The van Hiele Levels of Geometric Reasoning
(Developed by Pierre and Dina van Hiele-Geldorf in the late 1950’s)

Premise:

Important:

Level 0: Recognition/Visualization
Names

Visual Prototypes

Orientation Matters

Exclude Necessary Attributes
Level 1: Analysis
Investigate properties

Vocabulary

Use Properties

Miss Class Inclusions

Level 2: Informal Deduction
Network

Class Inclusions
Level 3: Deduction (or Formal Deduction)
Proofs

Necessary/Sufficient

Definitions:
Necessary

Sufficient

Statement/Converse

Examples:
Statement

Converse

Equivalent Definitions

Examples:
Definition 1

Definition 2

Level 4: Rigor
Formal definitions, constructs, and different axiom systems
A student should understand the role and necessity of indirect proof and proof by contrapositive.