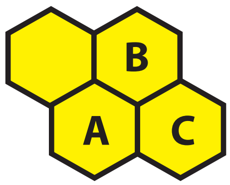
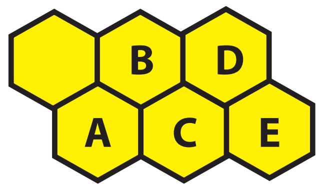
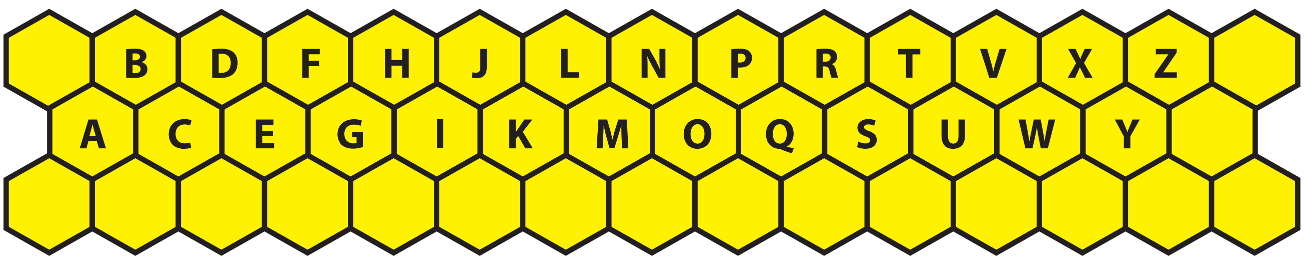
Fibonacci's Math

Activity 4 - Fib-Bee-Nacci Puzzle

Below is a picture of Buddy the Bee's hive:







Use the diagram above to help Buddy find his way!

Activity Instructions:

- Buddy starts on the blank cell behind cells A and B.
- Buddy always moves only to the right (that is in increasing alphabetical order). This means that Buddy can move from D to E, but not from E to D.
- Buddy cannot skip over any cells and does not backtrack.

For example:

- There is only one path to cell A (directly from starting point to A; remember that the bee is not allowed to backtrack, so going from B to A is not an option).
- There are two ways to reach cell B: Buddy can go from A to B, or directly to B from the starting point.
- There are three paths to cell C - BC, ABC or AC.

Fibonacci's Math

Activity 4 - Fib-Bee-Nacci Puzzle - *continued*

Activity Questions:

- How many paths are there from the starting point to cell D? Cell E? Cell F? Cell G? List all the possibilities.
- You can print out or copy the diagram on the previous page and draw the different paths on there to help you.
- Make a table like the one below to help you solve this puzzle.
- ***Bonus:*** How many paths are there to cell M? Cell Z? Is there an easier way to figure this out than drawing the paths?

Buddy's Paths

Cell Letters	Number of Paths	Possibilities
Starting Point	1	
A	1	A
B	2	B, AB
C	3	ABC, AC, BC
D		
E		
F		
G		

Fibonacci's Math

Activity 4 - Fib-Bee-Nacci Puzzle - *continued*

Solution:

- How many paths are there from the starting point to cell D? Cell E? Cell F? Cell G? List all the possibilities.

Buddy's Paths

Cell Letters	Number of Paths	Possibilities
Starting Point	1	
A	1	A
B	2	B, AB
C	3	ABC, AC, BC
D	**5**	**BD, BCD, ABCD, ACD, ABD**
E	**8**	**ABDE, ACDE, ABCDE, BDE, BCDE, ACE,BCE, ABCE**
F	**13**	
G	**21**	

- ***Bonus:*** How many paths are there to cell M? Cell Z? Is there an easier way to figure this out than drawing the paths?

This is a Fibonacci Sequence:

H -> 13 + 21 = 34

I -> 21 + 34 = 55

J -> 34 + 55 = 89

K -> 55 + 89 = 144

L -> 89 + 144 = 233

M -> 144 + 233 = 377