

Outcome Space depicting the structure of children’s conceptions of the meaning of written numerals in everyday environments

CATEGORIES OF DESCRIPTION	SPECTRUM OF LINKS ACROSS CONTEXT, OBJECT, SYMBOL DIMENSIONS												
	Coding density key →												
	No coding			1-20%		21-40%		41-60%		61-80%		81-100%	
	Context Dimension Links The context - something about the situation or activity associated with the written numeral							Object Dimension Links The object on which a written numeral appears				Symbol Dimension Links Mathematics or non-mathematics-specific symbols	
No link	Misaligned	Loose link	Linked to personal occurrence	Linked & situation or activity-specific	Linked & universal	Linked & universal with examples	No link	Misaligned	Loose link	Linked	Implicit link/unclear		
Coded for ALL photographs in data set							Coded for ALL photographs in data set				Coded when symbols (e.g., £, ml, kg,) appear in photograph		
1 - No expressed meaning and / or purpose of numeral.	81-100%						81-100%						
2 - Description of actions associated with the context and object, rather than number-focused meaning and / or purpose of numeral.	21-40%		81-100%				21-40%	21-40%	41-60%	21-40%		81-100%	
3 - Meaning and / or purpose of numeral misaligned with object and context.		81-100%						41-60%	21-40%				
4 - Meaning and / or purpose of numeral linked to the object but misaligned with context.		81-100%							21-40%	41-60%			
5 - Recognition that the numeral has a meaning and / or purpose, but the specific communicative message of the numeral is not expressed.	21-40%		41-60%	21-40%					41-60%	41-60%			
6 - Meaning and / or purpose not fully expressed but there is expressed recognition of a specific communicative message in line with culturally shared rules.			81-100%	21-40%	21-40%	21-40%			21-40%	81-100%			
7a - Fully expressed meaning and / or purpose, implicitly drawn from symbol accompanying numeral, in line with culturally shared rules.			41-60%			21-40%				81-100%		81-100%	
7b - Fully expressed meaning and / or purpose of numeral in line with culturally shared rules.					21-40%	81-100%	21-40%			81-100%			
8 - Fully expressed meaning and / or purpose of numeral, with examples provided, in line with culturally shared rules.						81-100%				81-100%		81-100%	