

$$\begin{array}{ccc}
 \mathbf{C}_1 & \xrightarrow[\text{MonCat}]{f_1} & \mathbf{D}_1 \\
 \downarrow F & & \uparrow G \\
 \mathbf{C}_2 & \xrightarrow[\text{MonCat}]{f_2} & \mathbf{D}_2 \\
 \downarrow H & & \uparrow K \\
 \mathbf{C}_3 & \xrightarrow[\text{MonCat}]{f_3} & \mathbf{D}_3
 \end{array}$$

Diagram illustrating a sequence of three categorical mappings (MonCat) between objects $\mathbf{C}_1, \mathbf{C}_2, \mathbf{C}_3$ and $\mathbf{D}_1, \mathbf{D}_2, \mathbf{D}_3$. The mappings are labeled f_1, f_2, f_3 . The objects are connected by vertical arrows labeled F, H (downward) and G, K (upward), with the middle row labeled **MonCaMonCat**.

$$\begin{array}{ccc}
 \mathbf{C}_1 & \xrightarrow[\text{MonCat}]{f_1} & \mathbf{D}_1 \\
 \downarrow F \circ H & & \uparrow K \circ G \\
 \mathbf{C}_3 & \xrightarrow[\text{MonCat}]{f_3} & \mathbf{D}_3
 \end{array}$$

Diagram illustrating a sequence of two categorical mappings (MonCat) between objects $\mathbf{C}_1, \mathbf{C}_3$ and $\mathbf{D}_1, \mathbf{D}_3$. The mappings are labeled f_1, f_3 . The objects are connected by vertical arrows labeled $F \circ H$ (downward) and $K \circ G$ (upward), with the middle row labeled **MonCaMonCat**.