

Thinking About Waves

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Transformation

Redefinition

*Tech allows for the creation of new tasks,
previously inconceivable*

Modification

Tech allows for significant task redesign

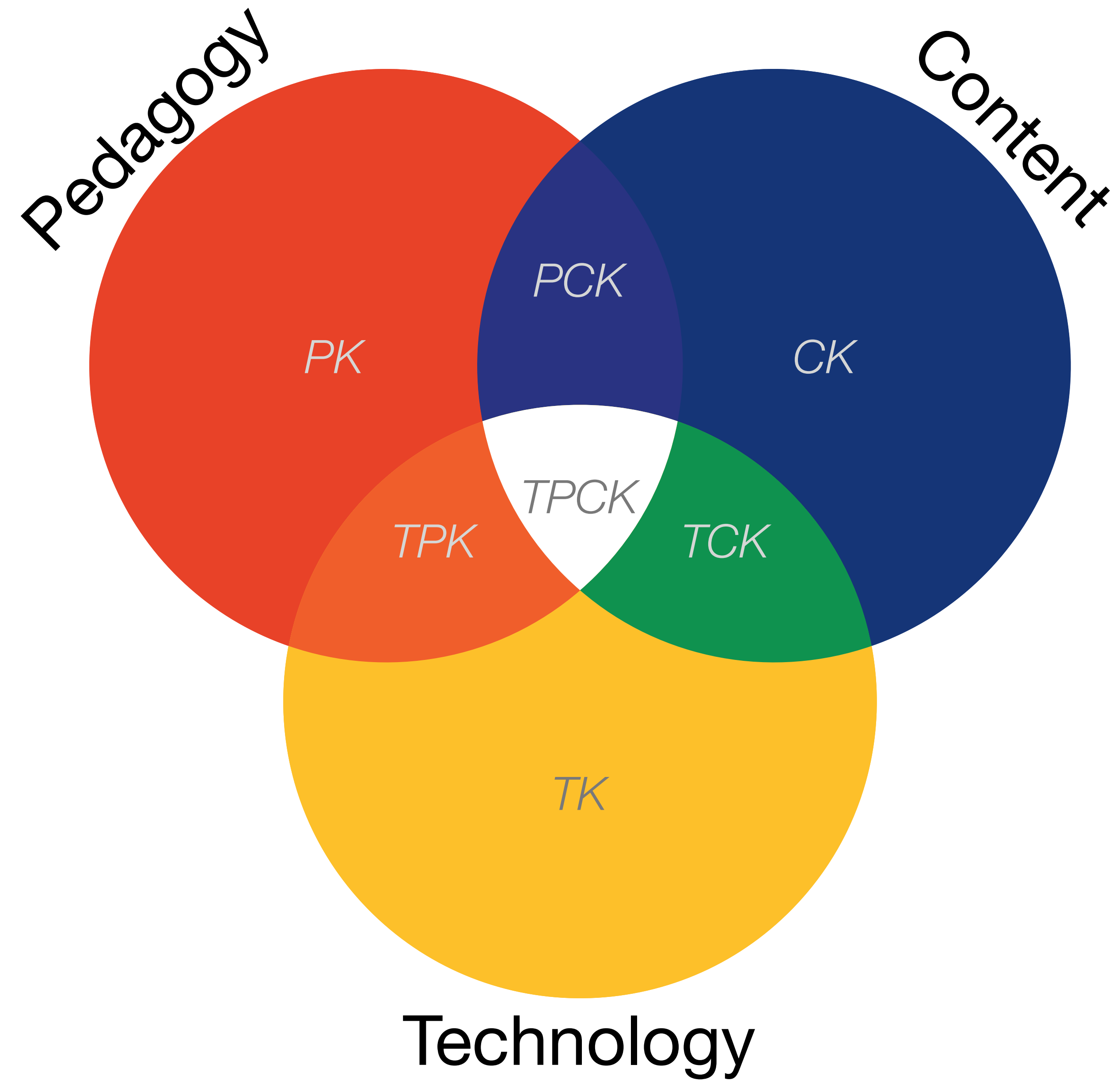
