Pilgrim Federation Key Stage 2 Curriculum Coverage Ideas & Resources for the Learning Theme: Robots & Machines and Lights, Camera, Action

Robots & Machines								
Science	**Art & Design**	**Computing**	**D&T**	**Geography**	**History**	**Music**	**PE**	**MFL**
What is inside a robot? Electrical components & power sources (Science/DT) Circuits Circuit training! Investigate electrical circuits (Science/DT) Flick the switch! Exploring switches. Recording explanations (Science/ English)	Robot artist Eric Joyner. Appraise key paintings. (Art/ICT) Recreate robot painting in style of Eric Joyner (Art/ICT) Robot artist Egenberger talking about 1950s influences in his art (Art/History) Be a graphic artist! Make own computer-generated robot art (Art/ICT)	What is a robot? Exploring key themes and vocabulary (English/ICT) Instructions - key language robot movements (Maths/ English) Robots to the rescue! Newspaper articles - rescue exploring robots (English/ICT) AI - ChatGPT	Making life easier robots in the home. Designs for new uses (English/ D&T) To the future - What might robots of the future be able to do? (English/ICT) AIBO & RoboSapien collages. Plan for bringing eyes to life! (Art/D&T) How does it work? Pneumatics - explain, and investigate (D&T/ English)	Co-ordinates Compass points Latitude and Longitude Where are robots being developed? Technological advances and where they have happened (Geog & ICT)	Jobs for robots. Compare past. How had technology improved the way things are made and the way things work? Local visit to factory (Hist/Geog) Robot beginnings & space race. Create information page (History/ English)	'Robots!' Music response Writing commentaries (Music/ Eng) Heavy metal! Iron Man 2D images using metal items. (English/Art/Music) Robot Hip-Hop! Music /film stimulus. Breakdancing! (Music) Robot City! Appraise music & respond in movement (Music)	*Circuit Training* *Physical challenges and being systematic in approach to problem solving.* *E.g. the crate game* *Large scale Battleships*	Name day to day objects that have technology in them: Washing machine Toaster Computer Laptop Mobile phone Research where different brands are made and find out what language they speak there.

Robots & Machines								
Science (cont.)	**Art & Design (cont.)**	**Computing (cont.)**	**D&T (cont.)**	**Geography (cont.)**	**History (cont.)**	**Music (cont.)**	**PE (cont.)**	**MFL**
Add sensors to circuits. Consider use in robots (Science/D&T) Light it up! Adding bulb eyes/sensor/switch to robots (Science/D&T) Pneumatic fanatics! Make own pneumatic systems; forces (D&T/Science) Planning pneumatic feature in junk-model robot. How force works (D&T/Science)	Workshop & gallery of Clayton Bailey. Research, respond, plan (Art/ICT) Direct control child. Fun remote controls (English/Art) Collaborative class robot sculpture, in style of Bailey's work. Photo (Art/D&T) Fictional robots / Robots movie Cartoon storyboards (English/Art)	Our new robotic pet! Learning to direct a Roamer/ Floor Turtle/ Bee Bots (ICT/Maths) Roamer routes. Directing Roamer Pet (ICT/Maths) The language of LOGO. Directions 'from floor to screen' (ICT/Maths) Direct screen turtle through a maze (ICT/Maths)	Building own junk-model robots with pneumatic mechanism (Art/D&T) Robot Wars Introducing our robots! Test/ demonstrate/ present models (D&T/ English) Storyboarding. Reflect, evaluate, record stages of project (English/D&T) Visit Hethel Engineering		Robot ancestors. Famous robots. Key fact timelines (History/ICT) Look at the first computers and compare to today. Development of robotic toys. Artefact history (History/D&T) People's memories of having early robotic toys (History/ English)	'Blue Man Group' Advert/flyer for tour (Music/ English) Percussion workshop! Sound & properties of metals (Music/ Art /Science) Music for metal world! Composition & perform (Music/ Science)		E.g. Apple Bosh Braun Hotpoint Indesit LG Maystag Mitsubishi Samsung Smeg Sony Toshiba….

Robots & Machines								
Science (cont.)	**Art & Design (cont.)**	**Computing (cont.)**	**D&T (cont.)**	**Geography (cont.)**	**History (cont.)**	**Music (cont.)**	**PE (cont.)**	**MFL**
Scrap-metal yard Properties of metal - metal meals! (Science/ English) Metals & magnets attract /repel Magnetic North & South (Science/ Geography) How strong magnet? Fair Test investigations use of measures (Science/ Maths)	The Iron Man description, similes. Sketching images (English/Art) Famous robots from Star Wars & Dr Who Make Dalek or other Robot! (English/Art)							

Robots & Machines								
Science (cont.)	**Art & Design (cont.)**	**Computing (cont.)**	**D&T (cont.)**	**Geography (cont.)**	**History (cont.)**	**Music (cont.)**	**PE (cont.)**	**MFL**
Magnetic robotic arms. Building working arms to lift items (Science/D&T)								

