Action Geometry From Trash

by **lafelabs** on October 4, 2016

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I'm an applied physicist by training(phd Yale 2006, BA Berkeley 1998, math and physics), and have done physics research in the federal government and product development in the private sector, starting two of my own companies. I concluded that the tenets of capitalism have held back progress in the applied sciences by huge amounts and am now attempting to build an applied physics and technology system without capitalism. I document most of my work at www.pinterest.com/lafelabs, and my manifesto and other social media links can be found at www.lafelabs.org. None of this pays the bills, I consult to do that, and can mostly be found somehow in the quantum information field when I'm doing day job stuff.

Intro: Action Geometry From Trash

This shows how to use trash-only geometric fabrication to make what I call my "C1" construction, the first construction of Action Geometry, the system I use as the basis to build all things. In the end we make the three C1 constructions which are documented here:

- http://www.instructables.com/id/TriangleC1/
- http://www.instructables.com/id/SquareC1/
- http://www.instructables.com/id/GoldenTriangleC1/
- http://www.instructables.com/id/Apply-Scale-Operation-to-TriangleC1/

These are the building blocks from which I build the C2 construction, which is the cardboard Platonic Solids. And with those I can build up to C3, which is the three dimensional construction geometry documented here:

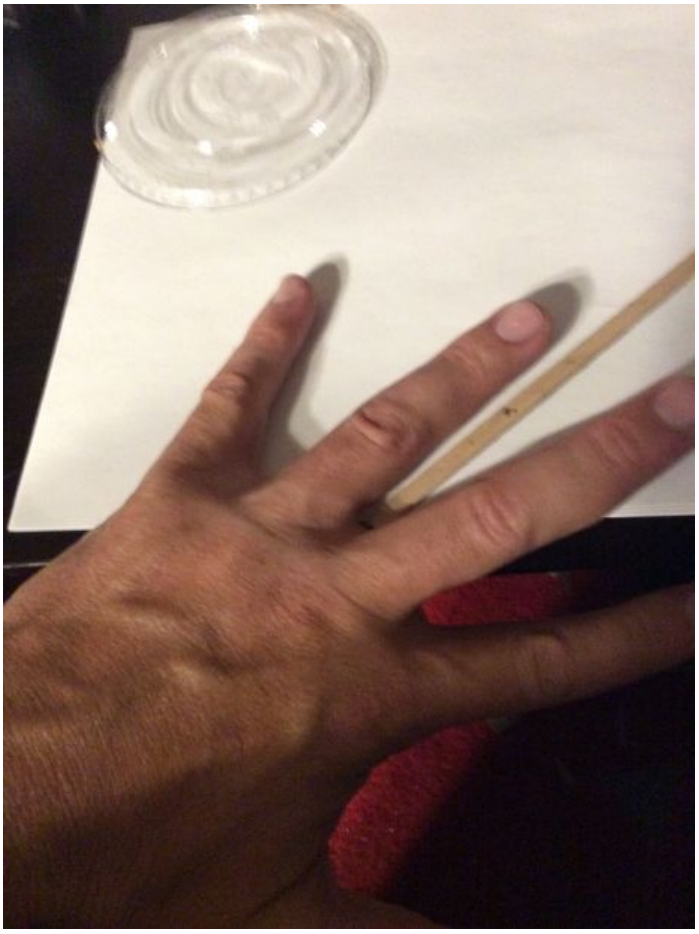
- http://www.instructables.com/id/Structural-Octahedron/
- http://www.instructables.com/id/Fluid-Tube-From-Plastic-Bottle/
- http://www.instructables.com/id/Cardboard-Triangle-Tube/
- http://www.instructables.com/id/Convert-Wood-Chairs-to-Modular-Structures/
- http://www.instructables.com/id/Art-Box-1/

The problem with the previously published version of the C1 shape constructions is that you need a compass, and those are annoying to find, and generally cost money. Also the ruler using English units is not ideal. So how to I build up the tools of classical geometry from trash in a way that actually works but doesn't need some capitalist nonsense like a compass or rely on imperialist units? By using the following tools:

- clear plastic drink lid
- wood stir stick or other straight object you can write on
- pen
- paper
- my hand, either hand, or someone else's hand

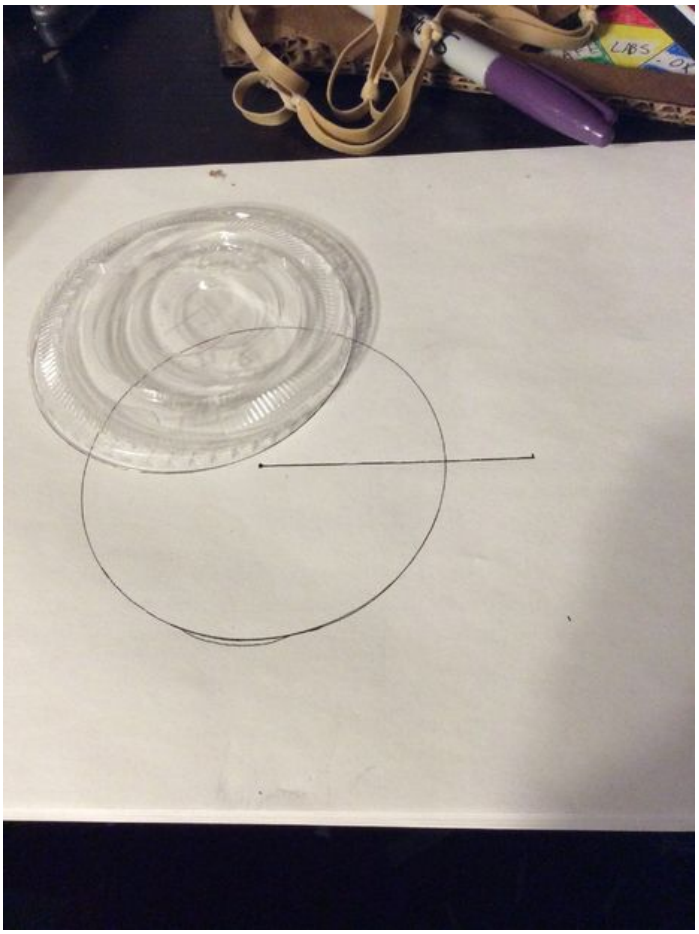
Step 1: Get Basic Unit from Anatomical measures

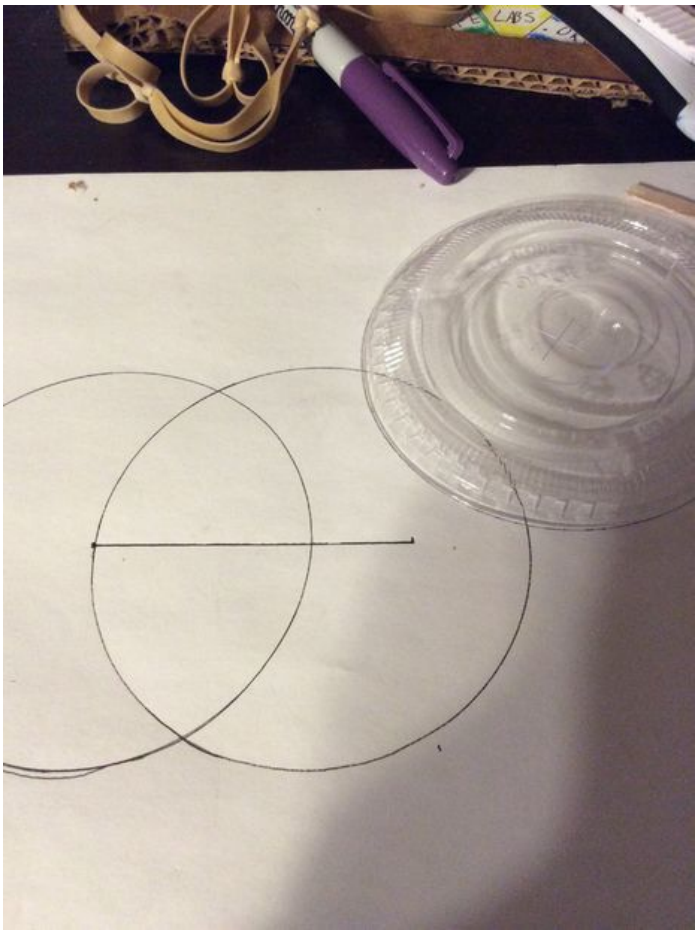
I use the length of my ring finger, the third finger over from the thumb, between the middle and pinkie fingers. I mark on the stick what that length is. I could pick any finger of course, but by choosing a body part and sticking with it I can repeatably build technology from this with some consistency internal to my own technical systems.