Augmentation

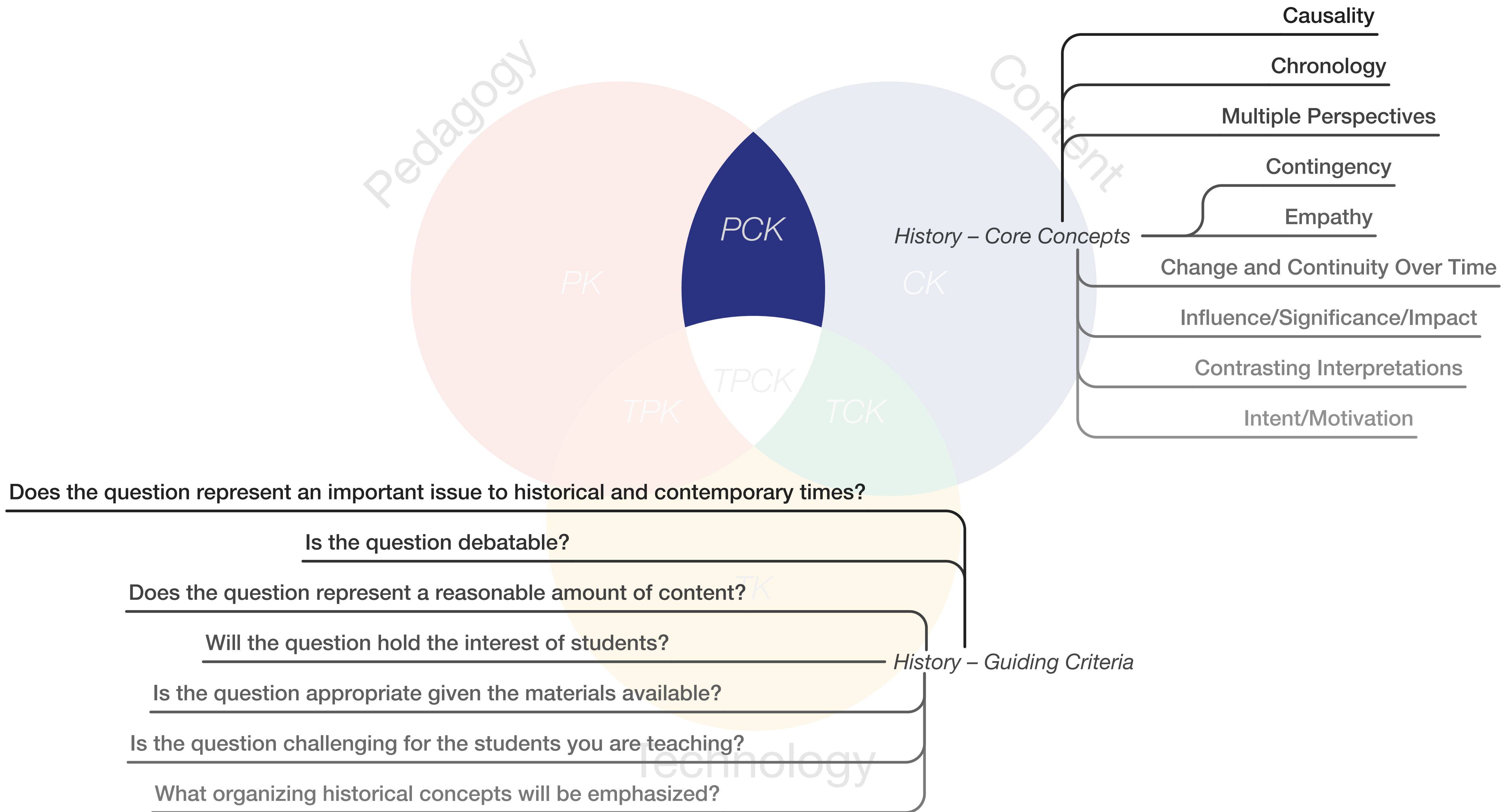
*Tech acts as a direct tool substitute, with
functional improvement*






Substitution

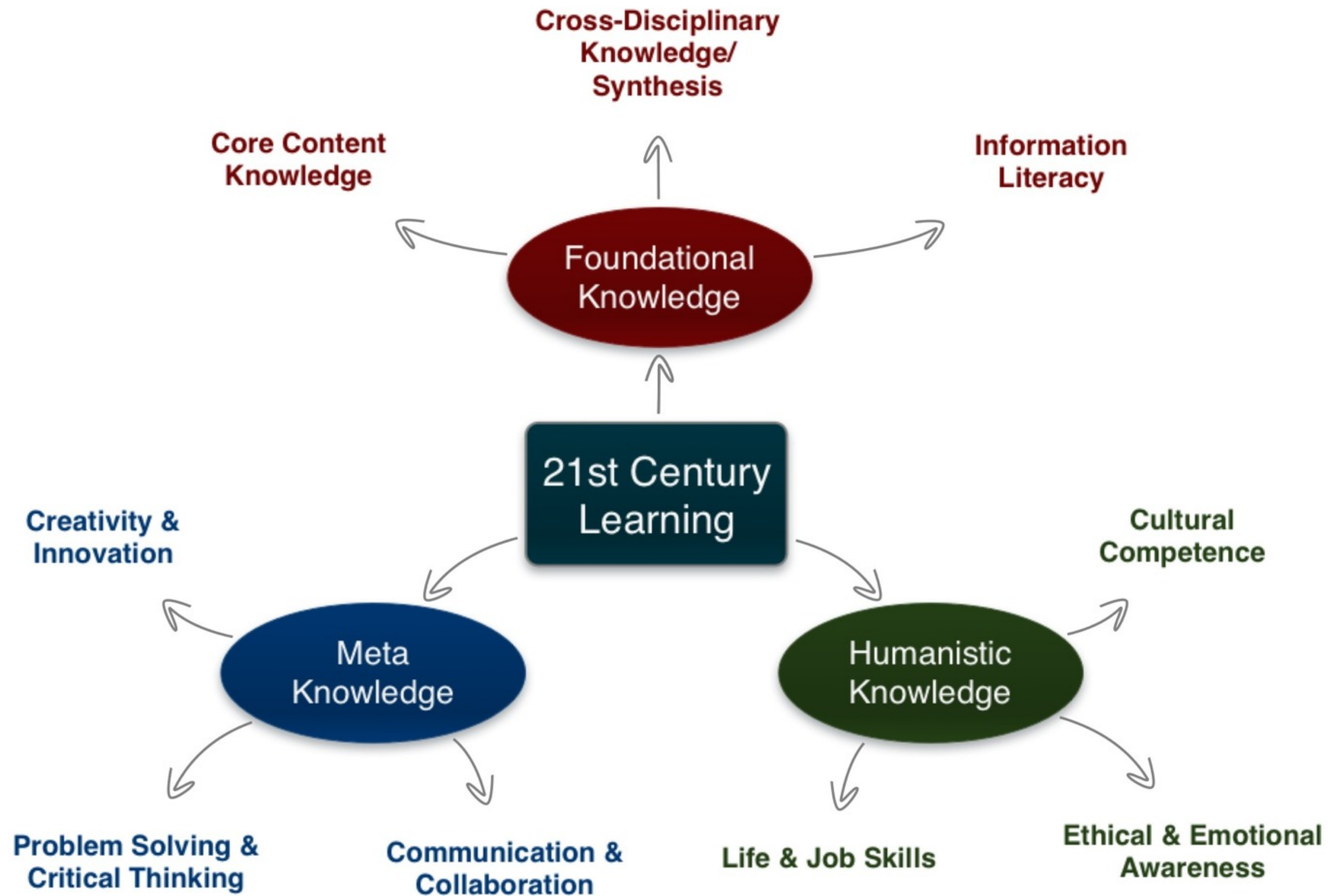
*Tech acts as a direct tool substitute, with no
functional change*