Lights, Camera, Action!								
Science (cont.)	**Art & Design (cont.)**	**Computing (cont.)**	**D&T (cont.)**	**Geography (cont.)**	**History (cont.)**	**Music (cont.)**	**PE (cont.)**	**MFL**
LIGHT YR3/4 Recognise that they need light in order to see things and that dark is the absence of light. Notice that light is reflected from surfaces. Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.	Look at film set artists, architects and designers. *Explore the work of artists:* *Andy Warhol through his iconic images of Marilyn Munroe.* *(photo manipulation)* *Jackson Pollock* *Jacob Lawrence* *Jean-Michel Basquiat* *Georgia O'Keeffe* *Edward Hopper* *Mark Rothko*	Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.	Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. *Make pinhole cameras, thaumatrope, phenakistoscope and flick books.*	Use maps, atlases, globes and digital/ computer mapping to locate countries and describe features studied ***Bollywood Vs Hollywood,*** *Look at cultural diversity* *INDIA – study physical & geographical features.* *Compare and contrast to UK.*	*The birth of moving pictures and cinema.* The first animated cartoon was produced in 1906. Credits began to appear at the beginning of motion pictures in 1911.	Improvise and compose music for a range of purposes using the inter-related dimensions of music. (*Indian folk music and bhangra)* **Indian Music Instruments** Sitar. Sitar is of the most popular music instruments of North India. Sarod. Sarod has a small wooden body covered with skin and a fingerboard that is covered with steel.	Compare their performances with previous ones and demonstrate improvement to achieve their personal best. *(perform Bollywood dances)*	Learn some basic Hindi, Guajarati, and Bengali.

Lights, Camera, Action!								
Science (cont.)	**Art & Design (cont.)**	**Computing (cont.)**	**D&T (cont.)**	**Geography (cont.)**	**History (cont.)**	**Music (cont.)**	**PE (cont.)**	**MFL**
Recognise that shadows are formed when the light from a light source is blocked by a solid object. Find patterns in the way the size of shadows change. LIGHT YR5/6 Recognise that light appears to travel in straight lines.	To improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials. *Create Oscar statuettes using wire frames and Modroc.* *Create Java shadow puppets* *Stop animation* *Filming Photography*	*Research, create and present biographies for film stars.* *Stop animation to create short films* *Record Bollywood style performances*	Investigate and analyse a range of existing products. *Design and sew superhero capes for dolls for stop animation films.* Electronics https://teachers.thenational.academy/units/electronics-simple-circuits-and-switches-2540 https://teachers.thenational.academy/units/control-6661		The Bell and Howell 2709 movie camera invented in 1915 allowed directors to make close-ups without physically moving the camera. By the late 1920s, most of the movies produced were sound films. https://blog.scienceandmediamuseum.org.uk/very-short-history-of-cinema/	Sarangi. Sarangi is one of the most popular and oldest bowed instruments in India. Flute. Shehnai. Tabla. Pakhawaj. Harmonium.		

Lights, Camera, Action!								
Science (cont.)	**Art & Design (cont.)**	**Computing (cont.)**	**D&T (cont.)**	**Geography (cont.)**	**History (cont.)**	**Music (cont.)**	**PE (cont.)**	**MFL**
Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes.								

Lights, Camera, Action!								
Science (cont.)	**Art & Design (cont.)**	**Computing (cont.)**	**D&T (cont.)**	**Geography (cont.)**	**History (cont.)**	**Music (cont.)**	**PE (cont.)**	**MFL**
Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. SOUND Identify how sounds are made, associating some of them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear.								

Lights, Camera, Action!								
Science (cont.)	**Art & Design (cont.)**	**Computing (cont.)**	**D&T (cont.)**	**Geography (cont.)**	**History (cont.)**	**Music (cont.)**	**PE (cont.)**	**MFL**
Find patterns between the pitch of a sound and features of the object that produced it. Find patterns between the volume of a sound and the strength of the vibrations that produced it. Recognise that sounds get fainter as the distance from the sound source increases.								

Lights, Camera, Action!								
Science (cont.)	**Art & Design (cont.)**	**Computing (cont.)**	**D&T (cont.)**	**Geography (cont.)**	**History (cont.)**	**Music (cont.)**	**PE (cont.)**	**MFL**
https://app.discoveryeducation.co.uk/learn/channels/channel/ee2be023-21c5-45af-aa39-a0d80577e499?embed=false&embed_origin=false Introduction to Electricity – Discovery Espresso								

Lights, Camera, Action!								
Science (cont.)	**Art & Design (cont.)**	**Computing (cont.)**	**D&T (cont.)**	**Geography (cont.)**	**History (cont.)**	**Music (cont.)**	**PE (cont.)**	**MFL**
https://app.discoveryeducation.co.uk/learn/channels/channel/1a3e0c21-5505-4989-a735-a688cc944540?embed=false&embed_origin=false Satellites- Discovery Espresso								

Robots & Machines	
Possible links to English:	**Possible Links to Maths:**
Fiction: The Iron Man – Ted Hughes The Iron Woman – Ted Hughes The Wild Robot- Peter Brown The Wild Robot Escapes – Peter Brown Non-Fiction: How Things Work – Conrad Mason The Way Things Work – David Macaulay Song: Drama:	

Lights, Camera, Action!	
Possible links to English:	**Possible Links to Maths:**
Fiction: The Iron Giant Non-Fiction: Song: Drama:	