

To: Spring 2020 Restorative Justice Group #23

Title: *Unit Origami*

In this week's handout, I'd like to take us in a slightly different direction. It's about a type of paper folding called Unit Origami. More on what unit origami is in a bit.

During my first experience as a volunteer participating in a Restorative Justice circle two years ago, I brought a 3-dimensional geometric shape (called a stellar dodecahedron) to share with the group. The reason I brought it to share was because it was the session during R. J. called "Show and Tell." The shape I had made was created using unit origami.



Stellar Dodecahedron

Unfortunately, our Spring 2020 sessions ended before we got to that week. Show and Tell is a powerful session during R. J. in which each of us brings something of meaning to the circle - whether it's something given to us, something we've discovered, or something created - and share it with the circle along with your story of why it's important to you.

The brief story I shared about my stellar dodecahedron two years ago and the one I'm sharing now as part of my own "Show and Tell" is this:

Before retiring, I was an 8th grade math teacher in Madison for many years. At times, when I tell this to others, I find they tend to avoid me as much as possible - no worries, this will not be a math lesson. As a math teacher, I always wanted my students to explore mathematics in a rich hands-on way. Unit origami is perfect for this.

Unit origami is a different type of paper folding in which one starts with several square sheets of paper of the same size. Through several steps of folding, each square becomes a "unit", all of them the same, and then all the units are joined in such a way as to create various 3-dimensional geometric shapes such as hexahedrons (six faces) and dodecahedrons (twelve faces) - perhaps this is part math lesson. Hands and paper are the only things needed to make the units and assemble them - no scissors, compass, glue, or tape are needed.

I found that an activity which got students using their hands as they folded the squares, the repetitive process of folding the same unit several times over, the opportunity to collaborate with classmates as they asked for and offered help to others, and the joy, satisfaction, and often surprise of creating something out of those square pieces of paper, is a powerful and rewarding learning experience.

I have enjoyed sharing my story of using unit origami with students in subsequent R. J. sessions. Even though we didn't get a chance to do Show and Tell with our group, I know some of you are familiar with it because you participated in the Diversity Enhancement Program evening sessions with Chaplain Mejchar. Chaplain gave me the opportunity (along with my wife) to have two hours with the group to explore and create several different geometric objects using unit origami. We had that presentation the day before our first R. J. session back in March and I remember several of you participating. My wife and I both feel fortunate to have been able to do that with the group before COVID-19.

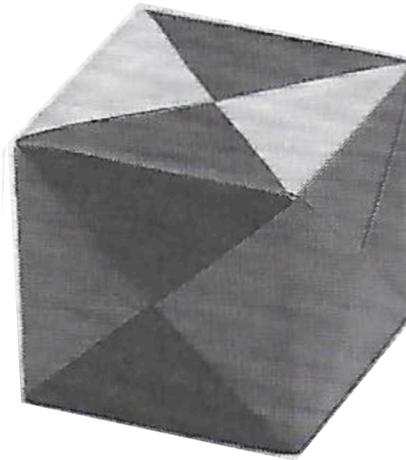
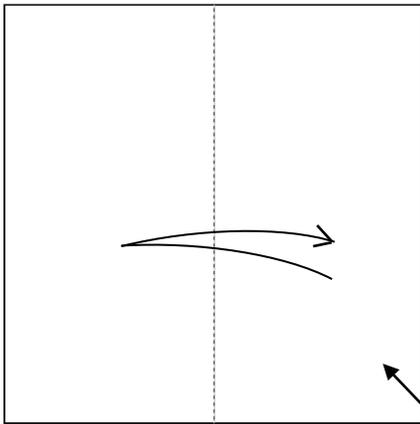
In the spirit of hands-on learning, we're including the directions - *Directions for Folding a Hexahedron (a.k.a. Cube)* - for one of the unit origami geometric objects we worked on during that Tuesday night DEP. You'll need six squares to start with (an easy size to start with is anything between 6 in. by 6 in. and 8 in. by 8 in.) As I tell anyone starting any type of paper folding - It takes time, plenty of paper, patience, and perseverance. But after some practice and do-overs, the final forms are clear and convincing and you will have joy in being a creator!

So, if you choose to try it, all origami starts with putting hands into motion ...

