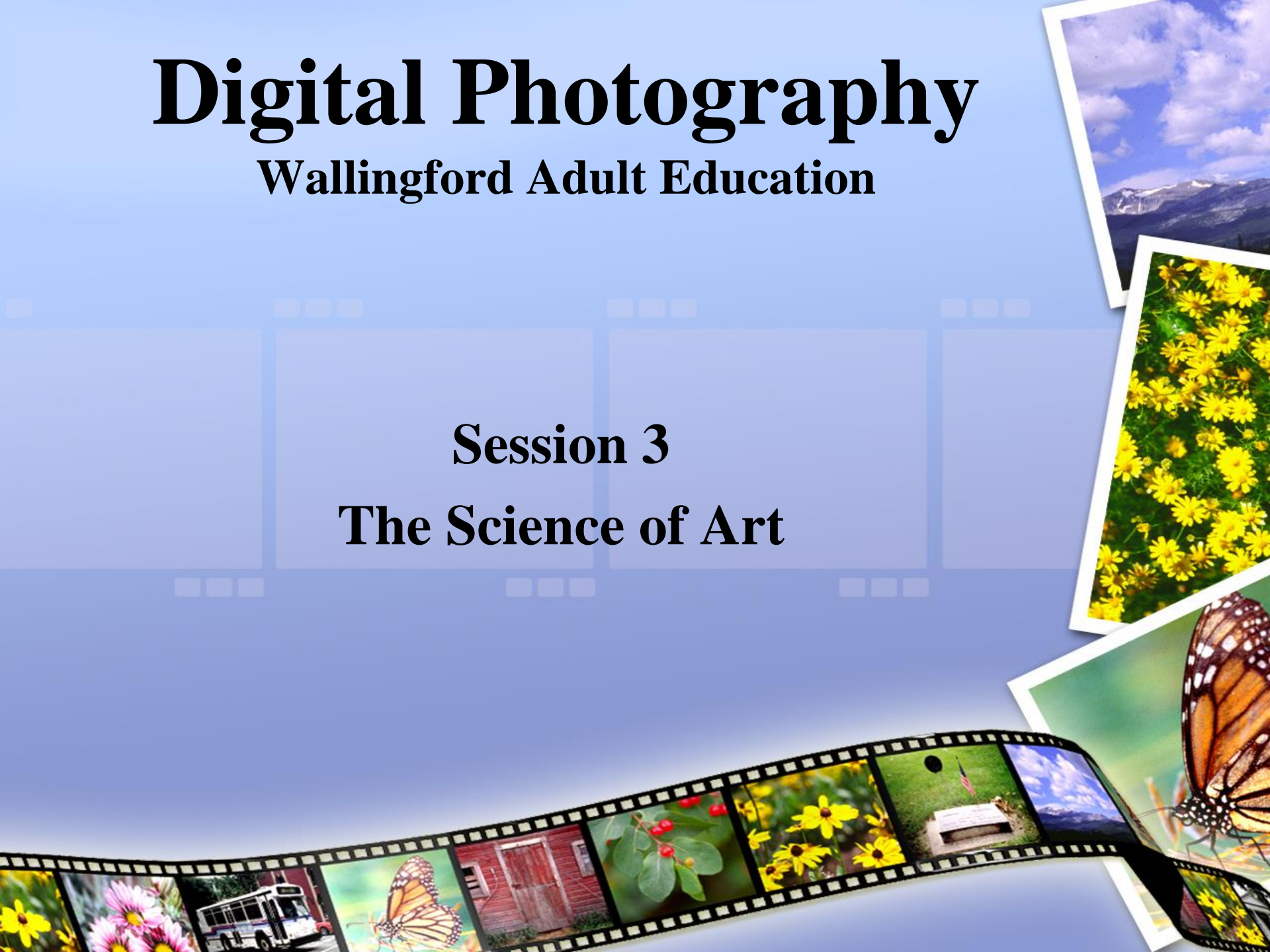


Digital Photography

Wallingford Adult Education

Session 3

The Science of Art





Session 2 Recap

- **Light is light whether it's RGB or 100101**
- **The Balancing Act**
- **Aperture**
- **Shutter Speed**
- **ISO**
- **Making them work together**



