The Fiber Technology Used in Space Development: Making Braids and Taking Thread from Cocoons

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Armor, Swords, and Women's and Men`s Traditional Kimonos







High

Square



Bamboo

Braiding looms

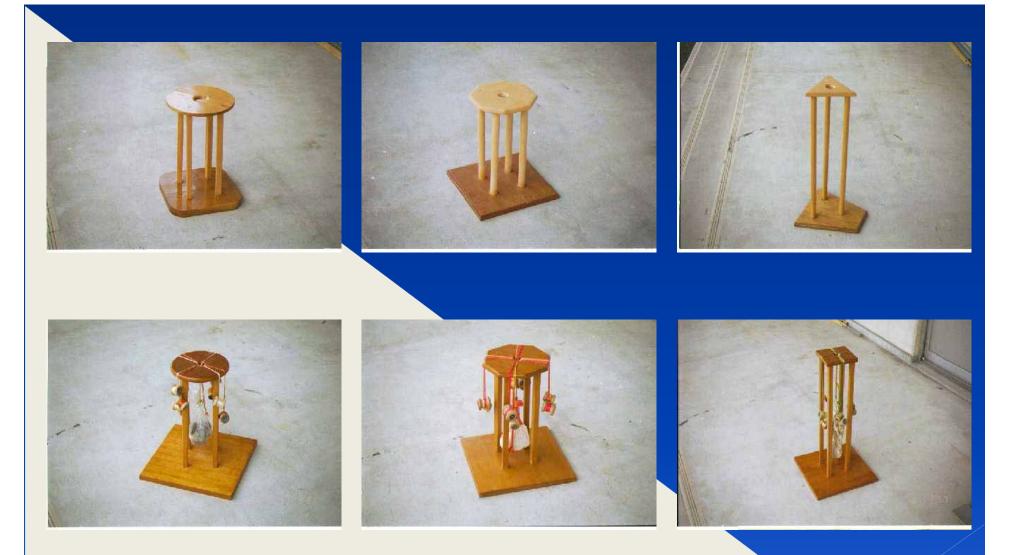








The students are making looms in Industrial Arts class.



These are the different shaped looms made by the students.

