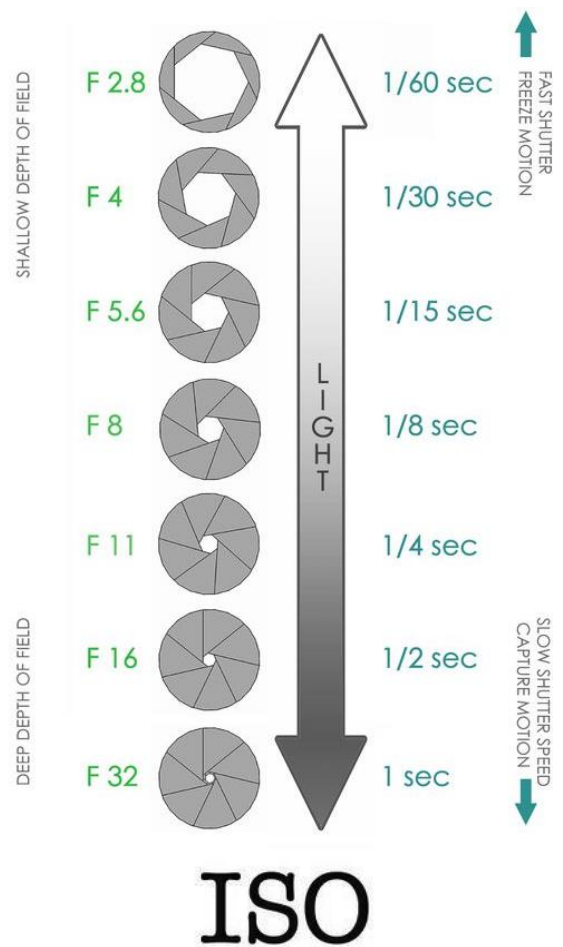
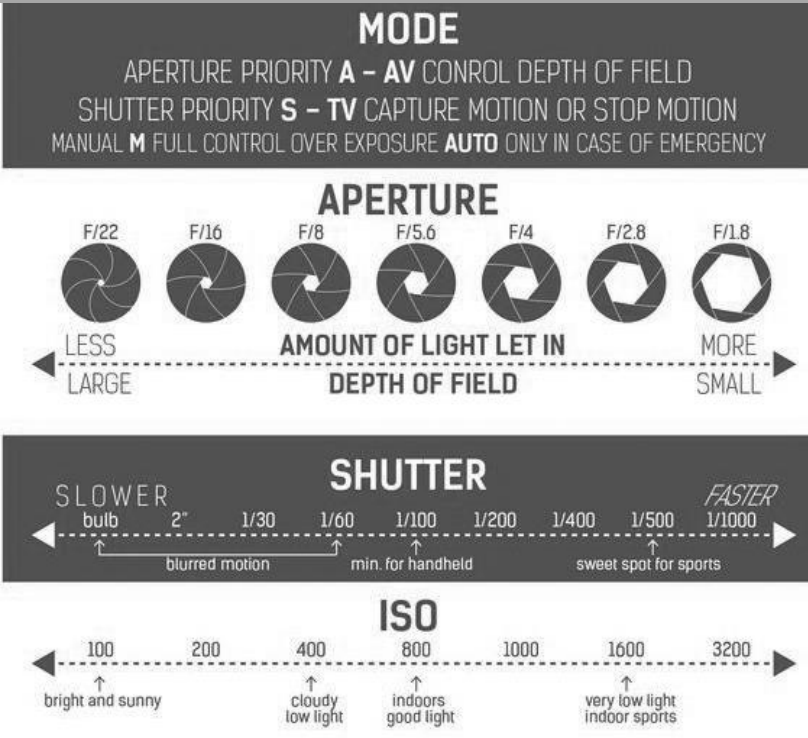


**3 key factors:**

There are 3 key areas to exposure that affect each other: ISO: How sensitive the camera is to light  
Shutter speed: How quickly the lens opens and closes. Aperture: How wide the lens opens.



**Setting the correct exposure**

The information on the sheet sets out how to gain the correct exposure with the camera on it's manual setting. These are the fundamental principals of photography that you must master. You will have gone through this in class but you must keep revisiting it to make sure you understand it. You will be testing on this knowledge.

**IF YOUR IMAGE IS...**

**BLURRY...**

INCREASE YOUR SHUTTER SPEED.

**DARK...**

DECREASE YOUR SHUTTER SPEED OR OPEN UP YOUR APERTURE

**BRIGHT...**

INCREASE YOUR SHUTTER SPEED OR CLOSE YOUR APERTURE

**A HIGHER ISO WILL ALLOW YOU TO INCREASE YOUR SHUTTER SPEED AND STOP ACTION.**

- 100 Full Sun, no shade
- 200 Lots of sun, could be in partial shade or an overcast day out in the open
- 200 Inside on a sunny day, directly by a large window
- 400 In the shade on a sunny day or under a covered area on an overcast day
- 700 Inside on a sunny or overcast day (near a window)
- 640-800 Sun is starting to set and less light
- 800 Inside, quite a distance from a window (sunny outside)
- 850-1000 Inside, quite a distance from a window (overcast day)
- 1250 Inside during the evening, light bulbs are the only source of light
- 1600 Inside a dark room where there is a light source (theatre, school production, etc)

Noise Warning

## This sheet recaps exposure:

The information is presented in a slightly different way which you may find useful

## This sheet recaps exposure:

• **Aperture, shutter speed** and **ISO** all affect the exposure of the camera. They control how much light enters the camera or how sensitive it is to light.