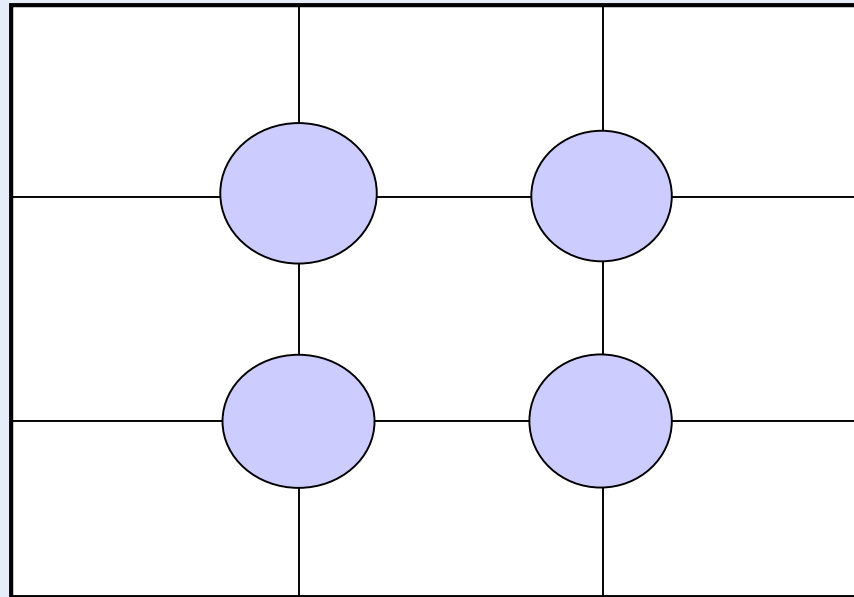
The Science of Art

- **Composition**
- **Rule of Thirds**
- **Camera Controls**
 - **Shutter Speed**
 - **Aperture**
- **Controlling Motion**
- **Controlling Focus**

Elements of Good Photography

- **Composition**
 - **Rule of Thirds**

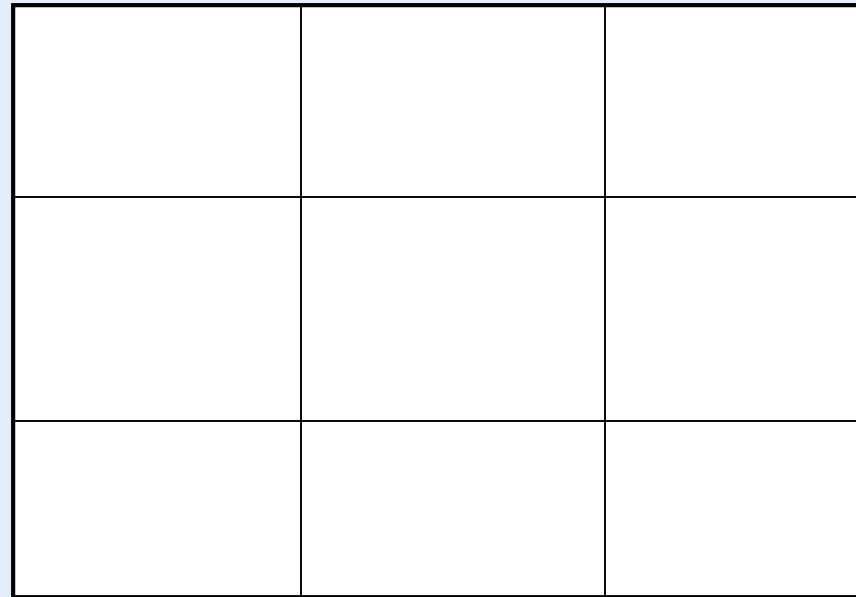
Subject Placement



Elements of Good Photography

- **Composition**
 - **Rule of Thirds**

Horizon Placement



Example #1

- Rule of Thirds put to use



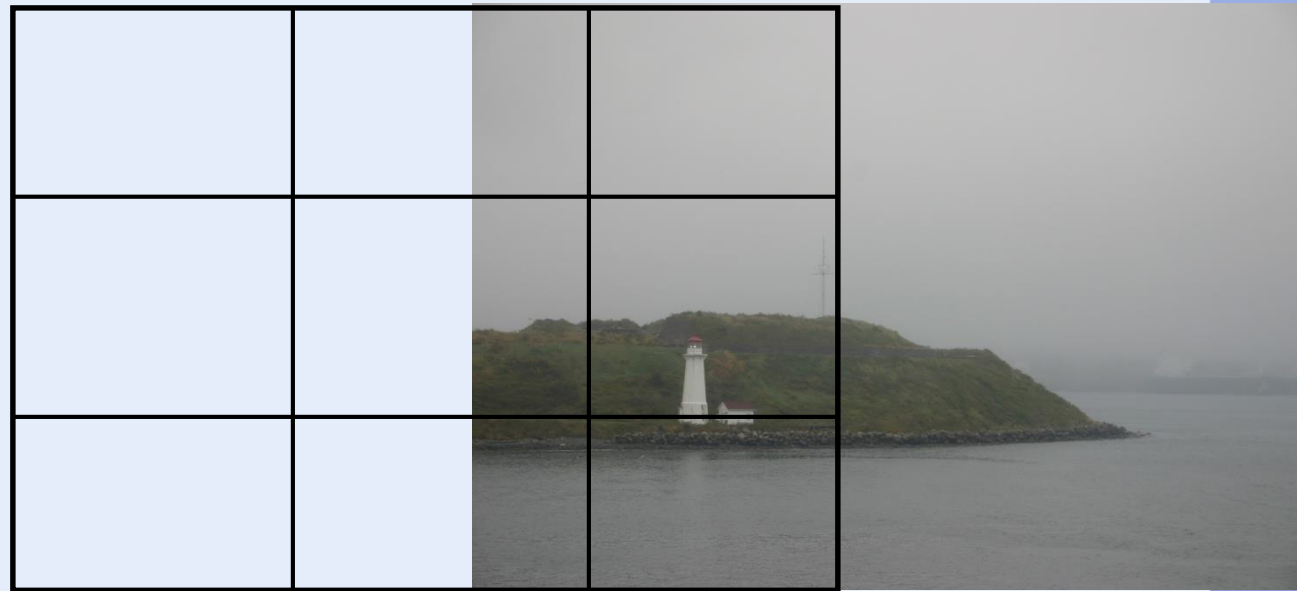
Example #2

- With and without the Rule of Thirds



In Camera Cropping

- Move the Camera to place the subject correctly in the view finder



f-Stop: *f* 8

Shutter Speed: 1/125

ISO: 100

In Camera Cropping

- **May Require:**
 - **Changing your Location**
 - **Zooming in or out**
 - **“Sneaker Zooming”**
 - **Moving closer or further away from your subject**

