

User Prompt
"Minimal Surfaces:
Mathematical Soap Films"

1. PrerequisiteExplorer
Builds Knowledge Tree
(recursive)

KnowledgeNode Tree
• concept
• depth
• prerequisites[]

2. MathematicalEnricher
Adds Math Content
(recursive)

Math-Enriched Tree
+ equations[]
+ definitions{}
+ examples[]

3. VisualDesigner
Designs Visual Specs
(recursive)

Visual-Enriched Tree
+ visual_description
+ color_scheme
+ camera_movement

4. NarrativeComposer
Creates Verbose Prompt
(2000+ words)

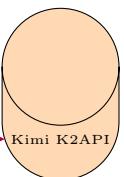
Final Enriched Tree
+ narrative
+ verbose_prompt
Complete for Manim

Manim ThreeDScene
minimal_surfaces_scene.py
Ready to Render

3D Animation

concept

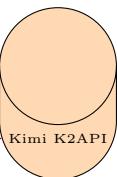
identify_prerequisites_tool



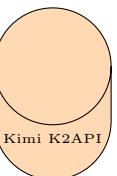
write_mathematical_content_tool



design_visual_plan_tool



compose_narrative_tool



3D Animation