• Because lighting conditions change according to the time of day or the power of the lights you are using we have to set the camera to gain the correct exposure under a range of different conditions. To do this we change these 3 settings:

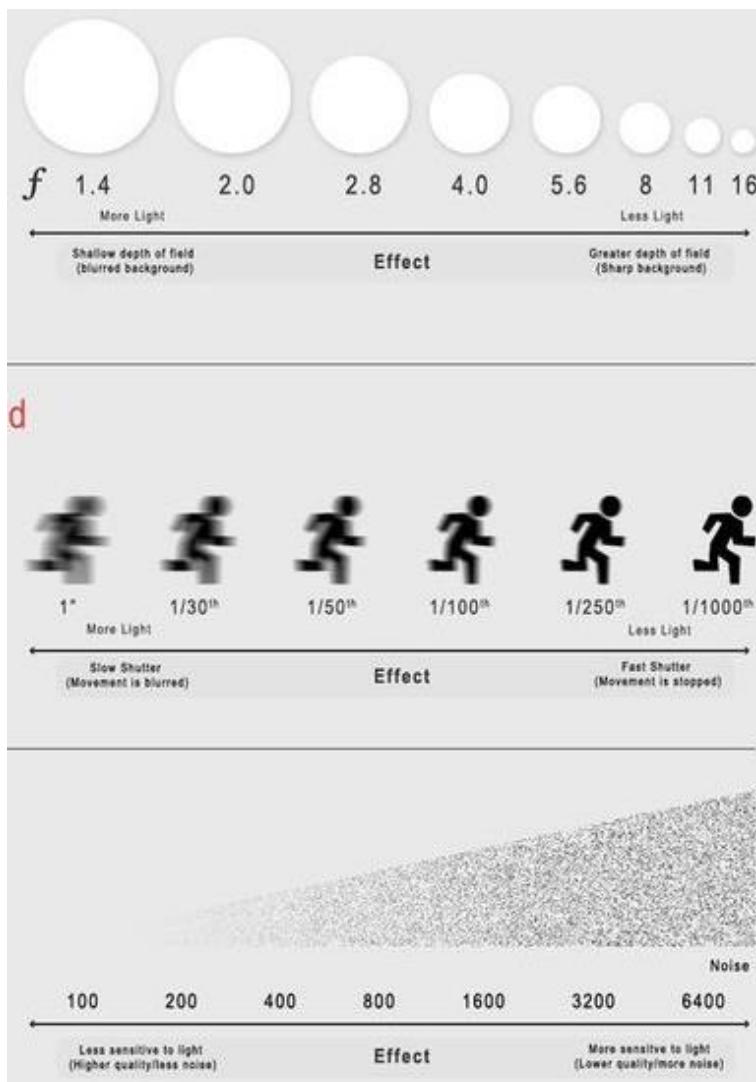
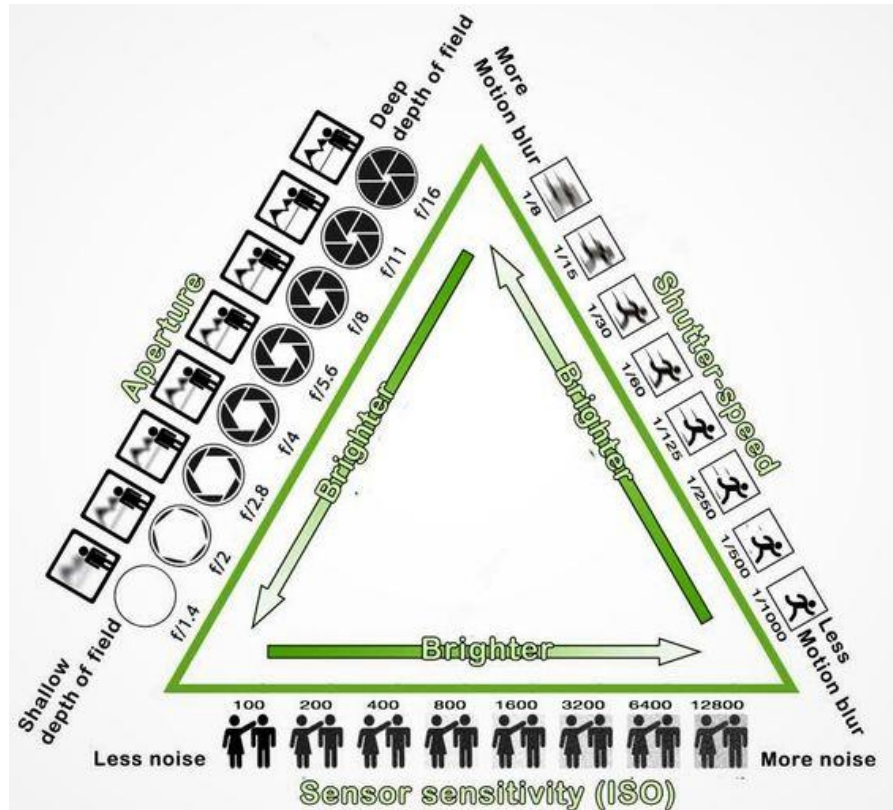
• **ISO:** How sensitive the camera is to light. The more sensitive the less light needed, the less sensitive the more light is needed. This also affects the quality of the image and how much grain there is. More sensitive more gain, less sensitive less grain.

• **Shutter speed:** The quicker the lens opens and closes the less light get in. The slower it opens and closes the more light is let in. If it's dark leave the lens open longer to let in more light.

• **Aperture:** This is how wide the lens is open. The wider the lens is open the more light comes in and vice versa. If it is dark let open the lens wider to let in more light. If it too bright close the lens so the whole is smaller.

# GCSE Photography Knowledge Organizer

(Gaining the correct exposure)