In Camera Cropping

- Example –Before



f-Stop: *f* 10

Shutter Speed: 1/100

ISO: 100

In Camera Cropping

- Example –After



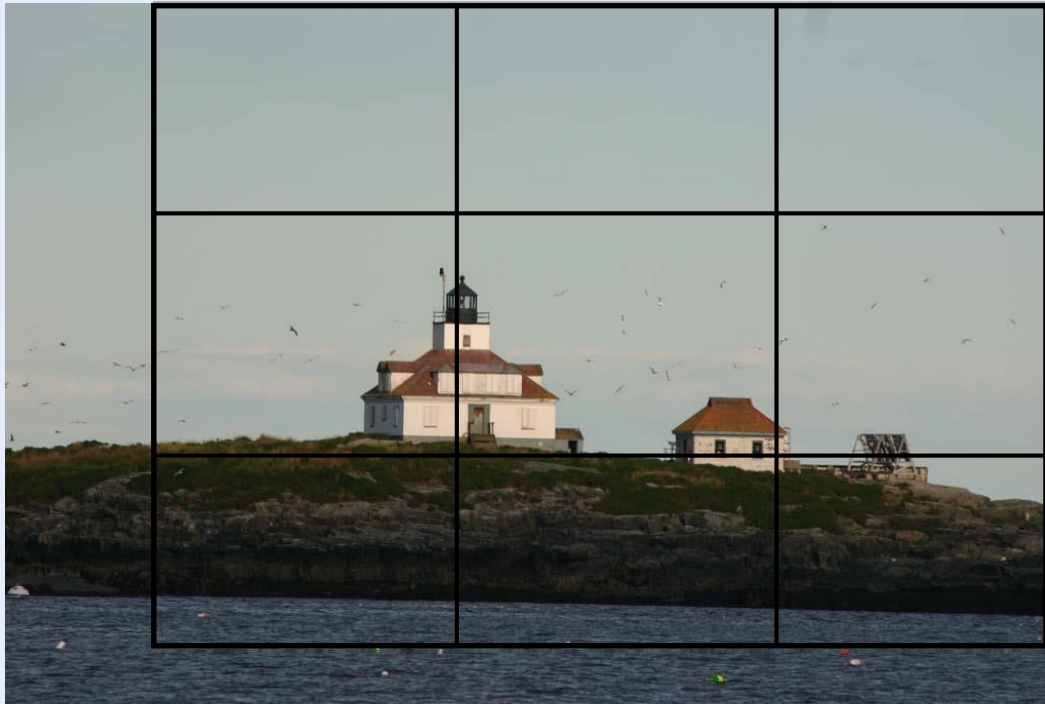
f-Stop: *f* 9

Shutter Speed: 1/200

ISO: 100

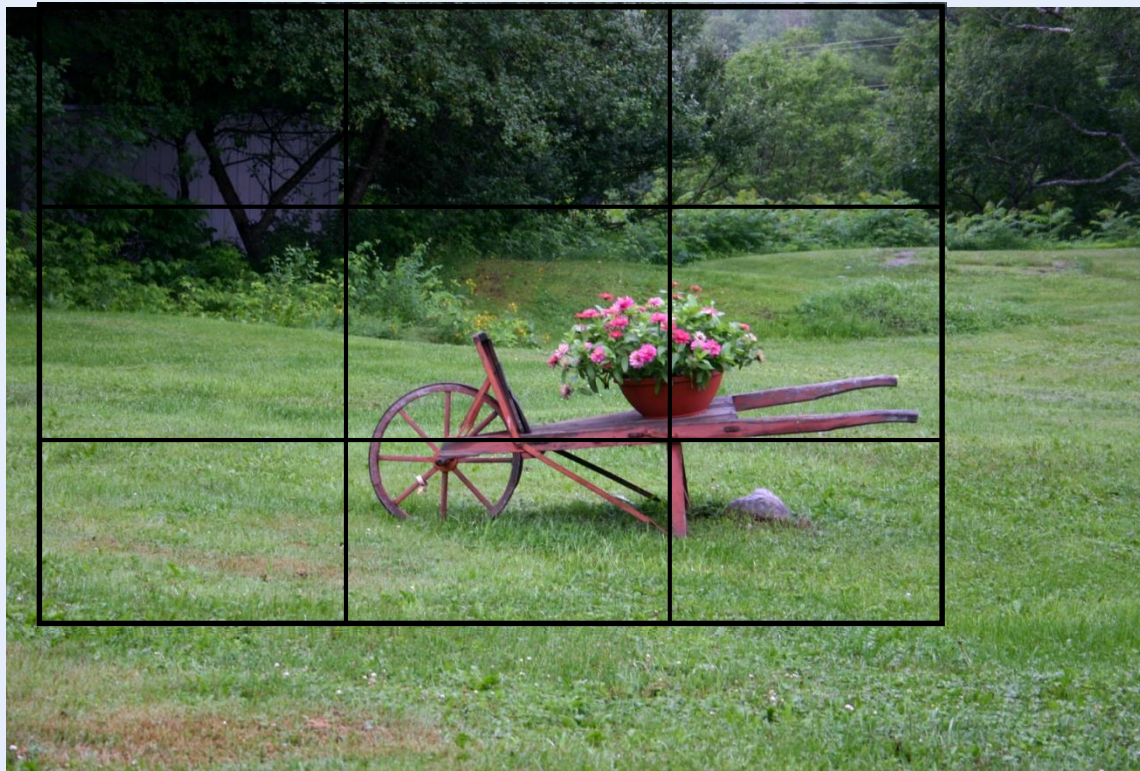
Post Production Cropping

- Crop the picture after taking it



Post Production Cropping

- Crop the picture after taking it





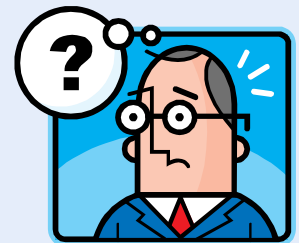
Pay Attention!

- **Your eye conspires with your brain**
 - You tend to tune things out
 - You see what you want to see
- **The camera sees EVERYTHING!**
 - It doesn't miss a thing
 - That's why the picture you thought you took is not the picture you ended up with

How do we Fight the Conspiracy???

- We can never completely eliminate the conspiracy –we are only human after all
- But, we **CAN** gain some control over our Eye/Brain Conspiracy.

How???





TAKE PICTURES!

Analyze your Pictures

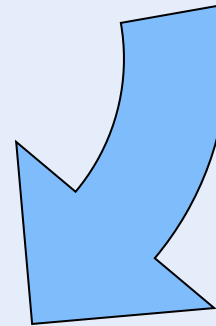
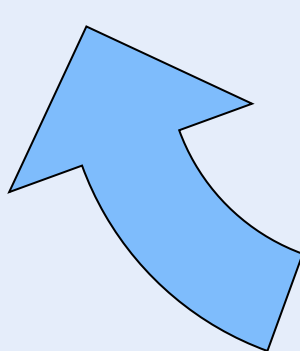
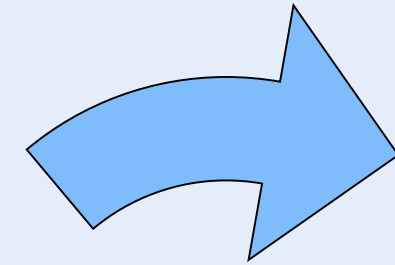
Take More Pictures!

The Cycle of Learning

Take Better Pictures

Take Pictures

Analyze Your Pictures





Subject

- **Determine what is your subject**
