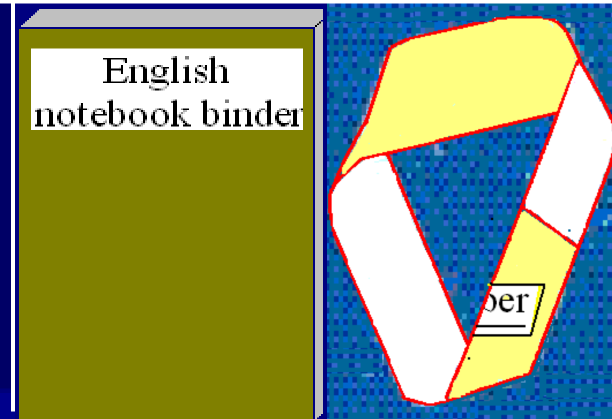
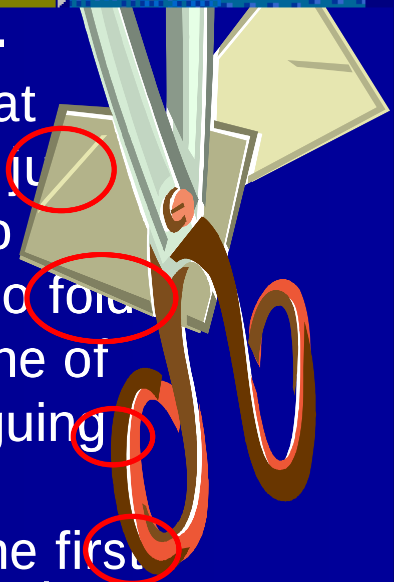
Georgia Southern Team

- Emily McLean Ga Tech
- Homeira Pajoohesh CUNY
- Thomas Anderson Emory
- Chasen Smith Kentucky
- Emil Iacob Kentucky
- Jonathon Nelson Ga Tech
- Hua Wang South Carolina
- Bruce McLean Kentucky

It all began





"It all began in the fall of 1939. Arthur H. Stone, a **23-** year-old graduate student from England, in residence at Princeton University on a mathematics fellowship, had ju trimmed an inch from his American notebook sheets to them fit his English binder. For amusement he began to fold the trimmed-off strips of paper in various ways, and one of the figures he made turned out to be particularly intriguing

Hexaflexagons and other mathematical diversions – The fir Scientific American Book of mathematical puzzles and games by Martin Gardner 1959

Scientific American 1956, 1957, 1958

It's called a mobius band and it is recognized around the world.

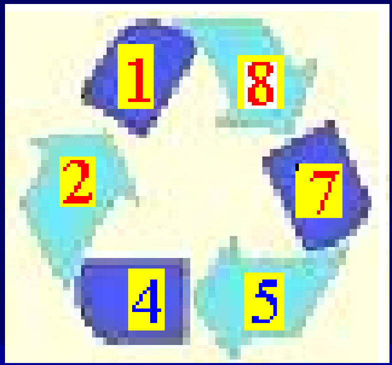
Each arrow stands for the 3 main components of the recycling system:

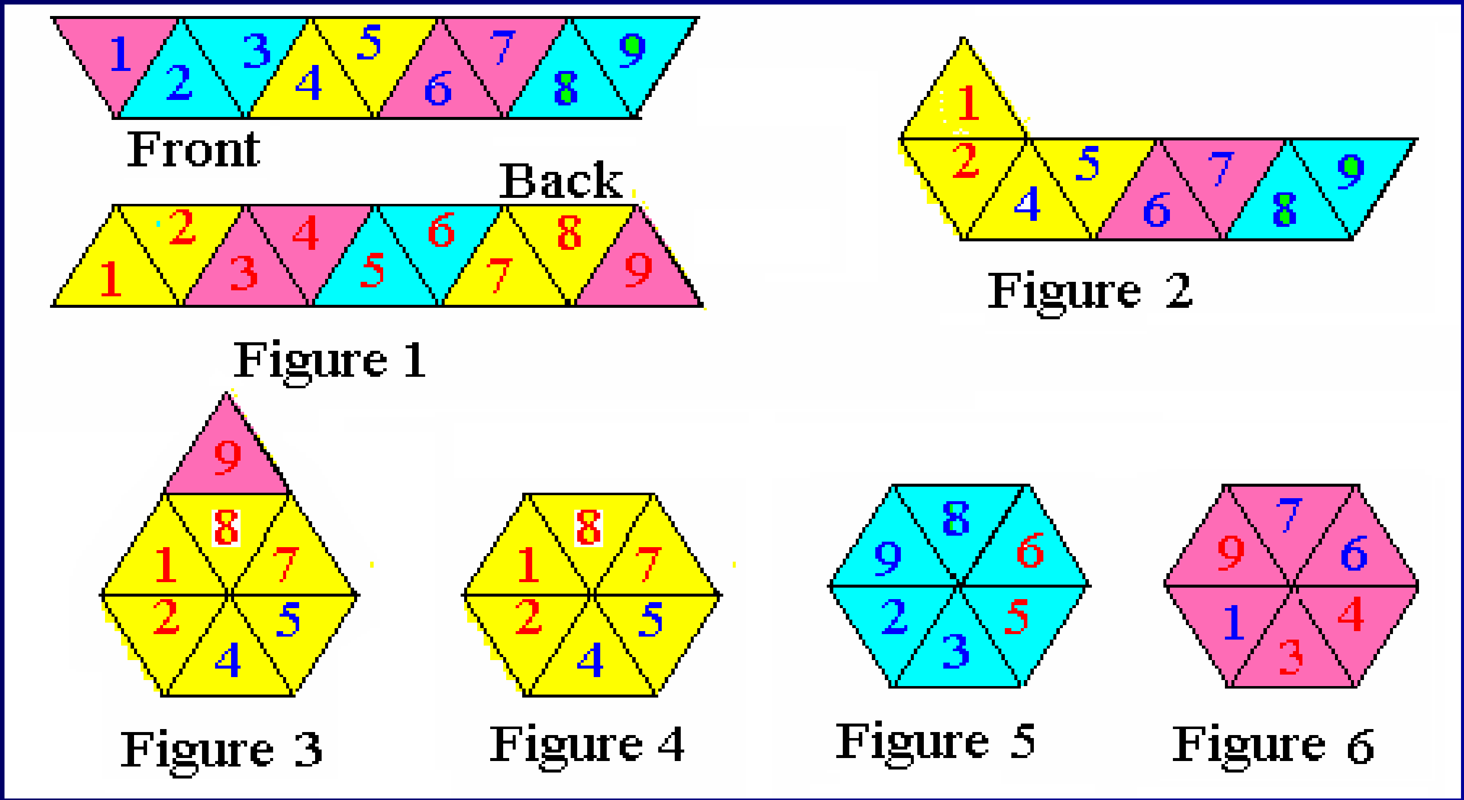
http://www.green-networld.com/tips/whyrecyl.htm

http://www.paperrecycles.org/

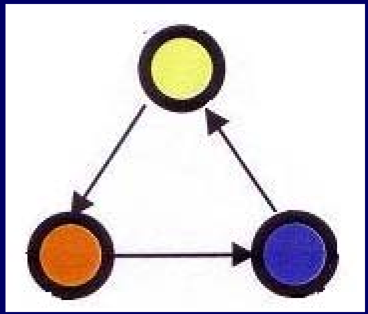
Thanks to Ivars Peterson for making this connection.

Arthur Stone's Trihexaflexagon 1939





Pinch flex



- Must rotate 60º after every pinch
- Tuckerman Traverse

Why did Stone come to U.S.?

Colin Singleton, editorial committee for Recreational Mathematics and a Cambridge alumnus, wrote me in 2004 indicating that Stone probably came to America because Paul Erdos did.

Colin asks

"Would flexagons Have been discovered if Erdos had not decided to cross the Atlantic?"