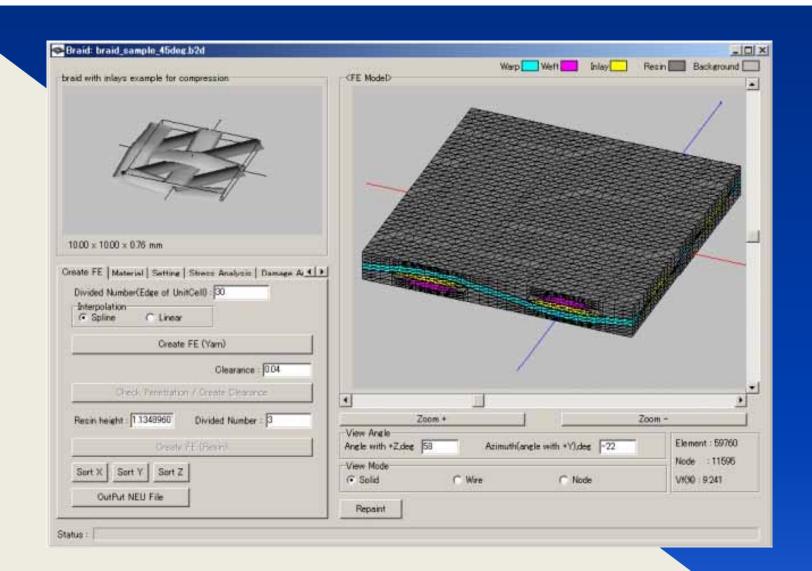


Strength Analysis of Braids by Computer-Aided Engineering

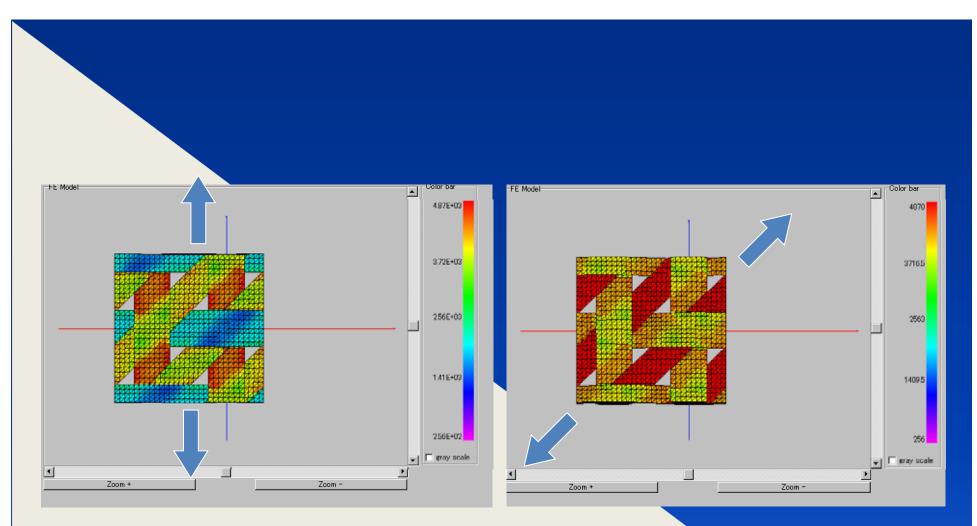
Analyzing software: Mesh Tech

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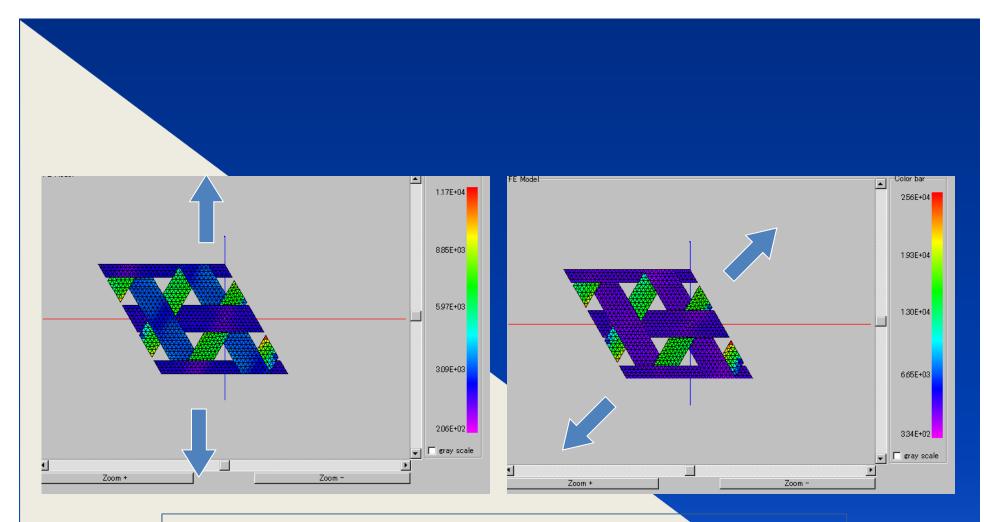
Stress and strain are distributed on the triaxial braided structure.



Triaxial layer fortified by Fiber Reinforced Plastic (FRP)



Triaxial braid structure interwoven at 45degree angles



Triaxial braid structure interwoven at 60degree angles.

	Warp 🔜 Weft 🔜 Inlay 🔜 Resin 🔜 Background 🦲
braid with inlays example	<fe model=""></fe>
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Check Penetration / Create Clearance	Zoom + Zoom - View Angle Angle with +Z,deg 65 Azimuth(angle with +Y),deg -23 Element : 15120
Check Penetration / Create Clearance Resin height : 1.17 Divided Number : 3	Zoom + Zoom - View Angle
Check Penetration / Create Clearance Resin height : 1.17 Divided Number : 3 Create FE (Resin)	Zoom + Zoom - View Angle Angle with +Z,deg 65 Azimuth(angle with +Y),deg -23 Element : 15120 View Mode Node : 4423

Each triaxial structure is stacked to create a product that is resistant to pulls from every direction.



These everyday products were created using fiber technology.

These are a few examples of how fiber technology is used in space development.