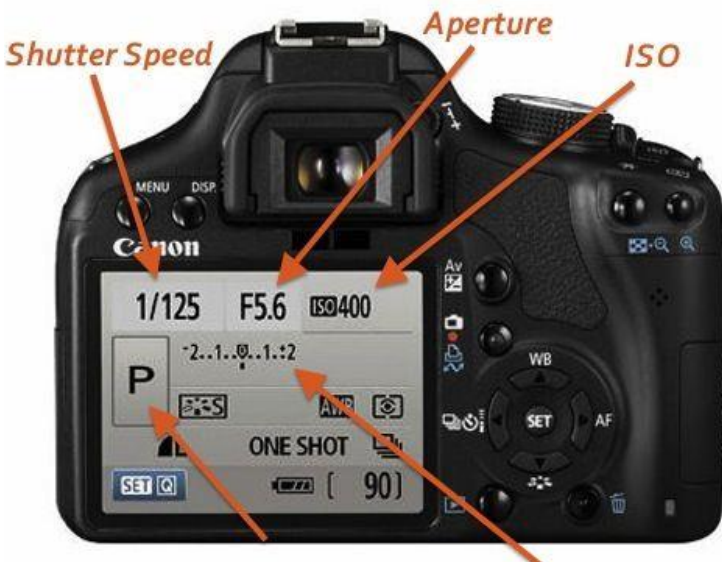
# EXPOSURE

BASIC TIPS FOR BETTER PHOTOS

ISO	Shutter Speed	Aperture
- Measures how sensitive the camera will be to light	- How fast the shutter is opening and closing to expose light to the camera sensor	- Controls how much light enters through the lens.
- Digital equivalent to film speed	- Measured in fractions of seconds (2", 1/15, 1/60, 1/4000, etc)	- Measured in F/Stops (f/1.8, f/2.8, f/5.6, f/22)
- The lower the ISO the less sensitive to light, used when there is a lot of available light (100, 200, 400)	- Faster shutter speeds freeze action (1/250+)	- The lower the number the more light is coming through and visa-versa
- The higher the ISO the more sensitive to light, used when there is not a lot of available light (800, 1600, 3200)	- Slower shutter speeds slow motion (1/30 and slower)	- Also controls depth of field (how much of the photo appears to be in focus)
- Lower ISO means less noise (digital graininess)	- Your shutter speed should match or exceed the focal length you are at with your lens	- Shallow depth of field is where less of the photo is in focus. Is achieved by a larger aperture (smaller number like f/1.8)
- Higher ISO means more noise (digital graininess)	- When shutter speeds go below 1/60 sec. you need a tripod to stabilize your photo.	- Deep depth of field is where more of the photo is in focus. Is achieved by a smaller aperture (larger number like f/16)

## Shoot and Review

Digital photography has the distinct advantage over film because you can see your photo immediately. Use this to your advantage and review your photos whilst taking them. Make adjustments whilst you shoot to capture the best outcome.

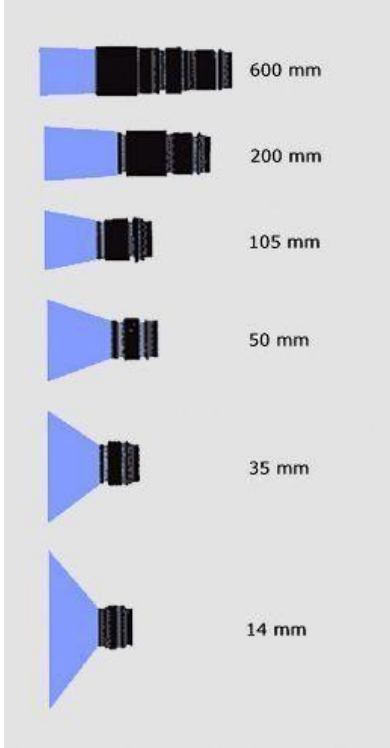


**How to read your display**

The diagram to the left shows you where the information regarding the camera settings / exposure settings are on your camera. You will be familiar with what these mean from the earlier sheets in your knowledge organizer.

## Learn Your Camera Lens Part 1: Different Lens

This diagram explains how the type of lens we use can change the width of the shoot making it wider or narrower



This diagram explains the settings on the top of your camera. We typically use the manual setting as this gives us the most control

