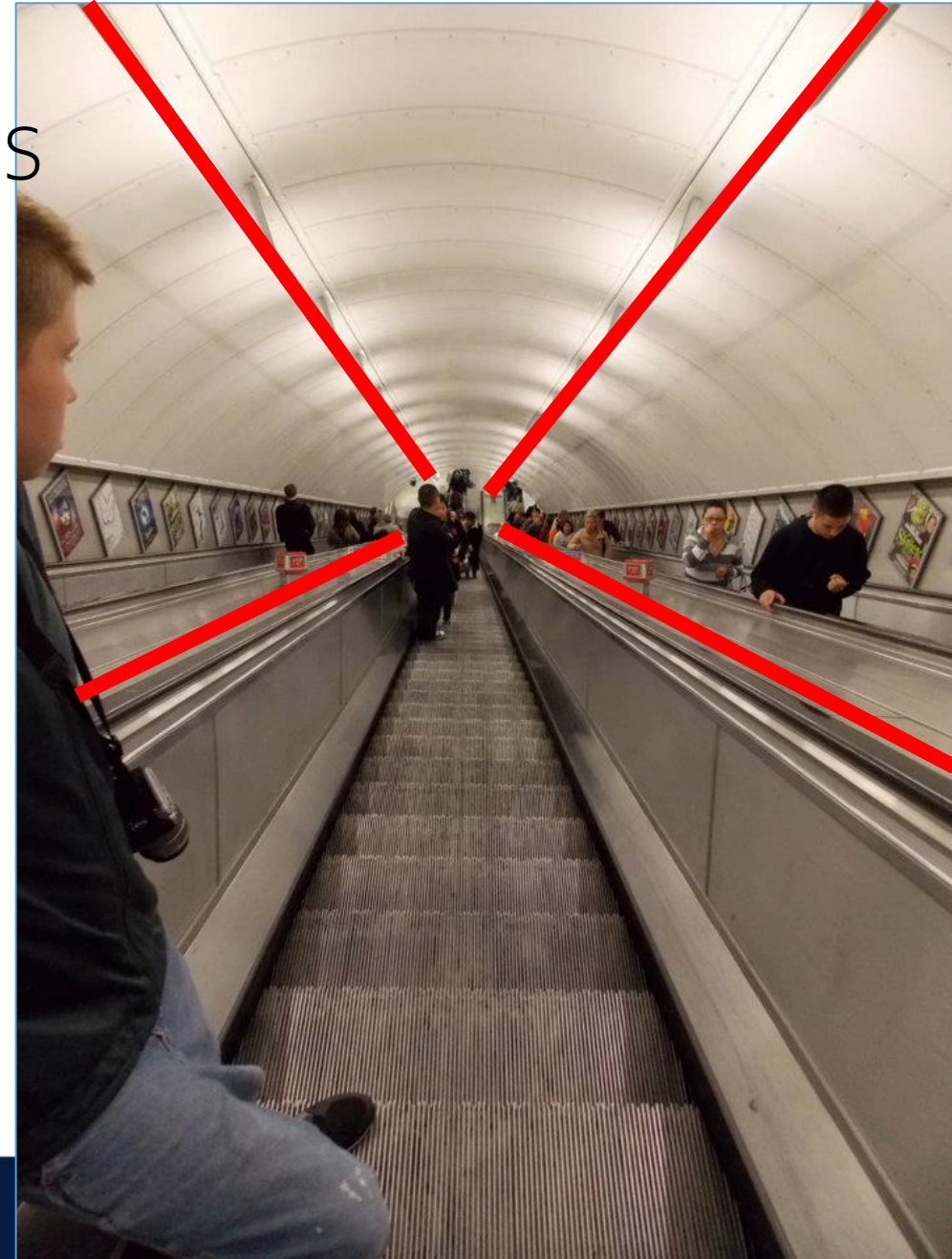
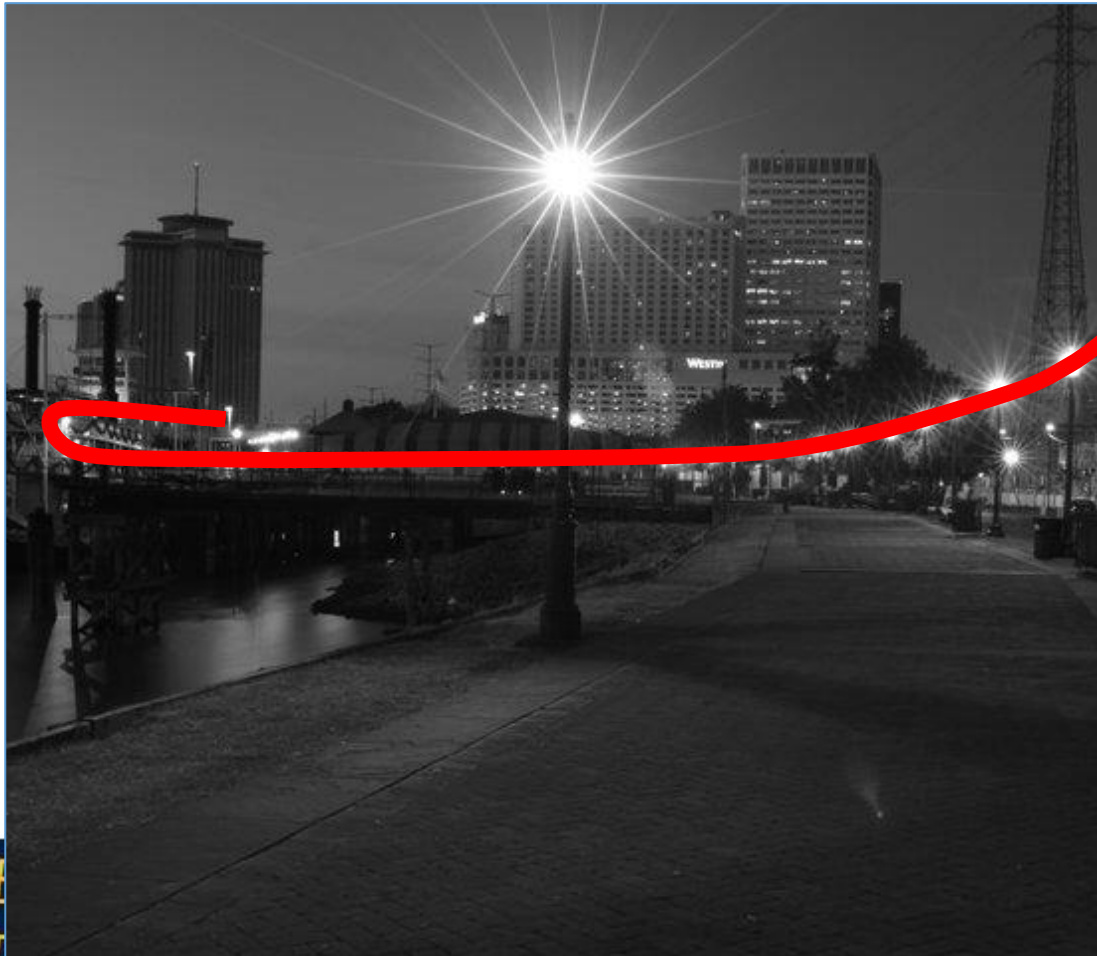
# Gestalt Web Design Principles

