**Balloon Ride**

**Why**
To practice problem-solving techniques by trying to figure out how to win a variation of the old Chinese game of NIM

**How**
- Tell the children a story about the hot air balloon coming to town. There is a contest to win a free ride. There are ten ropes holding the balloon to the ground. Two people take turns cutting the ropes. Each person may cut either one or two ropes. The person who cuts the last rope wins a free ride.
- Put out ten toothpicks on the Balloon Ride board to represent the ropes.
- Players take turns picking up one or two toothpicks at a time.
- No one is allowed to skip a turn.
- The person who takes the last one (or two) toothpicks wins the free ride.

- When you and your child begin to see some patterns and possible strategies, see if together you can work out a way to win every time. (Hint: Start with a game that has just a few toothpicks. Who has the best chance of winning? Then add a few more toothpicks. This is called working backward.)

**More Ideas**
- After you think you have found a way to win, use a larger number of toothpicks—maybe twelve or nineteen.
- You can also change the number of toothpicks that can be picked up—try picking up one, two, or three toothpicks on each turn.
- You may even want to change the rules so that the person who has to pick up the last toothpick is the loser instead of the winner.

- This activity develops intuitive understanding of subtraction or “take-away.” If children can find a strategy to win, it will build a stronger number sense.
Arrange 10 toothpicks to connect balloon to ground