

OBJECTS OF THE QING DYNASTY

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Lesson Plan Background:

- **Demographics**
 - **Title:** Objects of the Qing dynasty: A Lesson Utilizing Scale Models with 3D Printing
 - **Subjects/Grade Level:** Geometry
 - **Suggested duration:** 60 minutes

ASSESSING THE EARLY QING DYNASTY

- Kangzi and Qianlong have been held up as model rulers.
 - Defended and assimilated Han Chinese culture.
 - Maintained high degree of Manchu identity
 - Worked with different ethnic groups
 - Preserved and created impressive works of classical Chinese architecture and literature
 - Skillful interaction with Tibetans, Mongols, Italians, Russians, Portuguese and the British
- **Learning Objectives**
 - Students will be able to create a 3D model utilizing a 3D printer.
 - Students will be able to use a ruler to retrieve measures from their art.
 - Students will be able to understand calculations for scale factor, area, surface area and volume.
- **Essential Questions**
 - How did architects determine which buildings would be “safe” to build?
 - How can we create models that are true to size and scale factor?
 - How do we create models?

Lesson Plan Details:

- **Pre-Assessment of Prior Knowledge**

Students will be learning as they go. This will be a Project-Based Learning opportunity.
- **Teacher-Student Interaction**
 1. Have students find a model that they would like to print. This may take some time, so have this be a “Before the lesson” activity. Here’s a link to a reference: <https://www.thingiverse.com/thing:3478531>
 2. Once students have their models, have them calculate features of their architecture.
 3. Students should also find a real-life example of their art so that they can compare and find a scale factor.
 4. Have students create a write-up of the process for their art. How wide is it? How long is it? What is the surface area? What is the volume? Find at least 3 features on the item to calculate surface area and dimensions for it.

LESSON PLAN

5. Have students share and discuss the implications of squaredness. What would happen to the buildings if scale factors are off? Are there examples in the real world where you can see this happened?
- **Closing Activity**
Teachers will have an art show to display the pieces. Students are expected to have a sheet that shows the math with these items.
 - **Post-Assessment**
The art show is the post-assessment as students will be expected to peer-review each other's item and write-up prior to the art show.

This lesson plan was developed by the Kimberly Reiner, The Columbus Academy as part of the [Interdisciplinary Curriculum Development Team](#). This project was coordinated by the East Asian Studies Center at The Ohio State University and funded in part by the Freeman Foundation through the University of Pittsburgh national coordinating site for the National Consortium for Teaching About Asia (NCTA) Asian Studies Center, University Center for International Studies, and the U.S. Department of Education Title VI National Resource Center grant to the East Asian Studies Center at The Ohio State University. The content of this resource guide does not necessarily represent the policy of the U.S. Department of Education, and you should not assume endorsement by the Federal Government.

This lesson plan is available online for classroom use worldwide and can be accessed at [EASC's Resource page](#).

Source: Kenley, D. L. (2020). *Modern Chinese History* (2nd ed., Ser. Key Issues in Asian Studies). Association for Asian Studies.