CONTINUATION



# Gestalt Web Design Principles

## CONTINUATION





# Gestalt Web Design Principles

## CONTINUATION



# Gestalt Web Design Principles

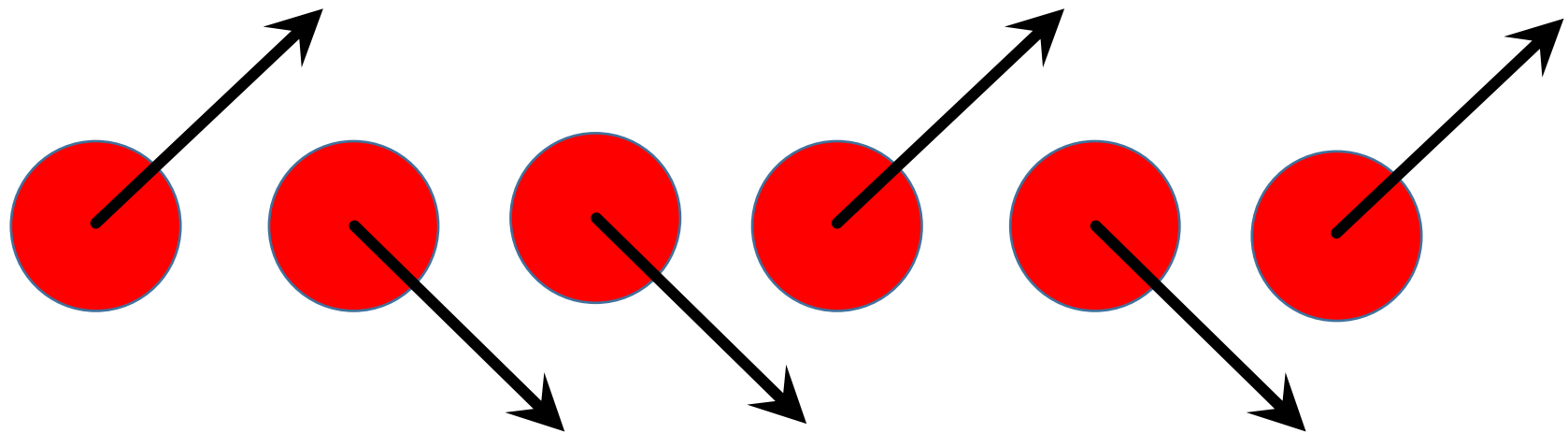
## COMMON FATE (SYNCHRONY)

Regardless of how far apart the elements are placed or how dissimilar they appear, if they are seen as moving or changing together, they'll be perceived as being related

In the next image, the arrows are enough to indicate the elements share a common fate. While movement or change isn't necessary, both are still a stronger indication of common fate than things like arrows or looking in the same direction which only imply movement

# Gestalt Web Design Principles

## COMMON FATE (SYNCHRONY)





# Gestalt Web Design Principles

COMMON FATE (SYNCHRONY)



# Gestalt Web Design Principles

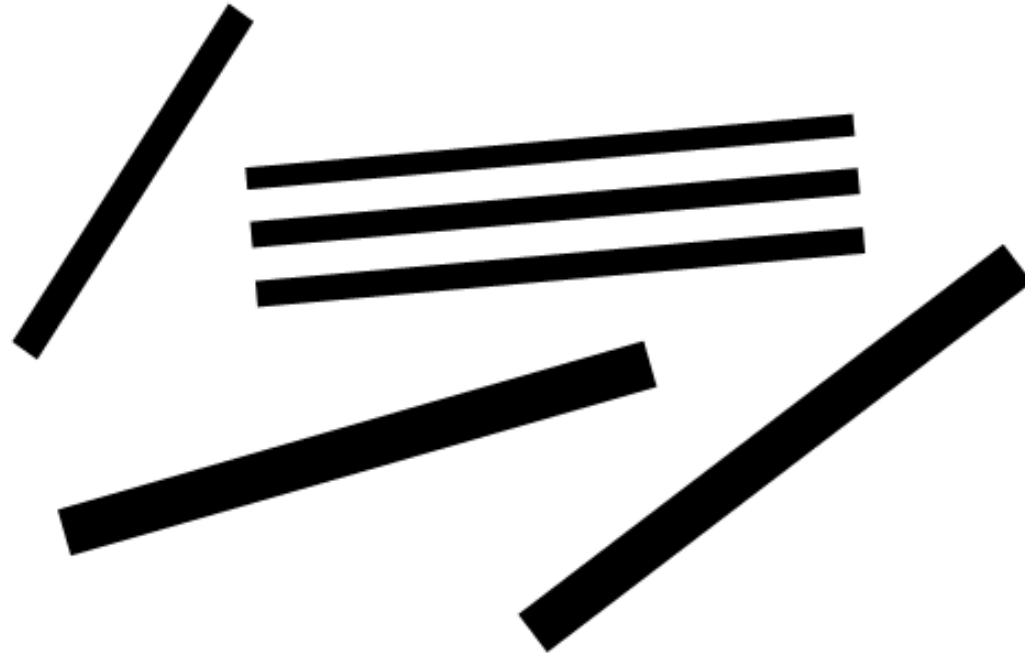
## PARALLELISM

Elements that are parallel to each other are seen as more related than elements not parallel to each other