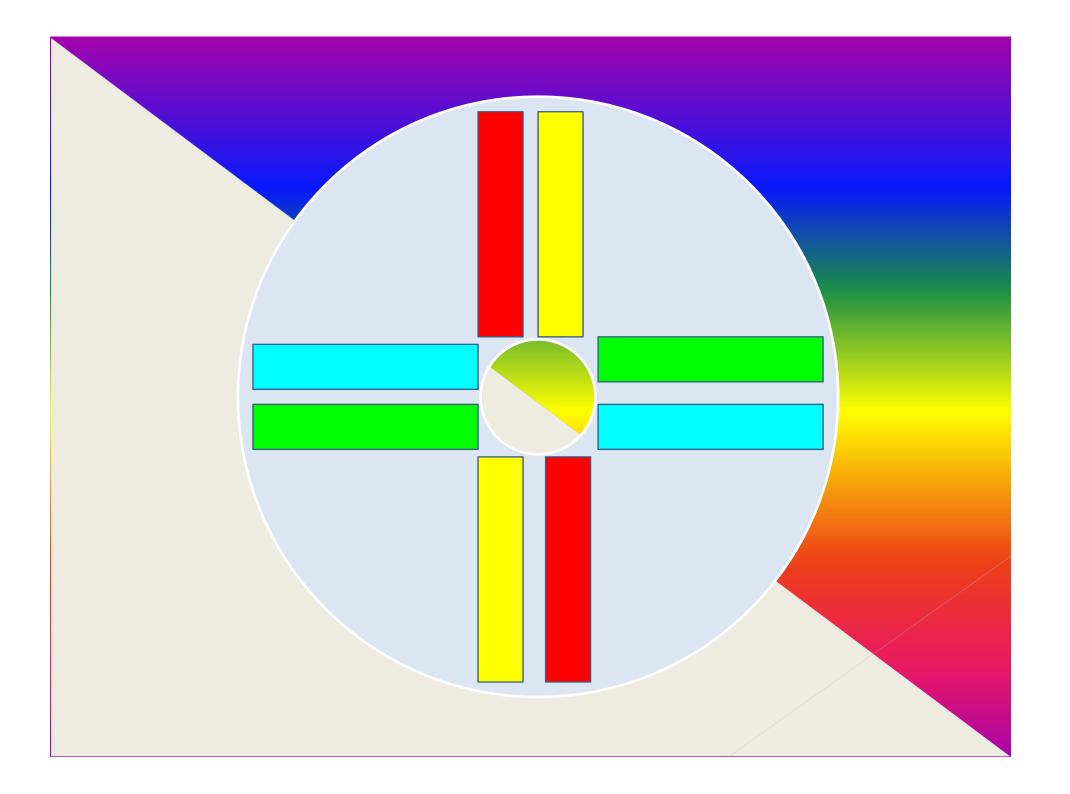


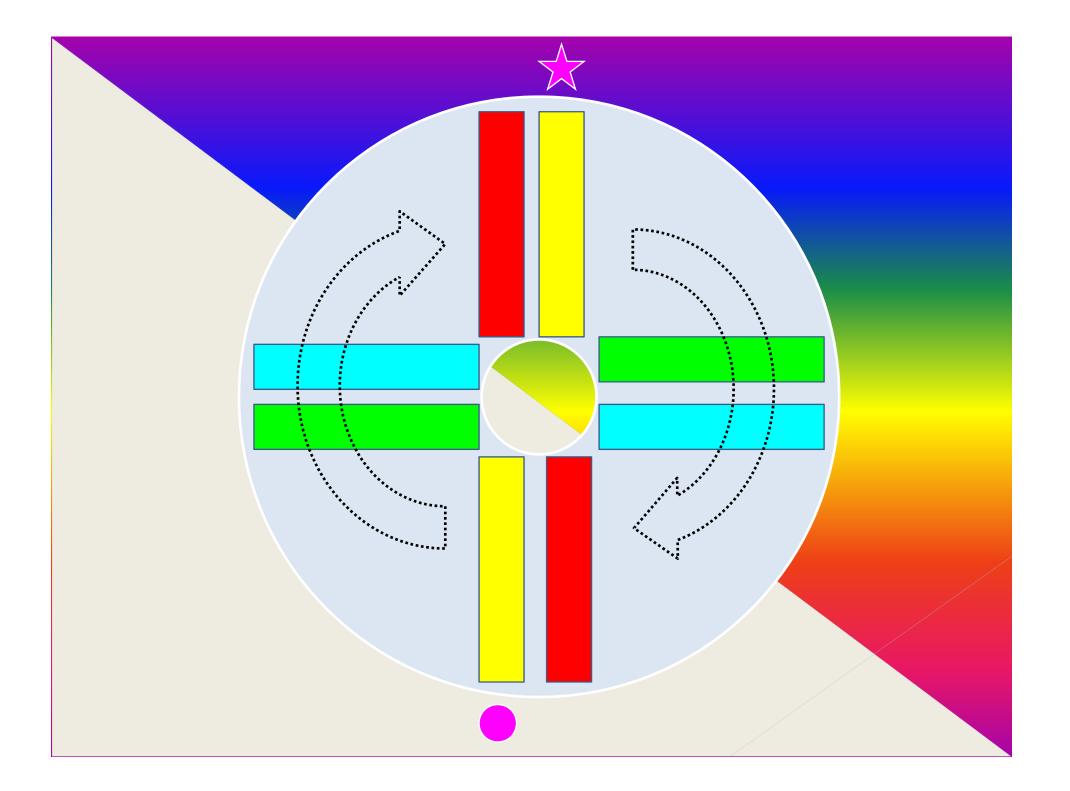
Making Iga Braids

