

Names_____ Period_____

6th Gr L.A. – Out of This World (*A Wrinkle in Time*) Literary Café

Tesseract

Madeleine L'Engle is the author of many science fiction/fantasy novels. In *A Wrinkle in Time*, L'Engle's characters travel through space and time by way of a tesseract that she calls "*tesseracting*." At this café station you will learn about the mathematics of a tesseract.

Work in **pairs** and follow these directions to go to the **Out of This World (A Wrinkle in Time) Literary Café** resource web page to learn what a tesseract is, and what 4th (or even 5th) dimensional space is all about. Then follow the activity directions below to build your own **tesseract**, or **hypercube**.

Directions:

1. On the iPad mini, open up **Safari**. Click the open book icon (Bookmarks).
2. Click the bookmark labeled **Tesseracts**.
3. View the short video clip from *The Avengers movie- The Tesseract Misbehaves* which refers to a **tesseract** that allows time/space travel.
4. Read the **Definition of a Tesseract** and **Tesseracts are Tough Stuff** boxes to learn about the mathematics of tesseracts and the 4th dimension.
5. View the 2 short video animations of our understanding of what a 4D hypercube or tesseract might look like:

- **Tesseract**
- **Unwrapping a Tesseract (4D Cube) in 3D Space**

6. ACTIVITY: (With your partner) Take an activity bag containing cut straws and fun tack. Follow the directions to build a 3D cube. Then take the pre-built mini cube and attach it inside your 3D cube to create a hypercube or tesseract just as shown in the pictures and videos. Move it around in the air just like in the video animation and notice the different ways the tesseract looks depending on the angle.

Question: Discuss with your table – what might objects in 5th, 6th or even 97th dimension look like? (mind blown!)