

How do humans develop concepts?

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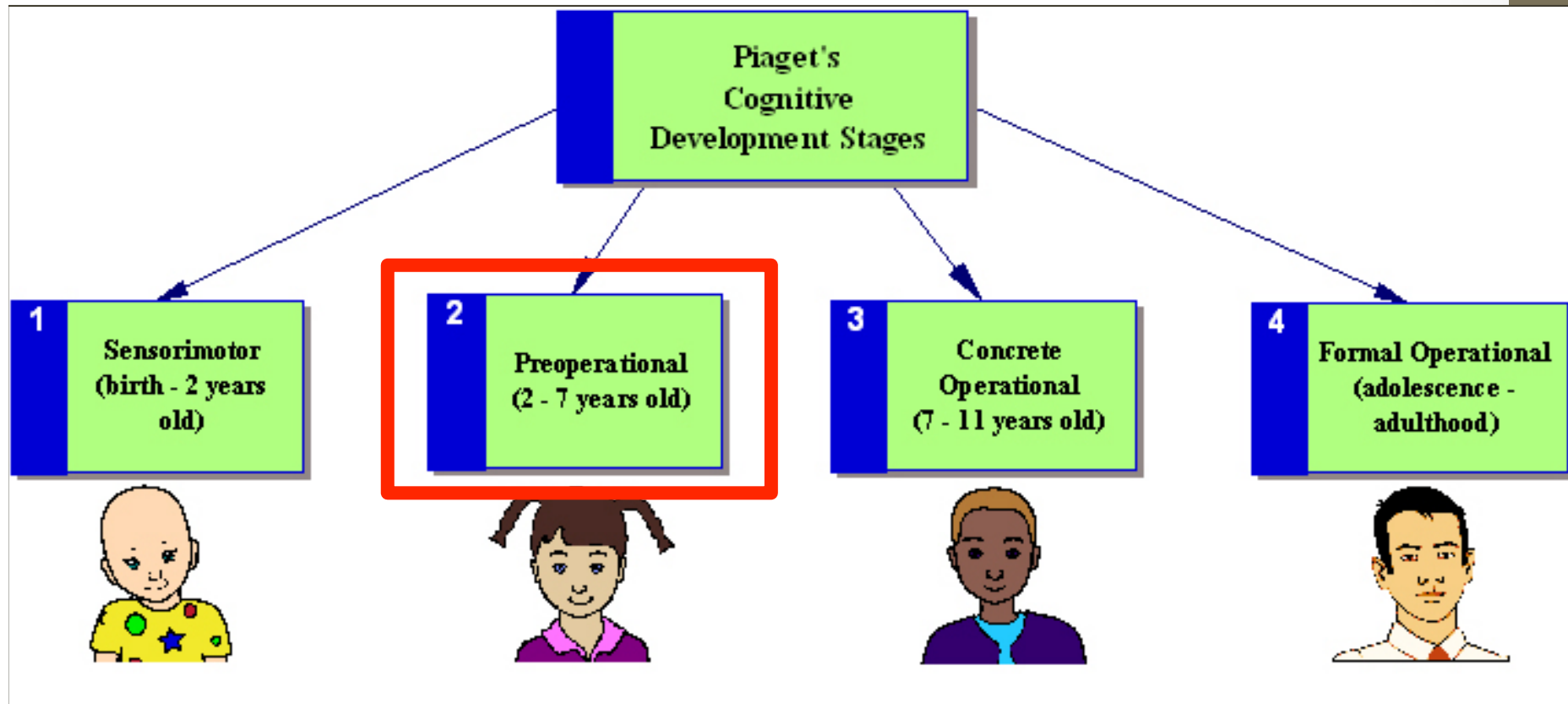
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Concept

- Mental representations
 - entities that exist in the brain
- Abilities
 - peculiar to cognitive agents
- Abstract objects
 - Objects that immediate between thought, language, and referents