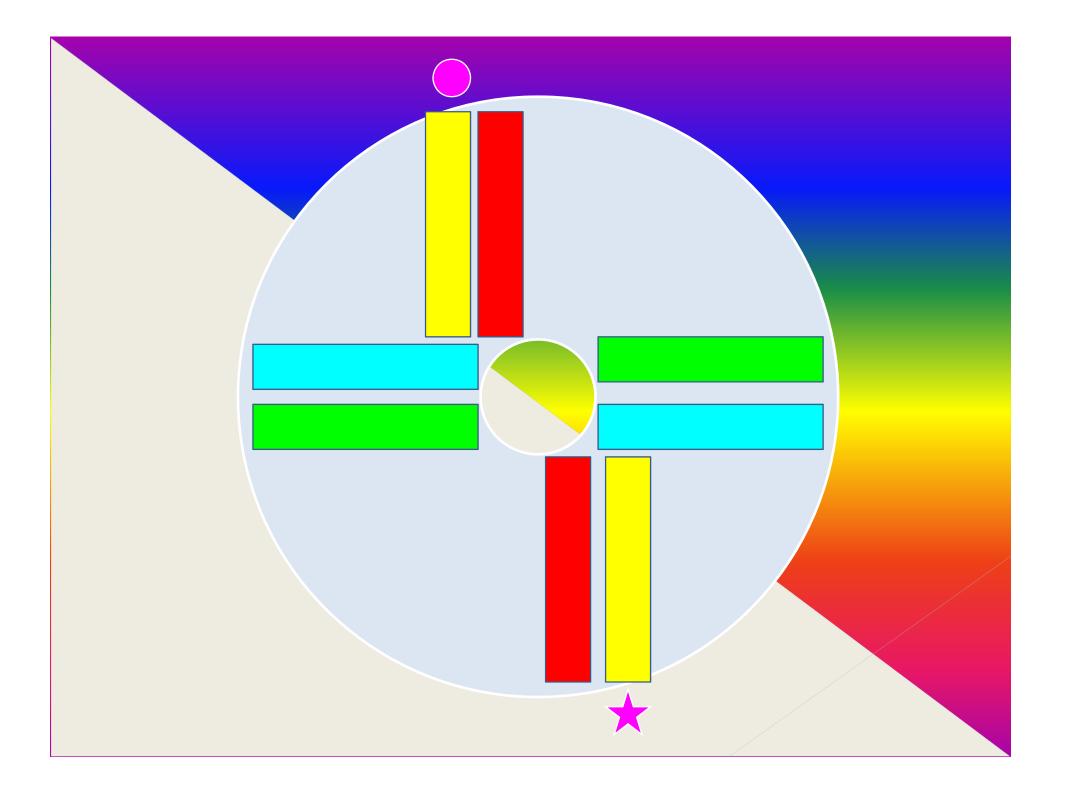
Taking Thread from Cocoons

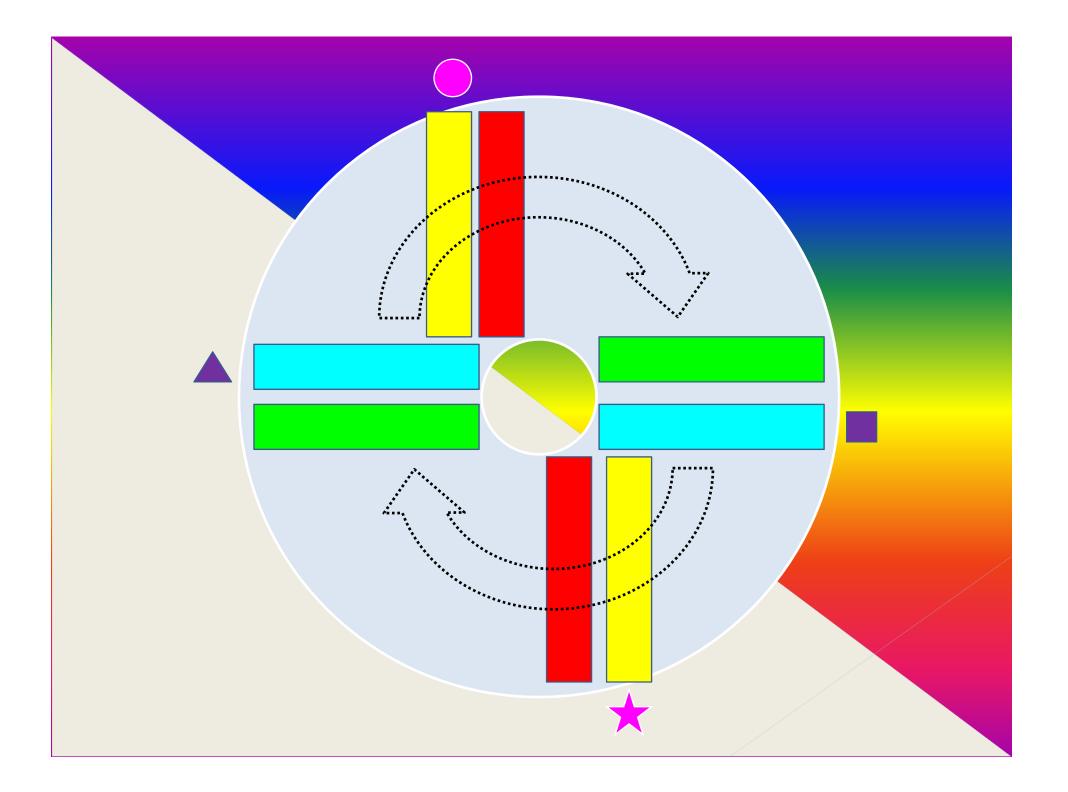
"Kon-gou Gumi"

