YEAR 12 Scheme of Work – BBAB

****NB Baselines should be completed at the beginning of each half-term****

Year 12 Autumn 1 – Photography Techniques and the Exposure Triangle

Lesson 1 of 12		
LO	**Success Criteria**	**I can**
We are used to drawing shadow on highlight – pencil on paper; with a long exposure, in dark conditions, we can use a light source to draw on the camera sensor <u>Key Vocabulary</u> *Camera* – dark chamber *Photo – phos* – light *Graph – graphos* – to paint or draw *Exposure* – when light is exposed to the light sensitive surface i.e. digital sensor or film *Light painting* – the technique whereby we can move a light source in front of the sensor to create lines and/or patterns *Bulb setting* – the setting on the camera whereby the shutter stays open as long as the shutter release button is depressed	Work as a group, each taking turns on the various stations; create light painted outcomes by moving a light source in front of the digital sensor (focussed through a lens)	Operate the camera shutter on the 'bulb' setting
Process	**Context**	**Expected outcome**
DSLR and movable light source	Gjon Mili – 'Pablo Picasso draws a Centaur in the air with light, 1949'	Light painted drawings/text EXTN Same as above, but including portraits
Extension		
Fire flash (studio head strobe) to ensure an exposure of a person/object, combined with the light painting		

Lesson 2 of 12		
LO	**Success Criteria**	**I can**
A studio head will fire a flash using the 'strobe' bulb. The duration of the flash is very short – about 1/1000sec. In otherwise entirely dark conditions, the only exposure made will be within 1/1000sec. Any movement taking place will be captured within this time, thus appearing to 'freeze' movement <u>Key Vocabulary</u> *Studio head* – the studio light we use to light the subject *Strobe* – the bulb in the studio head which provides the flash *Exposure* – when the light sensitive device (the digital sensor) or film is exposed to light *Remote trigger; transmitter/receiver* – the system of equipment used to communicate between the camera and the studio heads, meaning that the strobe flash and the camera shutter synchronise	Work as a group to set up a camera, framing, and focussing on the subject matter. Enter fully dark Set up and test the studio head. Check the exposure is acceptable. Communicate effectively with team members to synchronise motion and strobe flash.	Operate the camera on the bulb setting Operate the studio head with the remote trigger Communicate effectively with peers, while working in a team
Process	**Context**	**Expected outcome**
Strobe is fired at the same time as motion is occurring in real life. Camera shutter is open throughout; fully dark conditions	Harold Eugene Edgerton – AKA 'Doc' Edgerton or 'Papa Flash' Philippe Halsman (Salvador Dali) Eadweard Muybridge	Water balloon photograph; mid burst
Extension		
Consider combining this process with light painting		

Lesson 3 of 12		
LO	**Success Criteria**	**I can**
The aperture in the lens can be adjusted making it wide or narrow. The wider the aperture, the shallower the depth of field <u>Key Vocabulary</u> *Aperture* – the hole in the lens which allows light to pass through *Depth of field* – the distance in front of the camera where the photograph is considered in focus	Use a wide aperture to take photographs with a shallow depth of field	Identify shallow depth of field Verbally communicate what is meant by a shallow depth of field Take photographs with a shallow depth of field
Process	**Context**	**Expected outcome**
Use 'f' 1.8 to shoot photographs with a shallow depth of field	Steve McCurry – 'Afgan Girl'	Photographs with a shallow depth of field
Extension		
Learn that the 'f' number is the measurement unit for aperture size – the higher the 'f' number, the smaller the aperture. Take photographs with a great depth of field.		

