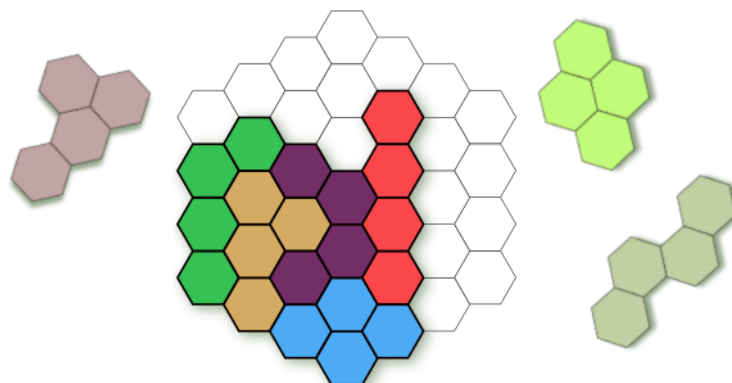# MATH CHALLENGE PROBLEM

for September 2016

Tetris for Bees

When bees play Tetris, they use hexagons instead of squares. That is, each playing piece is made up of four adjacent hexagons, in some configuration (a *hexa-tetromino*). The goal of the game is to completely cover a regular $n \times n \times n$ hexagonal grid with non-overlapping playing pieces. For example, the $4 \times 4 \times 4$ grid above is partially covered with playing pieces, although this might not be a correct start. You can use the same shape as many or as few times as you like.

The Challenge: For which n is it possible to completely cover a regular $n \times n \times n$ hexagonal grid with non-overlapping hexa-tetrominos? Prove your answer.

Submit solutions to Ross 2239G or `oscar.levin@unco.edu` by **Friday, September 30**.

The best solution will WIN A PRIZE!
Prizes include nifty Rubik's style puzzle cubes, math puzzle books, math games, even a math coloring book. So submit your answer TODAY!