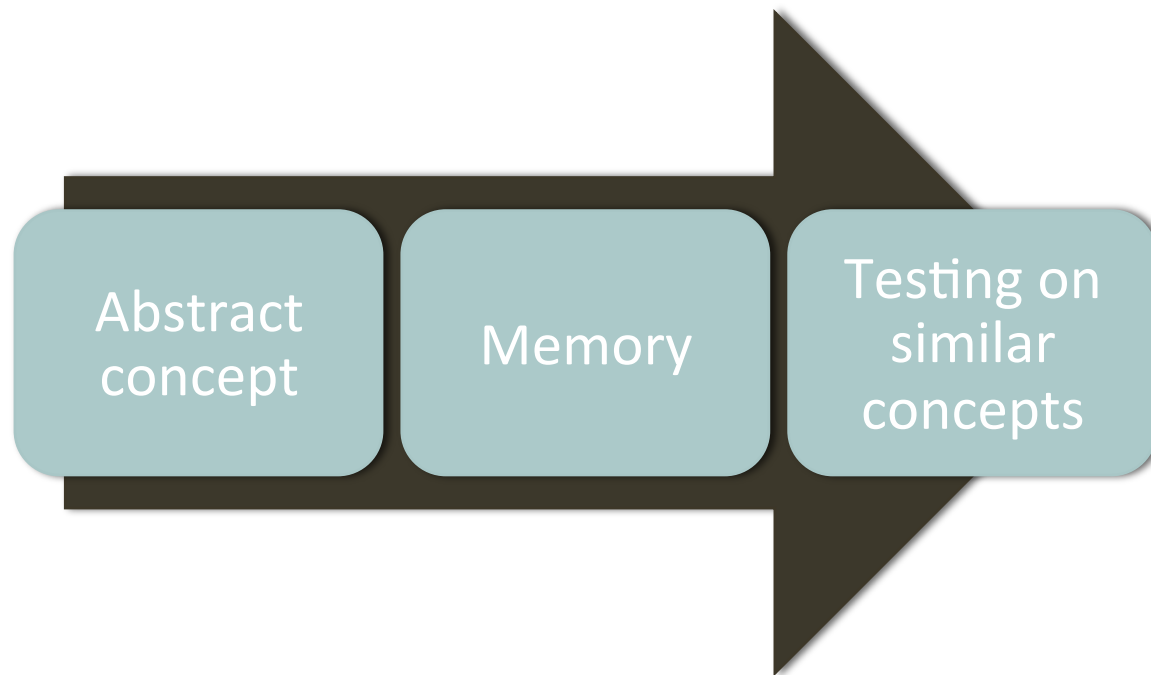
Piaget Theory and Learning

- Developmental Stages in children



Piaget Theory and Learning

- Preoperational Stage (2-7 years)
 - Have memory
 - Lacks abstract concepts

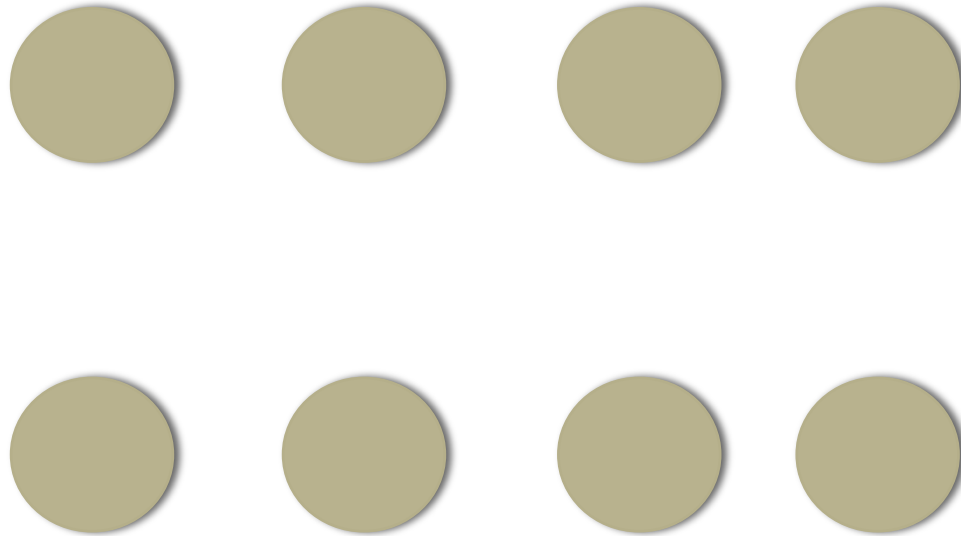


EXP 1 (Transitivity)

Which is longer?
RED or YELLOW



EXP 2 (Conservation)



Which group has more coins?