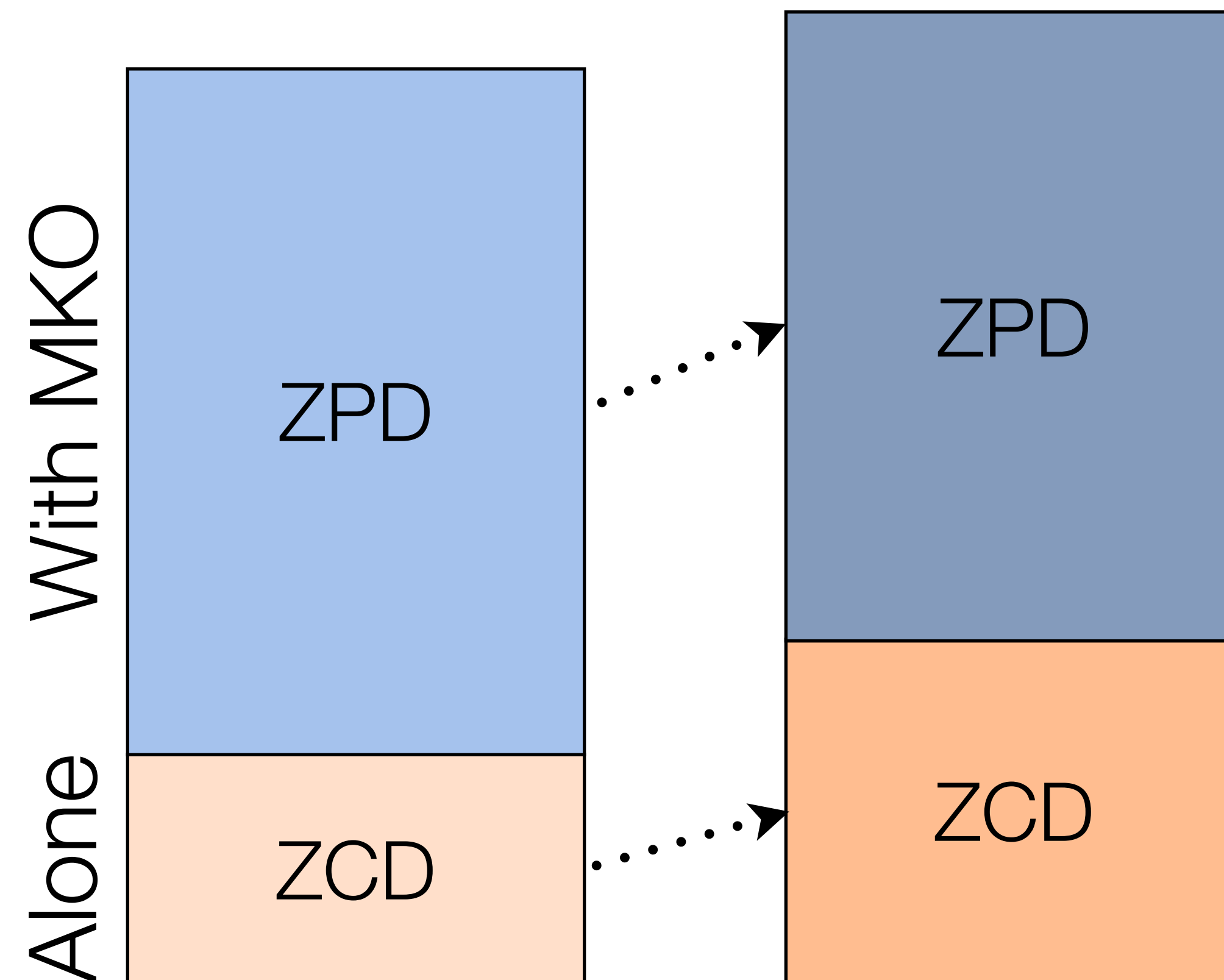
Enhancement





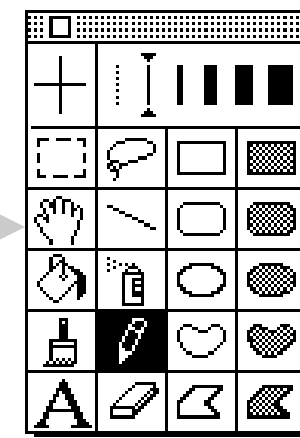
Social	Mobility	Visualization	Storytelling	Gaming
200,000 years	70,000 years	40,000 years	17,000 years	8,000 years
				





