

Teaching Reasoning and Problem Solving to Higher Functioning Children

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Problem Solver

Enthusiastically attempt to solve.

Be careful.

Break the problem into parts.

Avoid guessing the answer.

Be active with the problem.

Active Listener

Check for accuracy.

Stay with the Problem Solver.

Catch mistakes.

Don't give away the correct answer.

Lead your partner to the
information. Be like a teacher.

Use encouraging words to keep the
problem solver thinking.

Problem 1

Gladys is a teacher, Sallay a truck driver, violet a crane operator, and Hannah a Hollywood stuntwoman. The truck driver is heavier than Hannah. The crane operator is lighter than the stuntwoman, Gladys is heavier than the truck driver. Which woman is heaviest and which woman is lightest.

Problem 2

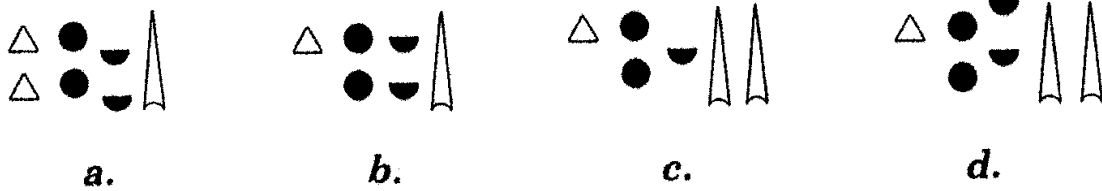
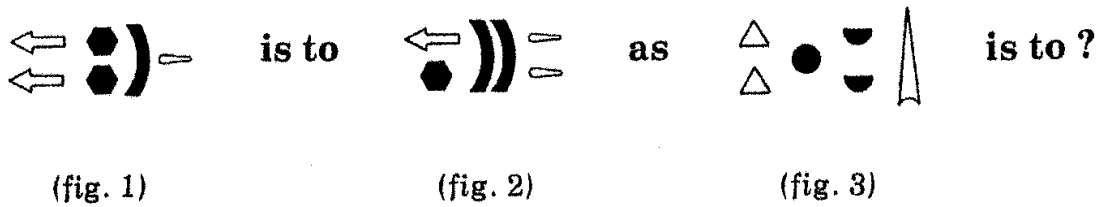
A graph breaking down the cost of education for the state showed that the category labeled “operation, maintenance, and auxiliary agencies” took a greater proportion of the budget than “capital outlay.” The category labeled “instruction” had the highest portion of the budget, while “interest” had a smaller portion than “capital outlay” and “general control” had a smaller portion than “interest.” Show a digram of the categories ordered according to their portion of the budget.

Problem 3

In a different language *si gumba lo* means “not very sweet,” *ja lo* means “not brown,” *ba ja gumba* means “very brown coffee,” in this language. How would you say, “sweet coffee” in this language?

- a.** *lo gumba* **b.** *ja gumba* **c.** *ba si* **d.** *gumba ba* **e.** *ja si*

Problem 4



Teaching TAPS to Children

Select a problem for which the learners have the prerequisite skills, including reading level, math skills, following along skills, etc.

Model both roles: Problem Solver and Active Listener.

Two adults who understand the process and who can speak at the level of the learner.

If 2nd adult not available, recruit a higher performing learner to serve as the problem solver (perhaps from another classroom).

Teaching TAPS to Children

Begin with playing, “What am I doing?”

Next play, “What did I miss?”

Play it for both Problem Solver and Active Listener roles.

Play until all missed items quickly caught.

Best if you have a teacher and at least two learners, can be played with more.

Suggested Resources

Get Your Hands on Problem Solving

Author: Shirley Hoozeboom & Judy Goodnow
Publisher: Ideal

Puzzles and Games for Reading and Math (Ages 6-8)

By: Kaye Furlong & Nancy Casolaro
Publisher: Lowell House Juvenile

Math, Book 2 (ages 4-6)

Author: Martha Cheney
Publisher: Lowell House Juvenile

Puzzles and Games for Critical and Creative Thinking

Author: Martha Cheney & Diane Bockwoldt
Publisher: Lowell House Juvenile

Thinkathon 1

Author: Charlotte S. Jaffe & Barbara Roberts
Publisher: Educations Impressions

Puzzles and Games for Reading and Math (Ages 4-6)

Author: Susan Amerikaner & Kaye Furlong
Publisher: Lowell House Juvenile

Venn Perplexors

Author: Evelyn B. Christensen
Publisher: Mindware

Scratch Your Brain Where it Itches

Author: Linda Brumbaugh
Publisher: Critical Thinking Books and Software

Math Brainteasers

Author: April Blakely
Publisher: Good Year Books

Illustrated Math Dictionary: An Essential Student Resource

Author: Judith de Klerk

Publisher: Good Year Books

Thinking Through Math word Problems

Author Whimbey, John Lochhead, & Paula Potter

BDF Performance Systems

Problem Solving and Comprehension

Author: Arthur Whimbey, Jack Lochhead, & Ronald Narode

Publisher: Lawrence Erlbaum Assoc.

Beyond Problem Solving and Comprehension: An Exploration of Quantitative Reasoning

Arthur Whimbey and Jack Lochhead

Publisher: Lawrence Erlbaum Assoc.

TAPS for Teachers

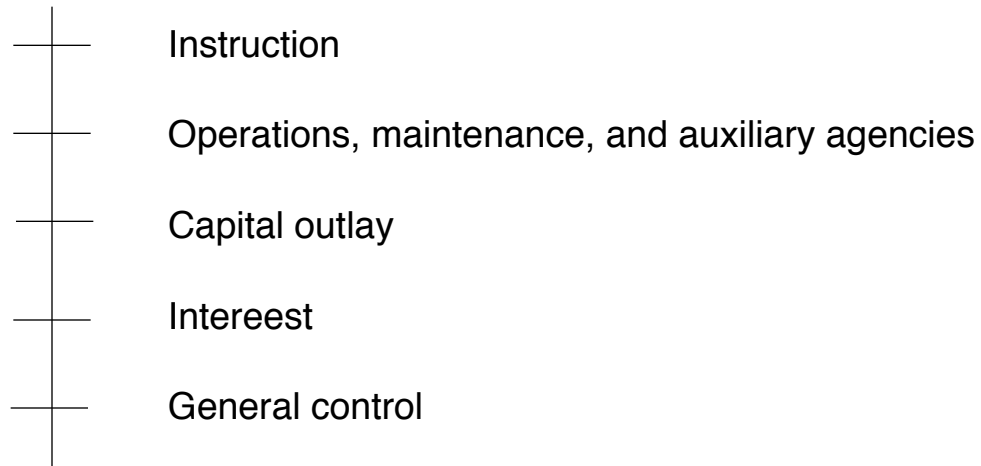
Author: Joanne K. Robbins

Publisher: jkrobbins@comcast.net

Answers:

Problem 1: Gladys is heaviest; Violet is lightest

Problem 2:



Problem 3: **c.** *ba si*

Problem 4: **c.**