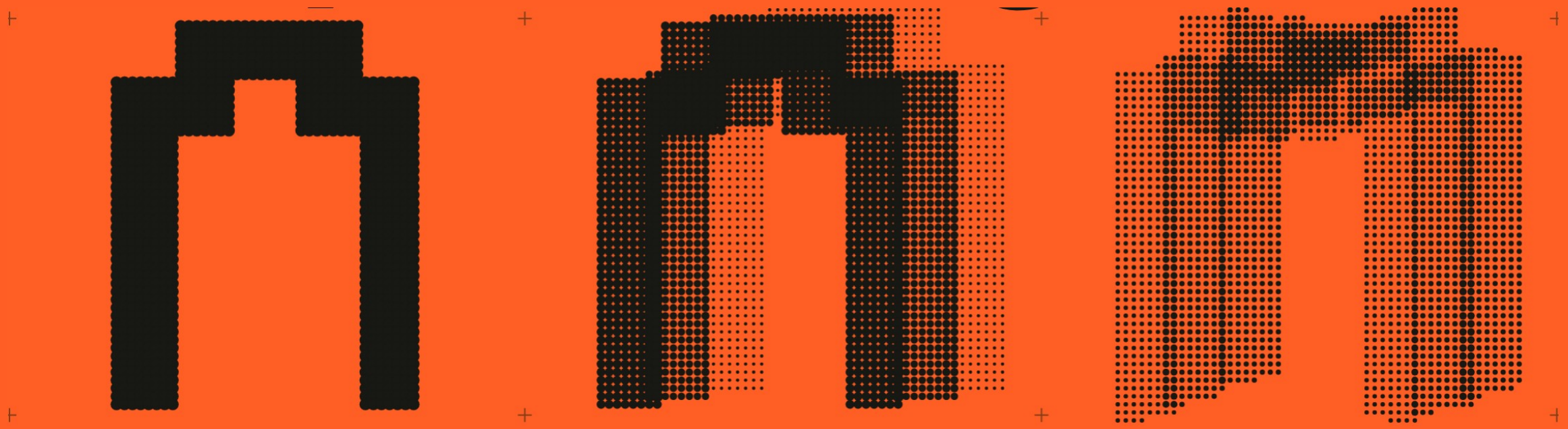
INDEPENDENT DESIGN PROPOSAL FOR PRESTON AI LAB

Shape and signal

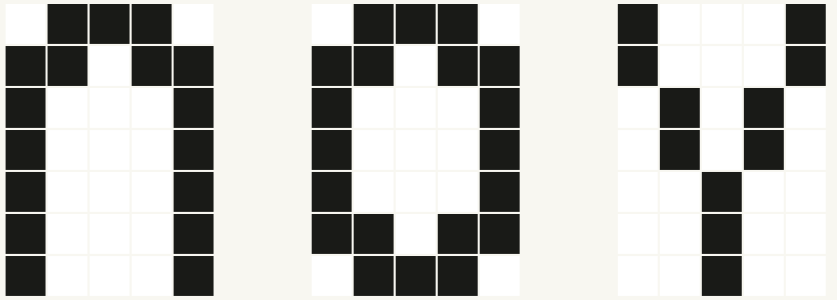
An observation desk for teaching visual perception.



When does a smudged mark change its name?

CLASSROOM EXERCISE

Picture a class printing these three symbols.
A student still sees a loop in the broken ink.
Would a rule that compares shades agree?



Arch Loop Fork

Ask for a prediction before revealing the scores.

The observation desk

Select a source. Change blur or noise. Read the winning template and all three distances.

Source glyph

Arch | **Loop** | Fork

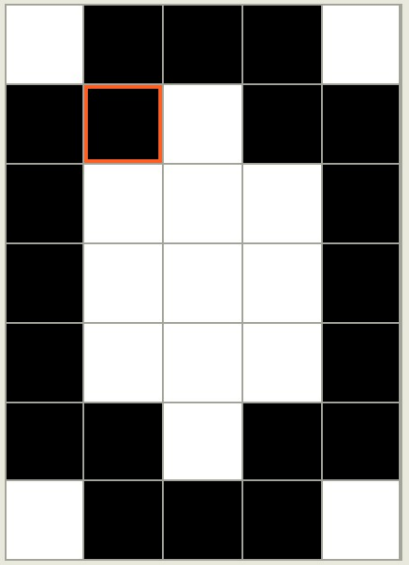
Blur 0%

Noise 0%

Reset experiment

Observed pixels

Which template do you think will win?



