- Providing Developmentally Appropriate Sports
    - Build on children's interests
        - Emphasize enjoyment
        - Let kids contribute
    - Teach age-appropriate skills
        - Limit practices
    - Discourage unhealthy competition
    - Focus on personal and team improvement
- Rough and Tumble Play
    - Friendly chasing and play-fighting
    - Common in many mammals and across cultures
    - Peaks in middle childhood
    - Boys do more
    - May help establish dominance hierarchy
- School Recess
    - 7% of U.S. schools no longer provide recess to students, and many others have recess only once a day.
        - Jobs/funding depend on academics and test scores, not time to play outside
    - Recess periods don't subtract time from learning, they actually boost children's learning capability
    - Regular, unstructured recess fosters children's health and competence physically, academically, and socially.
        - Cognitive benefits
            - Regular breaks distribute cognitively demanding tasks throughout the day, leading to more attention and better performance
        - Social Benefits
            - Child organized games lead to practice in social skills
                - Ex- cooperation, leadership, followership, inhibition of aggression
            - Under adult supervision rather than Adult Direction
        - Physical Benefits
            - Even more beneficial than PE for children, especially girls

- Piaget's Theory: The Concrete Operational Stage
    - Piaget's 3rd stage (ages 7-12)
    - Children's mental activities become more logical with actual (concrete) objects and materials
    - Advances in:
        - Reversibility/Conservation
            - Reversibility allows for Conservation

- Decentration: Ability to focus on more than a single property of an object
- Reversibility: Ability to do reversible mental actions on real, concrete objects
- The capacity to think through a series of steps, and then mentally reverse their direction, returning to the starting point.

- Classification
  - Classification: organization into groups according to a common property
  - The ability to classify or divide things into different sets or subsets and to consider their interrelationships
    - Example: Show 5 collies and 2 poodles. Ask, "Are there more collies or dogs?"
    - Kids in middle childhood know that collies are a subcategory of "dog"
- Class inclusion
- Seriation
  - School-age children develop the ability to order items along a quantitative dimension, such as length or weight, which is called seriation
    - Something they either have or can experience through their senses
  - They can also seriate mentally, an ability called transitive inference(7-8)
  - Allows children to integrate 3 relations at once:
    - A is longer than B
    - B is longer than C
    - Is A or C longer?
- Transitive inference
- Spatial Reasoning
  - Mental rotations
    - Around 7-8, align the self's frame to match the orientation of another person.
      - Ex- which is my left hand
  - Directions
    - Around 8-10, give clear, well organized directions by using a "mental walk" strategy
      - Ex- in class

- Piaget's Theory: Limitations of Concrete Operational Thought
  - Mental operations work best with objects that are concrete vs. problems with abstract ideas
  - Horizontal Decalage
    - Master concrete operational tasks and abilities gradually
    - Some before others
- Further Research on Concrete Operations
  - Culture and schooling affect performance on tasks (more than Piaget thought)
    - Affects ability to reason
    - Ex- Brazilian street children calculate complex computations not learned in school

- Neo-Piagetians suggest advances in information processing helps the development of operational thinking
- Cognitive development in middle childhood is probably best explained by a blend of Piagetian and information-processing ideas

- Key Information Processing Improvements
  - Cognition becomes more efficient in middle childhood
  - Brain Development leads to gains in:
    - Information processing speed and capacity
    - Gains in inhibition
    - Attention Improves and becomes more
      - Selective
        - Through the elementary years, children become better at deliberately attending to just those aspects of a situation that are relevant to their task goals
      - Planful
        - Steps in Planning
          - Postponing action to weigh alternatives (not doing the first thing that comes to mind)
          - Organizing task materials
          - Remember steps of a plan
          - Monitor how well the plan works
          - Revise if necessary
        - Helps accomplish goals better
- Memory Improvements
  - Working Memory:
    - Often assessed by digit span
      - 5 yrs: @ 4 items
      - 7 yrs: @ 5 items
      - 9 yrs: @6 items
      - Adults: @ 7 items
        - How to remember a phone # then?
        - Chunking: grouping bits into larger units
  - Automatization
    - Certain skills become automatic during middle childhood (ex- reading, writing)
    - Frees up working memory
    - Increased intellectual capacity and speed of processing
  - Long-Term Memory
    - Long-Term Memory: minutes to decades
    - Declarative: facts (ex- names of people/places, phone numbers)
    - Procedural: complex skills; how you do something (riding a bike, keyboarding)
    - Verbatim: detailed memories of specific events; exactly what happened
    - Gist: general, not specific, memory of common occurrences
    - Declarative, procedural, verbatim, & gist memories improve in middle childhood