



Children's Museum of Houston

Pre/Post Classroom Activities

Tricky Tower

Rationale

Think Tank encourages children to use higher level thinking skills by using an array of lively and interactive components and activities. Four child characters serve as the gallery guides, spreading the message that thinking and problem solving is fun, hip, and “the thing to do.” This lesson introduces children to higher level thinking skills and provides practice of processes and tools used in problem solving.

TEKS Objectives (Mathematics)

3.14C, 4.14C: Select or develop an appropriate problem-solving plan or strategy, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem

Background

This is a classic brain teaser that engages the children in strategy as they make their plans to solve the puzzle and logical thinking. Each time they move a disc, they must consider how that affects the next move. The children may notice a pattern in how they need to move the discs to solve the problem. It is easier to see when you start with three discs and work up to more.

Vocabulary

Strategy

Logic

Materials

- Game board
- Discs

Procedure

Set up: Copy game boards and cut out the discs. Set out the puzzle. Stack the discs from largest on the bottom to smallest on top.

1. The object of the puzzle is to move the Tower to one of the other pegs following the rules.
2. Rule: Move one disc at a time.
3. Rule: Never place a larger disc on top of a smaller one.

Hints for developing a strategy:

- Start with 3 discs. Add another disc to the Tower once you master the solution.
- Look for a pattern in your movements.
- Always start on the same peg and move the tower to the same peg.

Questions to ask

- What is tricky about this tower?
- How can you use what you learned from solving the puzzle with 3 discs to solve it with 4?
- Can this puzzle be done with any number of discs? Is there a point where you have so many discs that it cannot be solved?

Extensions

Create a poster that explains how to solve the tower for any number of discs.

Search for other puzzles or games that ask you to think like this.

Resources

You can play this online at <http://www.mazeworks.com/hanoi/>

Find other games that use logic in *More Math Games & Activities from around the World* by Claudia Zaslavsky, Chicago Review Press, Incorporated, 2003.