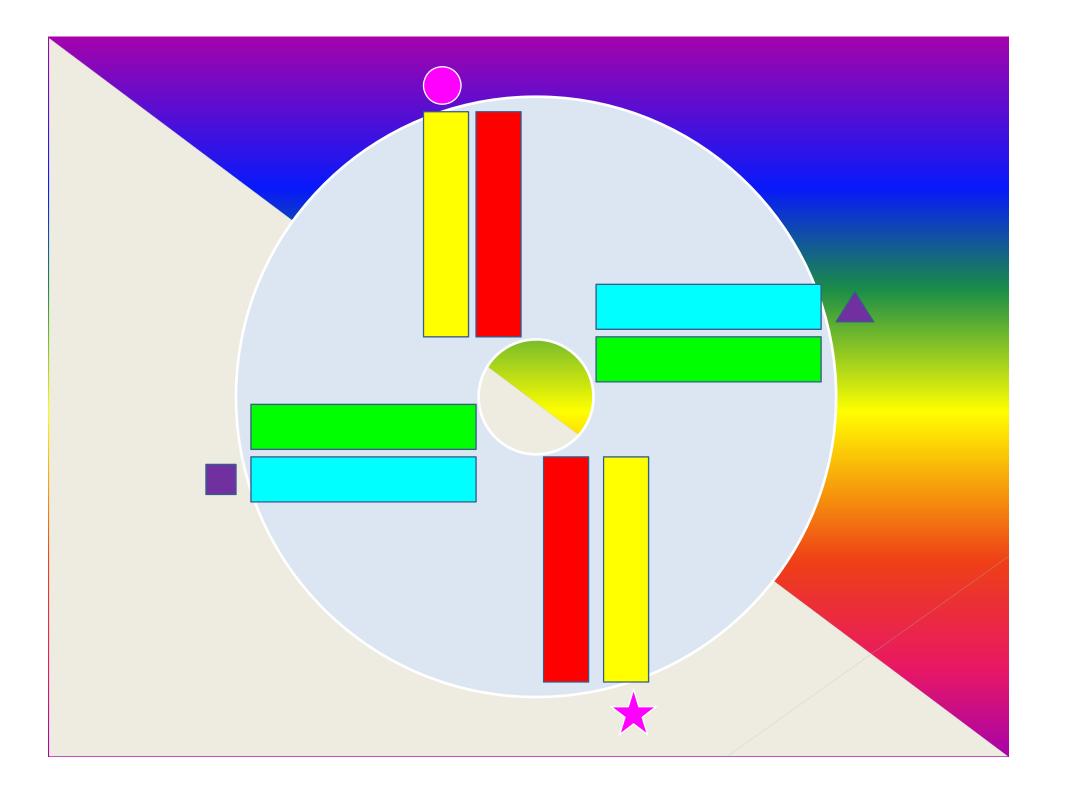
The process of weaving thread

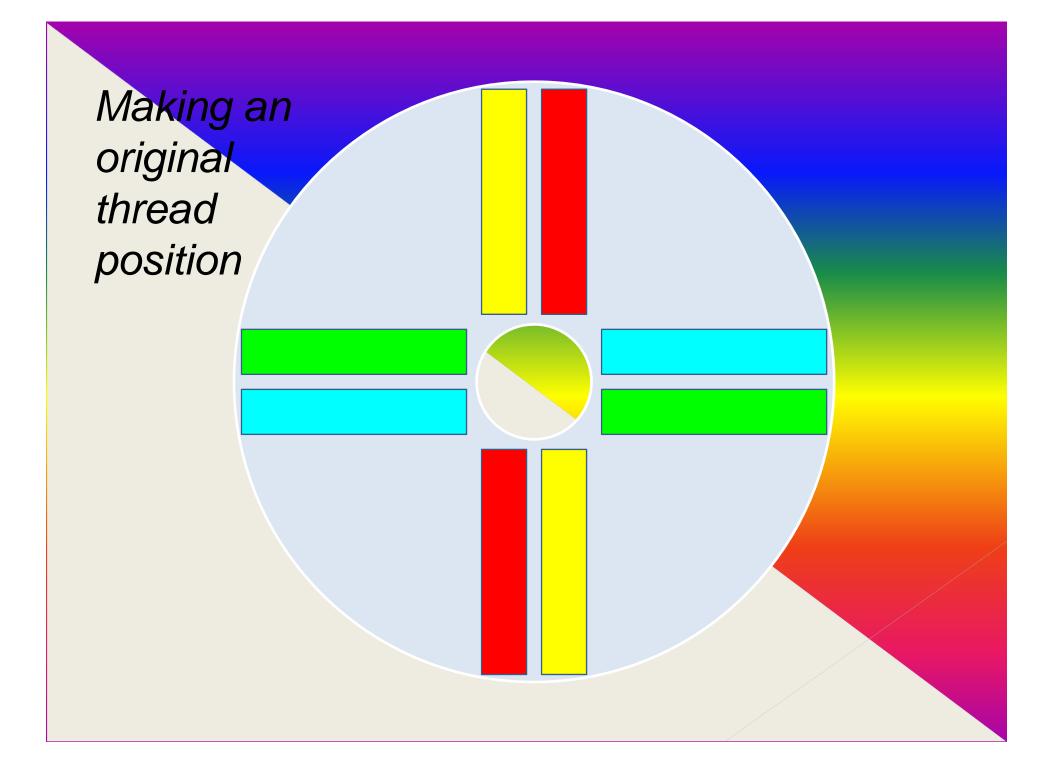


