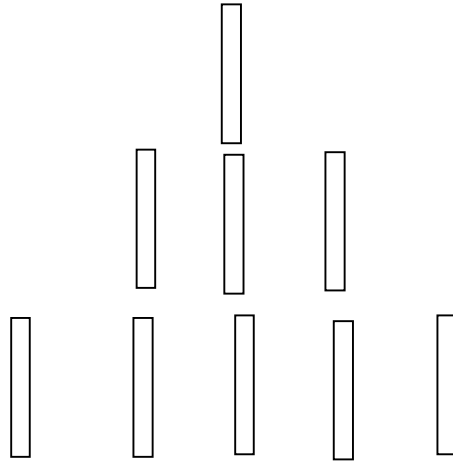


The Game of Nim

A game of patterns for all ages

Place sticks in 3 rows as shown here:



Two players take turns removing sticks according to these rules:

- Each person takes 1, 2, or 3 sticks each time.
- The sticks you take must come from within the same row. (Do not take some from one row and some from another row on the same turn.)
- The person who takes the last stick loses.

Questions to think about:

- 1) What patterns of sticks are winning patterns? In other words, how can you leave the sticks after your move so that the other person loses?
- 2) Is it better to go first or second? or doesn't it matter? Why or why not?
- 3) What if the rules are changed so that the person who takes the last stick **WINS** instead of loses? How does this change your strategies?

Extensions:

Add a row of seven sticks to the set-up for the game.

Design a tournament for your class.

Teach the game to your family or friends.