This diagram explains the parts of the lens

**P** **Programmed Auto / Program Mode**  
Camera pairs aperture and shutter speed but you can change the settings

**A OR Av** **Aperture Priority Mode**  
You set the aperture, and the camera sets the shutter speed and ISO

**S OR Tv** **Shutter Priority Mode**  
You set the shutter speed, and the camera sets the aperture and ISO

**M** **Manual Mode**  
You set the shutter speed, aperture, and ISO, but the camera still gives a meter reading

**Night Portrait Mode**  
Combines flash with slow shutter speeds, but fixes other settings

**Macro Mode**  
Sets a wide aperture to blur backgrounds

**Sports Mode**  
Sets a fast shutter speed to freeze action

**Flash Off / Auto Flash Off Mode**  
Fully automatic mode that ensures flash does not fire

**AUTO OR** **Full Automatic Mode**  
Sets all camera settings automatically

**Portrait Mode**  
Sets a wide aperture to blur backgrounds, but overrides other settings

**Landscape Mode**  
Sets aperture to maximize depth of field and the built-in flash is switched off

## Learn Your Camera Lens Part 2: the Lens Itself



# Glossary

## PHOTOGRAPHY SPEAK FOR BEGINNERS

### APERTURE

CONTROLS THE AMOUNT OF LIGHT HITTING THE SENSOR. MEASURED IN F-STOPS

### BOKEH

THE BLURRED PART OF AN IMAGE NOT IN FOCUS. USUALLY THE BACKGROUND

### BRACKET

TAKE A SERIES OF FRAMES OF THE SAME SCENE AT DIFFERENT EXPOSURES

### BULB

'B' SETTING FOR LONG EXPOSURES. KEEPING THE SHUTTER OPEN

### CROP

CUT OFF PART OF A SCENE FOR BETTER COMPOSITION

### DEPTH OF FIELD

DISTANCE BETWEEN NEAREST & FARTHEST SHARP OBJECTS IN A SCENE

### DSLR

DIGITAL SINGLE LENS REFLEX CAMERA

### EV

EXPOSURE VALUE IS THE BRIGHTNESS OF A SCENE. MEASURED IN STOPS

### EXPOSURE TRIANGLE

EXPOSURE SETTINGS OF ISO, APERTURE & SHUTTER SPEED

### FILE FORMAT

THE TYPE OF FILE A CAMERA USES TO SAVE AN IMAGE. TIFF, JPEG OR RAW

### FLASH

CREATES A QUICK BURST OF LIGHT. ALSO KNOWN AS A SPEEDLIGHT

### F-STOP

THE FOCAL RATIO. DESCRIBES THE APERTURE SETTING

### GOLDEN HOUR

THE HOUR AFTER SUNRISE AND THE HOUR BEFORE SUNSET

### HDR

HIGH DYNAMIC RANGE. BRACKET & COMPOSITE FOR DETAILS IN DARK & LIGHT AREAS

### ISO

MEASURES THE LIGHT SENSITIVITY OF THE SENSOR

### KELVIN

UNIT OF MEASUREMENT FOR COLOUR TEMPERATURE OF LIGHT SOURCES

### METER

MEASURE THE LIGHT TO DETERMINE THE EXPOSURE

### MODE

METHOD OF OPERATION E.G. MANUAL MODE, APERTURE OR SHUTTER PRIORITY

### RESOLUTION

NUMBER OF PIXELS IN AN IMAGE. HIGH RESOLUTION = MORE IMAGE DETAIL

### RULE OF THIRDS

COMPOSITION GUIDE TO CREATE INTERESTING PHOTOGRAPHS

### SENSOR

CAPTURES LIGHT & CONVERTS TO AN IMAGE. DIGITAL EQUIVALENT OF FILM

### SHUTTER SPEED

CONTROLS HOW LONG LIGHT HITS THE SENSOR. MEASURED IN SECONDS

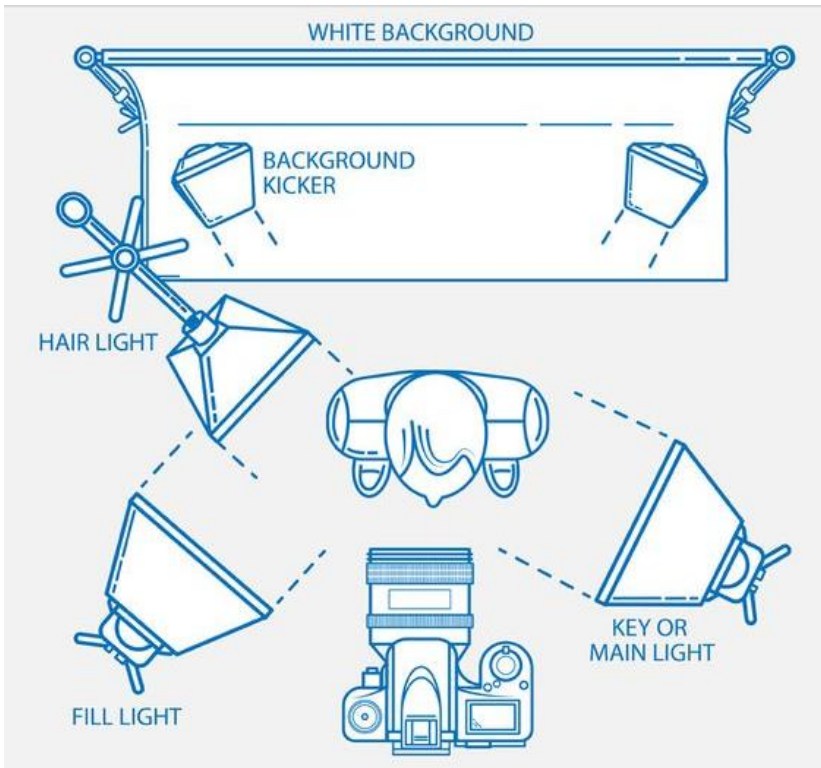
### TTL

THROUGH THE LENS METERING CAN BE USED TO MEASURE REFLECTED LIGHT OUTPUT BY A FLASH

### WHITE BALANCE

ADJUSTS COLOUR TEMPERATURE OF LIGHT SOURCE TO MAKE AN IMAGE WARM OR COOL

**Studio Lighting Set up (5 Lights)**



**When shooting the studio consider the following key things:**

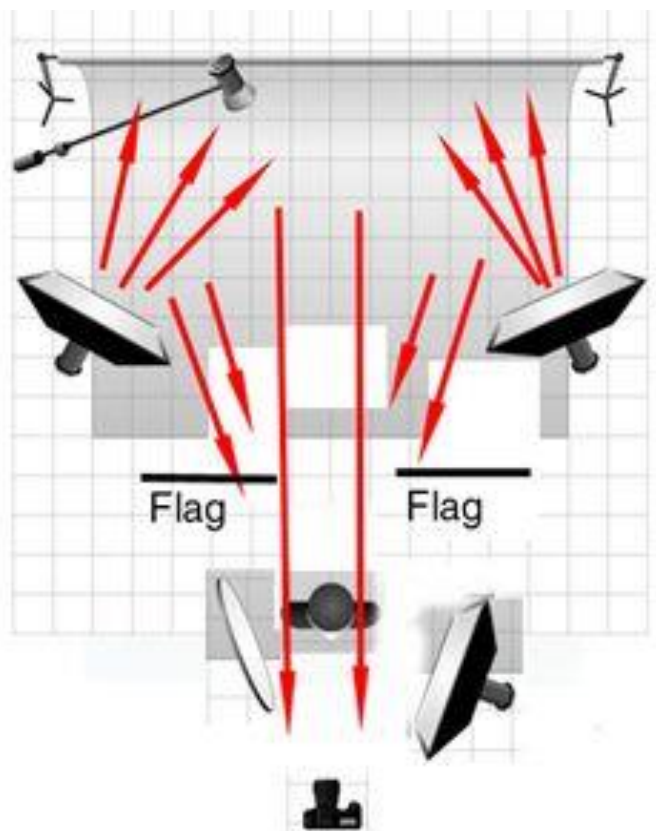
- Shutter speed the camera must be set to 1/125. Any faster and the camera won't capture the flash lights, any slower and ambient light (natural light in the room) will affect the exposure.
- Use the aperture to gain the right exposure too light close the aperture to let in less light. To bright open it up to let in more.
- You can also increase or decrease the power of the lights.
- Think about the position of the cables. Are they causing a trip hazard?
- Consider the position of the lighting. Are they pointing in the right direction to light the correct things.
- Check the power settings on the lights and make sure you have the cell button turned on. The photo cell allows the lights to communicate with each other so they all go off at the same time.

