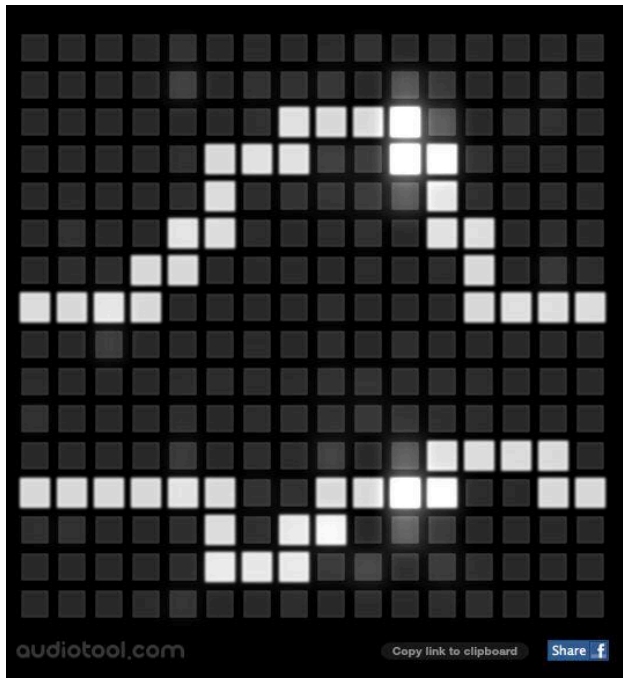


# Permutations and Combinations - Engaging Resources

## PC&B SO1: Interesting Fundamental Counting Principle Problems

(Link: [ToneMatrixAudioTool](#))

This website provides an interesting problem to introduce students to the fundamental counting principle.



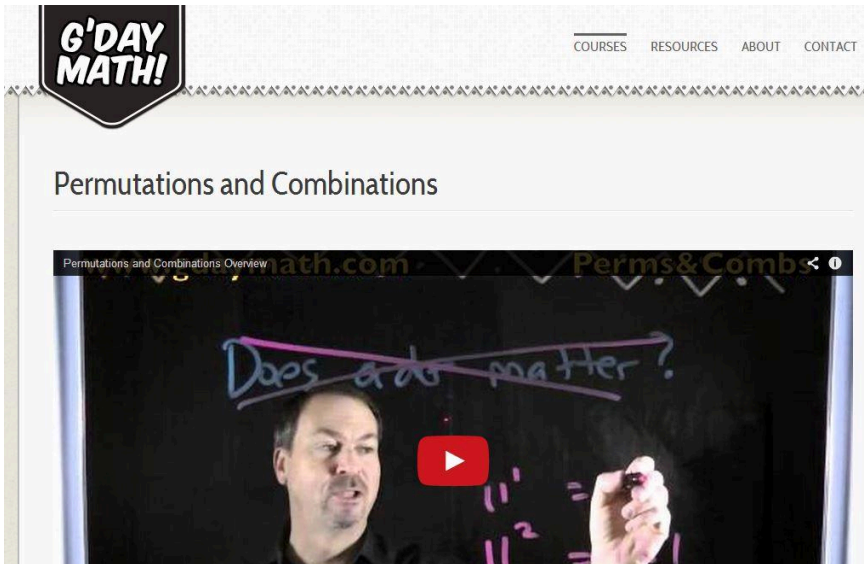
Tone Matrix - AudioTool

- Click to turn on squares and listen to the different melodies.
- Space bar to restart.
- Ask students ... How many melodies are possible?
  - The question is simpler if you include the sound of silence as a melody.

## PC&B SO2,3: Permutations & Combinations Websites

(Link: [JamesTanton](#) & [DaveMartin](#))

James Tanton & Dave Martin have websites with many resources and thoughts on teaching Permutations and Combinations.



G'DAY MATH!

COURSES RESOURCES ABOUT CONTACT

### Permutations and Combinations

Permutations and Combinations Overview math.com Perms&Comb

Does order matter?

### Real teaching means real learning

Coming together to create a real learning environment for students

Open ended Math Projects and Lessons Facebook in Math Class Topics I can speak about

Wednesday, September 12, 2012

#### Permutations and Combinations Lesson 7

Review:

Have students work on:

- 1) If you are arranging 3 different Math textbooks, 4 different Science textbooks, and 5 different English textbooks, how many different ways can you organize them if:
  - a) the books of the same subject must be together?
  - b) The shelf must start and end with an English book?
  - c) How many different ways can you pick 2 books from each subject?
- 2) Explain why  $5C2=5C3$ ?
- 3) Solve:  $n+1Cn-1=15$
- 4) How much different monetary amounts can you make from 1 penny, 1 dime, 1 quarter, and 1 dollar?
- 4) Explain everything you know about the expansion of  $(x+y)^n$ .

Body:

- 1) If you know one row of the Pascal's Triangle is  
1 3 3 1  
Determine the next row.
- 2) Determine the last term of the expansion  $(x-2y)^8$ .
- 3) Determine the third term of  $(a+b)^{10}$ .