



Flu Lab- Technical Notes

Before you arrive at the school you must check that you have everything you need and have aliquoted out all the tubes- see REAGENTS list in the next section.

Materials

Per group (4 pupils per group)

Laboratory Equipment	Quantity
P50 pipette	2
Pipette tips	1 box
Tube rack	1
Tissue	2 pieces
Waste beaker	1
Clear 1.5ml tubes	12

Reagents	Quantity
Pipetting practice dye	2
Blue tube with H ₂ O (negative control)	1
Green tube with lemon juice (positive control)	1
Yellow tubes with " serum samples "	4
Screw cap tubes with indicator solution	

PPE	Quantity
Lab coats	4
Safety glasses	4
Gloves	4 pairs

Educational Materials	Quantity
Results laminated sheets	1
Whiteboard pens	1
Micro-pipetting instruction card A4	1
Pipetting practice cards	4
Instructions for experiment A4 (2 sided)	1

Before the workshop

1) Aliquot Pipetting Practice Dye:

Use a dropper to fill **20x 1.5ml clear Eppendorf** with "pipetting practice dye". The pipetting practice dye is a mixture of water and blue food colouring.

Label the top of each tube with a "**P**" to show it is Practice Dye. These filled tubes can be reused for another session.

2) a) Aliquot Negative Controls:

Use a dropper to aliquot water (1ml) into **10x 1.5ml blue Eppendorf**. Preferably used dH₂O. If using tap water, please test the pH before the workshop.

b) Aliquot Positive Controls:

Use a dropper to aliquot the lemon juice (1ml) into **10x 1.5ml green Eppendorf**.



In each rack place 1 blue (negative control) and 1 green (positive control) tube, give workshop stage, **Flu Lab- Stage 1: Controls**

3) Aliquot “serum samples”:

In a rack place **20x 1.5ml yellow Eppendorf tubes**. To 9x of the tubes add 1ml dH₂O and to the other 11x tubes 1ml lemon juice (acidic solution. * this means that 55% of the chickens are infected with flu)

Mix the tubes up so that each group get some + and some – tubes (**ensure that each group get at least 1 positive sample**)

Now, label the tubes 1 – 40 randomly i.e. *group 1* has samples 6, 29, 13 & 21

Give these out during the workshop stage, **Flu Lab- Stage 2: Serum Samples**

4) Aliquot indicator solution

Use a dropper aliquot 1ml of 1% litmus solution (a non-hazardous pH indicator) into 10 screwcap tubes.

During the workshop

1) Set up the room

Set up each table (4 pupils per group, maximum 5 groups) with the:

- Group letter card
- Laboratory Equipment
- PPE
- Educational Materials
- Racks containing pipetting practice dye, positive and negative control

Have all other materials ready on hand on a table that you can access easily. Please note, you can give each student in each group a number 1 – 4 and then assign them tasks i.e. “*student 1- please come and collect the serum samples*”

After the workshop

1) Clear up the room

All waste should be taken away, please use a waste bag that can be taken back to your organisation for correct disposal. **Do not use the waste disposal system of the school.**

Please note, none of the reagents are toxic or hazardous, however they do look like laboratory waste materials so they should be disposed of in accordance with your organisation’s waste disposal protocol.



Some tubes can be saved and reused:

- Pipetting Practice Dye
- Indicator Solution
- All 50ml Falcon tubes and droppers used to set up the positive, negative controls and serum samples*

*ensure the tubes are dry before storing in the outreach box