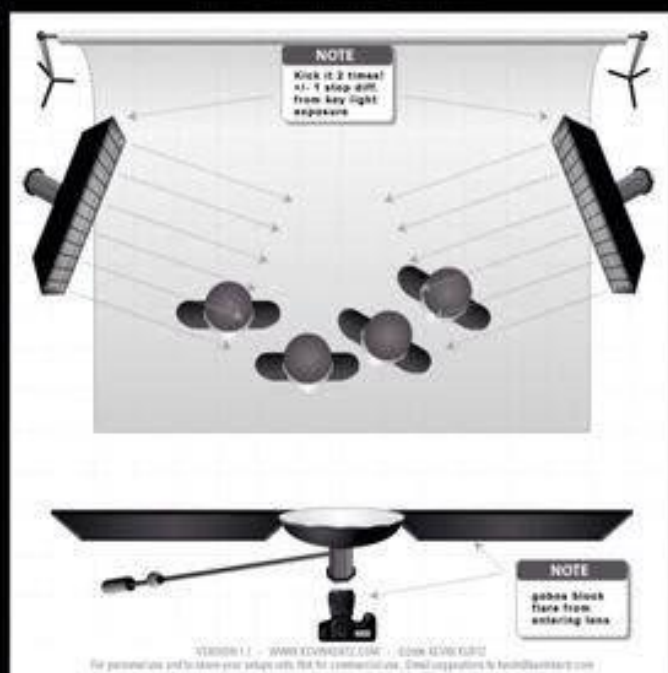
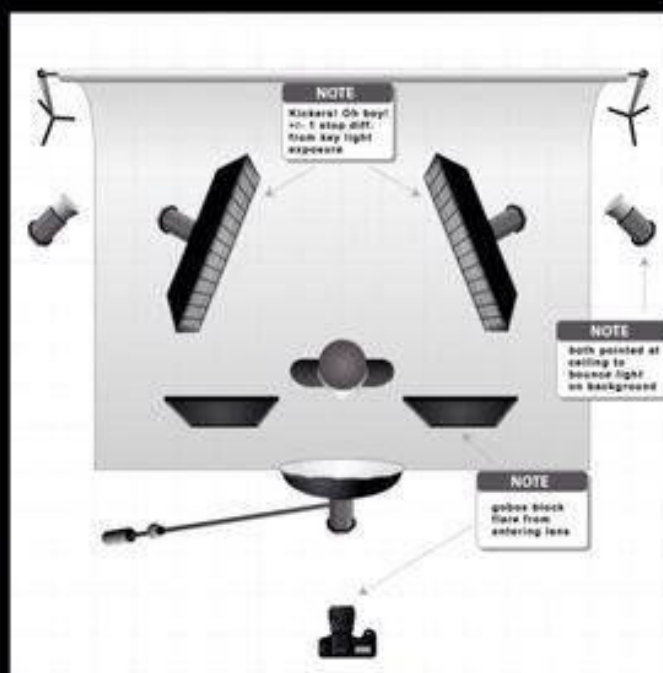
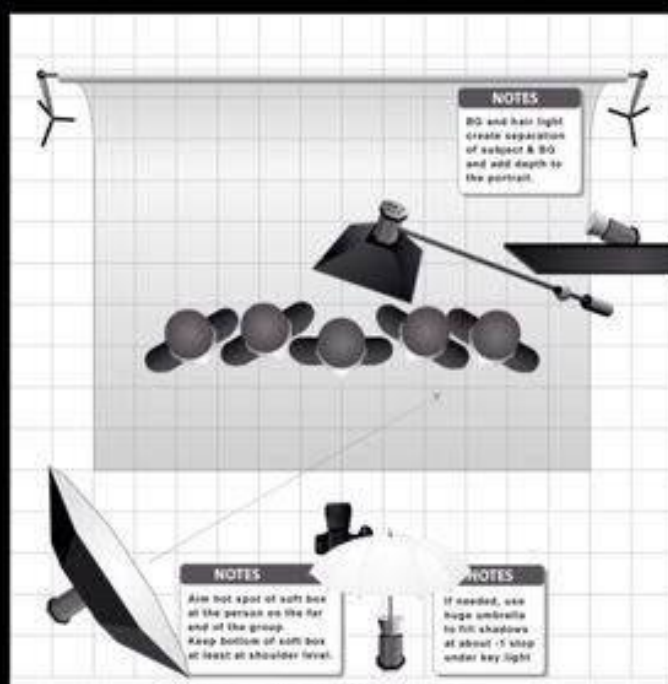
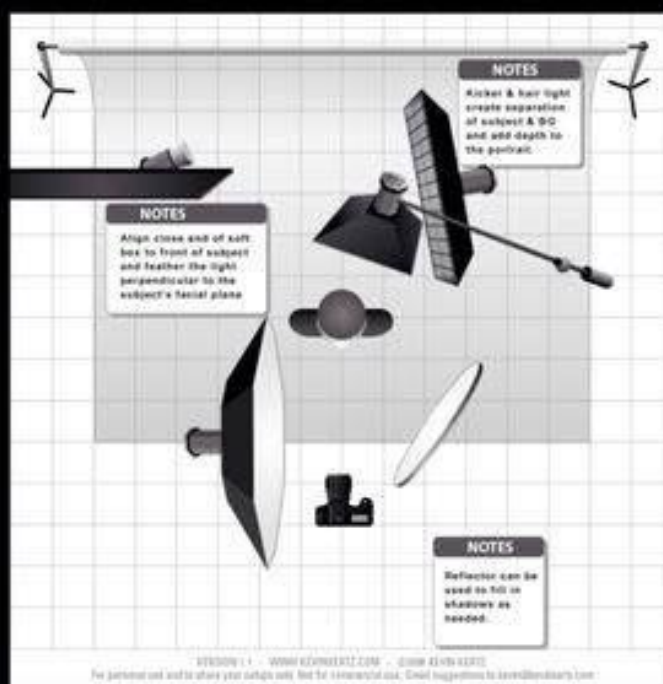
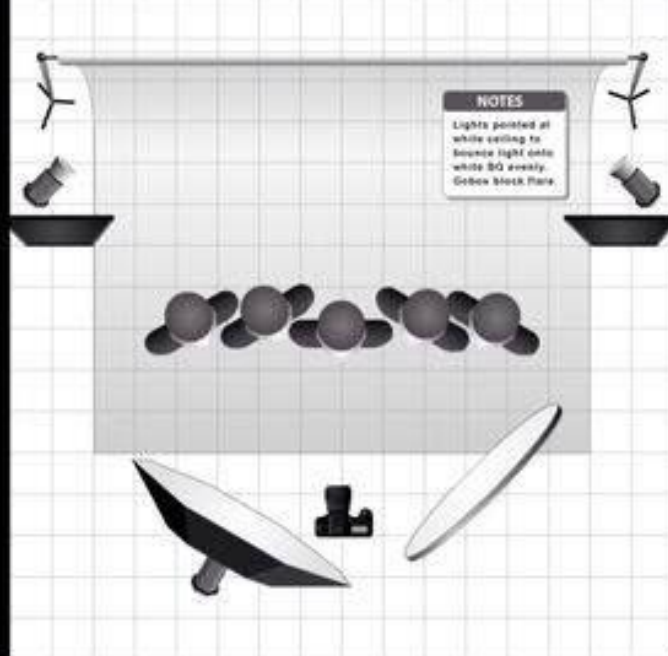
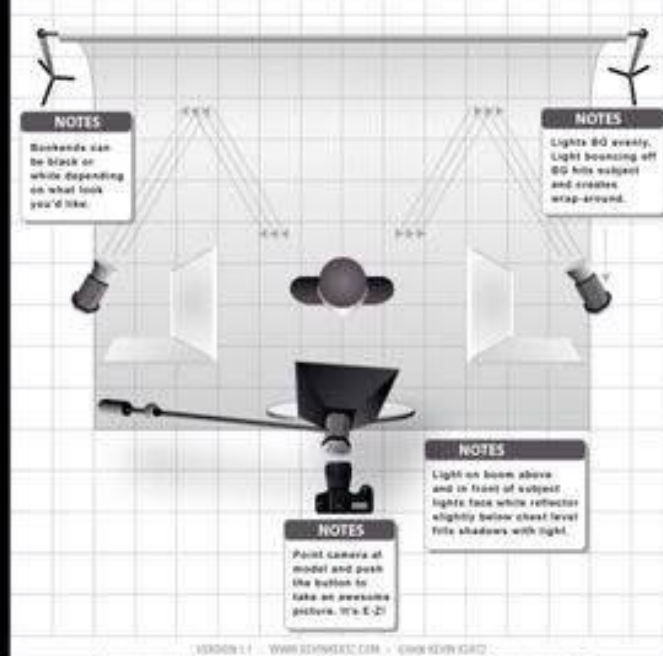
**Studio lighting terminology**

