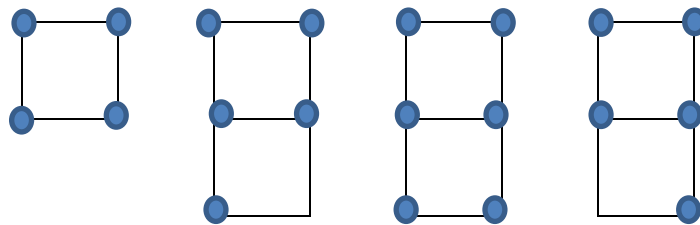


Geometric Letters from the sides of the square to the dotted corners

It is unfair to expect a blind child to master all the shapes of geometric letters, including the dots and diacritics above and below them. However, reading and writing will be easier for sighted children.

What if we used the letters composed of dots by **dotting the intersections of the sides of a square**? We would obtain from **4 dots 16 different shapes** as follows: **4 shapes** with one dot at each vertex, **6 shapes** with two dots at the ends of 4 sides and 2 diagonals, **4 shapes** with 3 dots for each corner, **one shape** with 4 dots at the 4 vertex points, and the **last shape** without dots.



If we were to mark the dots where the sides of the two adjacent squares meet, we would obtain from **6 dots 64 different shapes**. This is because, we obtain additional 16 different shapes by adding the fifth dot or the sixth dot or the two dots together. These shapes can form a new alphabet.

In fact, **French Braille** had preceded us to this idea and matched these 64 shapes with Latin letters. The **Geometric letters** aiming for universality must be matched to the **Latin and Braille alphabets**.

When the Latin letters arranged in words and compared to **Abjad words**, we find similarities in three words (**ABCD, KLMN, QRST**) and differences in the last six additive letters (**UVW XYZ**).

(أبجد الإفجج - كلمن أب قرست -) (أبجد هوز حطي - كلمن سعفص قر - شت تخذ ضظغ)

ABCD EFG HIJ – KLMN OP QRST - UVW XYZ

Short and long Arabic movements are matched with small and capital Latin vowels. The two short vowels (**e, o**) are not used in Arabic classic and the corresponding long vowels (**E, O**) were transformed into a short movement (**a**) followed by (**y**) or, (**w**) as in (**layl, nawm**) instead of {**IEI, nOm**}.

(A, U, I, E, O) (a, u, i, e, o) - (ا , ؤ , ا , ؤ , ا) (= , = , = , = , =)

We add 4 English consonant letters missing in Arabic (**ch v g p**), and match 3 Arabic guttural letters (**Hamzah, Ha, and Ayn**), missing in English, with 3 Latin poly sound letters (**x, c, q**). We also match 5 English compound letters and 5 Arabic hard consonant letters with capital Latin letters as follows:

(H/ch v g p) (هـ ح ط پ) - (أ ح ع) (q c x) (ق ك خ)

(P/dh B/th F/sh C/kh Q/gh) (ط ث ظ ث) - (ق ص ض ط ظ) (Z T D S K) (ظ ب ث ن ك)

Practical Exercise 6: The square and the double square models for dots where sides meet

The teacher explains how to create **16 shapes from the 4 dots** of a square and **64 shapes from the 6 dots** of the 2 joined squares. The children are then asked how many shapes there are from one, two, three, or four dots in a dotted square, and requested to draw them in space or on a sandy surface.