

# LESSON PLAN KS2

Programme: Forensic Science Masterclass

Programme of study : Science



<p><b>TARGET AUDIENCE:</b></p> <p><b>Key Stage 2 (Age 8 to 11 Years)</b> <b>Years 5 &amp; 6</b></p> <p><b>Useful for:</b> <b>Whole Year Group &amp; Whole Class teaching</b></p>	<p><b>DURATION:</b></p> <p>Full morning session      9:30 am – 12:00 pm          Full afternoon session    1:00 pm – 3:30 pm          Full day Event 9:30 am – 3:30 pm</p> <p><i>Timings are flexible according to your school's timetable</i></p>
<p><b>LESSON AIMS</b></p> <p>To develop pupil's awareness of Forensic Science and the applications, techniques and authentic processes used within a Crime Scene Investigation (CSI) scenario.</p> <p>Cross-curricular basic skill development; supports elements of (including National Curriculum references and levels, as appropriate):</p> <p><b>SC1 Scientific Enquiry, Mathematics Ma1, English: En1 Speaking &amp; Listening, En2 Reading, En3 Writing, Drama, History (Level 1), Geography (Level 1), ICT, PHSE &amp; Citizenship, Health &amp; Safety and Enterprise Education.</b></p>	<p><b>PUPILS</b></p> <p><b>Number of pupils: 30 – 45 Per Session</b></p> <p>Example 6 x Groups of 5 pupils situated at Desks / Tables within classroom</p> <p>Ideal group size: 30 pupils</p> <p>Larger group sizes: School Hall / Gym required</p>
<p><b>SCHOOL BENEFITS</b></p> <ul style="list-style-type: none"> <li>▪ Contributes to raised attainment</li> <li>▪ To learn about new topics and try new ideas in a less pressured environment</li> <li>▪ To celebrate science</li> <li>▪ Raising the profile of science within the school</li> <li>▪ Increasing interest and attitude to science</li> <li>▪ Encouraging independent working and team work, in order to approach and solve scientific problems utilising Forensic Science and Crime Scene Science as a tool</li> <li>▪ Assisting teachers and schools to raise standards across the whole Curriculum</li> <li>▪ Supports the “<b>Every Child Matters Agenda</b>”</li> <li>▪ Opportunities for Continued Professional Development for both Teachers and Support personnel</li> </ul>	<p><b>RESOURCES</b></p> <p>All learning resources will be provided by PULSE</p> <p>Schools to provide A4 sheets of paper for activities</p> <p><b>CEOP (Child Exploitation Online Protection)</b></p> <p>ThinkUKnow Programme. Short 8-minute film available for teachers to view prior to this workshop.</p> <p><b>ThinkUKnow Programme</b>  <a href="http://www.thinkuknow.co.uk">http://www.thinkuknow.co.uk</a></p> <p><i>(See end of lesson plan)</i></p>

## OBJECTIVES – INTENDED LEARNING OUTCOMES

**By the end of the session each pupil will have a good overall knowledge of ‘Forensic Science’:**

- Engage the pupils in an introduction to Forensic Science in preparation for KS3, highly recommended for Year 5 and Year 6 groups
- Gives pupils the opportunity to explore areas of Forensic Science and is an ideal introduction to the Science Curriculum
- Allows pupils to participate in practical “hands on” science activities using authentic equipment
- Broadens pupils enthusiasm for science making them active and curious
- Teaches pupils that science is all around them - gaining a greater understanding of scientific enquiry and its wider aspects
- Allows the pupils to gain confidence in their own thoughts and how to communicate scientifically to different groups
- Pupils will learn how these Forensic Science techniques relate and integrate into everyday life and the importance that this specialist skills set plays within today’s Criminal Justice System – important for pupils transition to KS3 learning

***NB:If school has opted for CEOP (Child Exploitation Online Protection) KS2 film, this resource will highlight, prepare and reiterate to the pupils the importance of ‘Online Internet Safety.’***