<b>Flash light</b>	These are powerful lights that deliver a very quick, very bright burst of light
<b>Flash trigger / receiver</b>	This is a piece of equipment that fits on the camera so that when we take a photograph a signal is sent to the light and they can fire at the right time.
<b>Backdrop</b>	This is the screen in the background that we photograph our models against
<b>Tripod</b>	This is used to hold the camera still or in a fixed position when we are taking pictures
<b>Reflector</b>	This is a big reflective disc used to bounce light on to the model
<b>Umbrella</b>	This is used to bounce the light off the flash head. It softens the light and makes it more flattering
<b>Soft box</b>	This fits on the flash head and again softens the light but still gives stronger more directional lighting
<b>Backlight</b>	This is a light positioned behind the model to give them a bright glow
<b>Background light</b>	This is a light positioned to light just the background behind the model
<b>Model light / key light</b>	This is a light / lights used to light the model
<b>Colour gel</b>	This is a sheet of reflective transparent film in different colours that we put over the lights to change the colour




**Lighting set up**

- When setting up your lighting you need to think carefully about where you want to position them. In simple terms what ever you point them towards will be illuminated
- There are some examples of lighting set ups on this page.





## Photography Composition - The First 19 Rules

	<b>Rule of Thirds</b> Position subject on the crosshairs		<b>Framing</b> Frame subject with surrounding objects - buildings, people, trees
	<b>Repetition</b> Look for repeating objects - pile of fruit, row of poles etc		<b>Leading Lines</b> Road, rails, lines of lampposts, buildings etc leading to subject
	<b>Negative Space</b> Leave space for subject to move into		<b>Colour</b> Use complimentary or opposing colours in background
	<b>Balancing Elements</b> Balance background interest with foreground subject		<b>Differential Focus</b> Subject in sharp focus to guide the eye
	<b>Symmetry</b> Half of the image is a mirror of the other half		<b>Patterns</b> Look for naturally occurring & constructed patterns
	<b>Depth (layers)</b> Position subject in front of and behind objects to create 3D depth		<b>Depth of Field</b> Blur background &/or foreground to separate your subject
	<b>Viewpoint</b> Photograph from different angles - get low, get high		<b>Triangles &amp; Diagonals</b> Look for diagonals in a scene, create triangles
	<b>Fill the Frame</b> Get in close and fill the frame with your subject		<b>Simplicity</b> Cut out distractions - get close, blur background, darken background
	<b>Left to Right Rule</b> Moving subjects should go from left of frame to right of frame		<b>Rule of Space</b> Leave space around your subject
	<b>Rule of Odds</b> Look for odd numbered design elements - 3 arches, 5 windows etc	brought to you by <a href="http://www.thelenslounge.com">www.thelenslounge.com</a> 	

Learn the rules, use them, combine them. Then learn to break them for effect.

**Understand**

What do you see in this photograph?

What words would you use to describe this photograph?

How would you describe this photograph to a person who could not see it?

What things do you recognise in this photograph? What things seem new to you?

What is the genre of this photograph? (still life, portrait, landscape, documentary, architecture, abstract, conceptual etc.)

**Apply**

What does this photograph remind you of?

Is this a naturalistic or abstract image?

Was this photograph made with or without a camera? How can you tell?