In the next image, the lines that are in parallel are perceived to be more related than the three lines not in parallel

# Gestalt Web Design Principles

## PARALLELISM



# Gestalt Web Design Principles

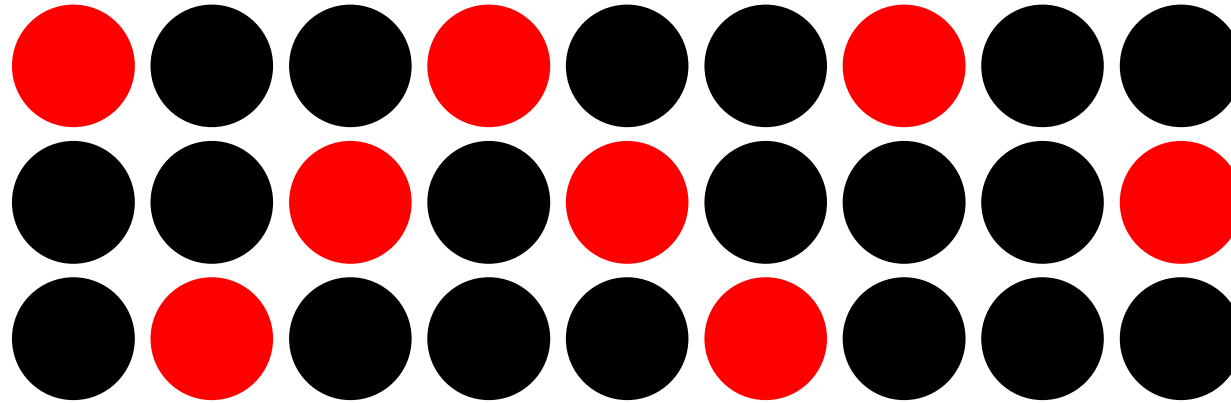
## SIMILARITY

Elements that share similar characteristics are perceived as more related than elements that don't share those characteristics

In the next image, red circles are seen as related to the other red circles and black circles to black circles due to the similarity in color. Red and black circles are seen as dissimilar to each other even though they're all circles

# Gestalt Web Design Principles

## SIMILARITY





# Gestalt Web Design Principles

## SIMILARITY





# Gestalt Web Design Principles

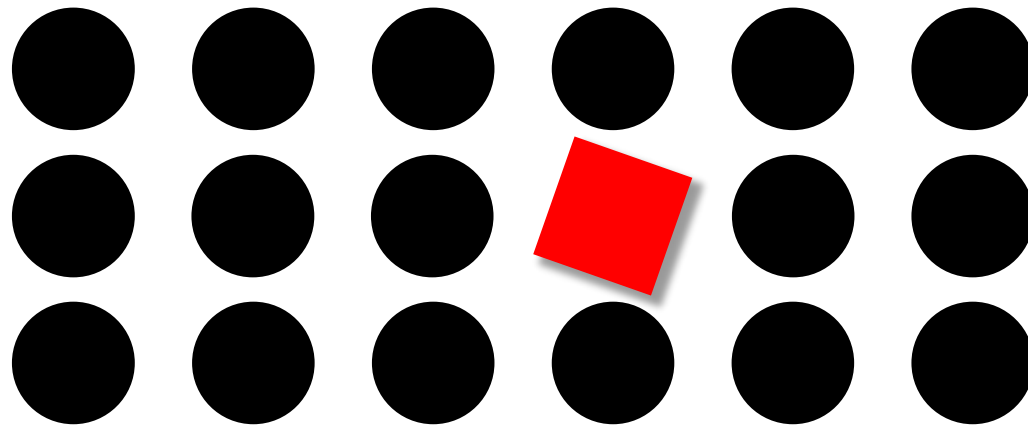
## FOCAL POINT

Elements with a point of interest, emphasis or difference will capture and hold the viewer's attention

In the next image, your eye should be drawn to the square. It's a different shape and color from the other elements. There is also a drop shadow to further emphasize it

