

Grade 5 - Tinkercad Lesson



Lesson Plan

Lesson Title:

Designing Native Californian Coastal Villages in 3D

Grade Level:

5th Grade

Standards

CA History–Social Science Standard (5.2.2):

Describe the major nations of California Indians, including their geographic distribution, economic activities, legends, and religious beliefs; and how they adapted to their environment.

CA Computer Science Standard (5-IC-21):

Identify and discuss how computing devices are used to solve problems in daily life.

CA Media Arts Standard (MA:Cr2.1.5a):

Develop skills and techniques with media arts tools, such as design and digital modeling, to create works that communicate ideas.

ISTE Student Standard (1.6 Creative Communicator):

Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats, and digital media appropriate to their goals.

Objective

Students will research how Native Californian coastal tribes built their villages and then use Tinkercad to design a 3D model of a coastal village, demonstrating how natural resources and environment influenced community structure.

Materials

- Computers or tablets with internet access
 - Tinkercad accounts for students
 - Projector/teacher computer
 - Reference images of Native Californian coastal villages (Chumash, Ohlone, Tongva, etc.)
 - Rubric handout
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Lesson Procedure (50 min)

1. Engage (5 min)

- Show images of Native Californian coastal villages.
- Ask: *“How do you think people built homes and villages without modern tools or machines? What materials might they have used from their environment?”*

2. Explore (5 min)

- Brief mini-lesson on how tribes like the Chumash and Ohlone used reeds, wood, and tule grass to construct homes and villages near the coast.
- Highlight connection between geography and design.

3. Plan (10 min)

- Students brainstorm what features to include in their 3D model (e.g., dome-shaped houses, canoes, fire pits, communal spaces).
- Quick sketch on paper to outline their layout.

4. Create (20 min)

- Students use Tinkercad to build a village model:
 - Simple structures for homes

- Canoes or boats to show connection to ocean
- Natural resource elements (trees, grass, etc.)
- Teacher circulates to provide support and technical help.

5. Share & Reflect (10 min)

- Students present their models to a partner or small group.
- Reflection prompts:
 - *“How did the environment influence your design?”*
 - *“What choices did you make to represent daily life in the village?”*

Assessment

Students are assessed on:

- Historical accuracy of features included
- Creativity and clarity in 3D design
- Collaboration and sharing of ideas
- Ability to explain how environment shaped design

Rubric (1–4 scale)

Criteria	1	2	3	4
Historical Accuracy	Few/no correct features	Some correct features	Mostly accurate features	Highly accurate with detailed features
3D Design Skills	Minimal use of Tinkercad tools	Basic use of shapes/tools	Good use of multiple tools	Advanced use of Tinkercad with details

Creativity	Little originality	Some creativity shown	Creative and thoughtful	Highly creative, original representation
Reflection/Sharing	Minimal explanation	Partial explanation	Clear explanation	Insightful, connects history and design deeply

Extension Ideas

- Export models for 3D printing.
- Create a digital “museum” gallery walk of village designs.
- Compare coastal villages with inland tribes’ villages in California.
- Use Canva/Adobe Express to create an informational poster alongside the 3D model.