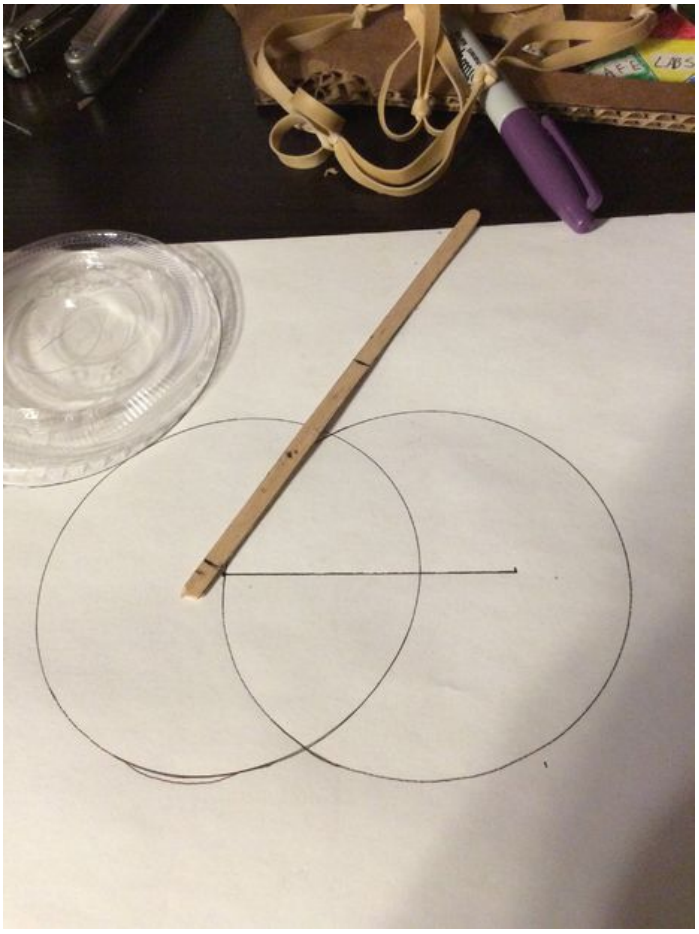


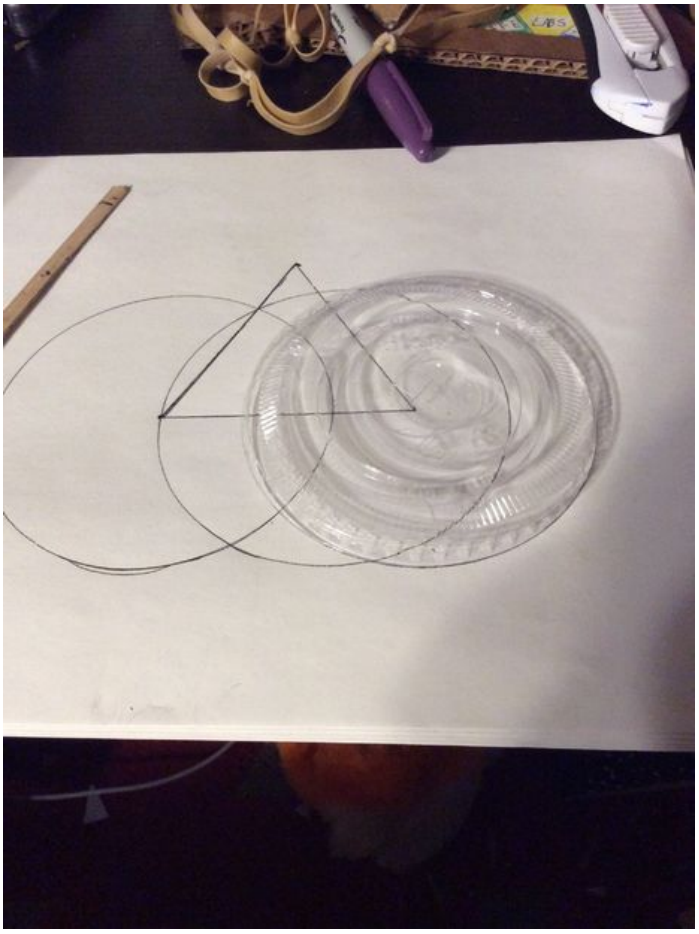
Step 2: Construct Triangle C1

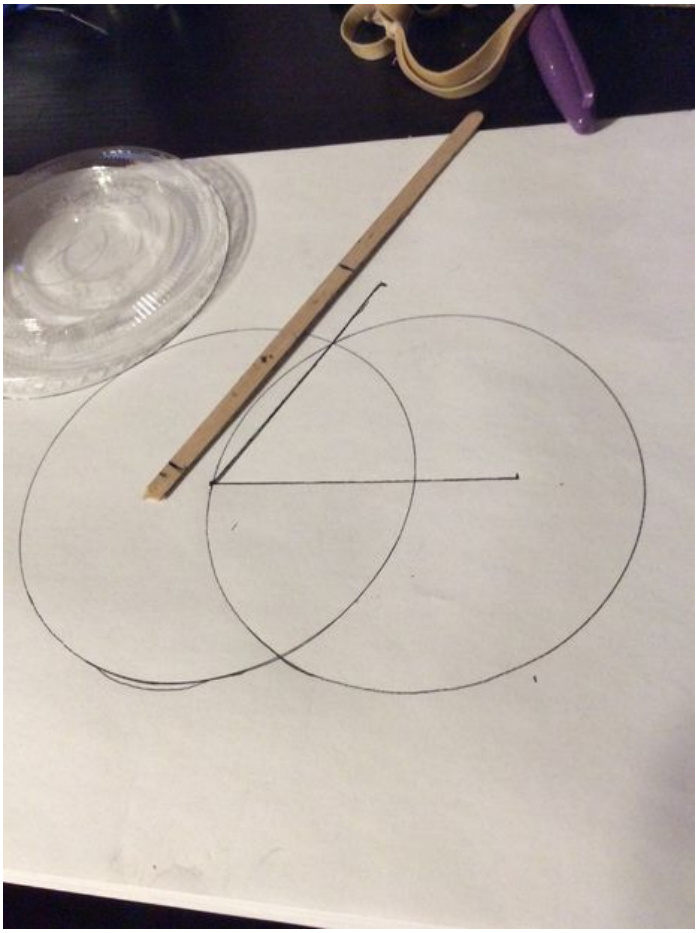
Follow the images and look up the compass-and-straightedge version I have up here, as well as the trash construction I posted here. I'll be adding more content here as time goes on as well.