Which Formal Elements seem important? How would you describe the lines in this picture? The shapes/forms? The colours/tones? The textures and patterns?

How has the photographer captured the play of light in this image?

How is space represented in this photograph (foreground, middle ground, background)?

What is in or out of focus? How has the subject been framed/cropped?

What equipment, techniques and processes have been used to make the image? How does this affect the way we view it?

How is this picture different from real life?

**Analyse**

Which part of the photograph strikes you as most interesting - captivating, surprising, puzzling, mysterious? Why?

How has the photographer dealt with space and time?

How has the flattening of space (3D to 2D) affected our view of the subject?

What questions would you ask the artist about this work, if s/he were here?

What can you discover about this image and the work of this artist through research? How does this new knowledge affect your understanding of the work?

**Interpret**

What title would you give to this photograph? What made you decide on that title? What other titles could we give it?

What do you think this photograph is about (its themes or big ideas)? How did you decide?

Pretend you are inside this photograph. What does it feel like?

What do you think it would be like to live in this photograph? What makes you think that?

Why do you suppose the artist made this photograph? What makes you think that?

Does this photograph remind you of other photographs/images that you know?

**Evaluate and Create.**

What do you think is effective about this photograph? What doesn't work so well?

What do you think other people would say about this work? Why do you think that?

What do you think is worth remembering about this photograph?

Create a photographic response to this image. What did you choose to create and why? How does it compare to the original stimulus?

What have you learned from exploring this work of art?



**Questions to support the development of emotional literacy in photography might therefore include the following**

- How does this photograph (or this photographer's work) affect your view of human relations?
- What do you think is the relationship between photographer and subject? What might others think?
- What do you find most challenging/puzzling/confusing about this photograph/project?
- Which ideas about photography have been most influential for you so far?
- How do you respond when you feel stuck? How might you develop your persistence and tolerance of uncertainty?
- How might you collaborate with others in solving this creative challenge?
- How might you become more self-directed in your studies? Which aspects of the course do you need to develop most?
- What are the ethical challenges for photographers? When might it not be appropriate to make a photograph?

**Whilst it is perhaps counter-intuitive to develop psychomotor skill through questioning, prompts to support the development of physical literacy in photography might include the following:**

- How might you use what you have just witnessed in your own work/practice?
- Explain how you might use a range of techniques/processes to create a response to X?
- How might you refine/develop your use of X technique/process?
- How do you know when X technique/process has worked well?
- What do you find most challenging when using your camera and/or working in the darkroom/studio?
- What physical attitudes/behaviours work best in different shooting situations E.g. on the street, in the darkroom, in the studio?

# UNDERSTANDING PHOTOGRAPHS

## VISUAL

### The Formal Elements:

- **Focus** - Which areas appear clearer or sharpest?
- **Light** - Where are the highlights and shadows? Can you guess the time of day? Is the light natural or artificial, harsh or soft, direct or reflected?
- **Line** - What are the dominant lines in the image? Are they straight or curved, thin or thick? Do they create direction, do they outline, do they indicate movement?
- **Repetition** - Are objects, shapes or lines repeated in the image? Does this create a pattern?
- **Shape (2D)** - Do you see geometric or organic shapes? What are they? How do they relate to each other?
- **Form (3D)** - Do the objects in the image appear three dimensional? What creates this effect?
- **Space** - Is there depth in the image or does it seem shallow? Is there negative space?
- **Texture** - If you could touch the surface of the photograph how would it feel?
- **Tone** - Is there a range of tones from dark to light? Where are the darkest and lightest parts of the image? Is there contrast? What is the proportion of greys (mid tones)?
- **Colour** - Is colour a significant feature of the image? Are there any complimentary colours? Can you attach any symbolism/meaning to the colours displayed?

### Composition:

Arrangement of formal elements, Rule of Thirds, Cropping/Framing, Foreground/Middle ground/ Background, Viewpoint, Balance, Harmony, Contrast, Tension etc.

## CONTEXTUAL

### Historical:

Place in time, local/national/global events. History of Photography - tools and equipment, movements, styles, genres and ideas. Significant practitioners/publications/exhibitions etc.

### Biographical:

What do we know about the photographer? What relevance does this knowledge have to the image(s)?

### Psychological:

How do you feel when you look at the image? What feelings/states of mind are suggested by the image? What theories of mind are relevant to an interpretation of the image?

### Theoretical:

Can you apply any theories to your understanding of the image (e.g. cultural, political, philosophical/aesthetic)?

## TECHNICAL

### Lighting:

Type of lighting e.g. available (daylight, street lights), additional (studio lights, flash, reflector) or combination?

### Aperture:

Type of lens (wide angle, telephoto, macro etc.) f-stops, Depth of Field (DOF) - deep/ shallow, focal point - selective focus, in and out of focus, vignette

### Shutter Speed:

Exposure time, over/under exposed, motion blur, panning

### ISO:

Film speed/sensitivity (fast = higher number, grainier/noisier image), tonal range, contrast

### White Balance:

Colour cast/temperature, colour accuracy, warm/cold

## CONCEPTUAL

### Connections:

- What connections can you make to your previous knowledge?
- What relationships can you see between this image and other images by this or a different photographer?
- What ideas/views do you think the image helps to communicate?
- What influence might this image have on the development of your own work?
- What have you learned from exploring and analysing this image?

## PHOTOGRAPHY VOCABULARY SUPPORT

## TECHNICAL



**Lighting:** Type of lighting E.g. natural/daylight, tungsten, flash, fluorescent, shade... Level of control E.g. positioned/located, reflected, manipulated, intensity, distance... Relevant key words: tonal range, contrast, saturated, over / under exposed, glare...

**Aperture:** Lens (lens size, macro, telephoto, wide angle, settings: **f-stops**...) Focal point, depth of field (DoF) - deep, short, sharp, focused, blurred, vignette...

**Shutter Speed:** Exposure time, over/under exposed, motion blur, panning...

**ISO:** Film speed, light sensitivity, (higher sensitivity = grainier image), tonal range, grain - coarse/fine, texture, contrast...