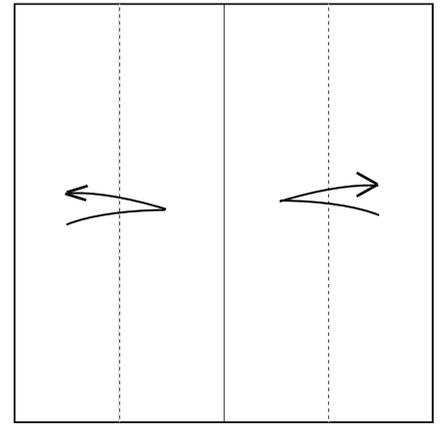
Good luck, have fun, and stay well,

~ Mr. Hetzel, Restorative Justice volunteer

Directions for Folding a Hexahedron (a.k.a. Cube)

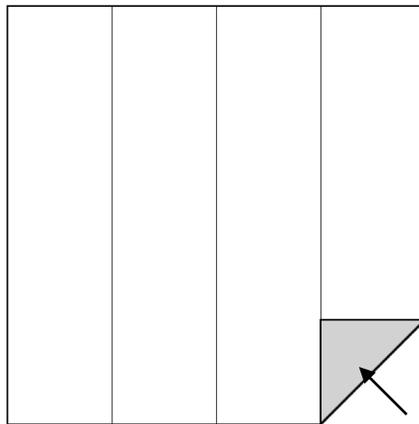
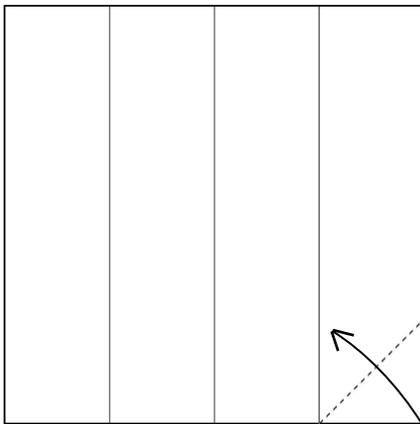


Non-shaded
side

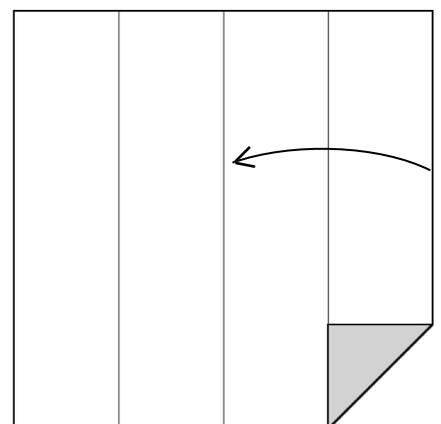


Step 1: Begin with six pieces of paper
(they can be various colors.)
Start with the non-shaded side up.

Step 2: Fold as indicated.



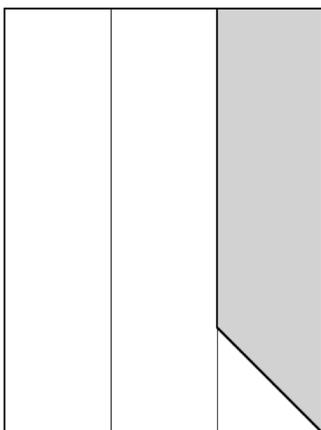
Shaded
side



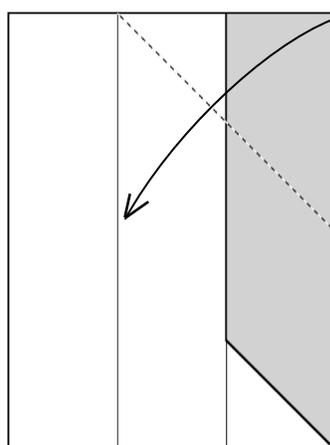
Step 3: Fold as indicated.

After completing Step 3.

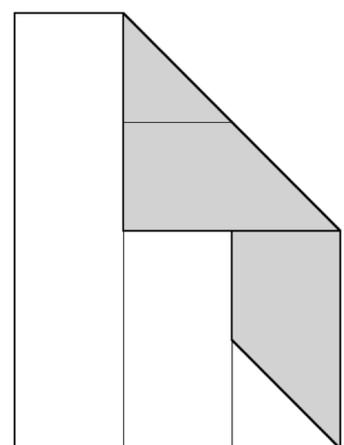
Step 4: Fold as indicated.



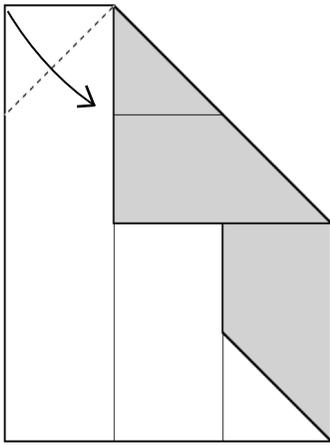
After completing Step 4.