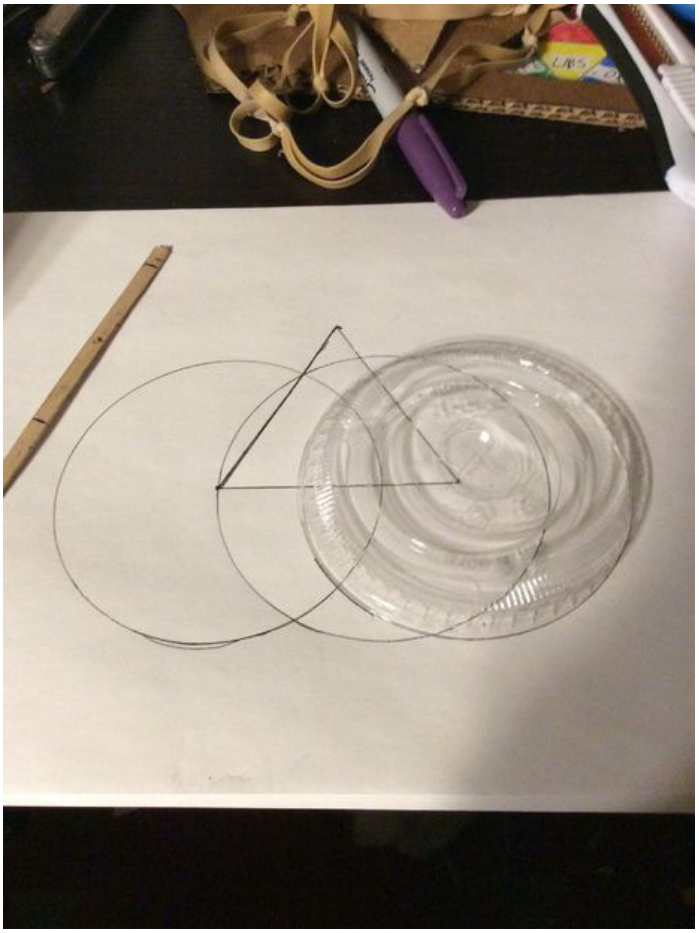


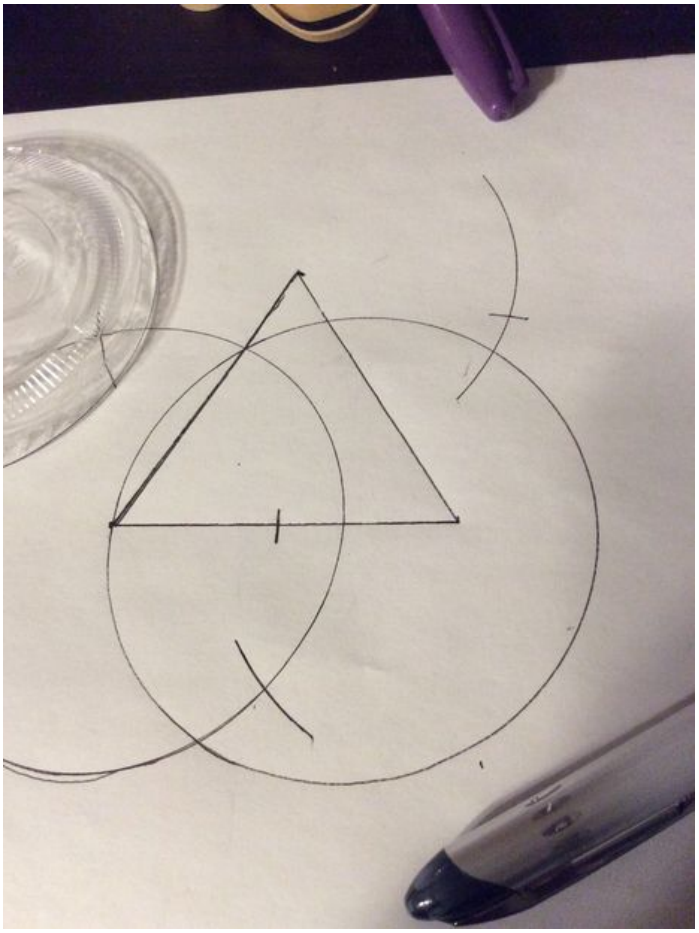


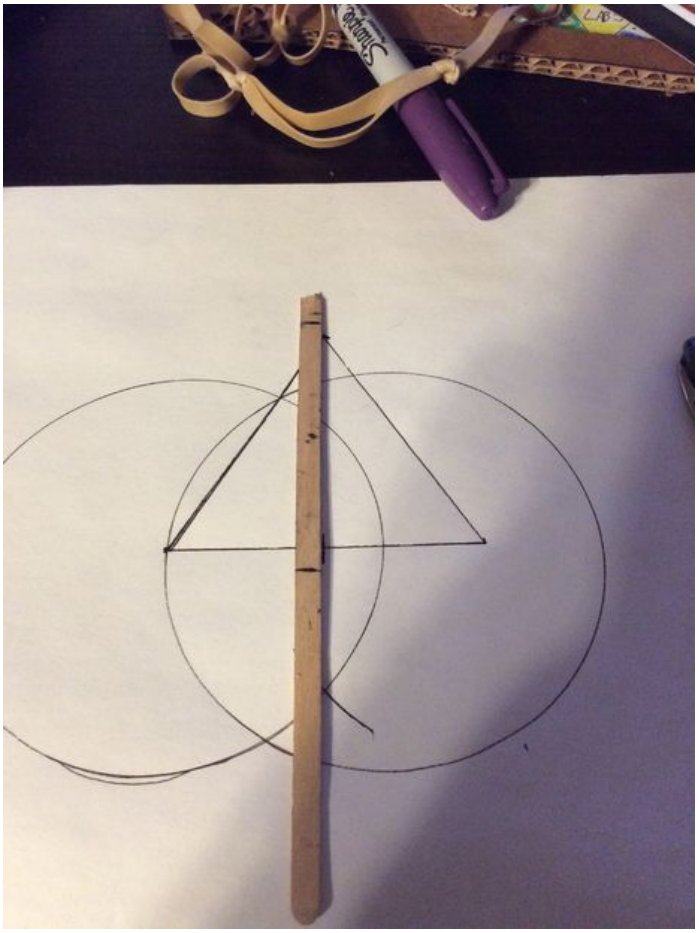


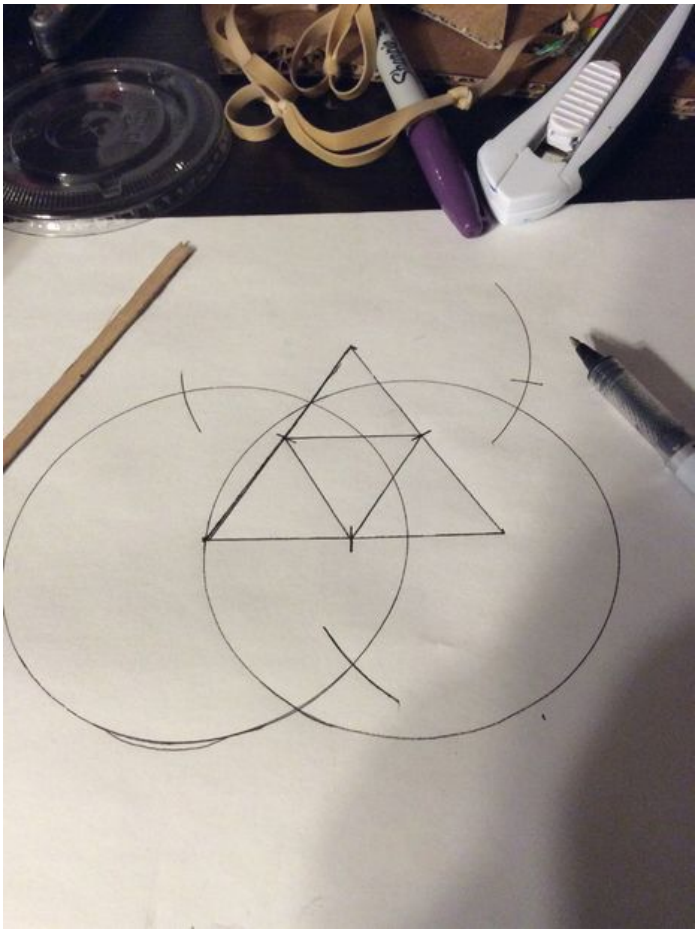


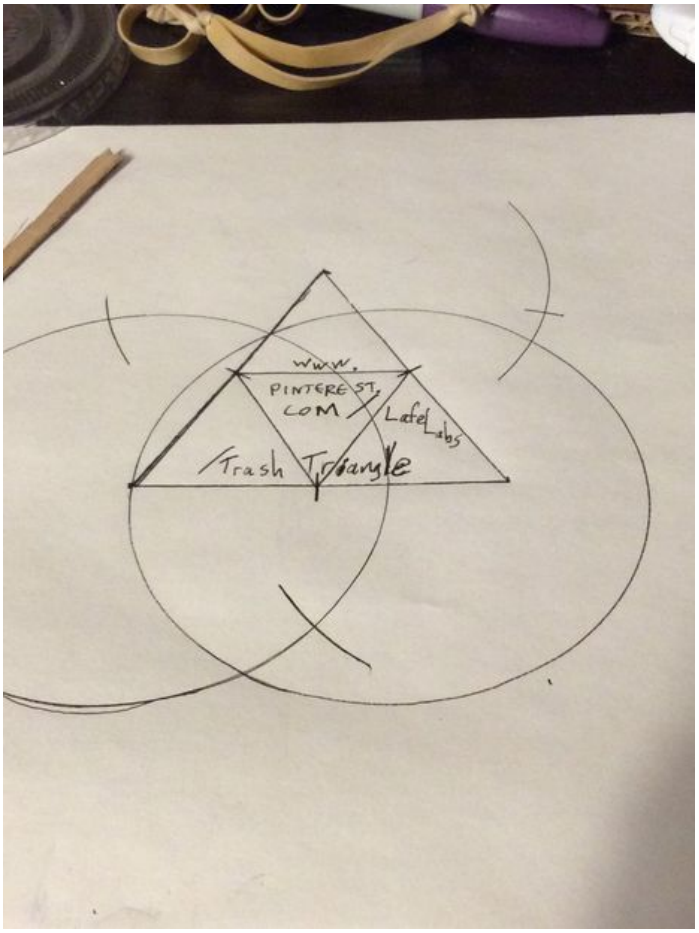