5 COLUMNS × 7 ROWS

INSPECT A CELL

Row 2 Column 2

Shade 0 of 255

Closest template

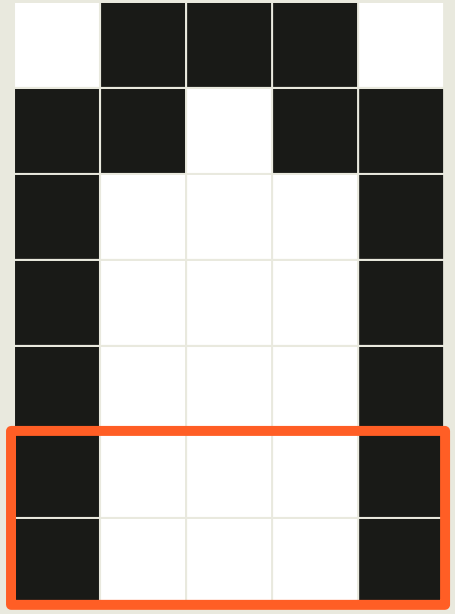
Loop

MEAN DIFFERENCE

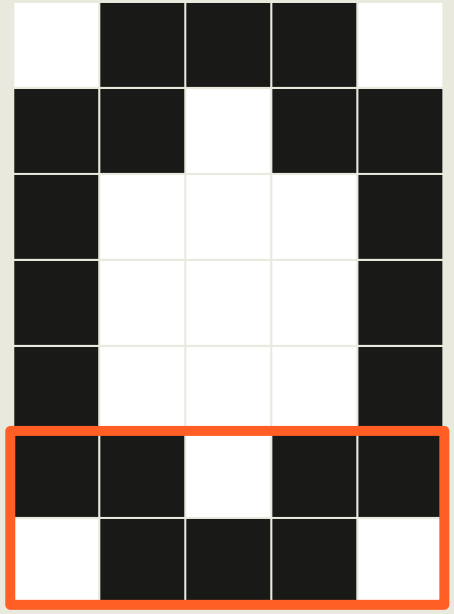
Arch	20.00%
Loop	0.00%
Fork	71.43%

A smaller difference means a closer match. Zero is a pixel-for-pixel match.

The closing stroke



ARCH



LOOP

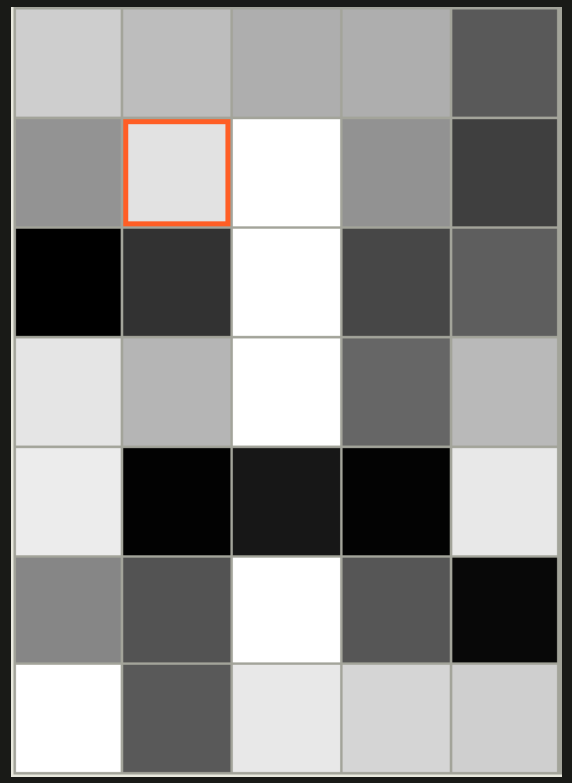
7 of 35

Only seven cells distinguish these two templates. All seven sit in the last two rows.

A clean Loop is a perfect match for itself. Its distance to Arch is exactly 20%.

OBSERVATION B / LOOP, BLUR 0%, NOISE 75%

A Loop read as Fork



Mean pixel difference

Arch		54.22%
Loop		51.05%
Fork		**42.68%**

The smallest distance wins. Noise replaced 29 of the 35 cells.

One cell explains the rule

226

ROW 2, COLUMN 2

Loop expects black (0)

The observed shade contributes 226 units of difference.

Fork expects white (255)

The same cell contributes only 29 units to Fork.

Across the grid, Fork scores 3,809 out of 8,925 possible units, or 42.68%.

The rule compares three aligned templates. It has no training stage or photo input.

Give a partner the settings

Choose a glyph and write down your own reading.
Save the observation slip as a text file.

Give a partner only the source, blur and noise.
Can they reconstruct the same picture and explain why the rule chose that label?

Observation slip

Source	**Loop**
Blur	**0%**
Noise	**75%**
My reading	.....
Arch	**54.22%**
Loop	**51.05%**
Fork	**42.68%**

Save this record (.txt) ↓

LOCAL CLASSROOM RECORD