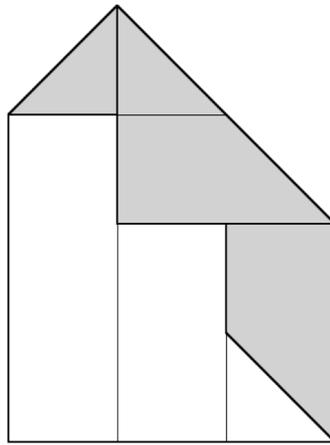
Step 5: Fold as indicated.



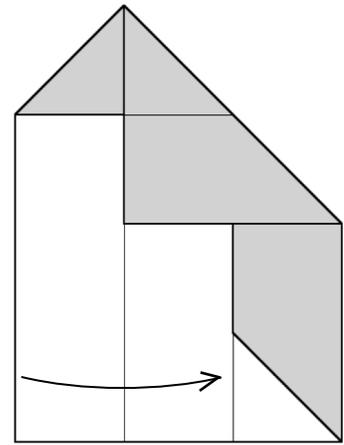
After completing Step 5.



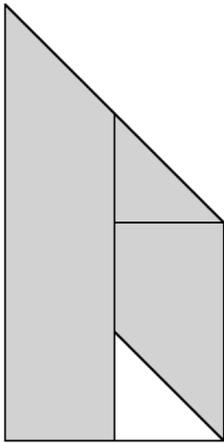
Step 6: Fold as indicated.



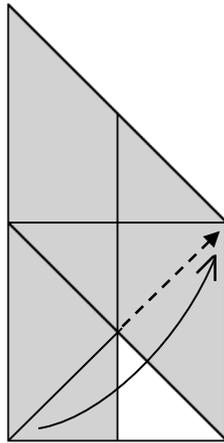
After completing Step 6.



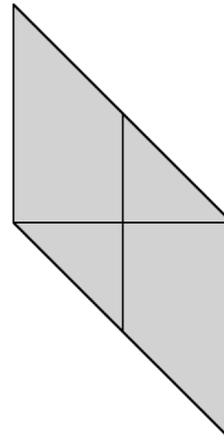
Step 7: Fold as indicated.



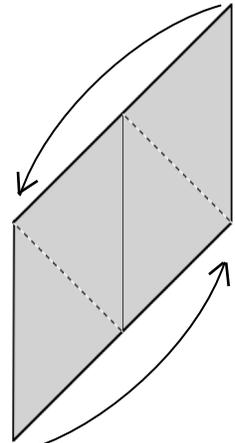
After completing Step 7.



Step 8: Fold and tuck under.

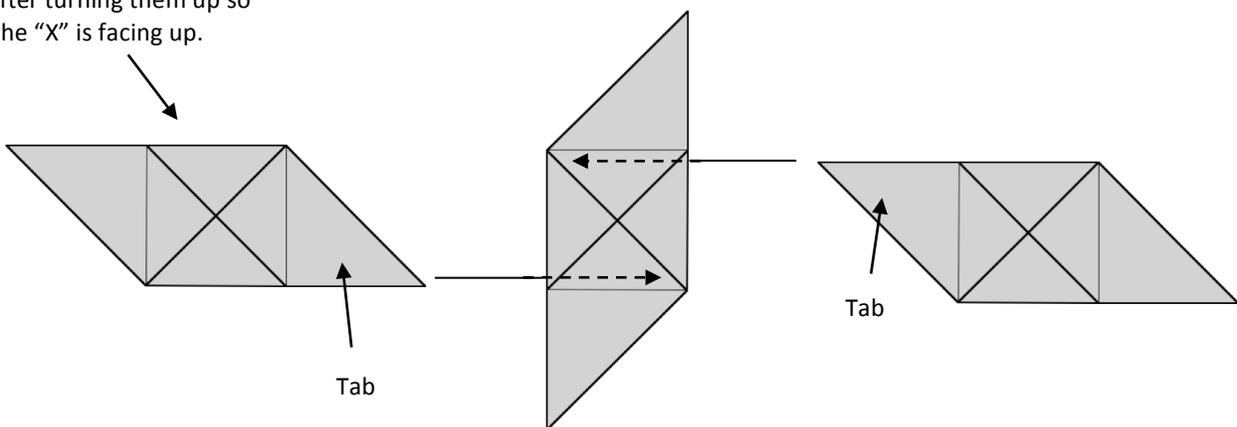


After completing Step 8.



Step 9: *Flip over.* Then fold as indicated. Then *unfold.* Make 6 units.

Your 6 units should look like this after turning them up so that the "X" is facing up.



Step 10: After folding all six units, construct your cube by joining each unit as shown above. Each tab will tuck inside a "pocket" on one of the square faces of the cube.