- **How to place the subject in the frame**
- **Determine what you want to say about your subject**
- **Look at your subject from several locations and vantage points**
- **Try several different shots from various spots**

Subject

- Example –Before



f-Stop: *f* 4.5

Shutter Speed: 1/85

ISO: 100

Subject

- **Example –After**



***f*-Stop: *f* 4.5**

Shutter Speed: 1/250

ISO: 100

Foreground

- Is it cluttered?
- Does it obscure the subject?
- Do you want it in focus?

Foreground

- **Example**
 - **Bad**



***f*-Stop: *f* 8**

Shutter Speed: 1/160

ISO: 100

Foreground

- **Example**
 - **Good**



***f*-Stop: *f* 7.1**

Shutter Speed: 1/160

ISO: 100



Background

- Is it cluttered?
- It is much more difficult to “see” than the foreground
- Does it obscure the subject?
- Does it detract from the subject
- Do you want it in focus?

Background

- **Example**
– **Bad**



f-Stop: *f* 14

Shutter Speed: 1/125

ISO: 200

Background

- **Example**
– **Good**



***f*-Stop: *f* 16**

Shutter Speed: 1/125

ISO: 200



Lighting

- **Is it High-key or Low-Key?**
- **What do you want to say with the lighting?**
- **Are there deep shadows?**
- **To use the flash or not to use the flash**
 - **That is the question...**

