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# visual category Theory

brick by brick

Part<sub>6</sub> ∈ C<sup>Parts</sup>

Visual Category Theory Brick by Brick, Part 6: Using LEGO® to Teach Abstract Mathematics

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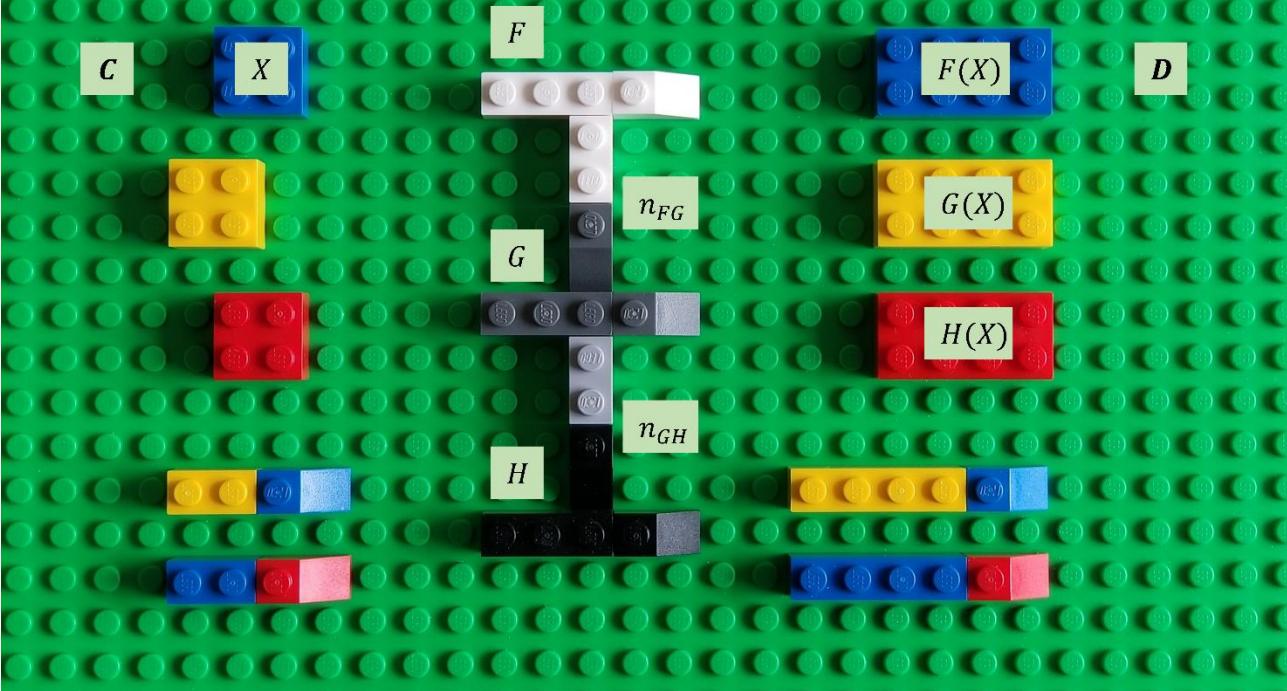
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In *Part<sub>1</sub>* we introduced natural transformations between functors.  
Natural transformations can be “vertically” composed.

$F, G, H : \mathbf{C} \rightarrow \mathbf{D}$ ,  $X \in \mathbf{C}$ ,  $F(X), G(X), H(X) \in \mathbf{D}$

$n_{FG} : F \rightarrow G$ ,  $n_{FG}(X) : F(X) \rightarrow G(X)$ ,  $n_{GH} : G \rightarrow H$ ,  $n_{GH}(X) : G(X) \rightarrow H(X)$

$n_{FH} = n_{GH} \circ n_{FG} : F \rightarrow H$ ,  $n_{FH}(X) = n_{GH}(X) \circ n_{FG}(X) : F(X) \rightarrow H(X)$



In addition to 12 books mentioned in *Part<sub>1</sub>*, *Part<sub>3</sub>*, *Part<sub>4</sub>*, and *Part<sub>5</sub>* we also used:

- Iconicity and Abduction by Gianluca Caterina and Rocco Gangle
- Directed Algebraic Topology: Models of Non-Reversible Worlds by Marco Grandis

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