

Physical and Cognitive Development in Middle Childhood

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Aspects of Physical Development

- Growth
 - Weight: Doubles between ages 6-11
 - Height: About 2-3 inches each year
- Girls retain more fatty tissue than boys
- African American boys and girls grow faster than Caucasians

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Nutrition in Middle Childhood

- Children need about 2400 calories per day
 - Less than 10% of calories should come from saturated fat

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Sleep Needs in Middle Childhood

- Children age 9 need approximately 10 hours a night
 - Should be alert in the daytime



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Recess-Time Play



- Games tend to be informal and spontaneous
- Boys are more physical
- Girls tend to favor games with verbal expression (jump rope)
- Rough-and-Tumble Play
 - Vigorous play that involves wrestling, kicking, chasing, and screaming
 - Seems to be universal

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Organized Sports



- Approximately 40% of 9-13 year olds participate in organized athletics
- To improve motor skills, sports programs should:
 - Offer a variety of sports
 - Coach towards skill building, not winning

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Causes of Obesity/Overweight

- Inherited tendencies
- Too little exercise
- Too much of the wrong kinds of foods

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A Serious Concern: Overweight Children

- In one national survey, 23% of 9-13 year olds engaged in NO free-time physical activity
- Interferes with health-related quality of life
- Overweight children fall behind peers in physical and social functioning
- Tend to suffer emotionally and compensate by indulging themselves with food and treats

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Prevention and Treatment of Overweight

- Less time in front of TV and computers
- Healthier school meals
- Education to help children make better food choices
- Regular physical activity
- Parents should address eating patterns before the child becomes overweight

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Acute Medical Conditions

Occasional and short-term

- Infections
- Allergies
- Flu
- Warts



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Chronic Medical Conditions

- **Vision**
 - About 13% of children under 18 are blind or have impaired vision
 - Children under 6 years tend to be far-sighted
- **Hearing**
 - Around 15% of 6-19 year olds have some hearing loss
- **Asthma**
 - Chronic respiratory disease (about 12% of children)
- **HIV/AIDS**

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Accidental Injuries

- As children take part in more physical activity and are supervised less, more accidents are common
- 88% of brain injuries could be prevented by using helmets
- High risks from snowmobiles and trampolines



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Cognitive Advances: Spatial Relationships & Causality

- Concrete operational children have a clearer idea of distance from place to place
- Better use of maps and models



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Cognitive Advances: Categorization

- **Seriation**
 - Arranging objects in a series based on a dimension
 - Lightest to darkest
- **Transitive inference**
 - Knowing the relationship between two objects based on the relationship to a third
- **Class inclusion**
 - Ability to see relationship between a whole and its parts



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Cognitive Advances: Reasoning

- **Inductive**
 - Starting specific and making generalizations
 - 'My dog barks, her dog barks...all dogs bark!'
- **Deductive**
 - Starting general and then making specific statements
 - 'All dogs bark. Spot is a dog. Spot barks!'



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Cognitive Advances: Conservation



- Concrete children can answer conservation problems in their heads
- Understand identity, reversibility, and de-centering
- Horizontal décalage:
 - The inability to transfer knowledge of conservation
 - Liquids vs. solids

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Cognitive Advances: Number & Mathematics

- Learn to 'count on'
- More adept at solving simple story problems
- Some intuitively understand fractions
- Able to estimate
 - 'How much time do I need to walk to school?'



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3 Steps of Piagetian Moral Reasoning

- Obedience to authority
 - Ages 2-7
- Increasing flexibility and autonomy
 - Ages 7-11
- Notion of Equity
 - Around age 11 or 12

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Understanding Memory

- **Metamemory**
 - Knowledge about the processes of memory
- **Metacognition**
 - Awareness of one's own thinking processes

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Mnemonics: Strategies for Remembering

- **External memory aids**
 - A note pad
- **Rehearsal**
 - Repeating a phone number in your head
- **Organization**
 - Placing information into categories (animals)
- **Elaboration**
 - Imagining items associated with something else