TIME	CONTENT	STUDENT	TUTOR / TEACHER
<p><b>9:30 am</b></p> <p><b>(Commence Workshop)</b></p> <p><b>(5 mins)</b></p>	<p>Welcome &amp; thanks to the School for inviting me in today / explain to class that for the next 2 hours, we will be taking a brief insight into the exciting world of CSI (Crime Scene Investigation and Forensic Science and more importantly the specialist processes used within Forensic Science today.</p> <p>(Only a brief overview as much will be discussed in the body of the lesson)</p> <p><b>So what is Forensic Science?</b></p> <p><b>So what is CSI?</b></p> <p><b>What are the people in the white overalls called?</b></p> <p><b>‘Ideal PHOTO Opportunity ‘</b></p>	<ul style="list-style-type: none"> <li>▪ Listening</li> <li>▪ Asking questions</li> <li>▪ Observations</li> </ul>	<ul style="list-style-type: none"> <li>▪ Speaking</li> <li>▪ Asking questions</li> <li>▪ Responding to questions</li> <li>▪ Polling for examples of Forensic Science and collating on white board</li> </ul>

<p style="text-align: center;"><b>(10 mins)</b></p>	<p>Class Participation – <b>7pupil volunteers</b> to come and stand out at the front of the class:</p> <p>2 minute: role play, resulting in a <b>Crime Scene Scenario</b></p> <p>1<sup>st</sup> pupil = Victim</p> <p>2<sup>nd</sup> pupil = Suspect</p> <p>5 pupils = Soco Officers</p> <p style="text-align: center;"><b>At the end of the photo opportunity, we go straight into a whole class “hands on” “Fingerprinting” and retrieving evidence exercise</b></p>	<ul style="list-style-type: none"> <li>▪ Listening</li> <li>▪ Drama / Acting (Questioning full class)</li> <li>▪ Dressing up as SOCO Officers in authentic SOCO suits</li> </ul> <p style="text-align: center;">Preparing:</p> <p style="text-align: center;"><b>CRIME SCENE SCENARIO</b></p>	<ul style="list-style-type: none"> <li>▪ Leading 7 “volunteers”</li> <li>▪ Class participation: we have a CRIME SCENE – what is the first thing we need to do?</li> <li>▪ What is a SOCO?</li> <li>▪ Information to be collated on white board</li> <li>▪ What do they need to wear &amp; why is it relevant?</li> <li>▪ 5 Soco’s to put on specialist SOCO suits)</li> </ul> <p style="text-align: center;"><b>PHOTO Opportunity for School / Local Press</b></p>
<p style="text-align: center;"><b>(45 mins)</b></p> <p style="text-align: center;"><b>Morning Break (15 mins)</b></p>	<p><b>Latent Prints – ‘hidden’</b></p> <p>Left by a thin film of sweat &amp; oil in our skin. We use different chemicals to enhance prints on different surfaces.</p> <p>In this session we will learn how to retrieve hand and fingerprints off a Porous surface (no holes to absorb moisture) ie; paper</p> <p>Using Magnetic Fingerprinting Powder</p>	<ul style="list-style-type: none"> <li>▪ Listen &amp; watch demonstration for “hands on” fingerprinting activity</li> <li>▪ Working in groups and individually</li> <li>▪ Carrying out individual fingerprint and hand prints using magnetic fingerprint powder</li> </ul>	<ul style="list-style-type: none"> <li>▪ Health &amp; Safety brief</li> <li>▪ Put pupils into groups of 5 – 6 (mixed abilities) and preferably “non-friendship”</li> <li>▪ Explain “hands on” exercise and reiterate importance of Health &amp; Safety</li> <li>▪ Hand out all materials / resources: magnetic fingerprinting powder, fingerprinting wands, magnifying glasses and fingerprint comparison cards</li> <li>▪ Explain what a “Tenprint Form” is and how it is used by the Police <b>(Teachers to assist pupils at tables)</b></li> </ul>