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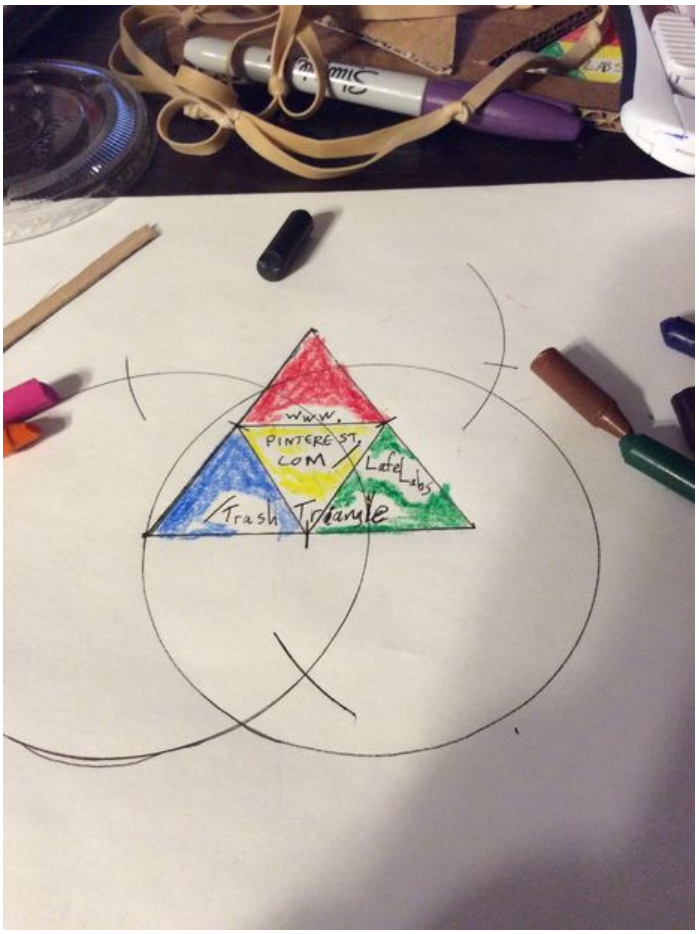
Trash Triangle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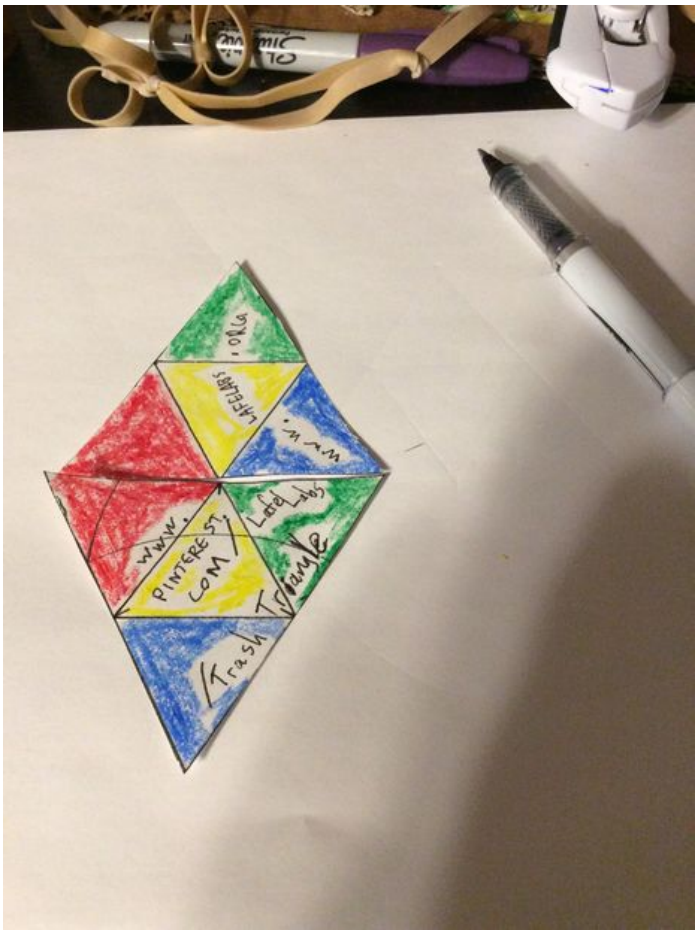