Lighting

- High-Key Lighting



f-Stop: f 16

Shutter Speed: 1/250

ISO: 100

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Lighting

- High-Key Lighting



f-Stop: *f* 5

Shutter Speed: 1/60

ISO: 100

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Lighting

- Low Key Lighting



f-Stop: *f* 14

Shutter Speed: 1/125

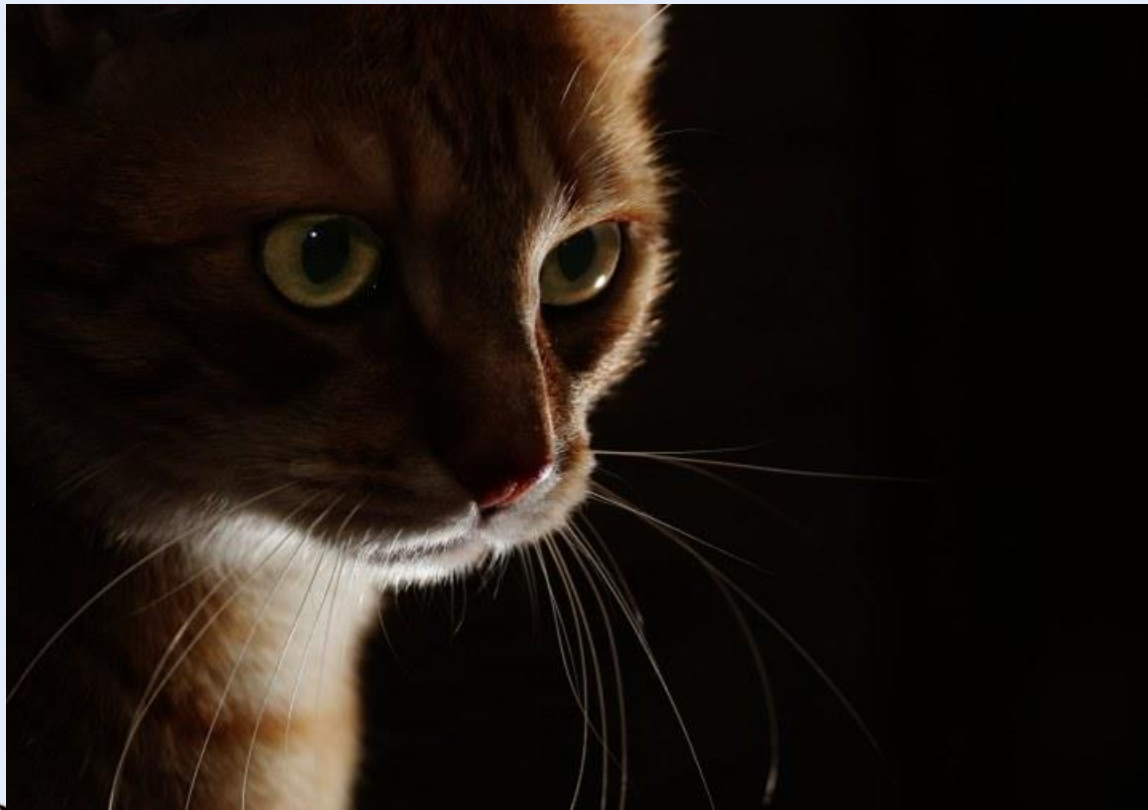
ISO: 50

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Lighting

- Low Key Lighting



f-Stop: *f* 2.0

Shutter Speed: 1/60

ISO: 100

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Lighting

- **Example**
– **Bad**



f-Stop: *f* 5.6

Shutter Speed: 1/60

ISO: 100

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Lighting

- **Example**
– **Good**



***f*-Stop: *f* 6.3**

Shutter Speed: 1/400

ISO: 100



Color

- **What colors are in the scene?**
- **Is there a “message” in the colors?**
- **Do the colors work together?**
- **Can you control the colors?**

Color

- **Color is effected by:**
 - **Exposure**
 - **Over Exposed**
 - Colors washed out
 - **Under Exposed**
 - Colors muted

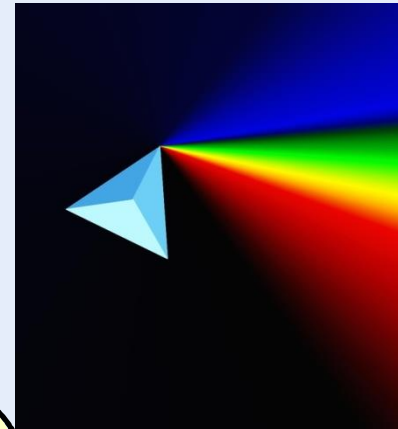
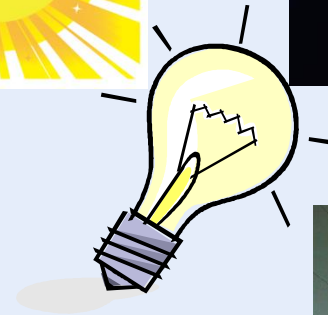
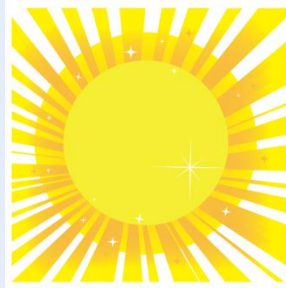


Color

- **Color is effected by:**

- **Lighting**

- **Daylight**
 - **Indoor Light**
 - Tungsten
 - Florescent



Color

- **Color Temperature**
 - **Color Rated by Degrees Kelvin**

Temperature	Source
1,700 K	Match flame
1,850 K	Candle flame, sunset/sunrise
2,700–3,300 K	Incandescent light bulb
3,200 K	Studio lamps, photofloods, etc.
3,350 K	Studio "CP" light
4,100 K	Moonlight, xenon arc lamp
5,000 K	Horizon daylight
5,500–6,000 K	Vertical daylight, electronic flash
6,500 K	Daylight, overcast
9,300 K	CRT screen

