YEAR 10 Scheme of Work – BBAB

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

Year 10 Autumn 1 – Photography Techniques and the Exposure Triangle

Lesson 1 of 8		
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 8		
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 8		
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 8		
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 8		
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 8		
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 8		
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 8		
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		