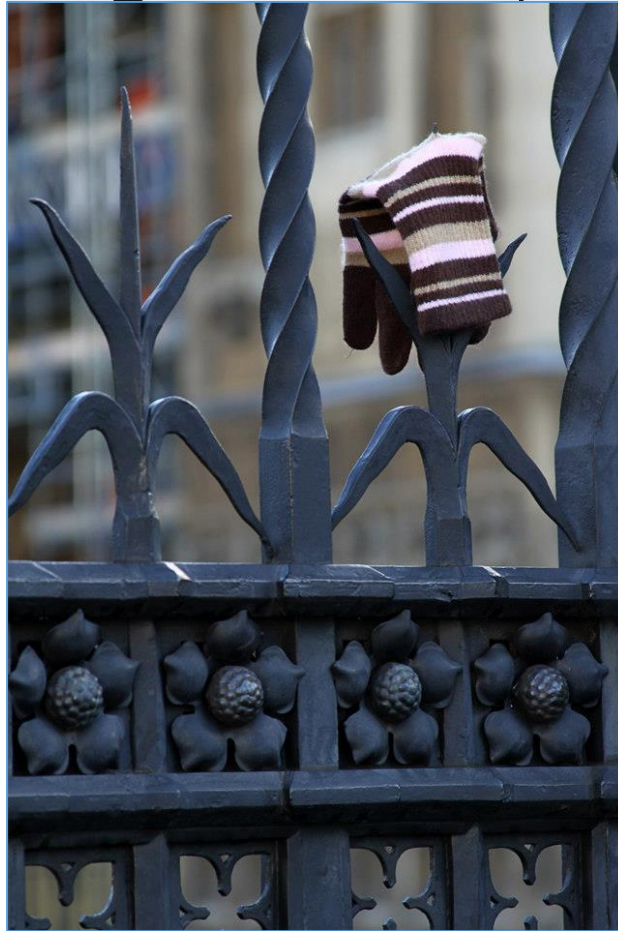
# Gestalt Web Design Principles

## FOCAL POINT



# Gestalt Web Design Principles

## FOCAL POINT



# Gestalt Web Design Principles

## PAST EXPERIENCE

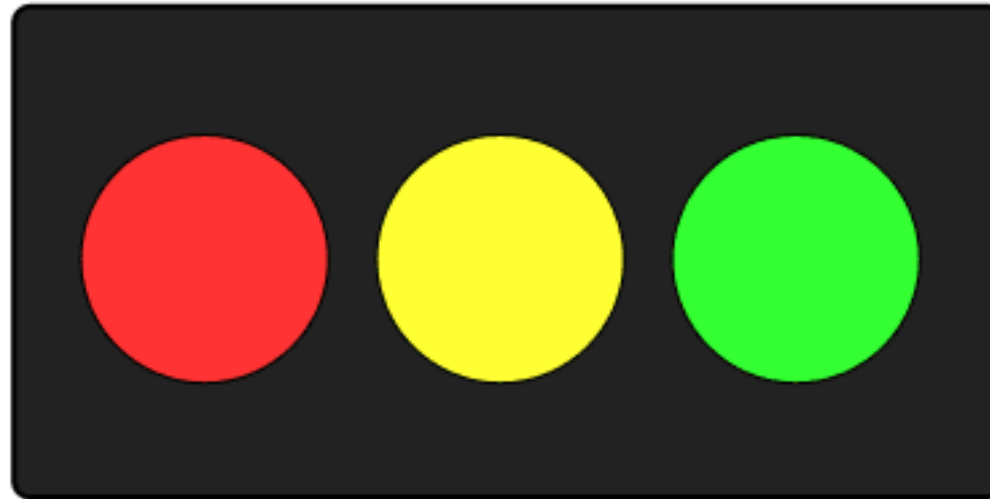
Elements tend to be perceived according to an observer's past experience

Having seen traffic lights throughout our lives, we expect red to mean stop and green to mean go. You probably see the next image as a traffic light on its side, because of the three common colors. That's past experience at work

Many of our common experiences also tend to be cultural. Color again provides examples. In some countries, white is seen as pure and innocent and black as evil and death. In other countries, these interpretations are reversed

# Gestalt Web Design Principles

PAST EXPERIENCE





# Gestalt Web Design Principles

- For more, visit:
- Smashing Magazine – [Design Principles: Visual Perceptions and the Principles of Gestalt:](http://www.smashingmagazine.com/2014/03/28/design-principles-visual-perception-and-the-principles-of-gestalt/)  
<http://www.smashingmagazine.com/2014/03/28/design-principles-visual-perception-and-the-principles-of-gestalt/>
- E-Book – [Design Fundamentals by Steven Bradley:](http://www.vanseodesign.com/downloads/learn-design-fundamentals/)  
<http://www.vanseodesign.com/downloads/learn-design-fundamentals/>



# Web Design Tips

# #1 Listen to Your Customer

It is critical that you listen for what your customer desires

Try to avoid making assumptions

However, do not oversaturate your customer with questions

## #2 Guide the User's Eye

It is important that you guide the user through the web page. You can do this by utilizing:

**Position** — Where something is on a page clearly influences in what order the user sees it.

**Color** — Using bold and subtle colors is a simple way to tell your user where to look.

**Contrast** — Being different makes things stand out, while being the same makes them secondary

## #2 Guide the User's Eye

It is important that you guide the user through the web page. You can do this by utilizing:

**Size** — Big takes precedence over little (unless everything is big, in which case little might stand out thanks to Contrast)

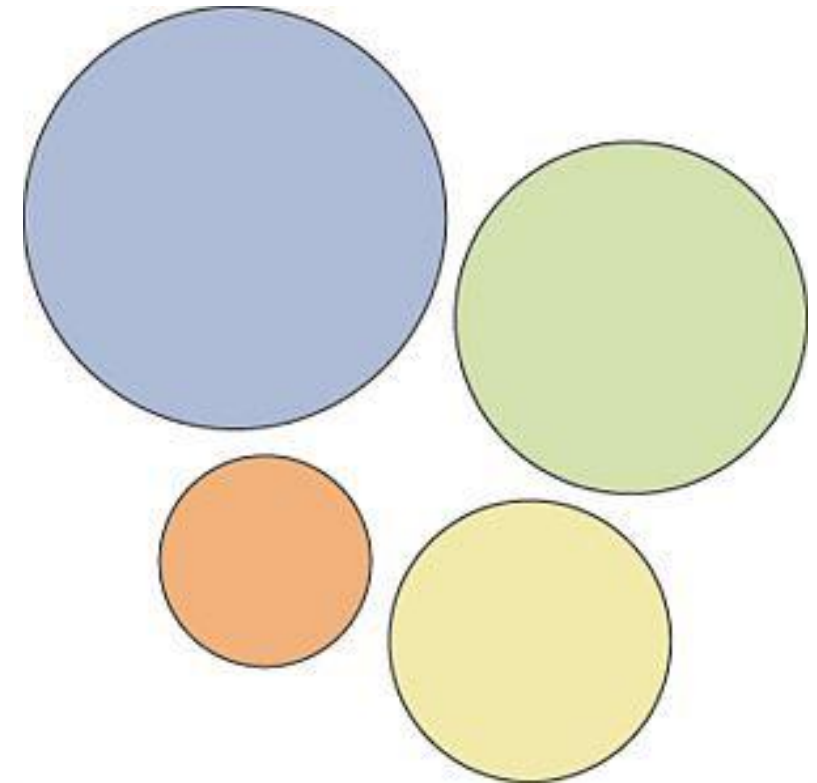
**Design Elements** — if there is a gigantic arrow pointing at something, guess where the user will look

# #3 Visual Hierarchy

Utilize size and color to highlight areas of importance and areas that you want your user to view/act

Lorem ipsum dolor sit  
amet, gravida facilisi orci  
nulla. Eu justo, senectus ut  
mattis laoreet et. Nec  
ultrices ultrices iaculis non  
asperiores urna

Aenean fusce donec, arcu  
elit, placerat arcu laoreet  
libero eu vitae. Erat dolor,  
sagittis blandit, maecenas  
quis mi suscipit, risus enim  
tincidunt erat.