Lesson 4 of 12		
LO	**Success Criteria**	**I can**
A camera obscura is a 'dark chamber', so any space which does not allow light in is a camera obscura. A pin hole camera is a light tight 'chamber', aside from the pin hole. The pin hole is so small, it creates a point where all the light converges, so producing a meaningful image. Black and white photographic paper is sensitive to green and blue light. White light is made from red, green, and blue, so it will expose photographic paper. A safe light is a red light which will not expose photographic paper. <u>Key Vocabulary</u> *Camera obscura* – what we think of when we use the term 'camera'. 'Obscura' is Latin for dark. NB this is as opposed to a 'camera lucida'; 'lucida' is Latin for bright. When a light is projected through a lens in normal light conditions, this is considered a camera lucida *Pin hole camera* – in this instance it is a box which is light tight apart from the pin hole *Converging* – meeting *Converging point* – a point where the light meets *Developer* – chemical used to show the photographic image *Stop bath* – this is a chemical which neutralises the alkaline developer *Fixer* – this is an acid chemical which stops the paper from being light sensitive, so it can be viewed in white light	In safe light conditions, place photographic paper into your pinhole camera. Use the pin hole camera to expose the paper. Exposure time depends on the length of the camera, and the light conditions, but it is a good rule of thumb to expose the paper for 5 minutes indoors, and 3 minutes when pointed out the window. In safe light conditions, place the paper into the developer, then stop bath, then fixer.	Load a pin hole camera with photographic paper Expose the photographic paper for an appropriate length of time Process photographic paper through photographic chemicals
Process	**Context**	**Expected outcome**
Pinhole camera exposures	Jon Grepstad	Pin hole camera photo
Extension		
Vaseline print		

Lesson 5 of 12		
LO	**Success Criteria**	**I can**
A lens creates a converging point, producing a meaningful image. Lenses are highly manufactured specialist items, but anything that creates a converging point can be used to produce a meaningful image. A small hole (aperture) will also create a converging point. Lenses can be tilted and shifted to create unusual effects with light. Changing the focal length will result in extension distortion; compression distortion; no distortion (same as the human eye) <u>Key Vocabulary</u> *Lens – a piece of highly manufactured glass, used to create a converging point* *Tilt and shift* – in this context we are referring to tilt and shift lenses. When the lens is tilted, it is moved into a sloped position; when it is shifted, it is moved up, down, and side to side *Free lensing* – this is when the lens is held in front of the camera, rather than being attached	Use free lensing technique to create tilt shift images Use objects which create a converging point, instead of a manufactured lens Use lenses with different focal lengths	Create tilt shift images by free lensing Use a wide-angle lens to create extension distortion Use a 50mm lens to achieve no distortion (same as the human eye) Use a telephoto lens to create compression distortion
Process	**Context**	**Expected outcome**
DSLR; create unconventional images by using unusual lenses	Vincent Laforet – considered one of the pioneers of tilt shift photography	Tilt shift images Unconventional photographic outcomes Wide-angle; 50mm; telephoto images
Extension		
Photoshop the images to increase tonal contrast and saturation		

Lesson 6 of 12		
LO	**Success Criteria**	**I can**
Just as a fast exposure time will freeze movement, a slow exposure time can blur movement. We can adjust the shutter of the camera, to ensure a long exposure time; this is known as a slow shutter speed <u>Key Vocabulary</u> *Slow shutter speed* – a shutter speed where the denominator of the fraction of the second is less then the numerical value of the focal length of the lens e.g. on a 50mm lens, a shutter speed of 1/30 is considered slow, and 1/60 is considered fast (because 30 is a smaller number than 50, and 60 is a bigger number than 50) *Motion blur* – blur created by a moving object (or moving camera) and a slow shutter speed *Zoom lens* – a lens on which the focal length can be adjusted	Use a slow shutter speed to create panning images (the moving subject is still, relative to the camera) Camera shake images (subject still, camera moving) Zoom with slow shutter (use a zoom lens to change the focal length as the sensor is being exposed) Choose 1/8second shutter speed; use the 'fill in' flash of the camera while shooting	Use the shutter speed to create 'panning' images Use the shutter speed to create images showing 'camera shake' Use a slow shutter speed, and zoom while the exposure is being made Combine the previous processes with flash (the flash will create a still image, while the slow shutter will create motion blur)
Process	**Context**	**Expected outcome**
DSLR; slow shutter speed; motion blur captured	Ernst Haas – 'Bullfight, Pamplona, Spain 1956'	Digital photographs showing motion blur
Extension		
Combine some of the techniques e.g. fire a flash while zooming		