<p><b>Return from Morning Break</b></p> <p><b>10:45 am</b></p> <p><b>(60 mins)</b></p>	<p><b>Criminals “always” leave a trace?</b></p> <p>Non-Porous Fingerprinting Exercise (no holes, smooth and rough surfaces) example: Window</p> <p>This session teaches the pupils how another type of fingerprinting powder is utilised at a crime scene; using Aluminium Powder this demonstrates to the pupils how to retrieve a fingerprint / ear print from a common window pane.</p> <p>Additionally, the pupils are taught about the importance of evidence retrieval and the different forms that evidence come in i.e.: Tyre Marks, Footprints, Hair, Blood &amp; Fibre, Footprints and personal effects Weapons, Wallet, Mobile etc;</p> <p>Examples shown of potential ‘Evidence’ from a crime scene and the packaging that Police would use to preserve the evidence.</p> <p>Pupils are shown how “Ultra Violet Light” can be used within a Crime Scene Investigation</p>	<p>Listen and watch the Aluminum fingerprinting retrieval demonstration</p> <ul style="list-style-type: none"> <li>▪ Listening</li> <li>▪ Responding to polling questions</li> <li>▪ Asking questions</li> <li>▪ Pupils to participate in Footwear analysis Exercise</li> <li>▪ Pupils to participate in Chromatography Activity</li> <li>▪ Pupils to participate in Hair, Blood and Fibre retrieval</li> </ul> <p>All groups are given a clear glass bottle to analyze using an “Ultra Violet Light” source and must retrieve the message on the bottle</p>	<ul style="list-style-type: none"> <li>▪ Health and Safety brief</li> <li>▪ Show fingerprint and ear print gel lift evidence to all pupils</li> <li>▪ Explaining why Criminals “always” leave a trace and the importance of Forensic evidence in a Court of Law</li> <li>▪ Different types of Forensic Evidence that might be used i.e.: Tyre Marks, Footprints, Hair, Blood &amp; Fibre and Fingerprints / Ear prints etc;</li> <li>▪ Showing and explaining materials used in Hair, Blood and Fibre retrieval</li> <li>▪ Footwear analysis activity using “white flour” to show example of footwear impression</li> <li>▪ <b>Case Studies:</b> briefly discuss the Rees Jones Murder and the evidence found which led to a conviction this year, 2 years after the actual murder. Signifying the importance of Forensic evidence in a court of law – and how the <b>Criminal Justice System</b> operates.</li> </ul>
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11:45 - 12:15

### COMPUTER FORENSICS SESSION

This session is completely optional and all the materials used are provided by CEOP (Child Exploitation and Online Protection)  
Leaflets will also be handed out at the end of the session to all students.

Normally the short film and discussion would take place at the beginning of the workshop. CEOP films can now be viewed on YOUTUBE by putting CEOP – Jigsaw.

To end the workshop on a high – our last activity is producing a “UNIQUE” keyring, which will have the pupils own fingerprint encased in it.

- All pupils sit and view short film based on online internet safety

- All pupils get to take home an individual impression of their own ‘unique’ fingerprint encased into a Keyring fob

Show CEOP KS2 film on Internet Safety, relating to MSN Instant Messenger and Facebook

Questions taken from pupils about the short film.

Pupils asked how many of them actually knew about the **REPORT ABUSE** button, prior to watching the film?

Teachers must be aware that this film may cause some pupils to be affected more than others and so it is suggested that a teacher who has attended a Child Protection course is available.

This keyring is a reminder and keepsake of their day. The website address printed on the front allows the pupils to visit other Forensic Websites and Lincoln University, where they deliver several different Forensic Science Degrees.



[www.thinkuknow.co.uk](http://www.thinkuknow.co.uk)

**CLOSE**

## Full Day Activity

### A Full Day Session – includes students attending their own Crime Scene Scenario

Full Day activities for both Year 5 & Year 6 will include all the students dressing up in white / blue SOCO suits and visiting their own individual Crime Scene Scenario and using their newly acquired skill set – this would take place in the afternoon session. All pupils will be required to work within a team with their fellow pupils and retrieve, preserve and document any evidence. During a half-day or full day activity, a series of photos are taken and a CD containing these images is sent directly to your school. None of these photos would be used by PULSE without the schools prior permission.

