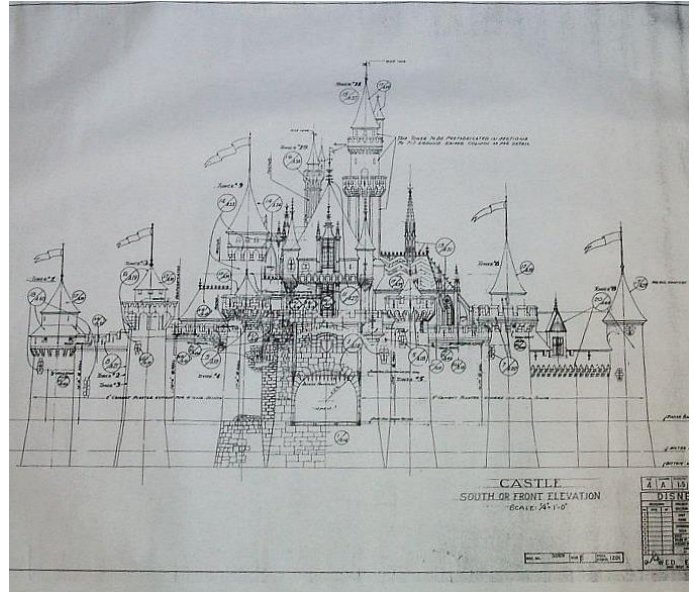
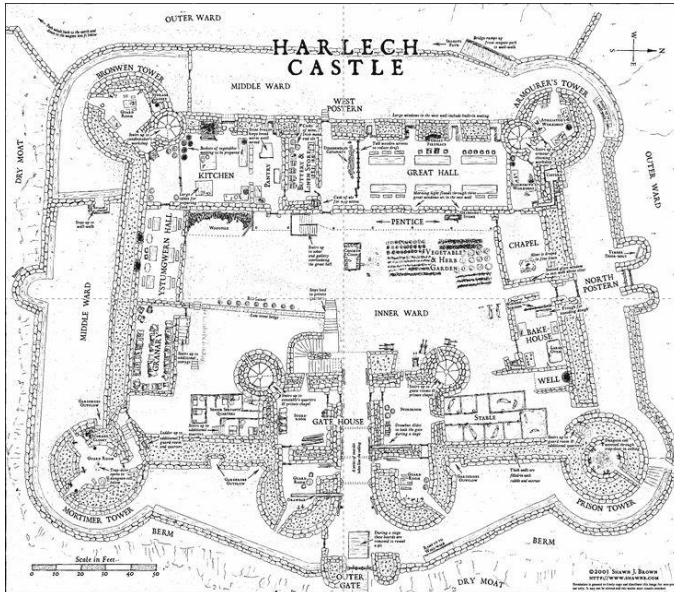


Area, Perimeter, and Measurement w/ German Castles



Overview

Students create blueprints for castles based on castle needs. They will measure the perimeter and the area of their castle.

Education Standards

TEKS 5.5

(5) Geometry and measurement. The student applies mathematical process standards to classify two-dimensional figures by attributes and properties. The student is expected to classify two-dimensional figures in a hierarchy of sets and subsets using

graphic organizers based on their attributes and properties.

(6) Geometry and measurement. The student applies mathematical process standards to understand, recognize, and quantify volume.

ELPS

(1E) Internalize new basic and academic language by using and reusing it in meaningful ways in speaking and writing activities that build concept and language attainment

(2I) Demonstrate listening comprehension of increasingly complex spoken English by following directions, retelling or summarizing spoken messages, responding to questions and requests, collaborating with peers, and taking notes commensurate with content and grade-level needs

(3G) Express opinions, ideas, and feelings ranging from communicating single words and short phrases to participating in extended discussions on a variety of social and grade-appropriate academic topics

(4F) Use visual and contextual support and support from peers and teachers to read grade-appropriate content area text, enhance and confirm understanding, and develop vocabulary, grasp of language structures, and background knowledge needed to comprehend increasingly challenging language

Materials Needed

1. Pictures of castles and an example blueprint for a castle.
2. Poster paper to synthesize the discussion.
3. Blueprint handouts with labeled graph
4. STAAR mathematics guide
5. A ruler.

Media:

https://www.exploring-castles.com/castle_designs/medieval_castle_layout/

Optional

1. Protractor
2. Compass

Vocabulary

- Perimeter
- Centimeter
- Measurement
- Area

Student Objectives

We will create a blueprint for a castle based on geographical landscapes with necessary requirements, measure the perimeter and area of different rooms in a castle, and record the data and synthesize the information on a graph.

We will use our new vocabulary and academic language to clearly communicate about our castle with groupmates and teachers.

Activity

1. Have a discussion based on what is needed in a castle.
 - a. Show a number of castles and have a discussion about what each part they see and what the castle was for;
 - b. Continue the discussion and have students discuss what is needed in a castle.
 - c. Write these requirements on the board or poster paper. They could include stables, courtyard, towers, great hall, etc.
 - d. Point out where the castle was built; continue the discussion on where the best place for a castle would be.

Draw pictures next to the requirements for ELL students.

2. Create blueprints for a castle based on geographical locations.
 - a. Pass out graph paper that has different geological landscapes on them.
 - b. Show students how a blueprint should look. Either by having your own or by showing one already completed.
 - c. Based on the list from your discussion have students create their own castle with all the required buildings/rooms that must fit on their graph paper with landforms.
 - d. Walk around the room helping students create their castle

3. Use the drawing of the castle to graph the area and perimeter.
 - a. Go over the equations needed to calculate perimeter and area.
 - b. On another sheet of the handout, there will be a blank graph. This graph will be used to record the measurements of their castle.
 - c. Students will measure the perimeter and area of each room based in centimeters. They will have access to the STAAR math guide, a ruler, and optional protractor and compass.
 - d. Students will label this information on the blank graph.
 - e. Make sure students are using the correct mathematical equations to find perimeter and area.
 - f. Each student should have their own table and show their work for finding the perimeter and area.
 - g. May have to give the equation for a circle

4. Finalize the lesson with a group discussion on their castles and have a demonstration of their castle or a gallery walk.

Optional: groups students based on ability with higher students in a group. Each student could create their own castle.

Extension

Battle plan-Students will research what is needed to defend and/or attack a castle. Each student will create a plan on how they will defend against the different threats that may be posed on their castle. Alternatively, they can plan an attack on another groups castle. Each group can compare their battle plans and discuss who would win.

