



General Certificate of Education
Advanced Level Examination
June 2011

Human Biology

HBI6T/Q11/TN

Unit 6T A2 Investigative Skills Assignment

Teachers' Notes

Confidential

**A copy should be given immediately to the teacher(s) responsible for
GCE Human Biology**

Teachers' Notes

CONFIDENTIAL

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

The effect of use on features of the arm

Candidates are required to find out whether there is a statistically significant difference in the features of the dominant and the other arm. They will first measure the circumference of forearms and then measure the diameter of the wrists of a group of people of similar age. They will then calculate how many times bigger the forearm circumference is than the wrist diameter. This will be done for each arm, for each person.

They should measure the features of the arm the person uses most frequently first, and then measure the other arm.

Materials

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

- length of string or tape longer than the circumference of the largest forearm
- ruler marked in mm
- set-squares
- Plasticine or Blu-Tack
- optional template stuck onto card (please see separate instructions)
- marker pen

A copy of the AQA Students' Statistics Sheet is provided at the back of the Task Sheet. Candidates may refer to this during any Stage.

Managing the Investigation

Each candidate must measure the forearms and wrists of a group of people of about their age. They must individually collect data from these trials. The groups should be large enough to allow sufficient data to be collected to enable a statistical calculation to be made.

Technical Information

A clear, flat surface should be made available. Bench tops are ideal, together with a stool or chair.

A length of string or tape should be used to measure the circumference of the forearm. This should not stretch. The string should not be so thin that it cuts into the arm. The length of the circumference should be marked on the string and this length then measured by laying it alongside the ruler. Trials have suggested that string approximately 600 mm long is long enough.

Two set-squares and a ruler can be used to measure the diameter of the widest part of the wrist. Alternatively, the accompanying template can be stuck onto card and used. Both techniques give satisfactory results.

If the set-squares are to be used they should be set up on each side of the wrist in the manner shown in the diagram on page 3 of the Task Sheet. A perspex ruler can then be used to measure the distance between the two vertical sides.

If the template is used it should be photocopied at 100 % and stuck onto stiff card. A double layer of cereal packet card worked well in trials. Care should be taken that the edges in contact with the wrist are not sharp.

If you use different apparatus please change the Task Sheet to reflect the equipment available.

You should instruct candidates to bring a calculator.

Candidates **must not** be given information about an ISA assessment until one week before Stage 1.

One week before Stage 1, candidates should be given the following information:

You will investigate the effect of use on features of the arm.

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

In this investigation, teachers must not give candidates the following information

- where on the forearm to make measurements
- how to make the wrist diameter measurements reliable
- how many measurements to carry out
- which statistical test to carry out.

