Chapter 2 Notes

1. Swingers to Walkers (23-3m ya)

- **Early Apes (23 million years ago)**
  - Perfectly adapted for forest life with long arms, curved fingers, flexible shoulders
  - Forward-facing eyes to judge jumping distances
- **Climate Change Challenge (10 million years ago)**
  - Earth cooled, forests shrank, savannas grew
  - Some apes ventured into open grasslands
- **Walking Upright (7 million years ago)**
  - First "hominins" stood on two legs
  - Advantages: seeing over tall grass, traveling longer distances, keeping cooler, freeing hands
- **Notable Early Hominins**
  - **Ardipithecus (4.4 million years ago)**: Could walk upright and climb trees
  - **Australopithecus (4 million years ago)**: Clearly built for walking upright
  - **Lucy (3.2 million years ago)**: Famous skeleton showing upright walking

2. Homo habilis (2.8-1.5m ya)

- **Major Change:** First creatures to create tools rather than waiting for mutations
- **Oldowan Tools:** Simple stone flakes and choppers

- **Walking Upright (7 million years ago)**
  - Cut meat from animal bodies
  - Crack open bones for nutritious marrow
  - Process tough plant materials
  - Better defense against predators
- **Tool-Brain Cycle:** Better nutrition → larger brains → more sophisticated tool-making → even better nutrition

3. Homo erectus (1.9m-110k ya)

- **Body Features:** Taller (4.5-6 feet), stronger, 50% larger brain than Homo habilis
- **First to Leave Africa:** Spread across Asia to Georgia, China, and Indonesia
- **Fire Mastery (1 million years ago)**
  - Provided warmth, protection, light, and cooking
  - **Cooking changed human bodies**: smaller jaws, less strong teeth, shorter digestive systems, larger brains
- **Advanced Tools:** Created carefully crafted "Acheulean" hand axes
  - Used for 1.5 million years - longest-lasting technology in human history
  - Show planning and symmetry, perhaps the earliest beginnings of art

4. Branching Family Tree (700k-40k ya)

- **Homo heidelbergensis** (700,000 years ago)**:** Important in-between species with larger brains
- **Three Branch-Off Species:**
  1. **Neanderthals (Europe):** Adapted for cold with thick, muscular frames, shorter limbs, larger noses

2. **Denisovans (Asia):** Less known, spread across Asia with special adaptations for high altitudes
3. **Homo sapiens (Africa)**: Taller, slimmer bodies, higher foreheads, rounded skulls

5. The Thinking Revolution (100k-70k ya)

- **Brain Change:** Shape became more rounded, working far more efficiently
- **New Mental Abilities:**
    - Abstract thinking—imagining things that don't yet exist
    - Future planning—thinking about next season or year
    - Symbolic thought—using marks to represent animals
    - Complex language—building and sharing detailed knowledge
    - Social intelligence—tracking complex relationships
    - Creative problem-solving—combining existing tools and ideas in new ways
- **Unique Human Trait:** Lack of fixed instincts, allowing greater ability to change
- **Skillful Hands:** Perfect partner for creative brains with opposable thumbs and sensitive fingertips

6. The Rise of Homo Sapiens (70k-15k ya)

- **Spread Across Earth:**
    - Reached Australia by 65,000 years ago
    - Europe by 45,000 years ago
    - Americas by 15,000 years ago

- **Creative Explosion** (50,000 years ago)**:**
    - Specialized roles within groups
    - Advanced shelters for different environments
    - Clothing technologies
    - Art forms: cave paintings, carvings, beadwork
    - Social networks across vast distances

- **Daily Life Improvements:**
    - Advanced hunting and gathering tools
    - Varied diet from many food sources
    - Division of labor: hunters, gatherers, toolmakers, healers, storytellers
    - Clothing with practical and identity purposes