SCoPE

Scientists' Collaborative Project with Educators

Fruit Fly Larvae Investigation

TEACHER AND TECHNICIAN NOTES

Curriculum links

AQA Trilogy/Biology 4.1 Principles of organisation; 4.2.2.1 "The digestive system is an example of an organ system in which several organs work together to digest and absorb food… Students should be able to describe the nature of enzyme molecules and relate their activity to temperature and pH changes."

OCR Gateway Science Biology key ideas;

Edexcel key ideas in biology

Equipment

NOTE: The fruit fly larvae must be ordered at least 2 weeks before they are required.

Equipment assumes a class of 30 students working in pairs.

Provided by the Gurdon Institute	**Provided by the school**
Fine forceps with plastic covers (x30)	Clear plastic rulers (x15)
Large coverslips (box of 100)	Saline solution in small containers (15x)
Microscope slides	Microscopes
Magnifiers with lights (x 15)	**OPTIONAL:** bleach/disinfectant for disposal of remaining fly larvae.
A5-size black laminated surfaces (x15)	
Vials of fruit fly larvae (x31) – some vials may contain bromophenol blue indicator	
Small fine-tipped plastic Pasteur pipettes (x15)	
Laminated 3-page identification keys (x15)	
PowerPoint file with background information, and an embedded video demonstrating the dissection procedure and with labelled microscope images to aid identification	
Sharps bin for disposal of slides and coverslips	
Flight case to contain all equipment	
OPTIONAL: digital microscope in separate flight case	

SCoPE

TEACHER AND TECHNICIAN NOTES

Safety considerations

The Gurdon Institute has provided a risk assessment for this activity. The school should review the safety aspects of this practical to ensure they are in keeping with your standards.

Fine forceps have very sharp points which need to be kept sharp. The forceps will be provided with a plastic cover which should be replaced when they are not in use. Students should be warned that the points are sharp and should be taken care of. Forceps should not be left lying about on the bench when not in use.

Glass microscope slides may break and then have sharp points which could cut. Any broken glass should be disposed of appropriately in the sharps bin provided.

Fruit fly larvae are provided growing on yeast and corn flour. There are no particular safety issues with this, but the flies should be disposed of at the end of the practical. You can send the vials back to the Gurdon Institute in the box provided and we can dispose of them for you. Or, you can dispose of them yourself, by adding disinfectant or bleach, rinsing the vials out completely and then throwing them in the ordinary rubbish. If you opt to dispose of the vials yourself, please ensure you have a school-approved risk assessment for this.

Preparation

1- Place the fruit fly larvae in the fridge until required (or in a freezer for 20 min before the practical begins). A short spell in the cold will stop the larvae moving around during the dissection. If the ambient temperature is warm, they will develop into adults more quickly and the larvae will be very much more active.

2- Thirty-one vials of larvae are provided (up to 5 may contain bromphenol blue). For a class of 30, one vial of larvae can be allocated to each pair of students. We have included extra vials of larvae in case any develop in transit. We recommend using vials with the largest, whitest larvae.

3- Each pair of students will require:

- a vial of flies*
- clear plastic ruler
- a microscope slide*
- a plastic coverslip*
- approximately 5 ml of saline
- a magnifier*
- two fine forceps*
- an A5-size black plastic dissecting surface*
- a fine tipped plastic Pasteur pipette*
- laminated identification keys*

* provided by the Gurdon Institute

The PowerPoint presentation includes a video of the dissection.