

Guided Reading Activity 11-1

Thinking and Problem Solving

For use with textbook pages 295-302

Directions: **Outlining** Locate the heading in your textbook. Then use the information under the heading to help you write each answer.

Fun Game Props

whose line is it anyway?

I. Thinking and Problem Solving

A. Introduction

1. What can your brain do that goes beyond memory? thinking, problem solving
2. When are these processes most impressive? when they show creativity, imagination, and originality

Computers Vs. Humans

B. Thinking

1. Thought processes depend on what five units of thought? images, symbols, concepts, prototypes, rules → scientific sense of the world
 → representative example
2. What are words, numbers, letters, and punctuation marks? symbols
3. What kind of thinking may result in unexpected insights? non directed thinking
directed thinking - systematic + logical
free flow of thoughts
metacognition - thinking about thinking

objects or events with common attributes

more abstract than images
↓
mirrored numbers illusion

C. Problem Solving

1. On what does problem solving depend? use of strategies or specific methods for approaching problems
2. How do we determine which problem-solving strategy to use? we tend to analyze the situation to an experience in the past
3. How do heuristics act as shortcuts in problem solving? simplify a problem to allow for quick decisions
4. How can you overcome rigidity in problem solving? caused by formal education
realize that your strategy isn't working → try something new
ability to overcome rigidity

Algorithms - step-by-step problem solving (science math) chess

rule-of-thumb (rightly tighty lefty loosey) - look both ways - don't eat yellow snow

D. Creativity

1. What are two characteristics of creative thinking? flexibility, ability to recombine elements to achieve insight ← New music artists
2. When does insight usually occur? problems prove resistant to all other problem-solving efforts and strategies
3-stepping hurdles

McGuyres