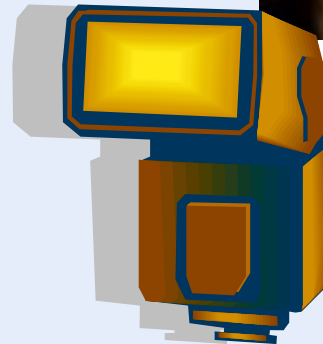
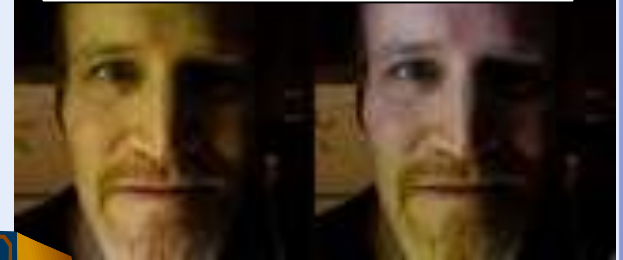
These temperatures are merely characteristic; considerable variation may be present.



Color Correction

- **White balance**
 - Usually automatic
 - Makes whites appear white
- **Flash**
 - Corrects for color

**Color
Corrected!**



Color

**Ambient Light:
Tungsten**



***f*-Stop: *f* 5.0**

Shutter Speed: 1/60

ISO: 100

Color

Post Production Correction



***f*-Stop: *f* 5.0**

Shutter Speed: 1/60

ISO: 100

Make your Camera Work

- Know the settings
 - How to control Aperture
 - How to control Shutter Speed



Make your Camera Work

- **Know the Settings**
 - **Automatic –for Beginners**
 - **Manual –for Advanced**

Manual

Automatic



Settings

- **Dial**

Automatic Depth of Field

“I’ll try to get it all in focus”



Settings

- **Dial**

Manual

“I’m not doing anything –you figure it out all by yourself!”



Settings

- **Dial**

Aperture Priority

“You handle the Aperture, I’ll handle the Shutter Speed”

- To control Depth of Field



Settings

- **Dial**

Time Priority

“You handle the Shutter Speed,
I’ll handle the Aperture”

- To control Motion Blur



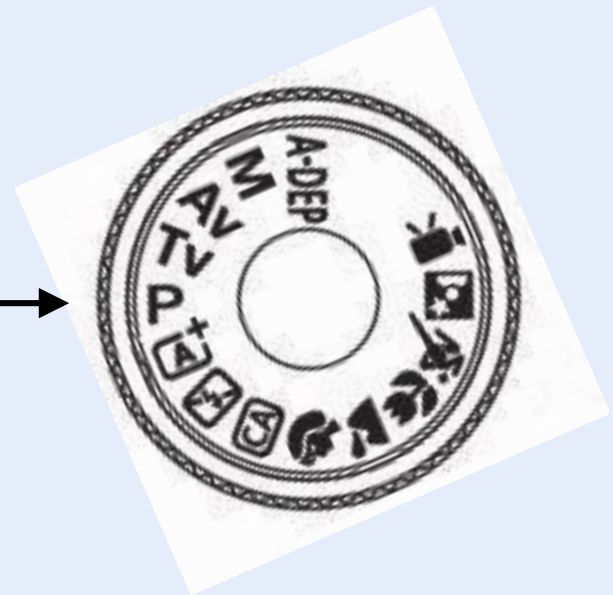
Settings

- **Dial**

Program

“I’ll set Aperture and Shutter Speed, but you can play with other stuff if you want”

- To make adjustments



Settings

- **Dial**

Full Auto

“Don’t worry your pretty little head, I’ll do it all for you”



Settings

- **Dial**

Full Auto –no Flash

“OK –I’ll do it all, but NO Flash”



Settings

- **Dial**

Almost Auto

“OK –you set what you want –
I’ll do the rest”



Settings

- **Dial**

Portrait

- Shallow Depth of Field
- Large Aperture (Priority)
- Faster Shutter speed
- Flash if Needed (automatic)
- Multiple shots (hold down shutter release)



Settings

- **Dial**

Landscape

- Long Depth of Field
- Small Aperture (Priority)
- Slower Shutter speed (subject is not moving)
- No Flash Used (subject too far for flash)



Settings

- **Dial**

Close-ups

- Shallow Depth of Field
- Large Aperture (Priority)
- Fast Shutter speed (as fast as possible)
- Flash if Needed
- Single shot



Settings

- **Dial**

Fast Action

- Shallow Depth of Field
- Large Aperture
- Fast Shutter speed (Priority)
- No Flash Used
- Multiple shots (hold down shutter release)



Settings

- **Dial**

Night Portrait

- Shallow Depth of Field
- Large Aperture (Priority)
- Slow Shutter speed
- No Flash Used



Settings

- **Dial**

Movie Mode

“Lights, camera –ACTION!”





