

# Figure 1: CogBench-RAG Framework

## Human Memory Phenomena

Encoding Specificity  
(Tulving & Thomson, 1973)

*operationalized  
as*



## CogBench-RAG Benchmark Modules

Context-match vs.  
mismatch retrieval

Fan Effect  
(Anderson, 1974)

*operationalized  
as*



Accuracy vs. entity  
association count

Interference  
(Underwood, 1957)

*operationalized  
as*



Phase 1 vs. Phase 2  
fact retrieval

Serial Position  
(Murdoch, 1962)

*operationalized  
as*



Retrieval accuracy by  
indexing position

Retrieval-Induced  
Forgetting (Anderson+, 1994)

*operationalized  
as*



Unpracticed item access  
after category practice

→ **Cognitive Alignment Score (CAS) per system**