# #4 Keep important items above the fold

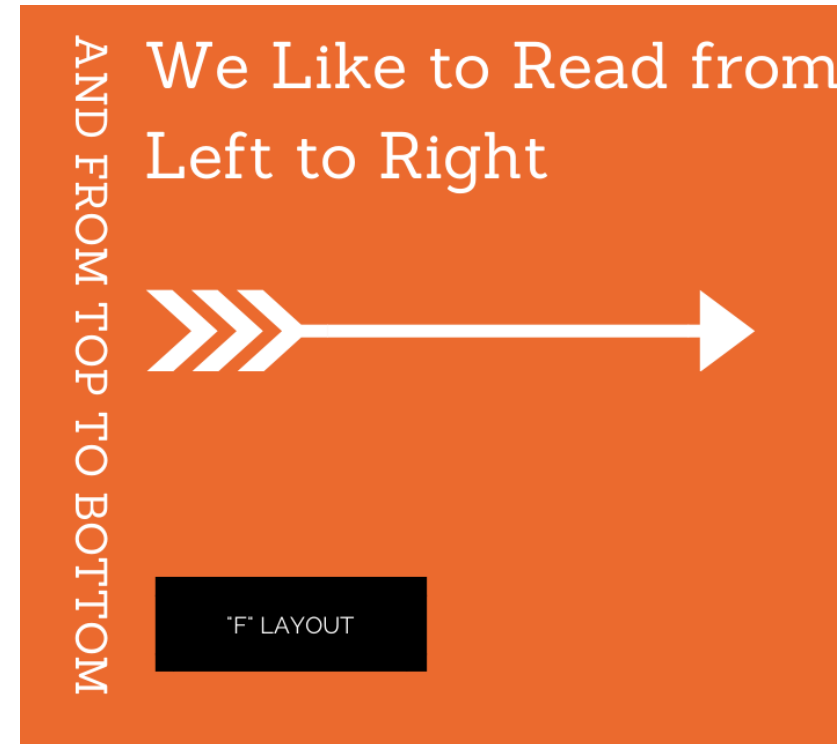
In newspaper, the top story is always printed above the fold of the newspaper, this way the newspaper can attract people to buy the newspaper to read the top story





# #5 Left to Right Top to Bottom (F Layout)

Most important items need to appear in the top left portion of your site



# Further Reading

<http://www.behance.net/gallery/20-Principles-of-Effective-Web-Design/4057243>

<http://design.tutsplus.com/tutorials/9-essential-principles-for-good-web-design--psd-56>

<http://conversionxl.com/8-universal-web-design-principles-you-should-to-know/#>.

<http://shortiedesigns.com/2014/03/10-top-principles-effective-web-design/>

<http://blog.crazyegg.com/2013/03/26/principles-website-usability/>

<http://www.creativebloq.com/netmag/dieter-rams-10-principles-good-web-design-3143872>

<http://webstyleguide.com/wsg3/index.html>

# Advanced CSS

Essentials of Web Design



# Classes

# CSS Classes

Classes can be used to apply varying format to a tag

When defining the style use a dot to modify the tag name. For the name, use a meaningful term (no spaces)

```
p {font-family: Arial}      /* General, all p elements */
p.fontBlue {color: blue}    /* Only the p element using
                             the p.fontBlue class */

<p class="fontBlue">...</p> <!-- The HTML code -->
```



# CSS Classes

Classes can be generalized to apply to multiple elements

Defining a class without an associated element gives us the ability to apply those rules to multiple elements on a page

```
.font-blue {color: blue}    /* CSS code */  
<h1 class="font-blue">...</h1> <!-- Heading 1 text is blue -->  
<p class="font-blue">...</p>    <!-- Paragraph text is blue -->
```

# CSS Classes

```
.font-blue {color: blue}    /* CSS code */  
<h1 class="font-blue">...</h1> <!-- Heading 1 text is blue -->  
<p class="font-blue">...</p>    <!-- Paragraph text is blue -->
```

## Blue Heading

Lorem ipsum dolor sit amet, gravida facilisi orci  
nulla. Eu justo, senectus ut mattis laoreet et.  
Nec ultricies ultrices iaculis non asperiores  
urna

# CSS Classes

General style applied, then class style

Each tag can have multiple classes (separated with a space)

```
/* General rule in CSS */  
p { font-family: Arial, Helvetica, sans-serif }  
.bold { font-weight: bold } /* CSS class for font weight */  
.italics { font-style: italic } /* CSS class for font style */  
  
<h1 class="bold italics">This is special h1</h1>  
<p class="bold italics">This is special text</p>
```

# CSS Classes

```
/* General rule in CSS */  
p { font-family: Raleway, Helvetica, sans-serif }  
.bold { font-weight: bold } /* CSS class for font weight */  
.italics { font-style: italic } /* CSS class for font style */  
  
<h1 class="bold italics">This is special h1</h1>  
<p class="bold italics">This is special text</p>
```

## *Blue Heading*

*Lorem ipsum dolor sit amet, gravida facilisi orci  
nulla. Eu justo, senectus ut mattis laoreet et.  
Nec ultricies ultrices iaculis non asperiores  
urna*