Arthur Stone's Hexahexaflexagon

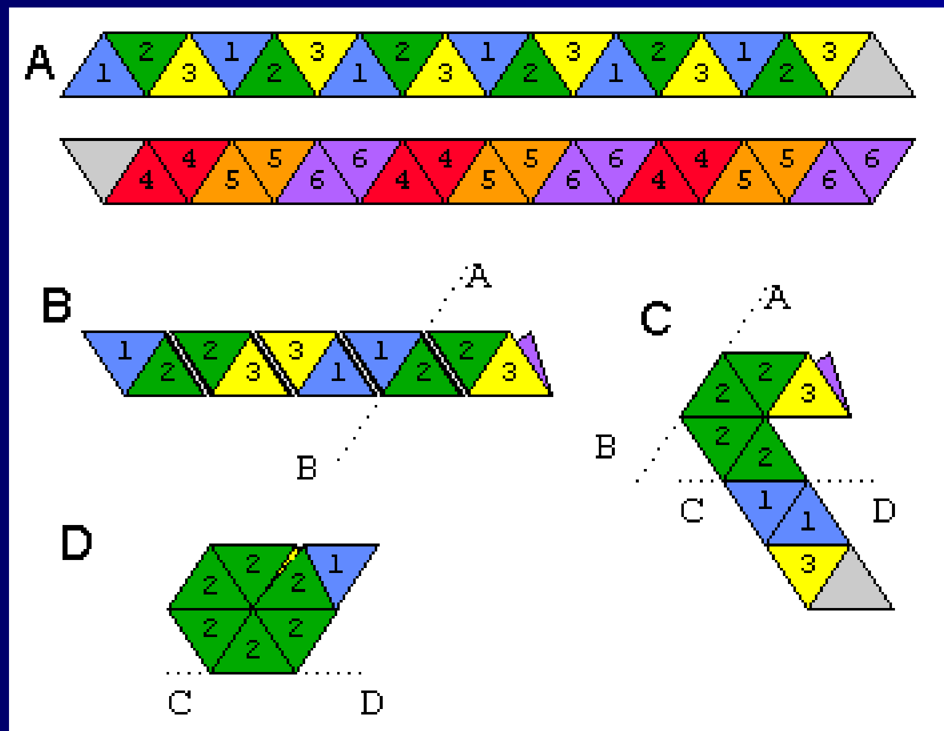
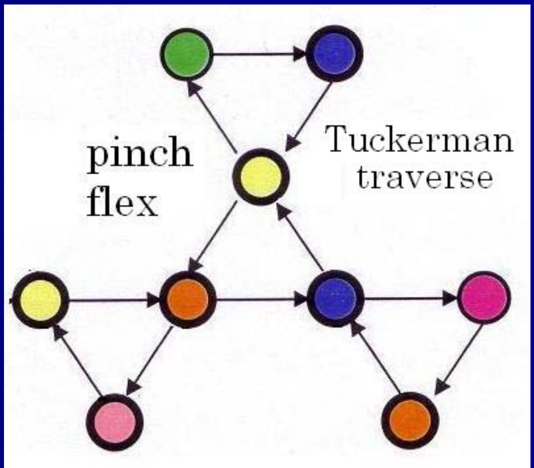


Figure 8 (Kapauan, 1996)

Kapauan, Alejandro. Hexaflexagons. Updated 14 Jan. 1996. Accessed 26 Dec. 2001. <http://home.xnet.com/~aak/hexahexa.html>.

Axioms 3n-colored If f = $(p_1 - p_2 - p_3 - p_4 - p_5 - p_6)$

- $D(p_i)$ not a multiple of 3 for each i in [1,6]
- $D(p_i) + D(p_{i+1}) = 3n$ for each i in [1,6]
- $9n = \sum_{i=1}^{6} D(p_i)$