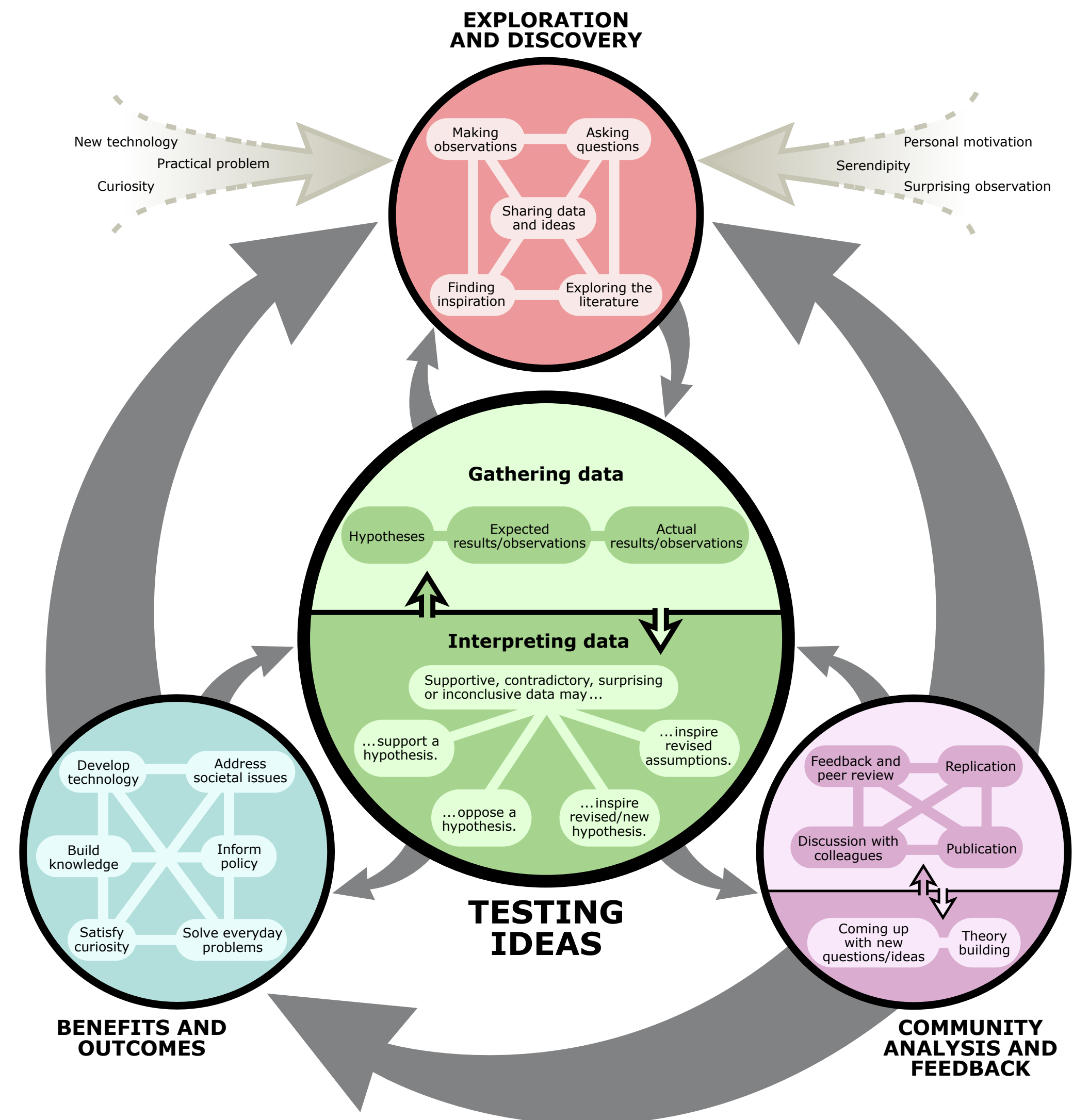


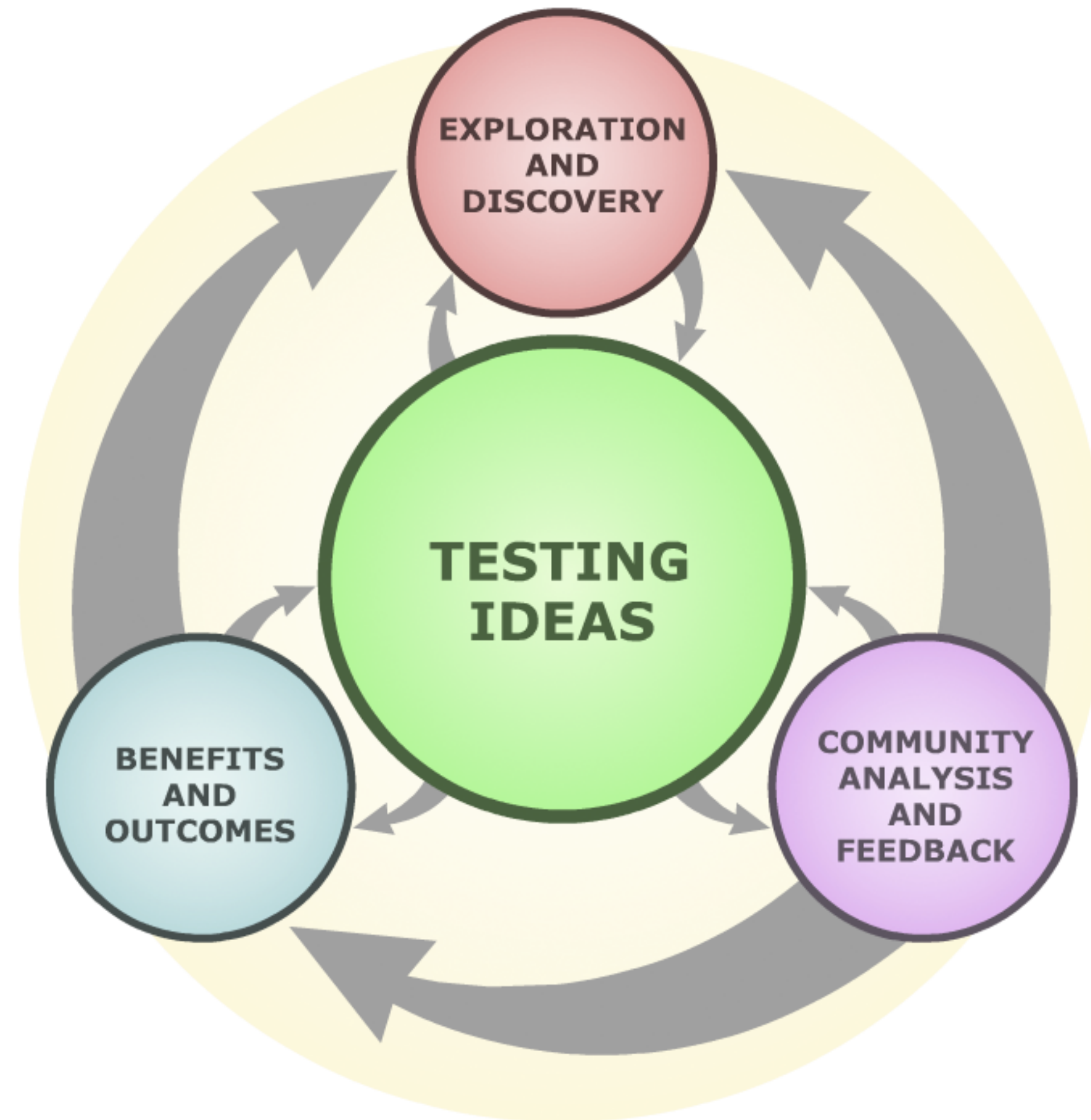
