General Certificate of Education
Advanced Subsidiary Examination
June 2012

Biology

Unit 3T  AS Investigative Skills Assignment

Teachers’ Notes

A copy should be given immediately to the teacher responsible for GCE Biology
**Teachers’ Notes**

**Confidential**

These notes must be read in conjunction with *Instructions for the Administration of the ISA: GCE Biology* published on the AQA Website.

**The effect of sucrose concentration on cells from a plant stalk**

**Materials**

In addition to access to general laboratory equipment, each candidate needs:

- 100 cm³ of 1.0 mol dm⁻³ sucrose solution
- water
- boiling tubes in which to make the required sucrose solutions
- boiling tube rack
- six Petri dishes and lids
- pipettes or measuring cylinders to measure a minimum of 2 cm³ and a maximum of 20 cm³
- pasteur pipettes to use with the measuring cylinders
- marker or chinagraph pencil to write on the Petri dishes
- piece of the flower stalk from a daffodil. Candidates will be required to cut this stalk so that it is 5 mm shorter than the diameter of the Petri dish. You will tell candidates the exact length to cut their stalks. Centres may wish to have spare lengths of stalk available in case candidates experience difficulty in cutting the stalk as instructed on the Task Sheet
- scalpel and cutting surface on which to cut the flower stalk
- ruler with millimetre measurements

Centres are advised to use flower stalks from daffodils for this investigation. They are widely available throughout the Spring term.

**Managing the investigation**

If you have queries about the practical work for this ISA please contact your Assessment Adviser. Contact details can be obtained by emailing your centre name and number to biology-gce@aqa.org.uk. Please do not contact suppliers for advice.

This investigation is in two parts. Candidates are required to set up their apparatus and materials, and then leave the stalks in the sucrose solutions until curling takes place before taking measurements. This could be any suitable time from 30 minutes after setting up to the following day. Strips should not, however, be left in the solutions for so long that the ends overlap. In trials, 30 minutes proved an adequate time.

**The task must be trialled before use.**

Candidates must **not** be given information about the ISA until one week before Stage 1. One week before Stage 1, teachers may give their candidates the following information.

You will investigate the effect of sucrose concentration on cells from a plant stalk.

There must be **no** further discussion and candidates must **not** be provided with any further resources to prepare for the assessment.