# CSS Classes/IDs - Naming Conventions

Generally, class names should be descriptive - should indicate what the class does

If the class name consists of more than one word, we usually separate the words with dashes: e.g., .container-fluid

We can't use this notation with IDs, though, because the '-' character has special meaning for JavaScript - is means minus and only minus

'-' in an ID name might confuse the JavaScript engine

So IDs are typically (conventionally) named using camelCase: e.g., #mainContent

# Flashback!

Identify the elements in the following CSS rule:

```
p { color: #FF8822; }
```

Selector



Property

Value

*Well Done!*



# CSS Positioning

# CSS Positioning

We can use the position property to position the elements on the screen

Potential values:

```
position: static;
```

Default value. Elements are shown on the screen in the order they are defined

```
position: relative;
```

The element is positioned relative to its normal (static) position

# CSS Positioning

We can use the position property to position the elements on the screen

Potential values:

`position: absolute;`

The element is positioned absolutely based on its container (if container is something other than static position)

`position: fixed;`

The element is positioned in the browser's window and fixed in that location

# CSS properties

`width` – determines how wide an element can be

`height` – determines how tall an element can be

# CSS **position** Values

**left** – defines its left position based upon the container it is within (can be negative value)

**right** – defines its right position based upon the container it is within (can be negative value)

**bottom** – defines its bottom position based upon the container it is within (can be negative value)

**top** – defines its top position based upon the container it is within (can be negative value)

# CSS Property `float` and `clear`

Float allows us to float objects to the left or the right of the screen.

Example:

```
img{ float: left;}  
div{ float: right;}  
.img-right { float: right }
```

Clear allows us to stop the floating of the objects and return to the next line.

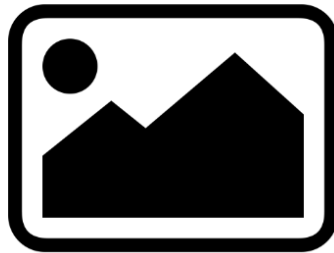
```
.clear-float{ clear: both; }
```



# CSS Property `float` and `clear`

```
img.float-left {  
  display: block;  
  float: left;  
  margin-right: 10px;  
}
```

```
<p class="font-blue italics">  
    
  Lorem, ipsum dolor sit amet consectetur adipisicing elit. Officiis,  
  reprehenderit magni! Eveniet repudiandae provident corporis dolorum  
  porro deleniti animi iusto aliquam dignissimos sint. Aperiam atque  
  commodi modi officii nisi qui ratione, deleniti voluptates voluptatem  
  at tempora, aut ut velit! Voluptatum quasi esse quibusdam nisi  
  explicabo assumenda quia vitae.  
</p>
```



*Lorem, ipsum dolor sit amet consectetur  
adipiscing elit. Officiis, reprehenderit magni!  
Eveniet repudiandae provident corporis dolorum  
porro deleniti animi iusto aliquam dignissimos  
sint. Aperiam atque commodi modi officii nisi  
qui ratione, deleniti voluptates voluptatem at tempora, aut ut velit!  
Voluptatum quasi esse quibusdam nisi explicabo assumenda quia  
vitae.*

# CSS Combinators

# CSS Combinators

In CSS, you have the option to group selectors together. To do this, separate each selector with a comma

CSS example:

```
h1, h2, h3, h4, h5, h6 { background-color:lightblue;}
```

Instead of:

```
h1{ background-color:lightblue;} h4{ background-color:lightblue;}  
h2{ background-color:lightblue;} h5{ background-color:lightblue;}  
h3{ background-color:lightblue;} h6{ background-color:lightblue;}
```

# CSS Combinators

In addition, we have the ability to change properties of nested selectors

We can use combinators to modify immediately nested selectors that are descendants of another selector

# CSS Combinators

## Examples (in CSS)

```
* {  
    background-color:green; /* all elements will have bg green */  
}  
  
div em {  
    color:green /* all em elements nested inside of a div tag  
                will have a text colored green */  
}
```

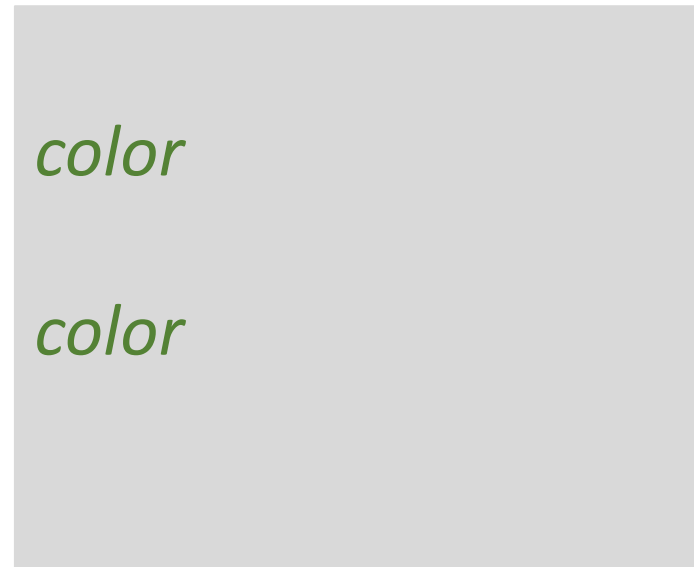
# CSS Combinators

CSS:

```
div em {  
    color: green;  
}
```

HTML:

```
<div>  
    <em>color</em>  
    <p>  
        <em>color</em>  
    </p>  
</div>
```





# CSS Combinators

## Examples (in CSS)

```
div > strong {  
    color: green; /* all strong tags immediately nested  
                  inside of an h1 tag will have text  
                  colored green */  
}
```