Enactive> Iconic> Symbolic



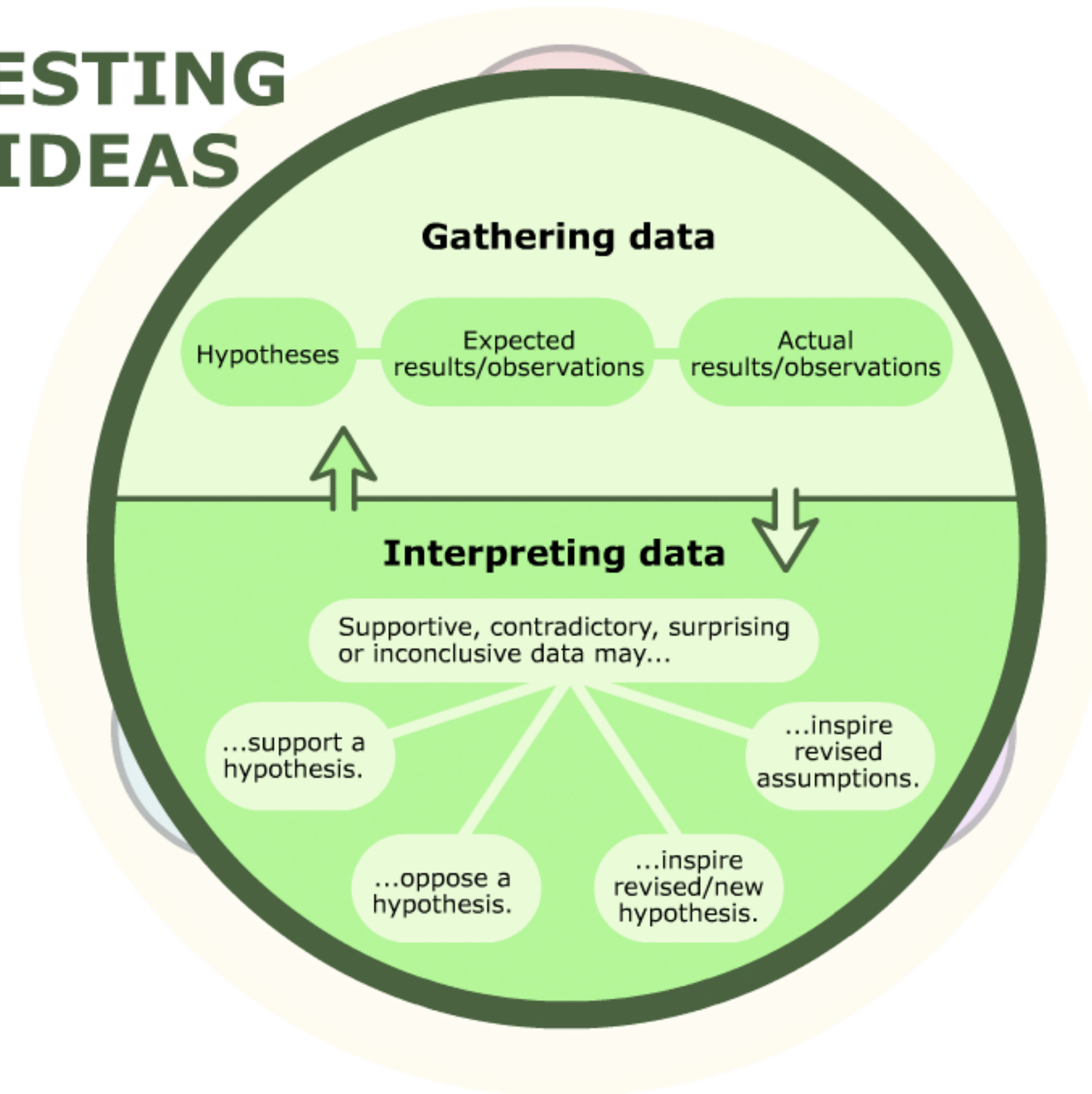
Understanding Science:

