

## Practical 1: Lab techniques

**Practical:** There may be a range of molecular experience amongst the delegates. These exercises aim to consolidate existing skills or enable people to learn new skills – using a range of pipettes.

### **Task 1 Pipetting large volumes using p1000 and p100**

4X 1ml cuvettes

Cuvette 1: add 500 ul water + 500 ul blue liquid

Cuvette 2: add 700 ul water + 300 ul blue liquid

Cuvette 3: add 800 ul water + 200 ul blue liquid

Cuvette 4: add 900 ul water + 100 ul blue liquid

Stand the cuvettes together in a row. Do they all contain the same amount of liquid?

Can you draw up 1 ml liquid in total from each cuvette?

### **Task 2 Pipetting medium volumes using p1000 and p100**

4X 1ml cuvettes

Cuvette 1: add 100 ul water + 150 ul blue liquid + 250 ul red liquid

Cuvette 2: add 75 ul water + 400 ul blue liquid + 25 ul red liquid

Cuvette 3: add 20 ul water + 430 ul blue liquid + 50 ul red liquid

Cuvette 4: add 100 ul water + 380 ul blue liquid + 20 ul red liquid

Stand the cuvettes together in a row. Do they all contain the same amount of liquid?

Can you draw up 500 ul liquid in total from each cuvette?

### **Task 3 Pipetting fixed volumes onto card**

Using the liquid in the cuvettes, pipette the correct amount onto each circle on the card.

### **Task 4 Pipetting medium volumes (uses p100 and p10)**

4X 1.5 ml Eppendorf tubes

Tube 1: 4 ul water + 12 ul blue liquid + 24 ul red liquid + 50 ul green liquid + 10 ul yellow liquid

Which order should you do this in? Repeat for 3 more tubes so have 4 in total.

Pipette the total volume from each tube onto parafilm. Are the 4 dots of liquid all the same size?

**Task 5 Pipetting small volumes (uses p1000, p100 & p10)**

**Wear gloves**

4X 1.5 ml Eppendorf tubes

Tube 1: 10 ul water + 2 ul fluorescein

Tube 2: 500 ul water + 5 ul fluorescein

Tube3: 700 ul water + 10 ul fluorescein

Tube 4: 100 ul water + 100 ul fluorescein

Take tubes, pipettes, gloves etc to the dark room to view under UV light - fluorescein fluoresces under UV light

**Task 6 Load agarose gel**

Using pre-mixed loading dye & water solution - Load 10 ul into gel lanes 1,2,3 & 4