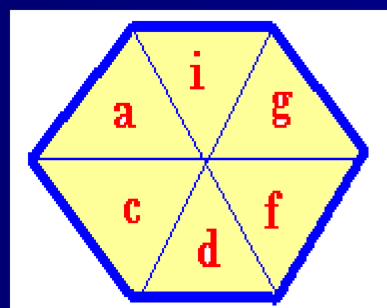
Pinch flex

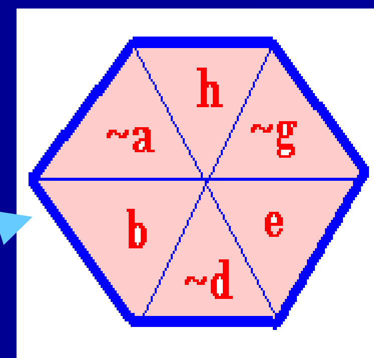
No singleton in positions 1,3, or 5

(a,b - c - d,e - f - g,h - i) =

$r-s,r \quad r-s,r \quad r-s,r$

(~a - b,~c - ~d - e,~f - ~g - h,~i)





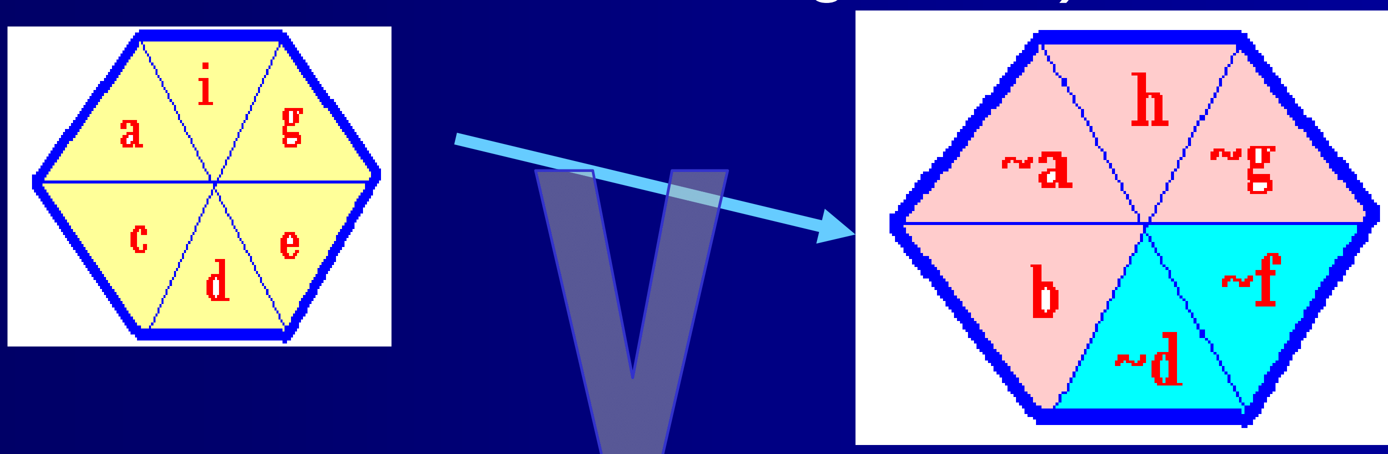
V – flex 1963

Bob Verrey - Alan Moluf

(a,b - c - d - e,f - g,h - i) =

$r-s,r$ $r,s-r$ $r-s,r$

(~a - b,~c - ~d,e - ~f - ~g - h,~i)



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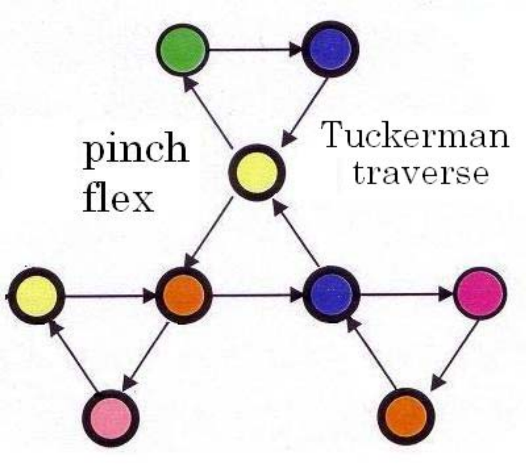


