**AICE Bio Lab: Plant Transport and Dying Flowers**

**Purpose**: To measure the rate of transpiration and water transport in cut flowers.

**Hypothesis:** (Describe what you think is going to happen. What will the petals look like? Will this be a quick or slow process? How long do you think it will take?)

**Materials:** Cut white flowers, water, containers, food colouring

**Procedure:** 1. Carefully trim flowers to have an even stem approximately 10-20cm long.
 2. Colour water with food colouring—water should be dark but 5-7 drops is enough depending on the
 colour!
 3. Place cut flowers in water
 4. Time how long it takes for the first appearance of colour in the flower petals.

**Results:** (Create a data table to compare your flower’s height with time taken for colour to ascend. Your data table needs three flowers—get data from other teams if there are not enough flowers for each group to have three!)

**Conclusions:** Copy the following questions and answer in complete sentences in your lab notebooks.

1. How does water move up plants from the surrounding soil? Outline the entire process—a diagram might be helpful.
2. Why do the petals end up dyed a different colour? What does this tell you about the food colouring chemicals?
3. How might you modify this procedure to dye a single flower multiple colours? Why does this work?
4. What happens when a plant cannot absorb enough water?
5. Outline at least three causes of stomatal closure and explain how, biochemically, the plant achieves closing its stomata.
6. Which types of flowers took up dye the best? Why do you think this is?