Quick Learning Versus Long Term Learning

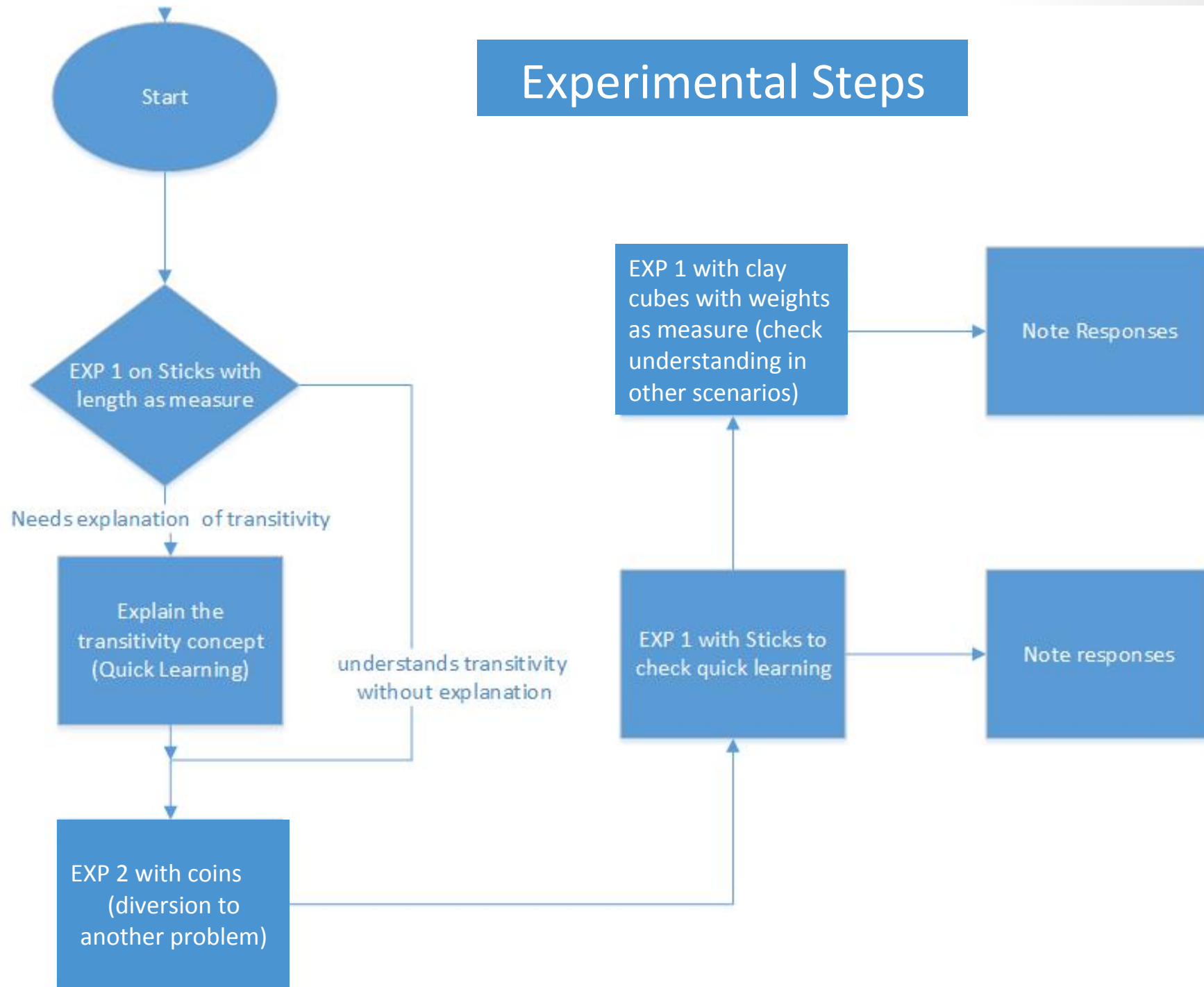
Quick Learning

- Understand concepts on-the-fly - SUPERVISED

Long-Term Learning

- UNSUPERVISED learning of concepts
- Apply concepts
 - same experiment
 - different experiment – but same abstract concept

Experimental Steps



Educational Implications

- Content up to speed with the learning capabilities
- Can a 2-7 year old child apply abstract concepts to similar problems?
- Familiar concepts to relate to newer concepts

References

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