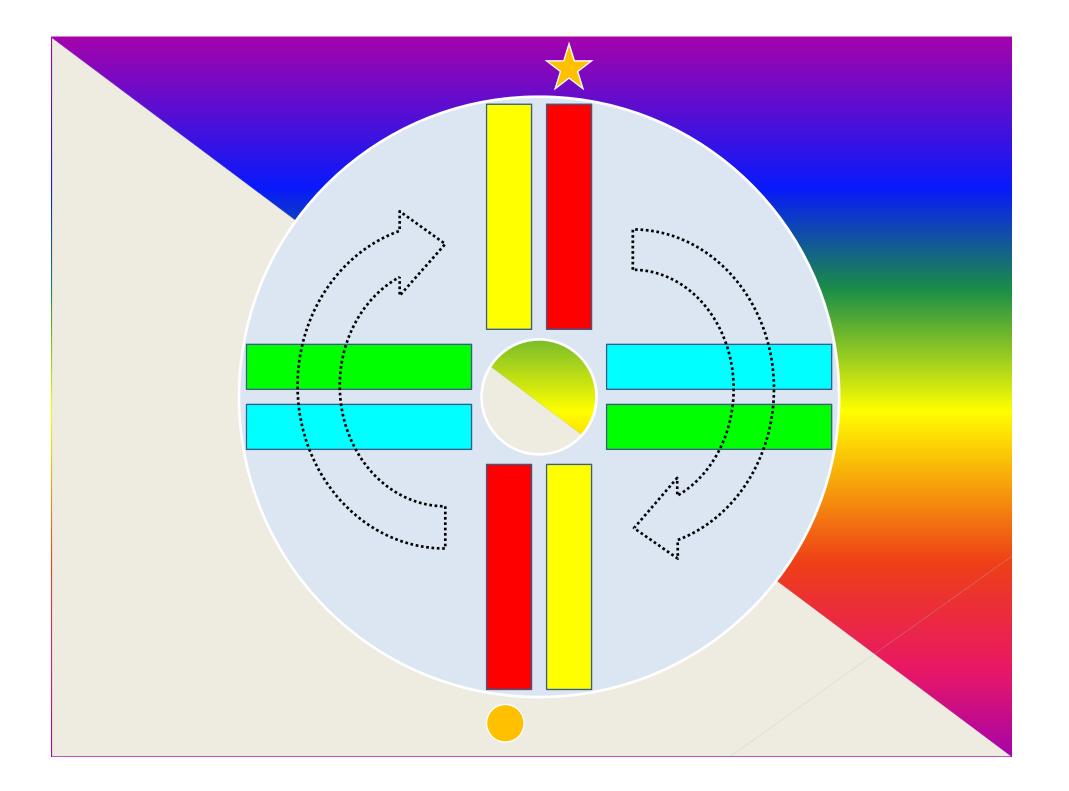


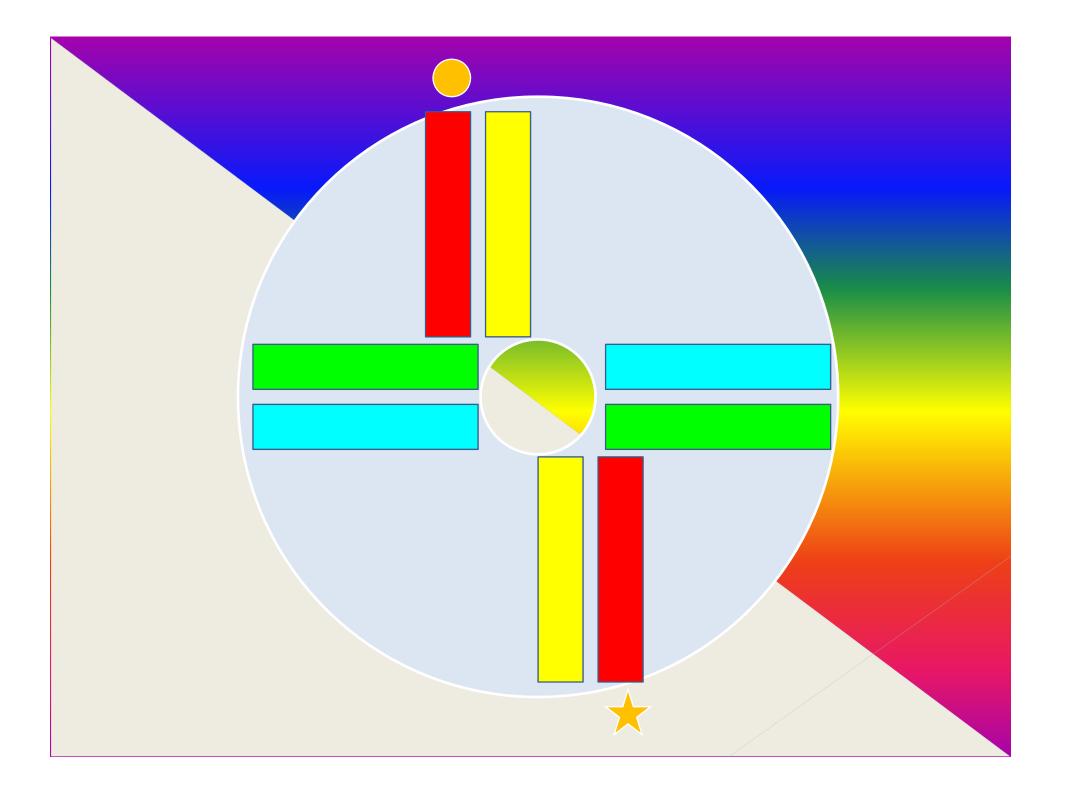