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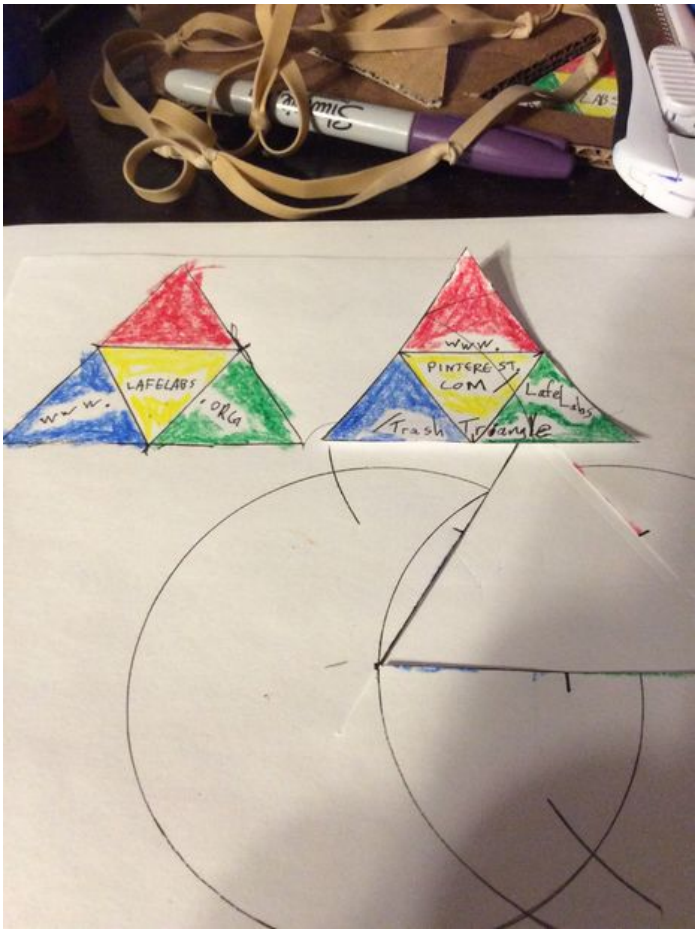
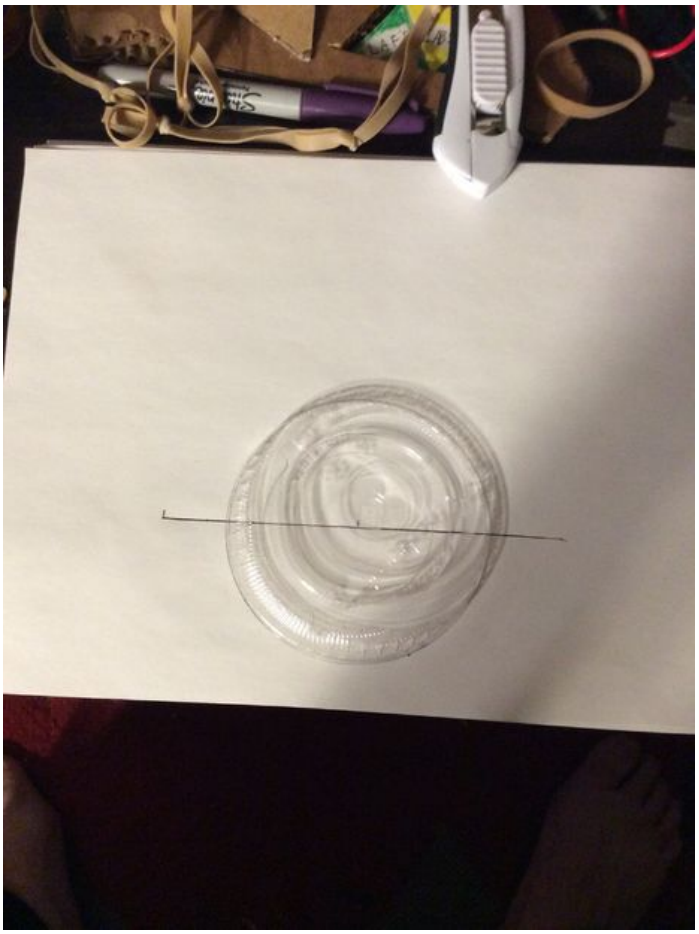
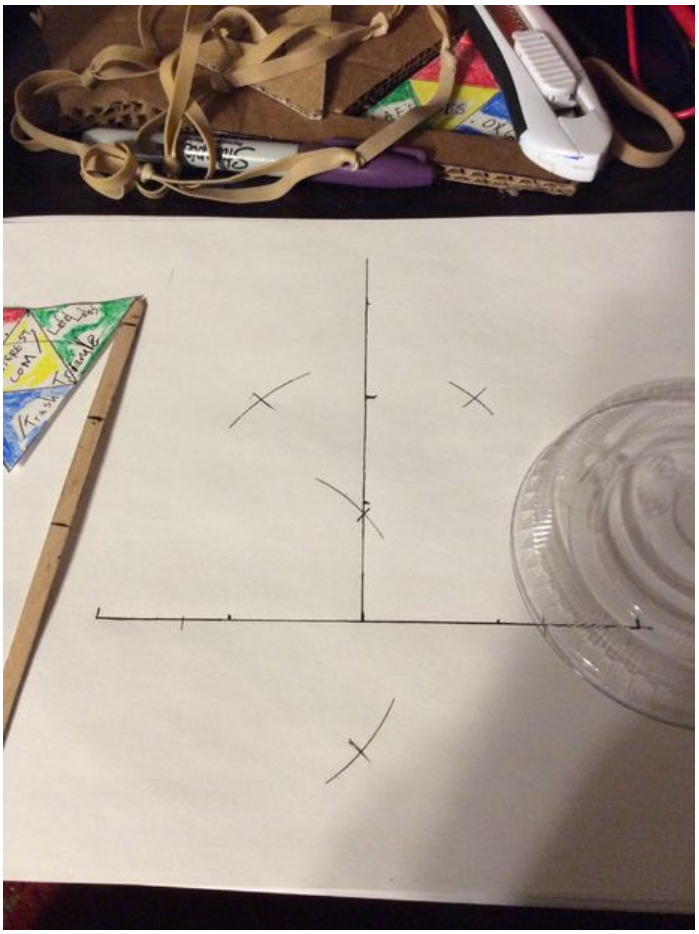
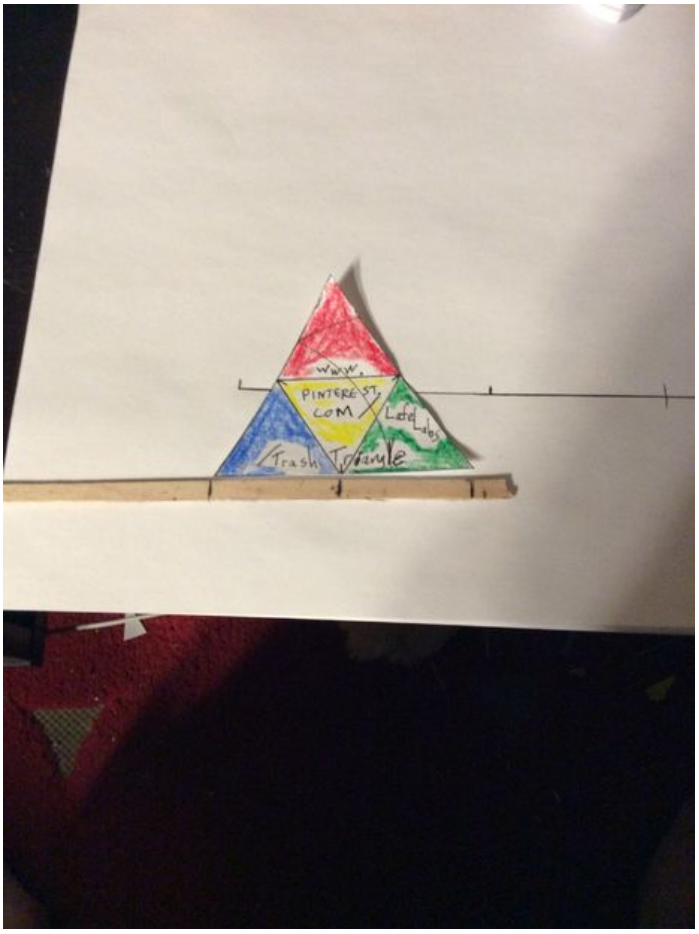


