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Writing with Light: Building a Low-Cost Lightboard at Carleton College

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What is a LIGHTBOARD?
THIS IS A LIGHTBOARD

\[ \begin{align*}
55 & \rightarrow \text{L} \rightarrow 53 \rightarrow \text{L} \rightarrow 61 \\
64 & \rightarrow \text{L} \rightarrow 55 \rightarrow \text{L} \rightarrow 13
\end{align*} \]

\[ \begin{align*}
\text{pK}_b & = -\log K_b \\
K_b & = 2.0 \times 10^{-3} \text{ M} \\
x^2 & = \frac{2.0 \times 10^{-3}}{1.0} \text{ M}
\end{align*} \]

1.0 M solution of NaCN (pK_b = 4.69) \( \rightarrow \) pH?

\[ \text{NaCN} \rightarrow \text{Na}^+ + \text{CN}^- + \text{H}_2\text{O} \rightarrow \text{HCONH} + \text{OH}^- \]

\[ \begin{align*}
1.0 \text{ M} & \rightarrow \phi \rightarrow +x \\
- & \rightarrow \phi \rightarrow +x \\
\end{align*} \]
念
今も心が残っている
万代
WHY USE ONE?

- Flipping the Classroom
- Replicability
- Comfort
- The “Wow Factor”
- Content+Personality
HOW IT WORKS
INSPIRATION FOR BUILDING

- ARCHITECTURAL GLASS
- CUSTOM METAL FRAME
- CUSTOM LED STRIPS
- HIGH-END STUDIO LIGHTING
- EXPENSIVE CAMERA SET-UP
HOW WE BUILT OURS

EXISTING FRAME & GLASS

IKEA “Dioder” Lights

Fluorescent Markers

Studio To Use

Video Editing Software

Vimeo & YouTube
RECOMMENDATIONS

- Nice, Stable Whiteboard Frame
- Ikea Dioder Lights
- Quality Plexiglass (~3/8” or thicker)
- Fluorescent Markers
- Tripod & Any Good Video Camera
- Basic Video Editing Software
- DIY Softbox Lighting
- Black Backdrop
- Vimeo or YouTube
DEMO
THANK YOU!

QUESTIONS?

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BONUS 1: A Look at Editing
BONUS 2: Unaided Studio

An independent studio will allow instructors to create content quickly and on their own schedule. It will also reduce the necessary staff for creating these videos.

Needs:

● Small, Unoccupied room
  ○ Lighting, cropping, etc pre-set
● Mirror Add-on
● External Webcam
● Quicktime or other screen recorder
THANK YOU!

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