



FORENSIC ENTOMOLOGY

Suggested program

The program is designed to enable students to participate in a range of activities that require them to make observations, collect, analyse and interpret data and try to form a conclusion.

A concluding scenario or situation is included that enables students to put into practice the skills they have developed. They attempt to calculate the Post Mortem Interval.

The program is organised into a series of pdf files.

- Background information for the teacher about various aspects of the program has been included.
- Teacher activity information has been provided for each activity with hints and technical notes.
- PowerPoint presentations have been included for download.
- Student worksheets are divided between a Personal Dossier and a Crime Dossier. Both documents can be printed to form two separate booklets that students work from, or you may choose to print and use only specific activities.
- Ask them to write a list of evidence they would collect.

1 – What is entomology? How can entomology be used to solve crimes?

- **FSE03, FSE05, FSE10, FSE12, FSE14, FSE15**
- Features of insects – PowerPoint presentation.
- Good bugs vs bad bugs – PowerPoint presentation.
- Interesting facts about insects.

2 – Lifecycle and structure of insects

- **FSE04, FSE10, FSE12, FSE16**
- Placemat activity.

3 – Classification Key

- **FSE10, FSE12,**

4 – Monitoring temperature

- **FSE04, FSE10, FSE12**

5 – Rearing flies: The lifecycle of flies.

- **FSE04, FSE11, FSE12**

- Design an experiment.
- Ongoing activity.

6 – Using insects to solve crimes?

- **FSE03, FSE07, FSE09, FSE10.** Watch snippets of CSI episodes.
- Jigsaw activity (Forensic terms and definitions)

7 – Accumulated heat

- **FSE04, FSE10, FSE12**

8 – Food webs

- **FSE04, FSE06, FSE10, FSE12**
- Class activity

9 – Faunal succession

- **FSE17**
- Board game

10 – Scenario

- **FSE10, FSE13**
- Given a scenario and using the knowledge they have gained over the last few lessons, students try to reconstruct a crime scene using PMI calculations.

11 – What happened?

- Sharing reconstructions and re-enacting what they think happened.
- Students present their evidence.



FORENSIC ENTOMOLOGY

Suggested program

Forensic Entomology - MODULE OVERVIEW: lessons/activities

Science Outcomes and Level	Lesson Outline & Activities	Resources
Communicating Scientifically Science in Society	<p>What is entomology? Entomology in crimes.</p> <p>Concept attainment activity – insects. ‘Good’ bugs vs ‘bad’ bugs Be amazed: Interesting facts about insects – eg insect world records</p>	<p>FSE03: What is forensic science? FSE05: Insect facts FSE10: Teachers Activity information FSE12: Student dossier FSE14: Types of animals Ppt FSE15: “Bugs” Ppt</p>
Life & Living Structure & Function	<p>Lifecycle and structure of insects.</p> <p>Placemat activity – review</p>	<p>FSE04: Insect structure and lifecycles. FSE10: Teachers activity information FSE12: Student dossier FSE16: Insect structure and lifecycles Ppt.</p>
Life & Living Structure & Function – Classification Level 3 & 4	Use of a simple classification key	<p>FSE10: Teachers activity information FSE12: Student dossier</p>
Life and Living Investigating Scientifically	<p>Monitoring temperature</p> <p>Students begin to collect data on minimum and maximum temperatures.</p>	<p>FSE04: Insect structure and lifecycles. FSE10: Teachers activity information FSE12: Student dossier</p>
Life and Living Investigating Scientifically	<p>Rearing flies – ongoing.</p> <p>Introduce experiment : eggs – >flies Discussion on experimental design. Create a hypothesis to be tested, identify the independent, dependent and control variables, look at the method designed to determine these. Design a table to record results in. Set-up dishes. Ongoing – students will need to measure and record observations daily – teams of students?</p>	<p>FSE04: Insect structure and lifecycles FSE11: Rearing flies FSE12: Student dossier PLUS: - Digital camera to take daily photos of maggot growth. - Computer to download the photos and keep their own record of what’s happening. -Microscope to record features of maggots at various stages of their growth. Apparatus as described in FSE11</p>
	<p>Using insects to solve crimes - CSI</p> <p>Jigsaw activity (forensic terms) True-life stories examples [On-going measurements]</p>	<p>FSE03: What is forensic science FSE07: Forensic Entomology: use of insects to help solve crime. FSE09: Case Studies and suggested CSI episodes FSE10: Teachers activity information.</p>
Life & Living – Reproduction & Change Level 2, 3 Investigating Scientifically – Planning (Variables) Level 3, 4 & 5	<p>Concept of accumulated heat.</p> <p>[On-going measurements]</p>	<p>FSE04: Insect structure and lifecycles FSE10: Teachers activity information. FSE12: Student dossier</p>



FORENSIC ENTOMOLOGY

Suggested program

Life & Living Interactions between Living Things – Level 3 Level 4	Food Webs Food webs and role of decomposers [On-going measurements]	FSE04: Insect structure and lifecycles FSE06: Maggots and decomposers FSE10: Teachers activity information. FSE12: Student dossier
Life & Living Interactions between Living Things –	Faunal succession Faunal succession board game.	FSE 17: Faunal succession board game
Investigating scientifically Life & Living Interactions between Living Things Communicating scientifically	Real-life case (scenario) Students to work in groups. They will use a range of provided data to work out time of death: PMI.	FSE10: Teachers activity information. FSE13: Crime dossier
Investigating scientifically	Work on experimental report and collating their data. Think about how this relates to the case.	FSE13: Crime dossier
Communicating scientifically	Student group presentations / mock court? Their estimate of time of death The basis for their estimate Reveal the actual result.	FSE13: Crime dossier
Science in Society Communicating Scientifically	Guest speaker – forensic entomologist if possible –otherwise a video.	FSE09: Case Studies and suggested CSI episodes
Science in Society	Reflection on the activity. How accurate was the result? Read back over true-life examples and write a short report on how and why insects can be used to solve crime.	