

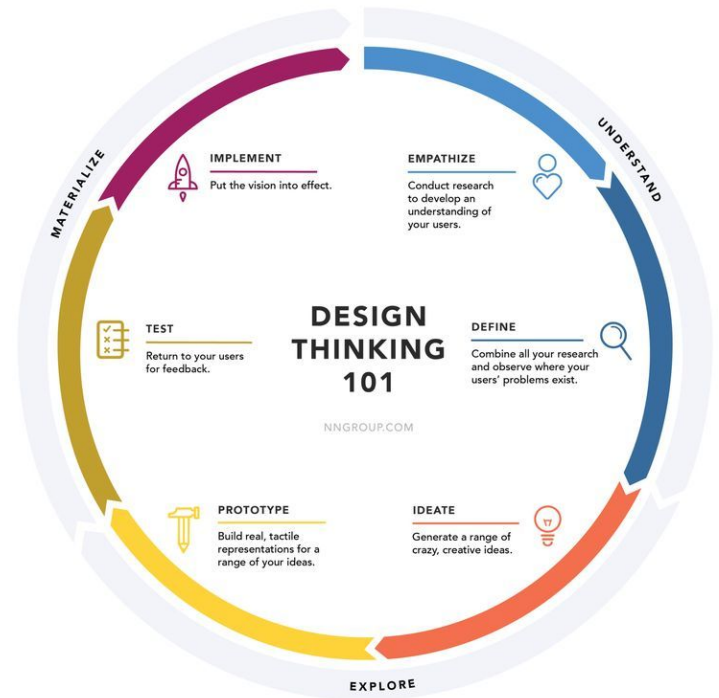
Design Thinking in the Makerspace

Lesson Outline

Purpose Statement: Explore the concept of Volume.

Step 1: Understand

- **Empathize-** Working in groups of 3-4 to show how one volume measurement 216 cm^3 , can be shown in different ways.
 - Students should already have an understanding of how to find volume.
- **Define-**
 - **Problem Statement:**
 - Design and create different models to represent a cube that has a volume of 216 cm^3 .
 - Include the dimensions of the sides.



Step 2: Explore

- **Ideate-** Students will explore the concept of volume of different objects.
 - Have different objects around the room that students can choose to measure and record the volume of.
 - Students will work together with their partners to complete 4-5 different objects from around the room.
- **Prototype-** Build/ Create your solution
 - Supplies needed: students will be asked to build 3 different models. There will be 5 stations set up with different materials at each station. (strawbees, wood blocks, consumables, legos, kinecks, brain flakes, etc.)
 - Students will work together to create 3 different models using different dimensions for each of models.

Step 3: Materialize

- **Test-** Give groups adequate time to discuss their ideas and formulate a plan.
 - Encourage students to try different plans and come up with different solutions.
 - Reflection- After students have had adequate time to work together and develop their model, they will need to to work together to present their information to the class. They should be able to share how they came up with their design and how using the volume formula helped them.
- **Implement-**
 - Find a way to share this with the masses- authentic audience - Have students share their landforms with other 5th grade classes. Discuss how they are similar and how they are different.