Step 3: Construct Square C1

Same as triangle, but compare to this instead of triangle.



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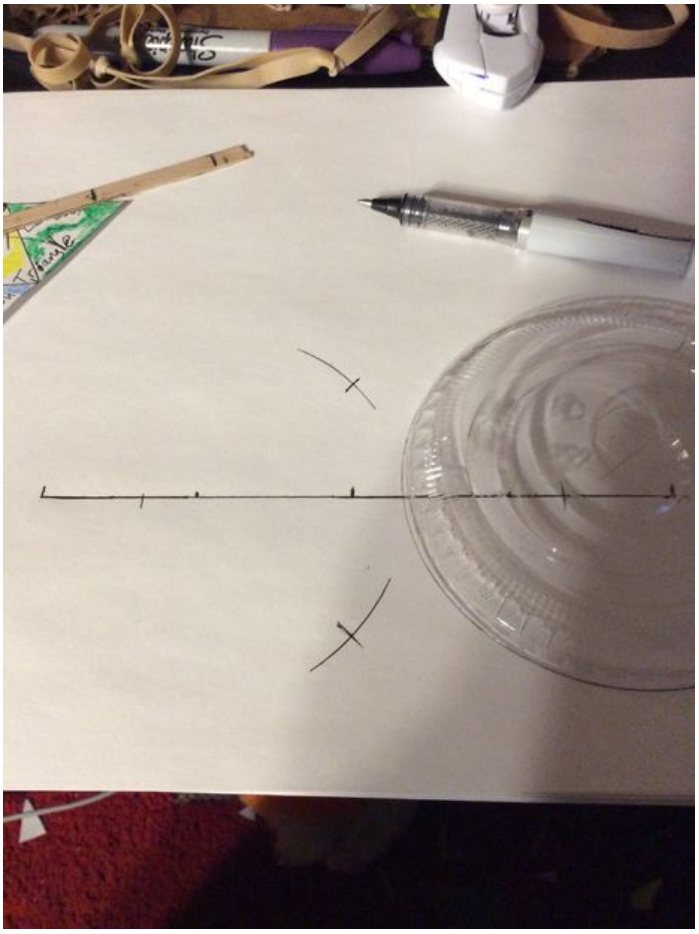
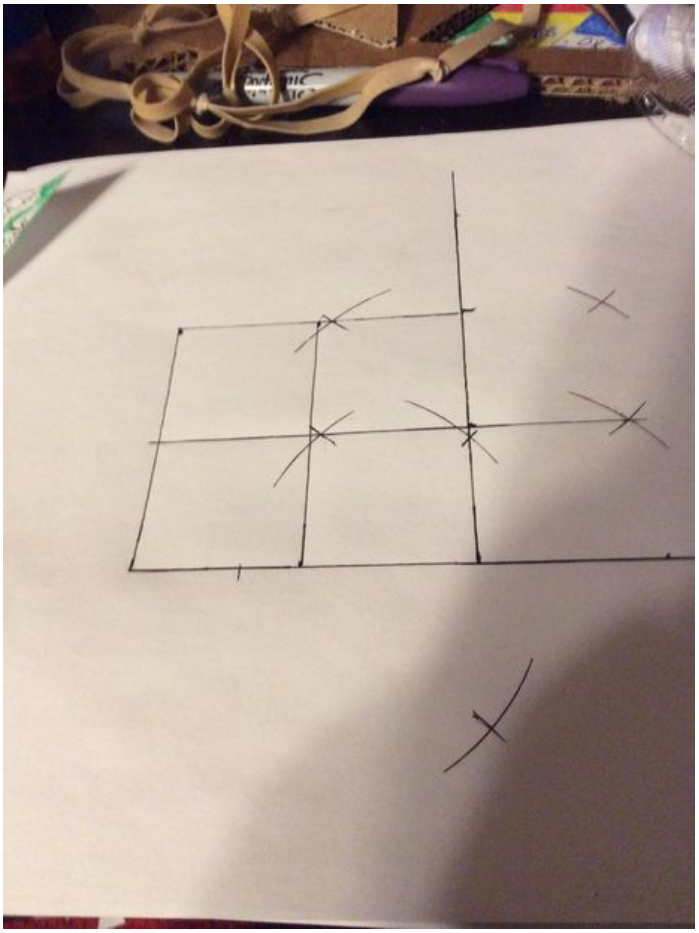
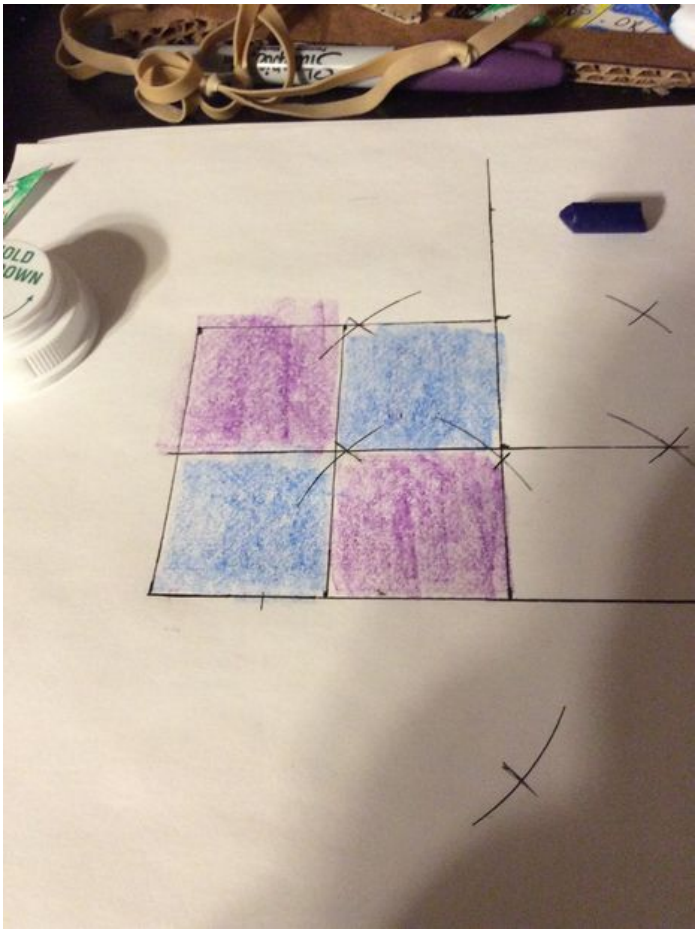
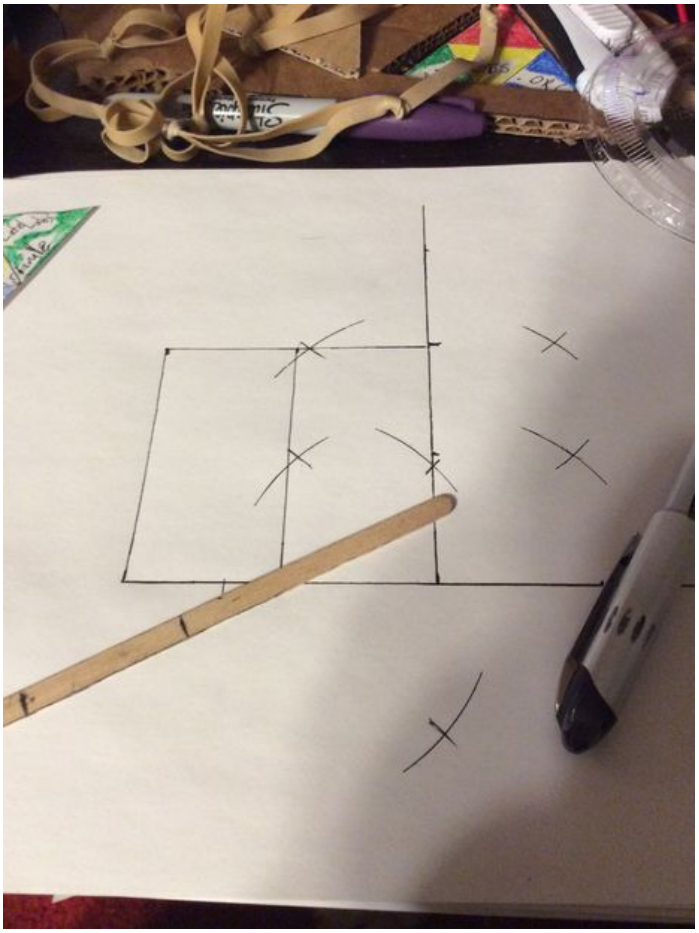