How Science Works



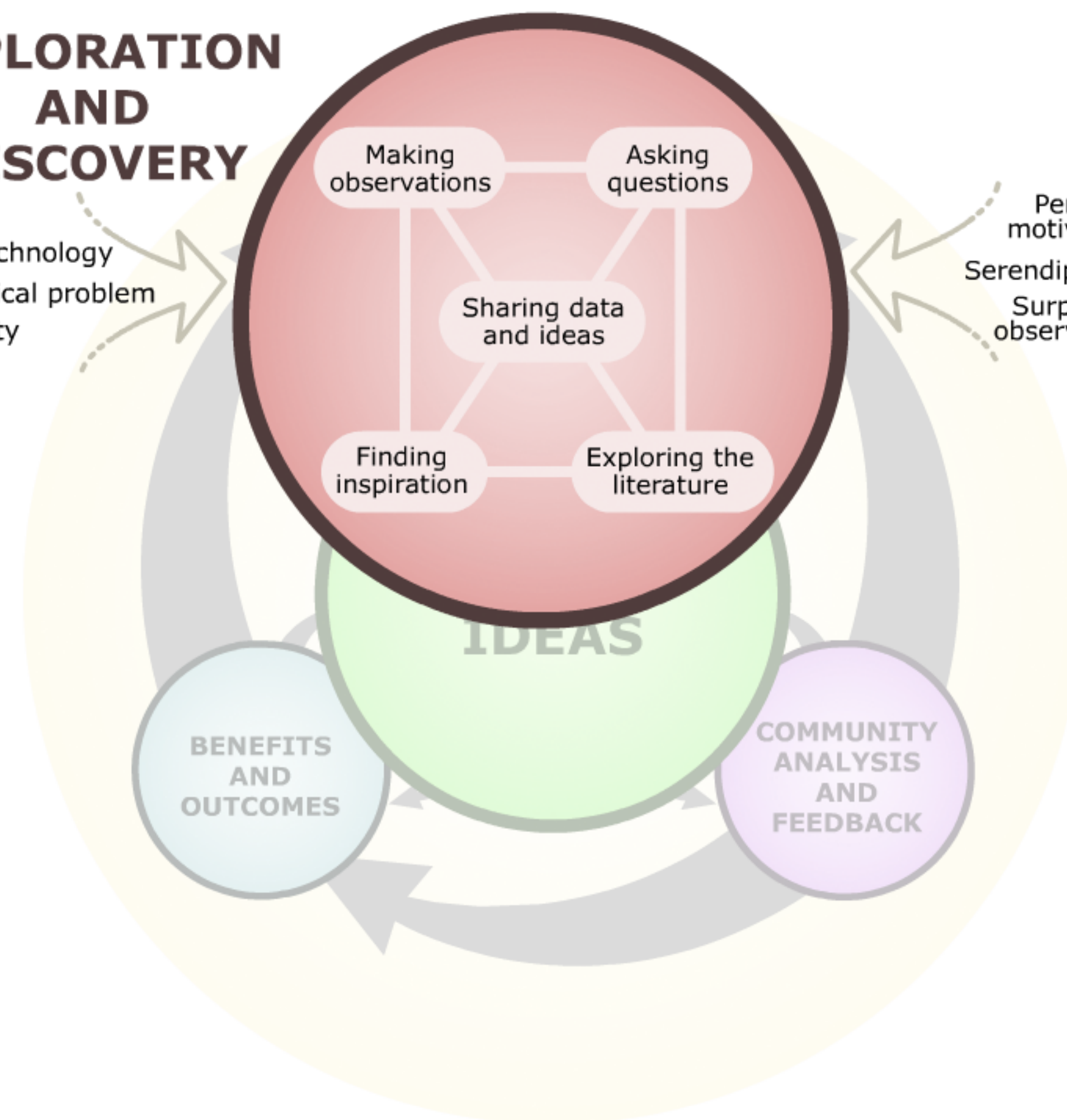


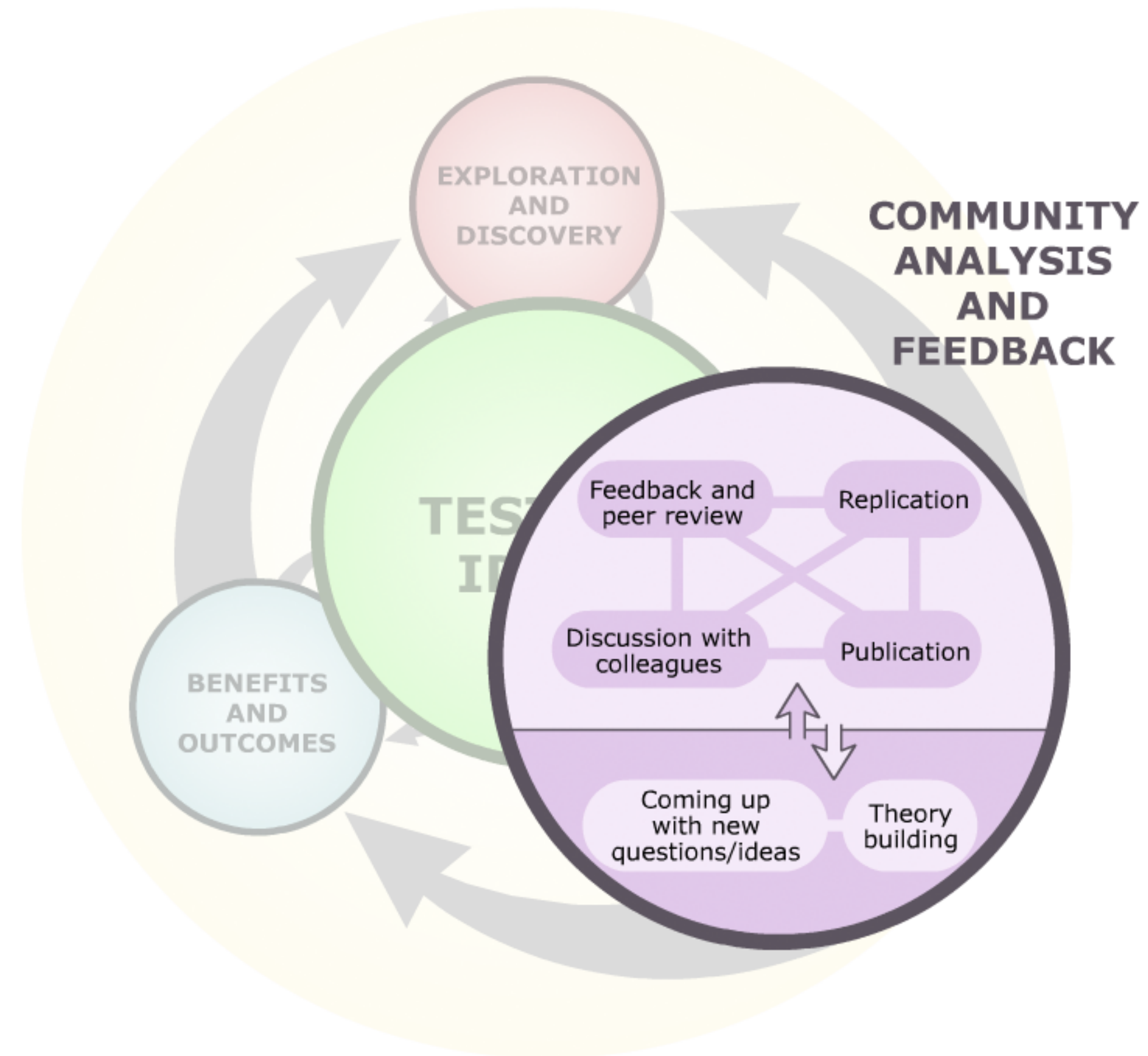
TESTING IDEAS

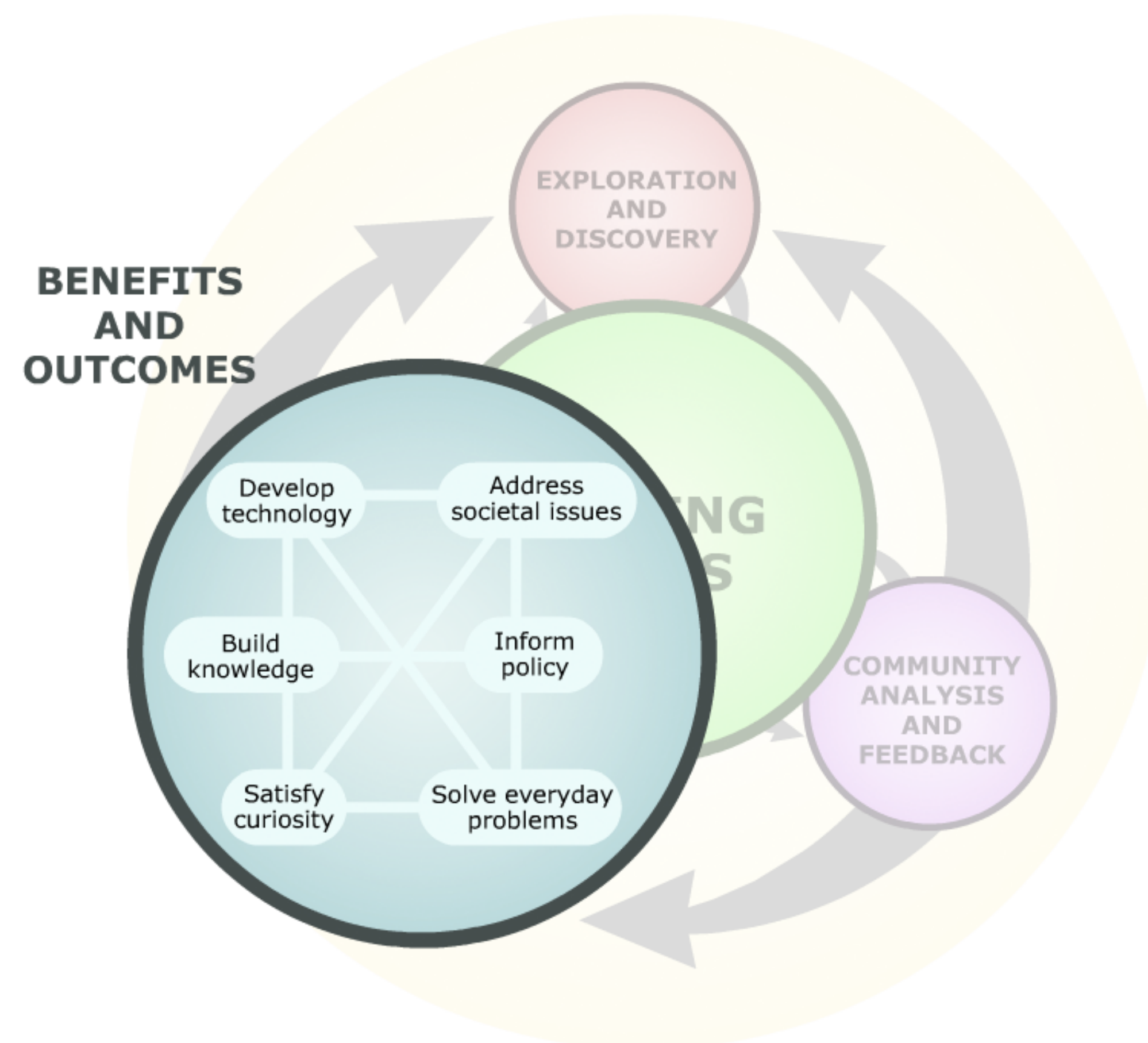














EXPLORATION AND DISCOVERY

New technology
Practical problem
Curiosity

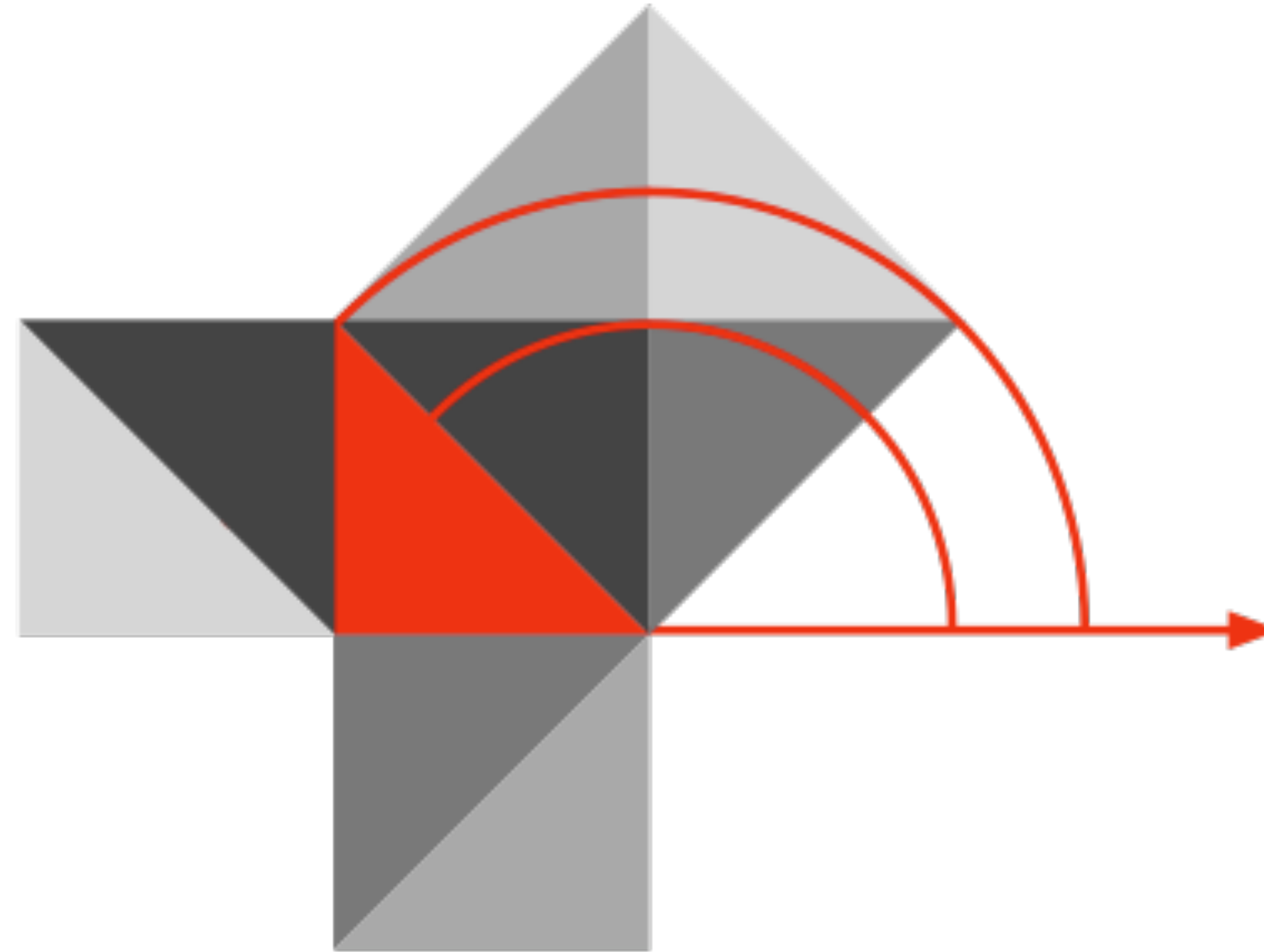






• What are Waves?	Record observation, interference	 
• Types of Waves	Math connection, simulation	 
• Observing Wave Properties of a Slinky and Rope	Procedure and replication	
• What is sound? Pitch	Measurement	 
• Sound Waves (Making a string phone)	Exploration, explanation	
• The Ear	Music exploration	
• Introduction to Concepts in Light	Geometry and projection	
• Transparent, Translucent, Opaque	Light diffraction	
• Bouncing/Reflecting Light	Kaleidoscopes, funhouses	
• Bending Light	Fiber optics, exploring materials	
• Optics	The eye and vision correction	
• Colors	The eye and color perception	 

Hippasus



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