At Woldingham we use a biometric (fingertip scanning) system to record attendance and borrow library resources. We are also investigating using it for building access and printing services.

The following information explains how we are not keeping a 'copy' of your daughter's finger print but only a small amount of key information.

Biometric Fingertip Recognition Explained

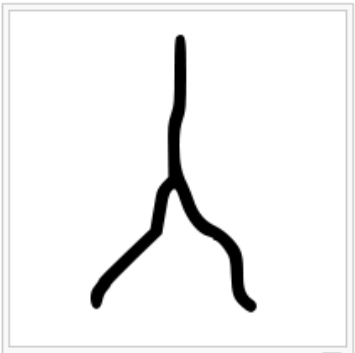
Every fingerprint is unique and, as can be seen from Diagram (a), each one contains a vast amount of detail.

For a system to capture every detail of every individuals fingerprint, not only would a huge amount of storage be needed but incredibly powerful and expensive processing power would be needed. By 'boiling down' the detail in the fingerprint to a much smaller number of unique characteristics the processing and storage requirements are hugely reduced, resulting in a fast, accurate and cost effective solution.

There are essentially two processes involved: Enrolment and Identification

Enrolment

A finger is placed on the reader and the system extracts the co-ordinates of a collection of features. These features are referred to as minutia; they are points where ridges split in two, end abruptly or are particularly short, as shown in Diagram (b). Typically 25 to 35 minutiae will be detected.



The resulting map of these minutiae (c) is converted into a vector of numbers, referred to as the biometric template. The biometric template (not an image of the original fingerprint) is then stored in the Live Register database. This is an encrypted number, only useful within the system and cannot be used to recreate an individual's fingerprint image, either by Live Register or by any external system. Once all students have been enrolled Live Register has a biometric template related to each student's fingertip, which can then be used for identification.

Identification
The student places their finger on the scanner and the system searches its database for a biometric template which matches the detected minutia map of the fingertip being scanned. The position of the finger on the scanner, the pressure applied and many other physical factors mean that it's highly unlikely that a perfect match will be found; so long as the comparison falls within previously set thresholds the match can be considered to be acceptable.

Live Register's Biometric Solution
The algorithms used in generating the biometric template, how the templates are efficiently stored, catalogued and retrieved, how newly scanned fingertips are matched with those in the database and how the data is encrypted are all critical in making biometric detection work well. Live Register has deep experience in the technologies and techniques needed to make fingertip detection successful, its solution is already in widespread use throughout UK education and we can confidently state that the Live Register biometric solution is fast accurate and safe.