Controlling Movement

- **Shutter Speed**
 - **Fast for stop action**
 - **Slow to show motion**
- **Fast is Easy!**
 - **But make sure you have enough light**
- **Slow is Harder**
 - **Hold camera steady!**

Slow Shutter Speed

- **Steady Camera Techniques**

Tripod



Tree-pod



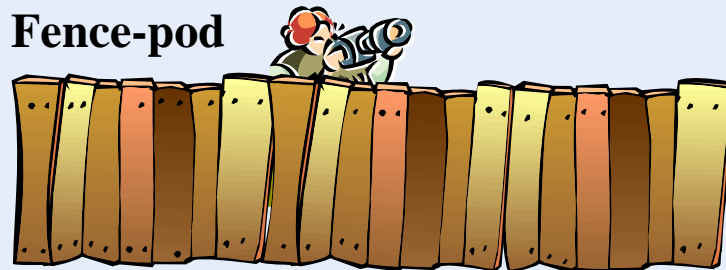
Building-pod



Man-pod

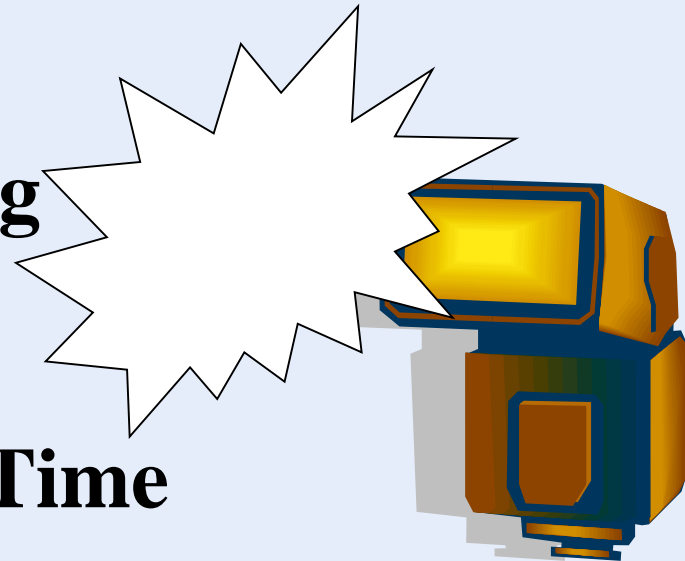


Fence-pod



Flash!

- Freeze Motion
- Limited Range
- Color Correction
- Flat, Harsh Lighting
- Red Eye
- Beware of Recycle Time
- Great for Snapshots
- Bad for Photographs





Focus

- Focus is the **MOST** important aspect
 - Most other errors can be adjusted in the Digital Darkroom.
 - Focus cannot be fixed!
 - Know how your camera focuses.
 - Know what you want to focus on.
 - Know how to get your camera to focus on what you want it to focus on.

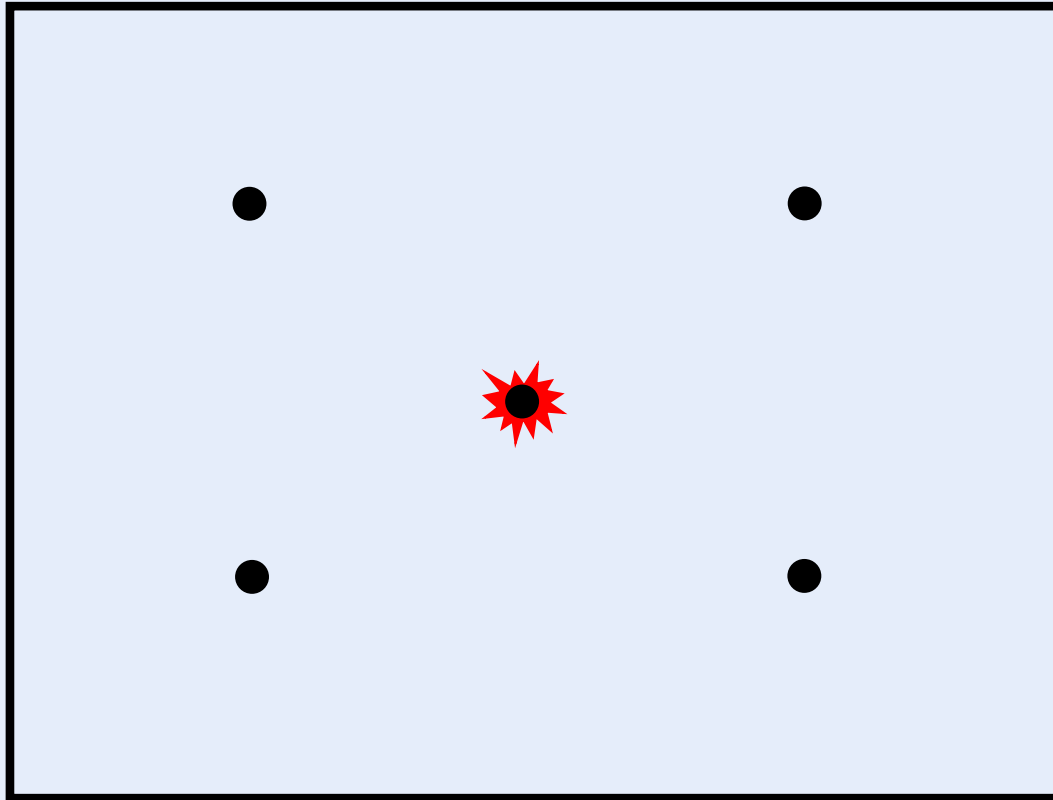


Auto Focus

- **It's Great when it Works!**
 - Is very precise
 - Takes the guess work out of focusing
- **It's a Disaster when you don't pay attention!**
 - You have to really look at what it's focusing on
 - Don't leave all the work to the Camera