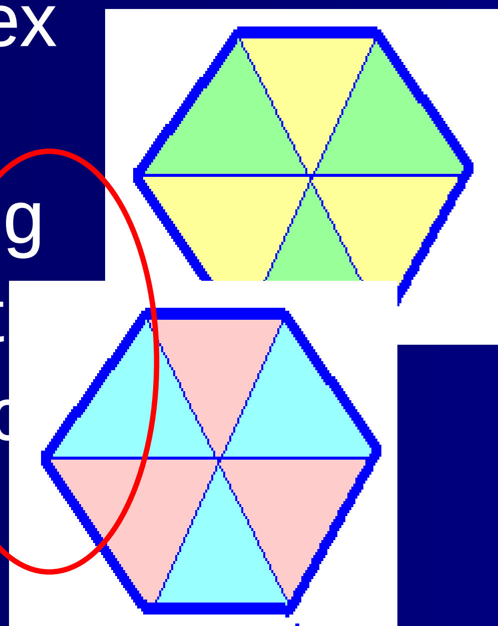
Hexahexaflexagon V-flex 100 initial faces (1979)

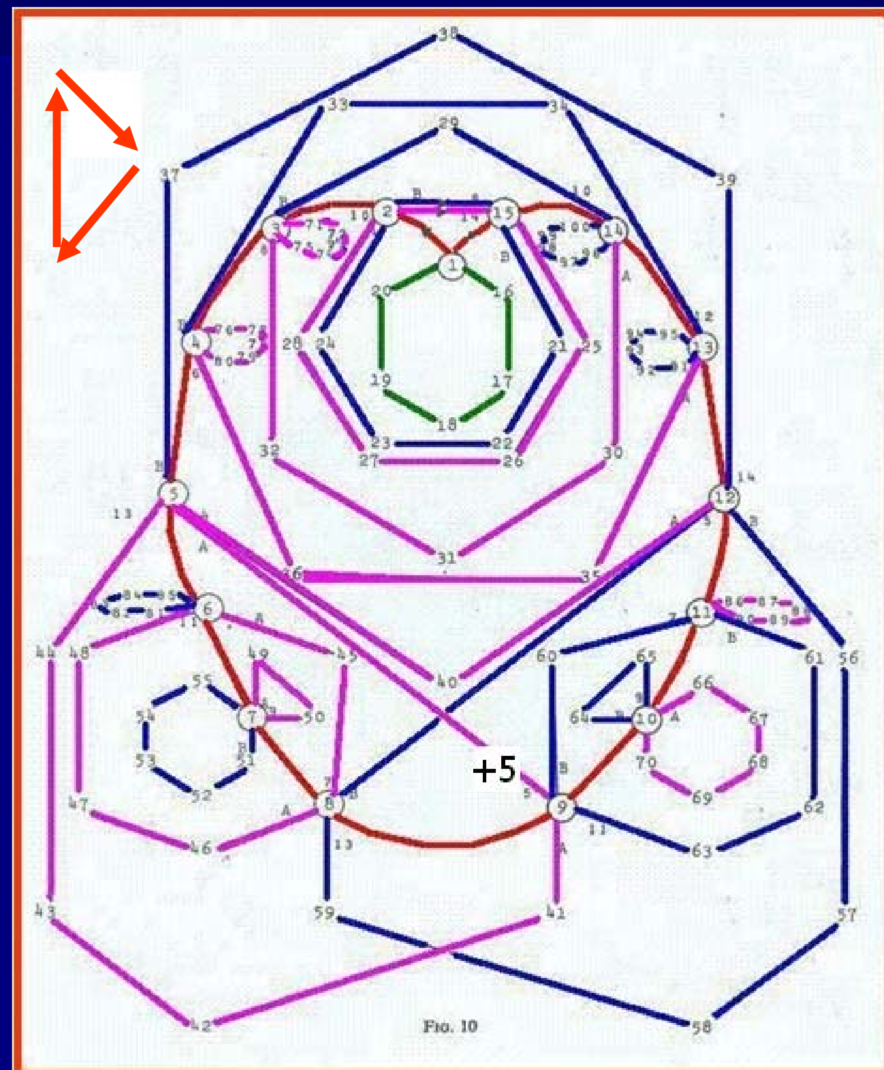
TRAVERSE

92 more with the Pinch flex

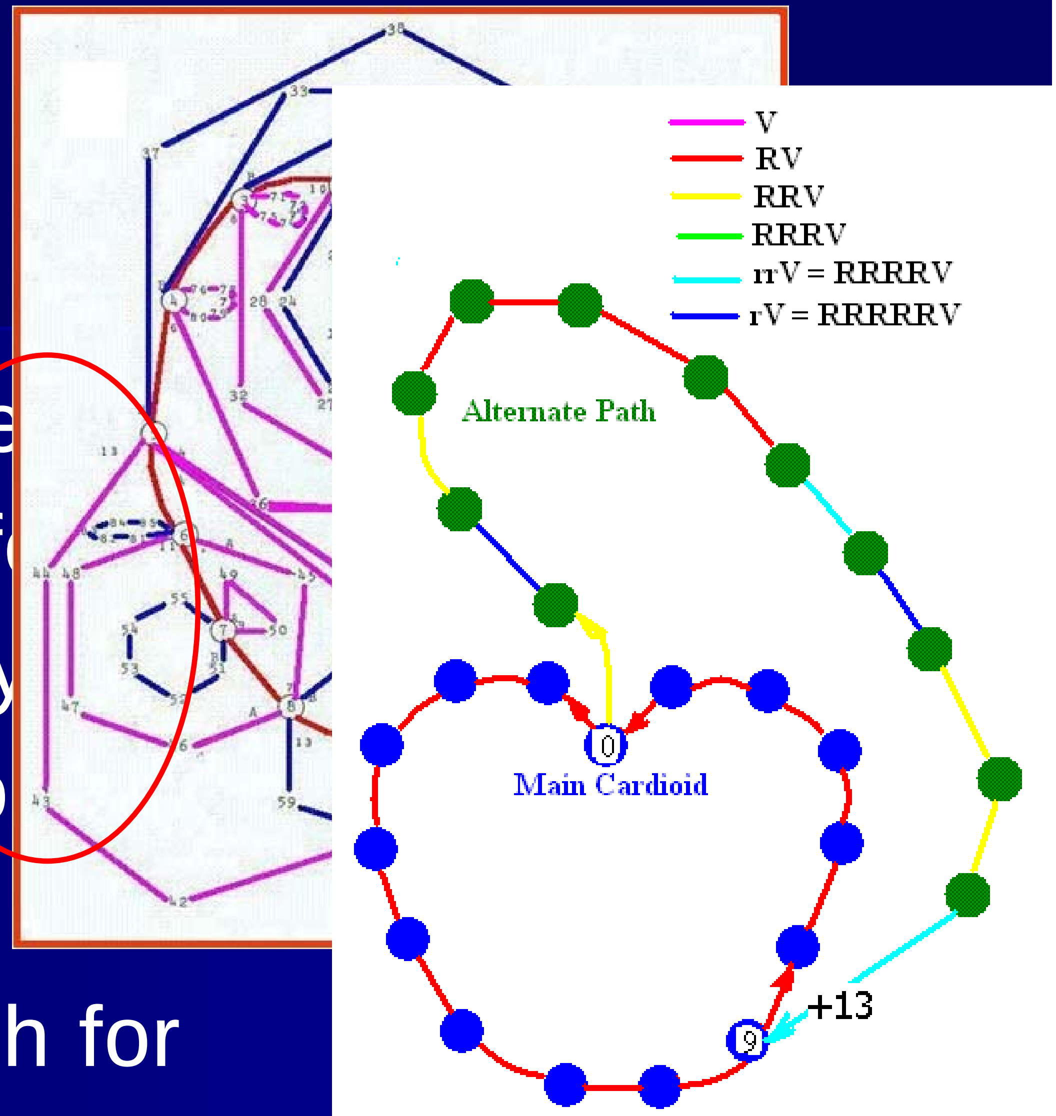
Including Translat

3420 fac





How many of the faces appear diffe
When n>3, can y translate a 3n co face by one?
What is the graph for n=3?



http://www.eighthsquare.com/index.html