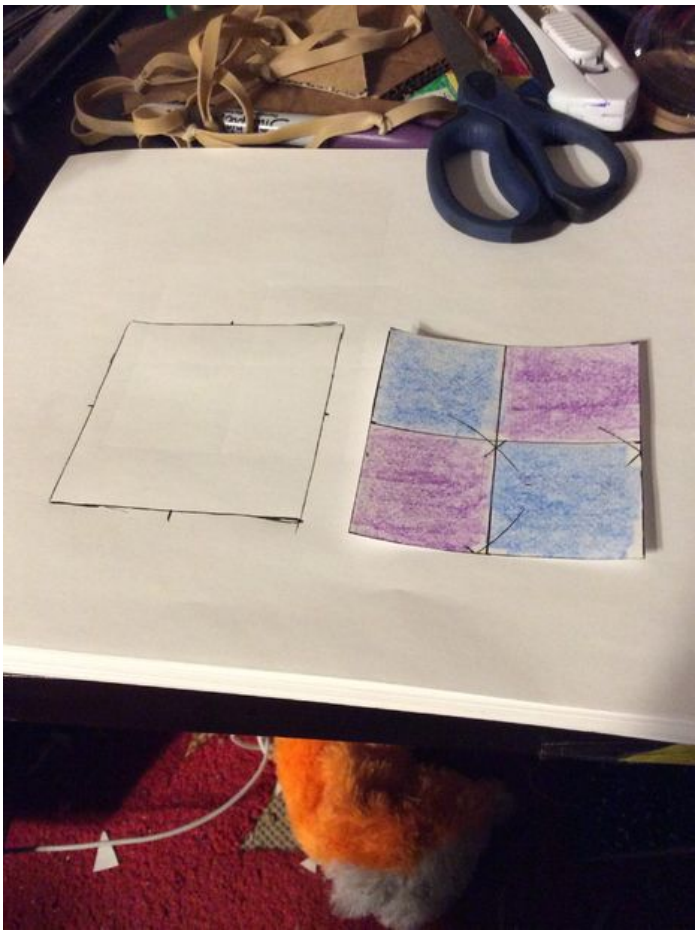


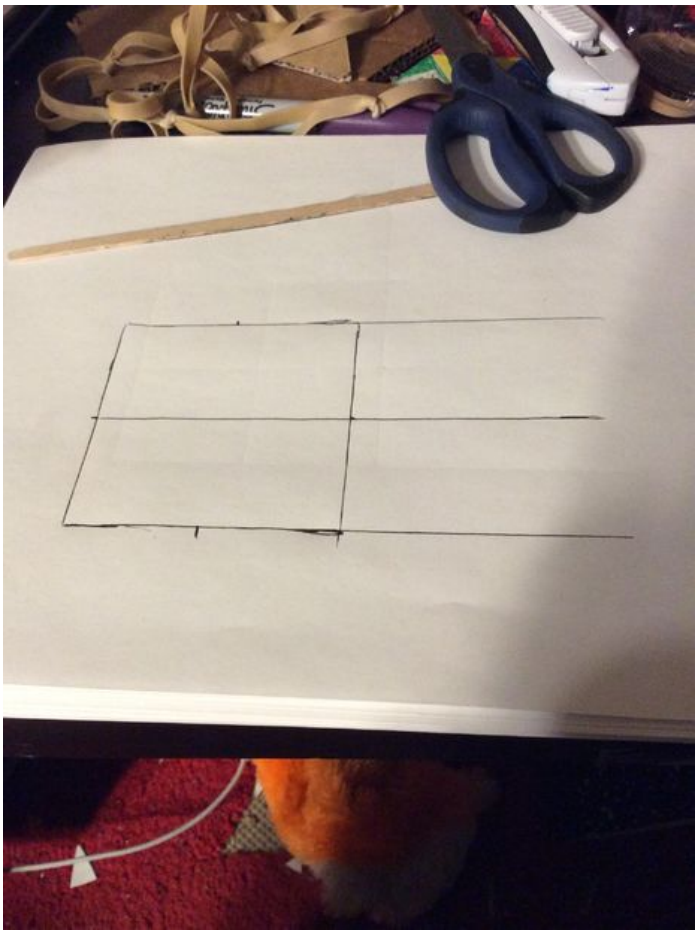


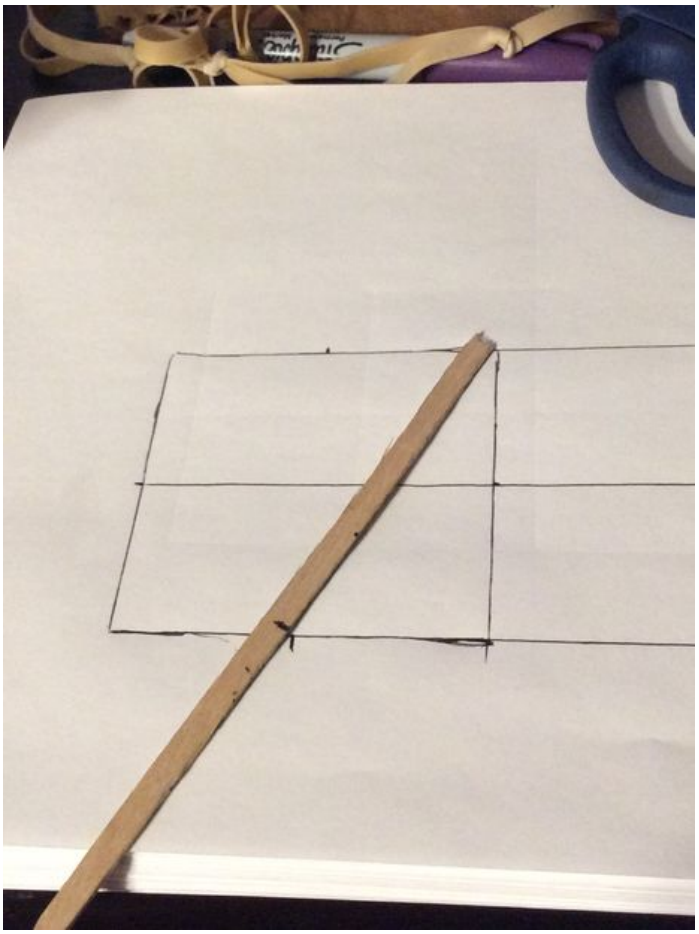
Step 4: Construct Pentagon C1

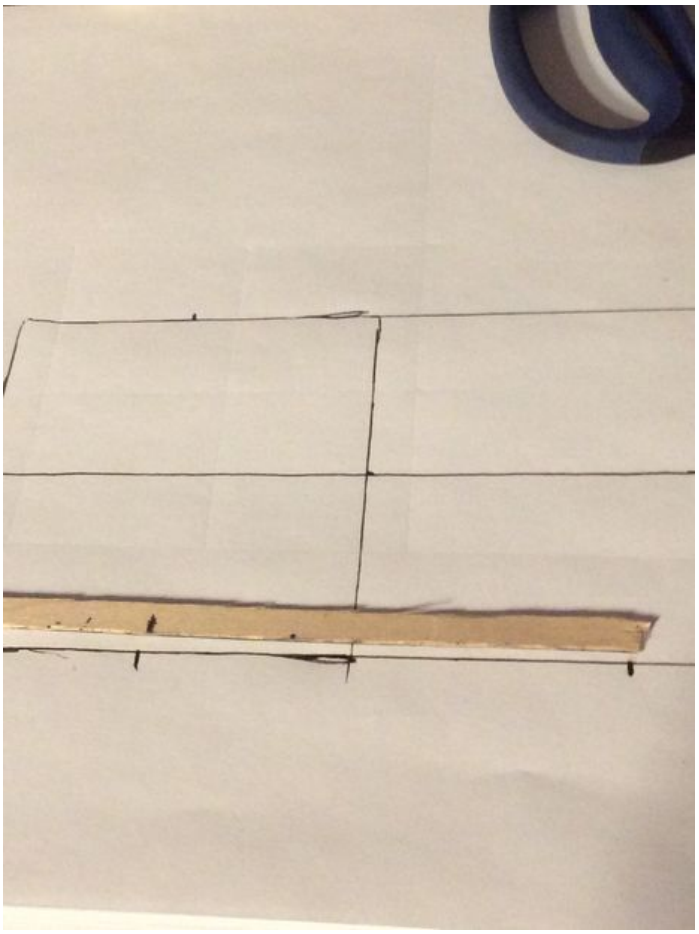
Now I follow the Golden Triangle construction here.

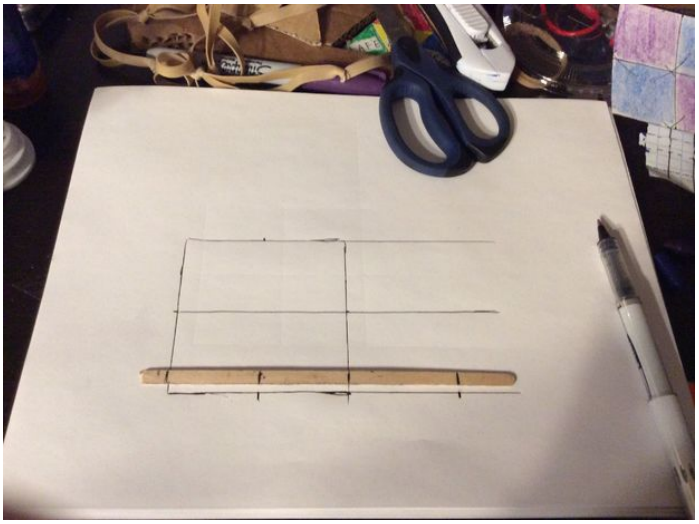
At this point you can cut out, laminate, paste to cardboard, copy, duplicate and spread.

