

Activity Guide

Tower of Hanoi

Overview:

FlagHouse has created this unique and exciting cooperative challenge activity. We're confident that your participants will have a blast with Tower of Hanoi!

Rebuild the tower in the least amount of moves with the Tower of Hanoi initiative, a mathematical, teamwork and physical challenge! The object of this quick-thinking game is to move this entire multi-level tower, one piece at a time, to one of the other two empty tower bases. Only one layer can be moved at a time and no ring may be placed on top of a smaller ring. Each move consists of taking the upper ring from one of the rods and sliding it onto another rod, on top of the other rings that may already be present on that rod. Includes three foam tower bases (18"H x 24" dia.) and six foam rings of different sizes (24", 22", 20", 18", 16", and 14"), which can slide onto any tower.



What Are the Educational Applications?

- This activity is a small group challenge that fosters teamwork and group thinking.
- The group must combine their physical skills with group problem solving and cooperation.
- The post activity de-briefing is an important part of the learning process.

How Can I Use This Product With My Students?

- **Where:** On a safe flat area. The area does not have to be large, but the bigger the area, the greater the physical challenge.
- **Age:** Best used with students in Grades 4 through 10.
- **Group Size:** A group of 6 or 7 makes up the best team.
- **Basic Skills Needed:** Teamwork, cooperative skills, problem solving, creative thinking.

Set Up/Instructions: Place the Tower that has the foam discs at one point of the triangle and the other two towers equal distance apart. The distance varies according to age and ability.



The Games/Activities

Activity #1: The Short Towers of Hanoi

- a. Objective: To move four foam discs from Tower 1 to Tower 3 using the rules of play.
- b. NASPE Standards: 1, 2, 3, 4, 5, 6
- c. Set Up: See diagram below.
- d. How to Play:
 - Only one disk may be moved at a time.
 - Each move consists of taking the upper disk from one of the rods and sliding it onto another rod, on top of the other disks that may already be present on that rod.
 - No disk may be placed on top of a smaller disk.



e. Solution:

- #1 small disk to tower 2
- #2 disk to tower 3
- #1 disk to tower 3
- #3 disk to tower 2
- #1 disk to tower 1
- #2 disk to tower 2
- #1 disk to tower 2
- # 4 disk to tower 3
- #1 disk to tower 3
- # 2 disk to tower 1
- # 1 disk to tower 1
- # 3 disk to tower 3
- # 1 disk to tower 2
- #2 disk to tower 3
- # 1 disk to tower 3
- DONE

f. Extensions:

- Allow only one person to talk.
- Change the way the discs are carried, for example one hand, elbows, fingers.
- Add a fitness challenge before each carry.
- Allow them to start over when they need to.
- Increase the distance if too easy, or shorten it if too hard.
- Add challenge obstacles in the path to the towers.

Activity #2: The Full Tower of Hanoi

- a. Objective: To move all the discs from Tower 1 to Tower 3 following all the rules of play.
- b. NASPE Standards: 1, 2, 3, 4, 5, 6
- c. Set Up: Same as Short Tower of Hanoi.
- d. How to Play: Same as Short Tower of Hanoi, but now add all the discs to the starting Tower #1.
- e. Extensions: Same as Short Tower of Hanoi.

Activity #3: Movement and Tower of Hanoi

- a. Objective: To move all the discs from Tower 1 to Tower 3 following the rules, but also performing a different locomotor skill when moving each disc.
- b. NASPE Standards: 1, 2, 3, 4, 5, 6
- c. Set up: Same as Full Tower of Hanoi.
- d. How to Play: Same as Full Tower of Hanoi.

Activity #4: Movement, Numbers and the Towers of Hanoi

- a. Objective: To move all the discs from Tower 1 to Tower 3 following the rules, but also performing using a different number of players and a different locomotor skill as below.
- b. NASPE Standards: 1, 2, 3, 4, 5, 6
- c. Set Up: Same as Full Tower of Hanoi.
- d. How to Play: Same as above, but while performing a different locomotor skill when moving each disc and when moving:
 - The smallest disc, use one person, walking.
 - The second disc, use two players, skipping.
 - The third disc, use three players, sliding.
 - The fourth disc, use four players, hopping on one foot.
 - The fifth disc, use five players, galloping.
 - The sixth disc, use six players, walking backwards.
 - Added rule: A disc may only be moved if the correct number of players are there to move it and use the correct locomotor skill.

Post-Activity Discussion Questions:

- a. Who were the verbal leaders?
- b. Who were the physical leaders and workers?
- c. Did anyone give a suggestion not used by the group?
- d. Were there any other solutions?
- e. What would you do different next time?

Safety Issues & Concerns:

- Students need to be aware of one another as to not bump into each other while playing the games.
- Avoid body contact to limit injuries.

Meets These NASPE Standards

1. Demonstrates competency in motor skills and movement patterns needed to perform a variety of physical activities.
2. Demonstrates understanding of movement concepts, principles, strategies, and tactics as they apply to the learning and performance of physical activities.
3. Participates regularly in physical activity.
4. Achieves and maintains a health-enhancing level of physical fitness.
5. Exhibits responsible personal and social behavior that respects self and others in physical activity settings.
6. Values physical activity for health, enjoyment, challenge, self-expression, and/or social interaction.