**White Balance:** Colour cast/temperature, colour accuracy, warm/cold...

## CONTEXTUAL



### Surrounding circumstances/information/knowledge that:

- Sets/fixes your understanding, brings deeper meaning, adding 'value' (context).
- Additional knowledge that can be applied/connected to the work  
You might consider (although these cross-over into each other):  
Historical contexts: Place in time, local/national/global happenings/events...  
Personal Contexts: Experiences/beliefs/intentions/interpretations (of the artist, or your self)...  
Visual/Conceptual Contexts: Connections with Art Movements, ideas, styles, inspirations – before and after  
Cultural/social/political contexts  
Wider connections – thematic/narrative/conceptual

## VISUAL



**The Visual Elements:** The information (ingredients) that we see:

- Colour
- Tone (light & dark)
- Texture (surface)
- Shape (2D, flat)
- Form (3D)
- Pattern (repetition)
- Line
- Space (3D concept)

**Composition:** Layout, arrangement, organisation (of Visual Elements), selection, cropping, containment/confinement (within frame)

Leading the eye, Viewpoint, Balance, Harmony, Contrast, Tension, Foreground, middle ground, background, Rule of Thirds, Golden Section/Ratio, Depth of surface illusion...



## CONCEPTUAL



Idea, meaning, reasoning, thought, notion, concept, theoretical construct...not just behind the work, but might be the 'essence' of the work/the work itself

*Conceptual art, sometimes called Conceptualism, is art in which the concept(s) or idea(s) involved in the work take precedence over traditional aesthetic and material concerns.*



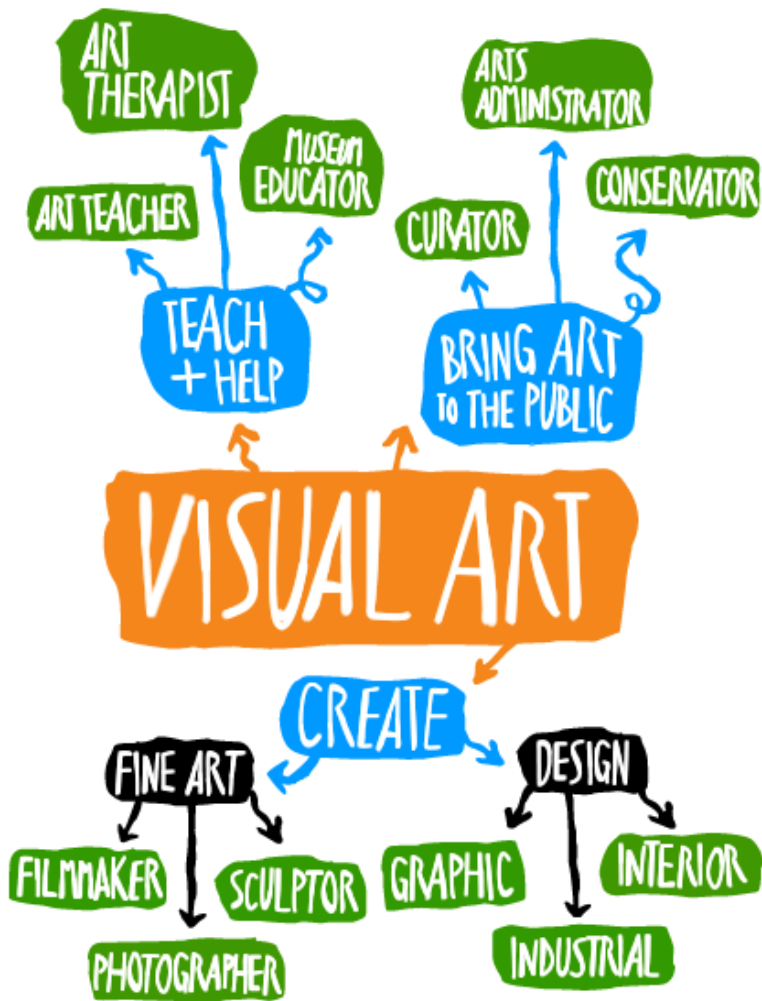
**Prestructural:** the student learns some unconnected information.

**Unistructural:** simple obvious connections are made but their significance is not fully grasped.

**Multistructural:** several connections are made, but the meta-connections between them are missed, as is their significance for the whole.

**Relational:** the student is able to appreciate the significance of the parts in relation to the whole.

**Extended Abstract:** the student is able to make connections not only within the given subject area, but also beyond it, able to generalise and transfer the principles and ideas underlying the specific instance.



Anything 'man made', someone has designed with Skill, attention to detail, visual & structural awareness.

# 60 Visual Arts CAREERS

## ADVERTISING

- Art Director
- Creative Director
- Graphic Designer
- Typographer
- Web Designer

## ARCHITECTURE

- Architect
- Interior Designer
- Landscape Architect
- Urban Designer

## COMPUTER GRAPHICS

- Computer Animation
- Concept Artist
- Digital Illustrator
- Motion Graphics Designer
- Video Game Designer
- Visual Effects Animator

## EDUCATION

- Art Camp Director
- Art Professor
- Art Teacher
- Community Studio Owner

## FASHION

- Fashion Designer
- Jewelry Designer
- Makeup Artist
- Stylist

## FINE ARTS

- Ceramicist
- Fiber Artist
- Mixed-Media Artist
- Muralist
- Painter
- Portrait Artist
- Printmaker
- Sculptor

## MUSEUM/GALLERY

- Curator
- Dealer
- Docent
- Gallery Owner
- Museum Educator

## PHOTOGRAPHY/FILM

- Cinematographer
- Costume Designer
- Fashion Photographer
- Photo Editor
- Photojournalist
- Set Designer
- Special Effects Makeup Artist
- Studio Photographer
- Wedding Photographer
- Wildlife Photographer
- Videographer

## PUBLISHING

- Comic Book Artist
- Illustrator
- Medical Illustrator
- Storyboard Artist

## OTHER

- Art Therapist
- Cake Decorator
- Caricaturist
- Courtroom Sketch Artist
- Event Planner
- Food Stylist
- Industrial Product Designer
- Police Sketch Artist
- Tattoo Artist