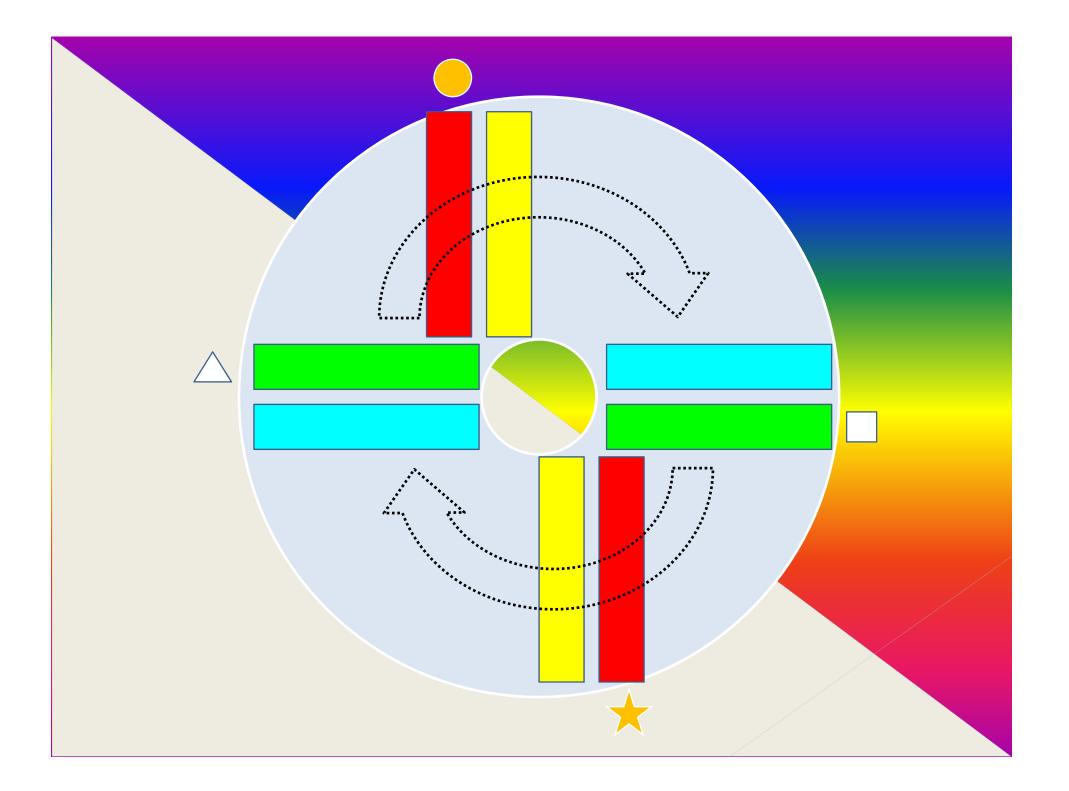


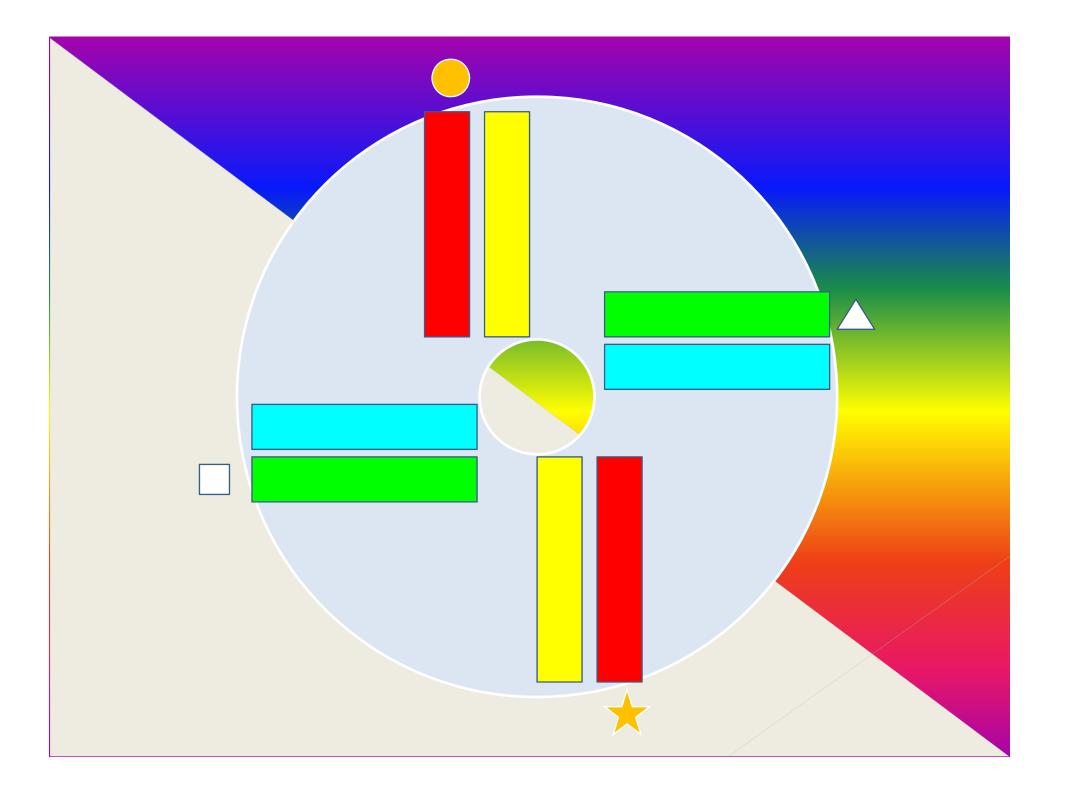


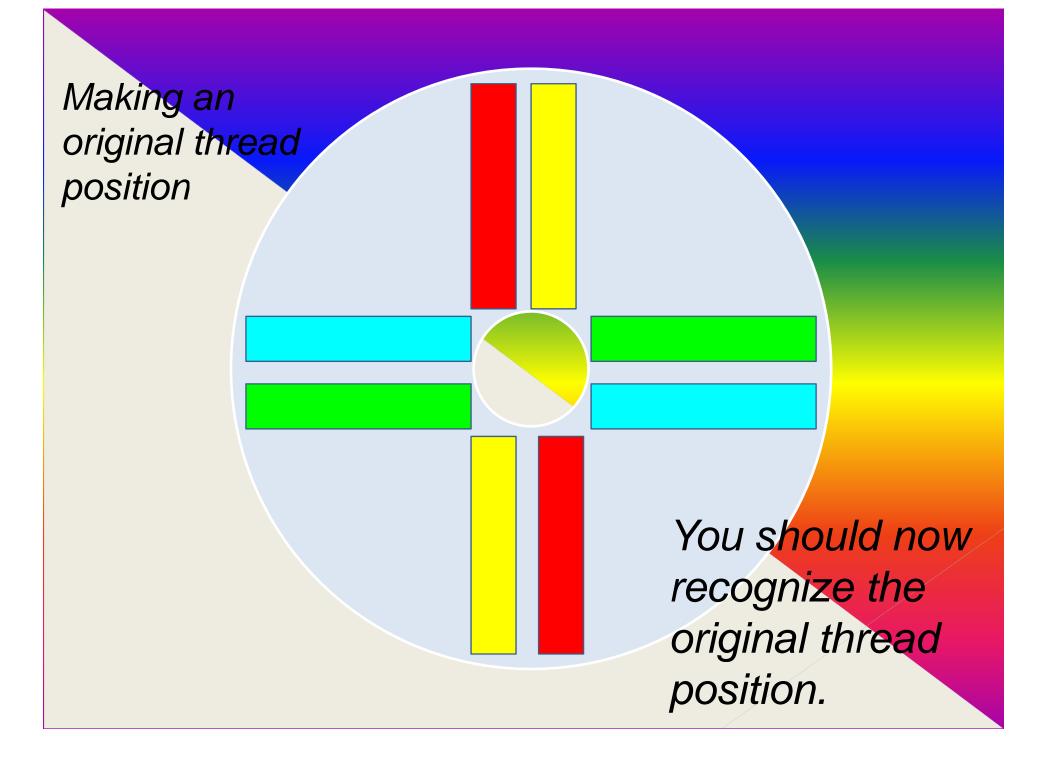












Please repeat the process!

This concludes my presentation. Thank you very much