Yr 6 - Summer 2: Light

Things to include each half term:
1 x active learning
1 x outdoor science lesson
3 x experiments/investigations
1 x child-led investigation
3 x examples of working scientifically

Science display:
- Key vocabulary linked to light and prior knowledge: Light, light source, names of light sources, dark, reflect, reflective, mirror, shadow, block, absorb, direct/ direction, transparent, opaque, translucent, straight, rainbow, colours
- Photos of children learning and their work
- Add to as taught: diagram of eye, how light travels, shadows

Science Adventure
Medium Term Planning

Lesson 1 (KWL)
- Gather ideas on what light is and re-cap prior knowledge
- Share crime report (from Hamilton Trust)https://www.hamilton-trust.org.uk/science/year-6-science/crime-lab-investigation/?gclid=Cj0KCQjw-_j1BRDkARIsAJcfmTFa2U0wTxVt90Iu-0qU-WxG4nr7RzQmgPfAKgiLITcVJkKM1RXkw8EaAniNEALw_wcB
- Children work in small groups to complete investigations as a carousel (active learning): Does light travel in straight lines? What causes a shadow to form? Is light made up of colours or not? Can you identify key sources of light?
- Quiz in teams

Lesson 2
- Continue with Hamilton Trust crime investigation
- Demonstrate that light travels in straight lines using shoe box, torch, pen and knitting needles
- Draw conclusions of who could/could not have been the culprit based on height of the hole and explain the science they are relying on.
- Write explanation about how a light source works to enable us to see.
- The human eye: https://www.bbc.co.uk/bitesize/clips/zf9c87h
- Light travels in straight lines: https://www.bbc.co.uk/bitesize/clips/zyntsbk

Lesson 3
- Continue with Hamilton Trust crime investigation
- Plan and carry out an investigation into the reflectiveness of given materials, recording results and identifying patterns
- Model and children make a periscope
- Draw conclusions of who may/may not be guilty
- Photos of periscopes in books

Lesson 4
- Continue investigation
- Children to create a rear view mirror - take a photo and annotate with how it works in books (outdoor learning)
- Children to complete shadow investigation - coming up with their own question to investigate (child-led)
- Record results in table and make line graph
- Children explain who can be discounted and why

Lesson 5
- Children to plan and carry out an investigation into the strength of various magnifying lenses, suggesting which cannot magnify enough in given circumstances
- Children to demonstrate and explain that light can be bent when it is slowed down.
- Children to split white light into rainbow colours.

https://www.bbc.co.uk/programmes/p0043dq1

Lesson 6
- Plan and carry out a light colour mixing investigation.

http://physics-chemistry-interactive-flash-animation.com/optics_interactive/additive_color_model_mixing_synthesis.htm

- Present findings in a chart.
- Plan a further investigation into the effect of coloured light on coloured materials
- Children to write up their final crime report with findings from light enquiries, including conclusions, causal relationships and explanations of and degree of trust in results. This can be handwritten, typed up, orally explained (teacher/ta scribe), shown in diagrams, labelled photos etc. Children choose how to present their report.