Week 6 Presentation: Gestalt Principles and Object Recognition (Chapter 5)

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Introduction:

The visual system does not just perceive lines and edges; it perceives whole objects. This topic delves into the Gestalt principles of organization (grouping, segregation) and modern theories of object recognition (e.g., Recognition-by-Components). It challenges students to consider how the brain separates "figure" from "ground" and solves the inverse projection problem to recognize objects from different angles.

Brainstorming Questions:

1. **The Spooky Coat Rack:** Think of a time you mistook a shadow or a coat rack for a person in the dark. Retell this "scary story" to a 5-year-old, explaining how your brain "guessed" wrong based on the shape. Contrast this with a robot, which would just see "wood and metal," to explain why humans are better at guessing but also easily tricked.

2. **The "Staticky" Phone Call:** Have you ever read a text message with typos but understood it perfectly? Explain, as if you were talking to, your grandma how her brain is a "super-guesser" (Top-Down Processing) that fills in the blanks based on what she *expects* to see or hear, just like understanding a friend's voice over a bad phone connection.

3. **The Upside-Down Family:** Look at a photo of a family member upside down. Is it weirdly hard to recognize them? Use this experience to explain to a child why faces are special "puzzles" that our brain likes to solve all at once (holistically), not piece-by-piece like a Lego set, and why it gets confused when the pieces are flipping around.

Recommended Readings:

- Goldstein, E. B., & Cacciamani, L. (2022). Chapter 5: Perceiving Objects and Scenes. In *Sensation and perception* (11th ed.). Cengage.