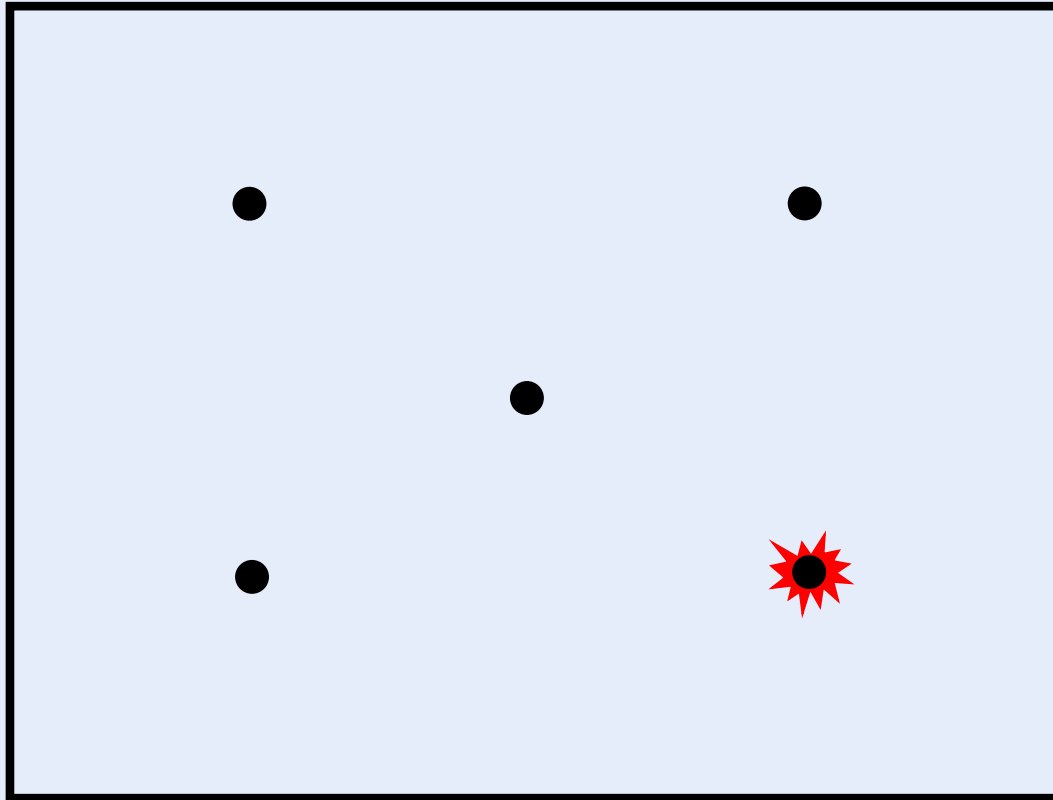
Auto Focus

- View Finder



Auto Focus

- View Finder



Focus

- **Example**

Good!



f-Stop: *f* 4.0

Shutter Speed: 1/125

ISO: 100

Focus

- **Example**

BAD!



f-Stop: *f* 4.0

Shutter Speed: 1/160

ISO: 100



Rule of Thumb #6

- **Learn How the Camera Uses Autofocus**
 - **Generally Focuses on what is closest to the Camera**
 - **Focuses on the object taking most of the viewfinder space**
 - **May be confused by:**
 - **Movement**
 - **Reflection**
 - **Low Light**
 - **Low Contrast**



Do it Yourself

- **Don't be afraid to switch to Manual Focus**
 - If the Camera Just Doesn't Get it
 - If it won't focus on what **YOU** want it to
 - For creative or special situations
- **You are in charge –NOT the Camera!**



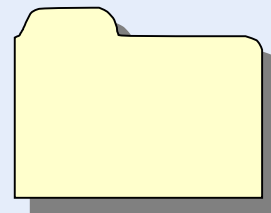
Show and Tell!



- **Let's look at your Good Pictures**
 - **Why is it good?**
 - **Is the picture how you imagined it before you released the shutter?**
 - **What did you do right?**
 - **What could you have done to make it better?**
 - **From what you have learned so far, tell us about the Science (i.e. shutter speed, aperture, exposure)**



Show and Tell!

- **Let's look at your Bad Pictures**
 - **Why is it bad?**
 - **What could be done to make it better?**
 - **What would you do differently next time?**
 - **How did you see it in your head while you were taking it?**
 - **Why didn't it come out that way?**





Session 3 Recap

- **Composition**
- **Rule of Thirds**
- **Camera Controls**
 - **Shutter Speed**
 - **Aperture**
- **Controlling Motion**
- **Controlling Focus**



Next week

- **Session 4:**

The Equipment you Already Have is all you Need



Assignment

- **Bring your Camera!**
(With the Instruction guide if you have it)
- **Take some pictures**
- **e-mail me the best one.**
- **e-mail me the worst one**
- **HAVE FUN!**