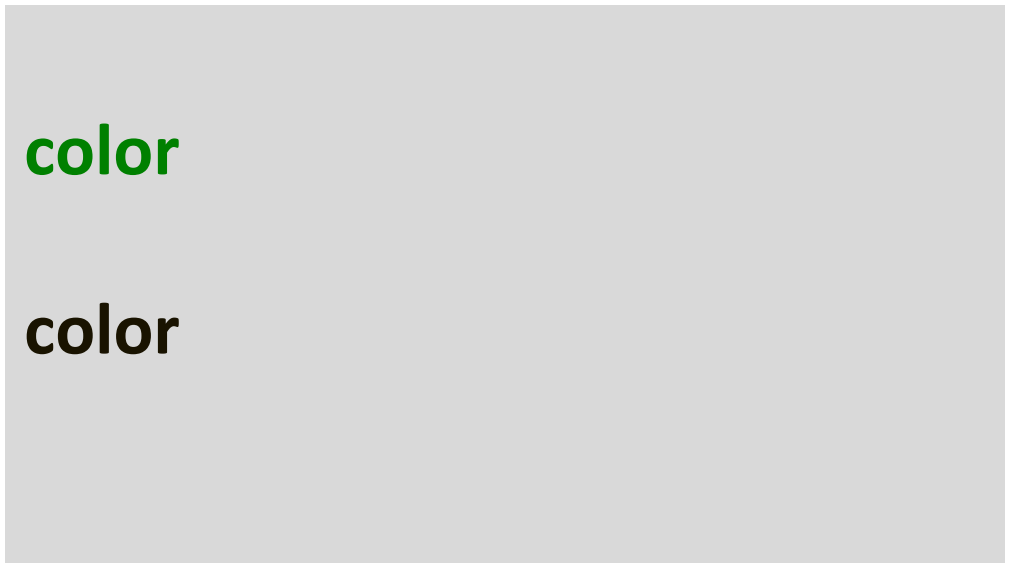
# CSS Combinators

CSS:

```
div > strong {  
    color: green;  
}
```

HTML:

```
<div>  
    <strong>color</strong>  
    <p>  
        <strong>color</strong>  
    </p>  
</div>
```



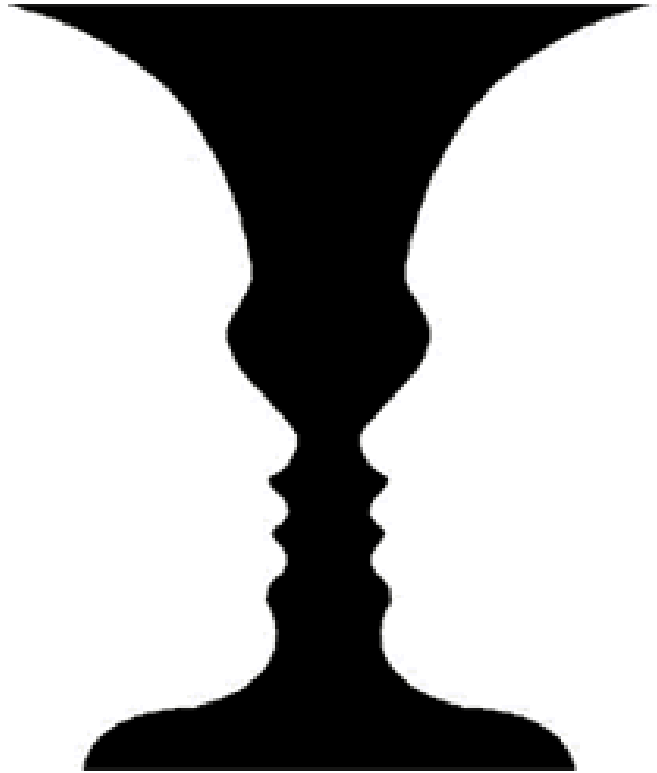
Questions?



# Lecture Quiz

1. Do you see a vase or two faces?

- A. Vase
- B. Face
- C. Both
- D. Neither



2. What is an organized whole that is perceived to be more than the sum of its parts?

- A. Gestalt
- B. Wertheimer
- C. Gerhardt
- D. Gesticulate



### 3. What is Emergence?

- A. Our minds fill in gaps
- B. The mind seeks to avoid uncertainty
- C. We're good at recognizing similarities and differences
- D. The whole is identified before the parts

