# Comprehensive Meaning-Use Diagram

## 723 Algorithmic Elaborations from Student Automata

### Following Robert Brandom's Category Theory Framework



**Addition Strategies**

$P_{addition.SAR\_ADD\_Count}$ $P_{addition.SAR\_ADD\_Chunkin}$ $P_{addition.SAR\_ADD\_RMB}$ $P_{addition.SAR\_ADD\_Count}$

**Algorithmic Elaboration Analysis**

Total Relationships: 723
Practices: 22
Vocabularies: 22
Derived from Actual Automaton Behavior

$P_{AlgEl\ 1:\ PP-suff}$

**Subtraction Strategies**

$P_{subtraction.SAR\_SUB\_COBO}$ $P_{subtraction.SAR\_SUB\_}$ $P_{subtraction.SAR\_SUB\_Decompos}$ $P_{subtraction.ChunkingA}$ $P_{subtraction.ChunkingB}$ $P_{subtraction.ChunkingC}$

$P_{AlgEl\ 2:\ PP-suff}$

$P_{AlgEl\ 4:\ PP-suff}$

$P_{AlgEl\ 5:\ PP-suff}$

$P_{AlgEl\ 8:\ PP-suff}$

$P_{AlgEl\ 6:\ PP-suff}$

**Multiplication Strategies**

$P_{multiplication.}$ $P_{multiplication.SMR\_MULT\_Commuta}$ $P_{multiplication.SMR\_MUL}$ $P_{multiplication.SMR\_M}$

**Brandom's Visual Conventions**

Vocabulary (Light Gray Ellipse)
Practice (Dark Gray Rounded Rectangle)
**Alg** Algorithmic Elaboration

$2:\ PV-suff$

$P_{AlgEl\ 3:\ PP-suff}$

→ Basic MUR
- - → Resultant MUR

**Division Strategies**

$P_{division.SMR\_DIV\_CGOB}$ $P_{division.SMR\_DIV\_II}$ $P_{division.SMR\_DIV\_DealingByO}$ $P_{division.SMR\_DIV\_UCR}$

**Core Vocabularies**

$V_{Counting}$ $V_{Decomposition}$ $V_{Base\ Multiple}$ $V_{Iterative\ Operation}$

$Res_1:\ VV\ 1-3$ $Res_3:\ VV\ 1-4$ $Res_2:\ VV\ 2-4$