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Examples of Intelligence Tests

- Otis-Lennon School Ability Test
- Wechsler Intelligence Scale for Children (WISC-III)

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The IQ controversy

- **In Favor of using IQ tests:**
 - Extensive information about validity and reliability
 - Scores from middle childhood are fairly good predictors of school achievement
- **Critics of IQ Tests:**
 - The tests can under-estimate children who do not test well
 - The tests do not directly measure native ability, only test current knowledge

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Factors Affecting IQ Scores

- **Schooling increases tested IQ**
 - Children whose schooling is delayed score lower on IQ tests
 - IQ scores drop during summer vacation
- **Scores vary among ethnicities**
 - Leads to claim that the tests are unfair to minorities

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Cultural Concerns for IQ Tests

- **Cultural Bias**
- **Culture-Free**
- **Culture-Fair**
- **Culture-Relevant**

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Sternberg's Triarchic Theory of Intelligence

Three aspects of intelligence:

1. **Componential Element**
 - Analytic
2. **Experiential Element**
 - Insightful or creative
3. **Contextual Element**
 - Practical

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Gardner's Theory of Multiple Intelligences

Intelligence	Field or Occupation Where Used
Linguistic	writing, editing, translating
Logical	science, business, medicine
Bodily	dancing, athletics, surgery
Intrapersonal	counseling, psychiatry, spiritual leader
Interpersonal	teaching, acting, politics

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New Directions in IQ Testing

- **Kaufman Assessment Battery for Children (K-ABC-II)**
 - Evaluates cognitive abilities in children with special needs
 - Autism, Language Disorders
- **Dynamic Tests**
 - Emphasize potential rather than present achievement

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Vocabulary, Grammar & Syntax in Middle Childhood

- Children use increasingly precise verbs
- Children start to use the passive voice and conditional sentences
- Syntax structure continues to become more complex

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Pragmatics



- The practical use of language to communicate
- Use of conversational skills
 - Asking questions before introducing a topic to make sure the other person is familiar
- Use of narrative skills
 - Starting to describe motives and causal links when telling stories

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Reading

Children identify print in 2 ways:

1. **Decoding**
 - Emphasizes phonetic, or code-emphasis approach
2. **Visually-Based Retrieval**
 - Whole-language approach



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Writing Skills

- Develop along with reading
- Early compositions are short
- Child must keep in mind many restraints:
 - Spelling
 - Punctuation and grammar
 - Capitalization



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Influences on School Achievement



- Self-efficacy beliefs and gender
- Parenting practices
- SES and social capital
- Educational system & school environment
 - **Social Promotion** – promoting students who do not meet standards
- Computer and Internet use
- Culture

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Second-Language Education



- **English-immersion**
 - Minority children are immersed in English
- **Bilingual Education**
 - Children are taught in 2 languages
 - First, their native language, then English
- **Two-way or Dual-Language Learning**
 - English- and foreign-speaking children learn together in both languages

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Children with Learning Problems



- Mental Retardation
- Learning Disabilities (LDs)
 - Dyslexia
- Hyperactivity and Attention Deficits (ADHD)

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Educating Children with Disabilities

- **Individuals with Disabilities Education Act**
 - Ensures free, appropriate public education for all children with disabilities
- **Inclusion Programs**
 - Integrating disabled and non-disabled children for all or part of day



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Identifying Gifted Children



- Criterion is high general intelligence
 - IQ score of 130 or higher
- Tends to exclude:
 - Highly creative children
 - Disadvantaged children
 - Children with specific aptitudes

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Defining and Measuring Creativity

Two kinds of thinking:

1. Convergent

- The kind IQ tests measure
- Seeks a single answer

2. Divergent (Creativity)

- Comes up with a wide array of new possibilities
- Ex: Listing unusual uses for a paper clip



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Educating Gifted Children

■ Enrichment

- Broadens knowledge through classroom activities, research activities, field trips

■ Acceleration

- Speeds up education through grade skipping, fast-paced classes or advanced classes

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