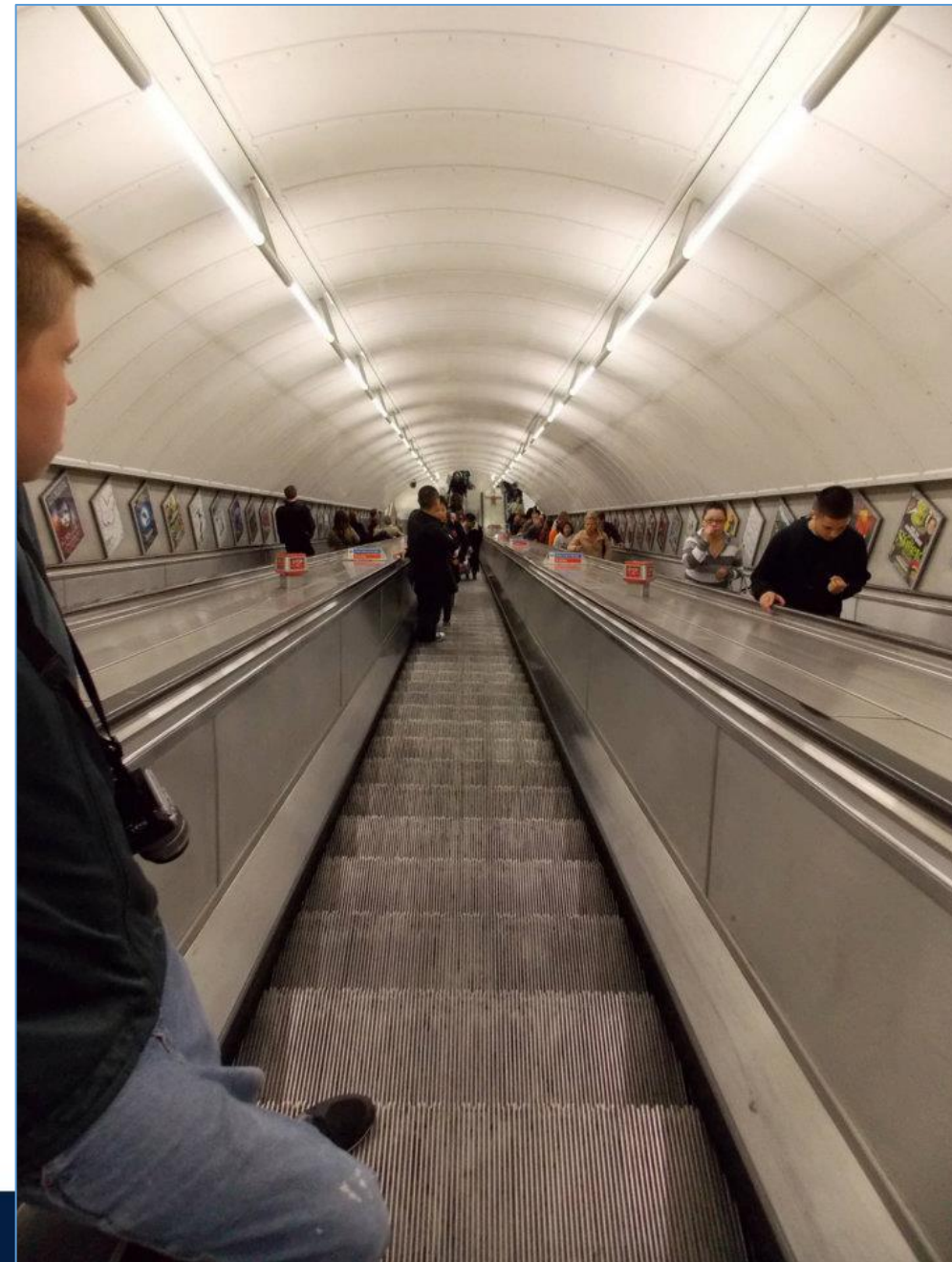
4. What is this an example of?

- A. Figure/ground
- B. Closure
- C. Continuity
- D. Common region



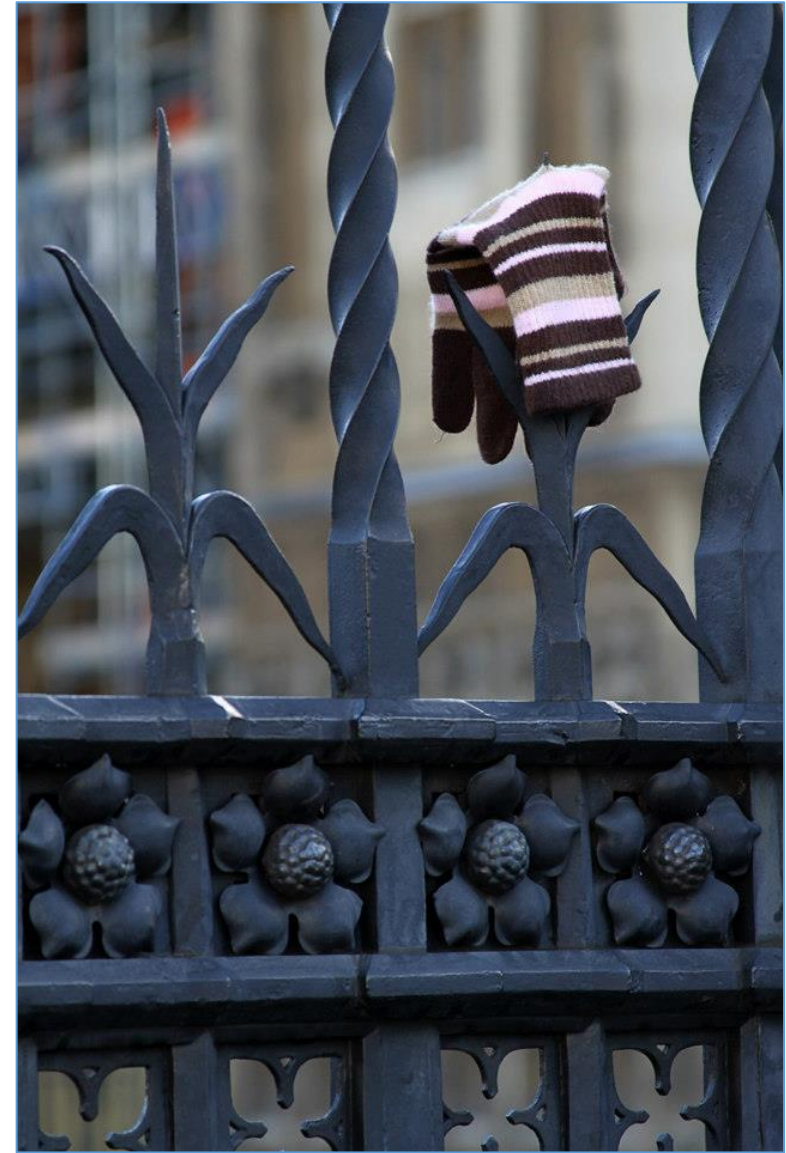
5. What is this an example of?

- A. Figure/ground
- B. Closure
- C. Continuity
- D. Common region



6. What is this an example of?

- A. Focal point
- B. Similarity
- C. Parallelism
- D. Common region





7. One essential skill for a developer is effective use of design elements, positioning, color, contrast, and size to guide the user's eye through a page

- A. True
- B. False

8. Where should the most important elements be placed on a page?

- A. Center
- B. Upper right
- C. Upper left
- D. It doesn't matter



9. Can we safely assume what colors a client would like us to use?

- A. Yes
- B. No

10. What principle might this be?

- A. Focal point
- B. Symmetry
- C. Parallelism
- D. Common region



# Sources

- Hendrix, S., (2014). Lecture Notes.
- Ramsey, J. (2021). Lecture Notes.
- W3CSchools

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