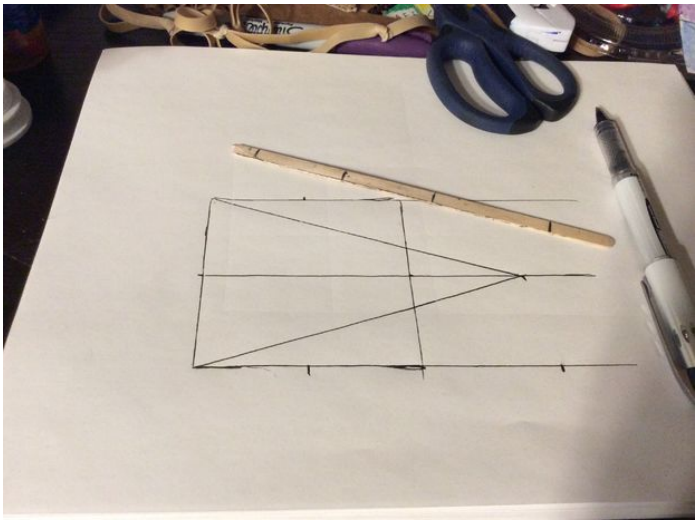


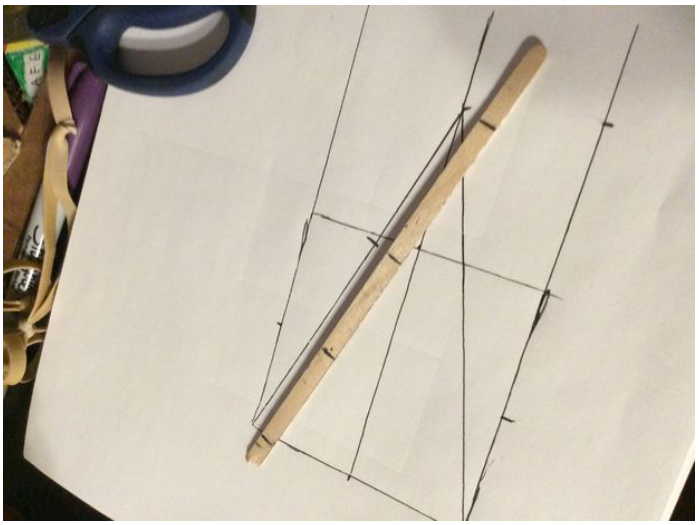


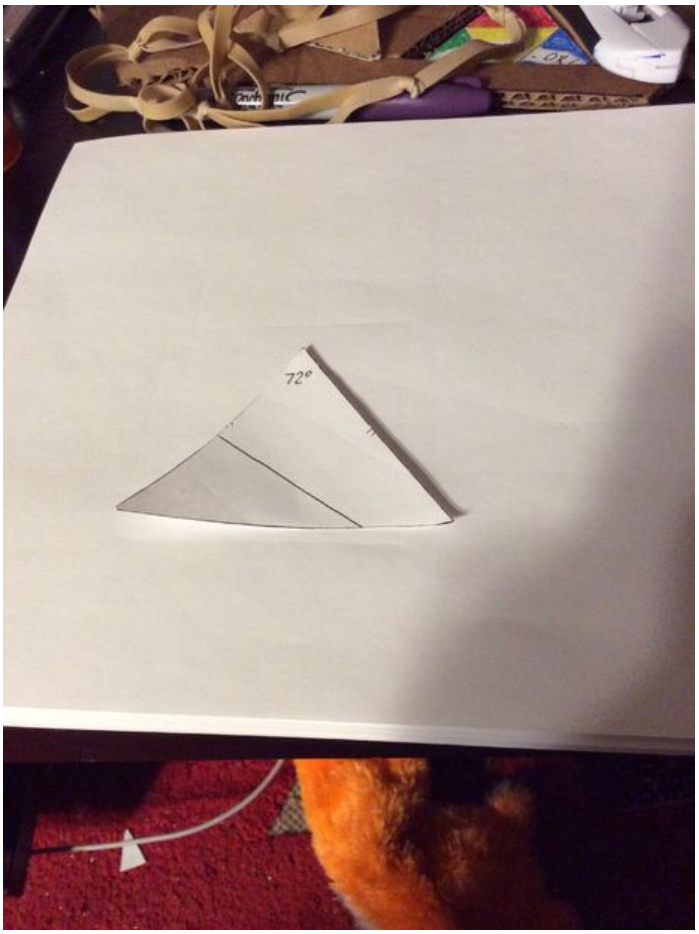








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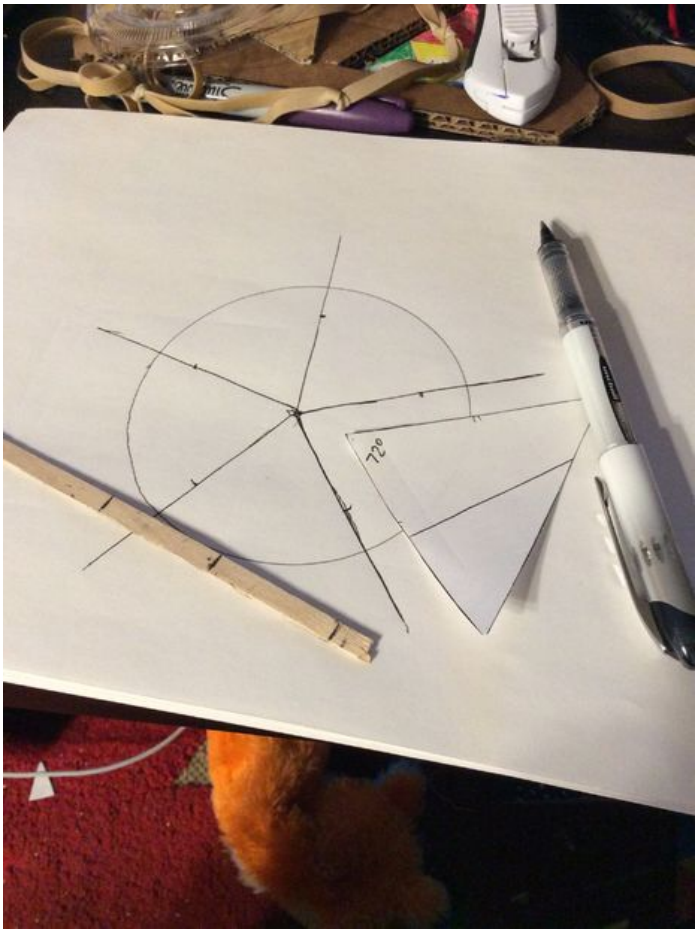
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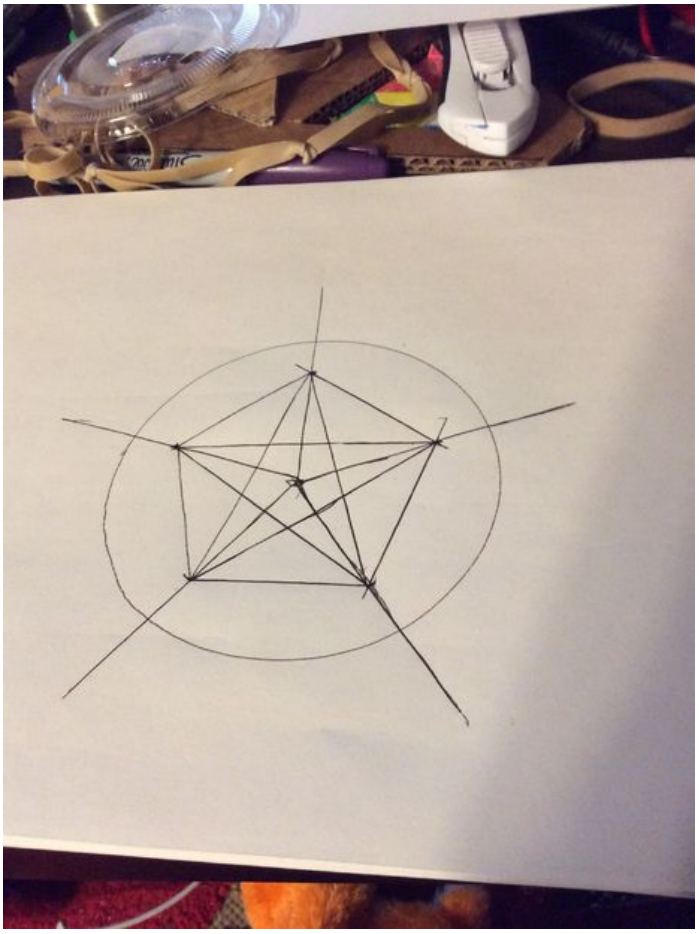

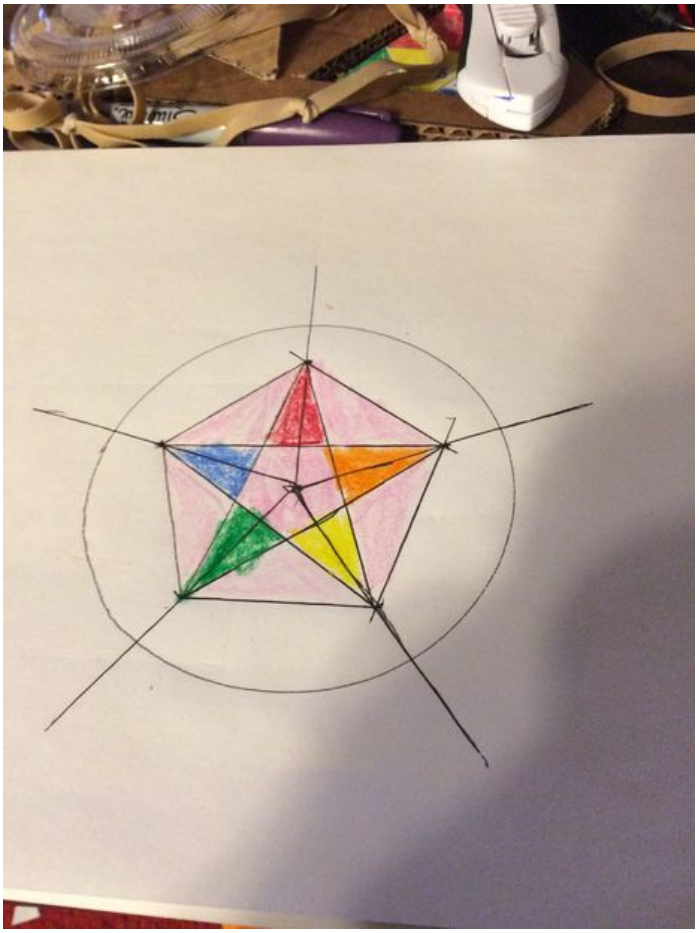

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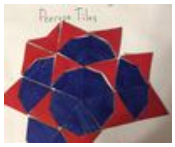

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