Lesson 7 of 12		
LO	**Success Criteria**	**I can**
The exposure triangle is a simple graphic which intends to highlight the relationship between aperture, shutter speed, and ISO. We can change the format of this diagram, to better highlight the relationship between the 'stops'. Stops represent equal values of light. <u>Key Vocabulary</u> *Aperture* – the hole in the lens which lets light through; on many cameras, the size of this hole can be adjusted to let in more or less light *Shutter speed* – this controls the exposure time i.e. the duration the light sensitive media is exposed to light *ISO* – this is a word, pronounced 'eye-so'. This refers to how light sensitive the media is i.e. a low ISO is not very light sensitive, and a high ISO is very light sensitive *Histogram* - a graph showing the distribution of light in an image	Understand that when a 'stop' is changed on one of the variables (aperture, shutter speed, ISO), it must be compensated by moving a stop in one of the other variables, to maintain the same exposure. Manually set the DSLR to maintain the intended exposure.	Use what I have learned about the exposure triangle to manually set the DSLR camera Choose which visual effects I would prefer while maintaining advantageous exposure e.g. shallow depth of field; motion blur; fine grain
Process	**Context**	**Expected outcome**
Manual setting on the DSLR	Henry Fox Talbot Louis Daguerre Nicephore Niepce	Photos exposed in the centre of the histogram
Extension		
Use a light meter		

Lesson 8 of 12		
LO	**Success Criteria**	**I can**
Various paradigms exist within the context of photographic studio lighting. The lights are used to create particular aesthetics, and have differing functions Various modifiers can be used to create different light effects <u>Key Vocabulary</u> *Studio head* – a light used in studio photography, usually comprising a strobe, for the final exposure, and a modelling light to judge the effect of the light before making the exposure *Soft box* – used to diffuse light *Beauty dish* – offers soft light, which drops off quickly *Standard reflector* – used to avoid light spilling out of the side of the studio head *Snoot* – this reduces the area of light on the subject *Master/slave lights* – the master is the light communicating with the camera; firing is synchronised with the shutter release button; the slaves will be triggered by the master's flash *Flash sync speed* – the fastest shutter speed whereby the shutter curtains are entirely open at the point of exposure	Set up the various lighting models Shoot at the sync speed of the camera (ensuring the ambient light is not affecting the exposure)	Use 1 point Rembrandt lighting Identify the function of the back light Use 3 point studio lighting
Process	**Context**	**Expected outcome**
DSLR; remote trigger; studio heads and various modifiers	Rembrandt Martin Schoeller Levett Landon Boscawen Ibbetson	1, 2, 3 point studio lighting Rembrandt lighting (with and without reflector) 3 point studio lighting (2 point used to illustrate the function of the back light)
Extension		
Clam shell lighting		

Lesson 9 of 12		
LO	**Success Criteria**	**I can**
The larger the light source, relative to the subject, the softer the light <u>Key Vocabulary</u> *Diffused light* - when a reflective surface bounces the light in many directions (resulting in the appearance of **soft** light) *Specular light* – when a surface is highly reflective and smooth, the angle of incidence remains relatively uniform (resulting in the appearance of **hard** light)	Shoot a subject using a small light source (suggested is a snoot at a distance) Shoot a subject using a large light source (suggested is a soft box, at close range)	Change light sources to choose between hard and soft light Identify the characteristics of hard and soft light
Process	**Context**	**Expected outcome**
Use a small source to light the subject, for hard light (achieved both with the use of modifiers, and distance from the subject); and vice versa	Film noir Edward Weston	Hard and soft light
Extension		
Use a mix of hard and soft lighting while shooting one subject		

Lesson 10 of 12		
LO	**Success Criteria**	**I can**
On the camera (and in photo editing software), you can view the 'histogram' <u>Key Vocabulary</u> *Histogram* – graph; in this context, it refers to the amount of each tone present in the photograph (shadows on the left; highlights on the right) *High key* – a photograph comprising mostly highlights (histogram showing a lot of information on the right *Low key* – a photograph comprising mostly shadows (histogram showing a lot of information on the left) *Broad tonal range* – full range of tones from absolute shadow to absolute highlight (histogram showing information across the full width); this is also associated with a high dynamic range (HDR) *Dynamic range* – the range between extremes. In another context, speakers have a dynamic range i.e. how well they handle bass before they fail, and how well they handle treble before they fail. In this context, it is concerning tones e.g. how well does the sensor handle dark shadows and bright highlights together i.e. if you have well exposed shadows by ensuring the image is bright, do the highlights become a flat white with no detail?	Use available light and the DSLR functions, or the studio heads, to produce images mostly exposing to the far right of the histogram Use available light and the DSLR functions, or the studio heads, to produce images mostly exposing to the far left of the histogram	Use the DSLR's manual functions and/or the studio heads to produce a high key image Use the DSLR's manual functions and/or the studio heads to produce a low key image
Process	**Context**	**Expected outcome**
Use the manual functions of the DSLR and studio heads to expose on both sides of the histogram	Richard Avedon Imogen Cunningham	High key; low key
Extension		
Produce HDR images		

Lesson 11 of 12		
LO	**Success Criteria**	**I can**
Photoshop pioneered the use of 'layers' in digital photography editing. This has now become the industry standard for digital editing Digital layers replaced analogue processes such as manually touching up by physically painting out imperfections in images. The disadvantage of working physically (rather than digitally) was that if mistakes were made, the image would be destroyed, and the whole process would have to be restarted Though less risk of destruction exists with digital editing, it is important to ensure that our working practices are **non-destructive** Layers and adjustment masks work in similar ways, but layers retain all of the information of the image (leading to lots of data being produced, and a lot of pressure put on the processor) <u>Key Vocabulary</u> *Analogue* – in this context, this should be understood as 'wet process' photography i.e. film and paper (both film and paper go through liquid chemicals; this is why it is known as 'wet process') *Adjustment masks* – a little like layers, but they do not retain the photographic information	Create new layers using the shortcut Ctrl+J Adjust a layer to black and white Use the eraser tool to rub through the top layer, showing parts of the layer underneath **EXTENSION** Complete the previous steps, but include history layers Consider the properties of the eraser tool – edge hardness and opacity Complete the previous multiple times for multiple edits Appropriately merge visible throughout	Duplicate layers with the keyboard shortcut Ctrl+J Adjust the colours and tones of a layer Use the eraser tool to erase parts of a layer, showing parts of the layer underneath Merge visible layers **EXTENSION** Complete the previous steps, but maintaining history layers throughout
Process	**Context**	**Expected outcome**
Use history, adjustment, and rub through layers to edit non-destructively	Dorothea Lange – Migrant Mother	Colour splash image created in Photoshop by using layers
Extension		
Clone stamp; healing brush/patch		

Lesson 12 of 12		
LO	**Success Criteria**	**I can**
We can use adjustment masks instead of layers, to make selective adjustments to the image Levels and curves deal with value i.e. shadows, mid-tones, and highlights Levels offer less control than curves, but are faster and more convenient to use Colour balance, and hue saturation deal with colours Colour balance allows colour correction of individual colours within shadows, mid-tones, and highlights Hue saturation affects the entire image, making no distinction between tones Curves can also be used to edit colours, and offer a great deal of control, allowing us to work with tone and colour together (but not saturation) <u>Key Vocabulary</u> *Hue* – colour *Saturation* – when colours are saturated on the screen, they are closer to the pure hue; when they are desaturated, they fade, becoming duller and duller until they have no colour remaining, at the extreme *Tone* – in this context, 'tone' is the same as 'value' or 'brightness'; it is referring to the amount of light in the image i.e. a fully bright image is entirely white, and a fully dark image is entirely black	Invert the adjustment mask Use a paintbrush tool of various tones and opacities to make selective adjustments to the mask; evident in the image Broaden the tonal gradient (dynamic range) of a black and white image – judge this by comparing the histogram to the original As above, but adjusting colour As above, but adjusting colour and tone	Create adjustment masks Invert adjustment masks Use achromatic brushes to make selective adjustments in tone Use achromatic brushes to make selective adjustments in colour Use achromatic brushes to make selective adjustments in both tone and colour
Process	**Context**	**Expected outcome**
Photoshop	Ansel Adams (tone) Andreas Gursky (colour)	Photoshop
Extension		
Creative outcome – high/low contrast		