

COMMON CORE CONNECTION: *THE ART OF WAR*

COMMON CORE CONNECTION: Standards for Mathematical Practice: Attention to Precision: Students are careful about specifying units of measure and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, expressing numerical answers with a degree of precision appropriate for the problem context.

OVERVIEW

Students will compare and contrast the visual and material elements of two suits of armor from Japan and Germany. They will use their creativity to design their own suits of armor, which will be drawn to scale to fit their own bodies. Precision will be vital in recording measurements, making the correct mathematical conversions, and drawing their armor in the correct scale.

SUPPLIES

- printed worksheets (see attachment)
- large sheets of blank paper (ex: 11" × 14", 11" × 17", etc.)
- rulers
- tape measures
- pencils / pens / markers
- scratch paper for calculations and sketches

ACTIVITY

- 1 Project the images of the two suits of armor for the entire class to see. Tell the students where and when these suits of armor were made, and have them compare and contrast the visual and material elements of the armor. Keep track of the similarities and differences by filling a Venn diagram on the board. One side of the diagram will represent the qualities of the Japanese suit of armor and the other side will represent the qualities of the German suit of armor. For more information about these suits, see the attached teacher handout.
- 2 Divide the students into pairs and give them the following assignment:
 - A. Design your own suit of armor using elements from the Japanese and German armor you have seen... and your own imagination! Your final design should be accurately scaled to 1/6 of your actual size. Your partner will help you take your measurements, and vice-versa, but everyone will create their own armor.
 - B. With your partner's help, measure your body in inches. You will need to take the following measurements. Record the measurements on your worksheet.
 - Total height
 - Width of shoulders
 - Width of abdomen
 - Width of hips
 - Length of legs
 - Length of arms
 - Height of head
 - Width of head
 - C. Divide these numbers by 6 to calculate your measurements at a 1:6 scale. Show your work on the back of your worksheet. Record these scaled-down measurements on your worksheet.
 - D. On scratch paper, work out a design for your suit of armor. These practice drawings do not need to be scaled. Be creative! Your suit of armor can be practical and durable, colorful and fanciful, or a combination of both.

- E.** Once you have decided on a final design, use a ruler to draw your suit of armor on a large, clean sheet of paper at 1/6 of life-size. You can use the diagram on your worksheet as a guide. Use pencil to make your drawing, and then trace over with pen or marker when you are happy with the design and you've double-checked all of your measurements.
- ③ **Teachers:** Once students have completed the assignment, collect their drawings and worksheets and check their math for accuracy. You can have your students present their armor drawings and describe them to their classmates, and/or display them in the classroom or hallway for all to see.
- ④ For another activity on armor, go to [teachers.thewalters.org/integrating the arts](https://www.teachers.thewalters.org/integrating-the-arts) and click on Mummies, Manuscripts and Madonnas. Then click on Science and Science in the Medieval Period. Here you can download an activity where you can create a cardboard replica of medieval armor while learning about range of motion.



Armor for fighting on horseback

Artist: Unknown

Location: Germany

Date: ca. 1530–1560 (Renaissance)

Materials: steel, paint, leather, modern felt; wood, steel

Measurements: 66" (height)

This heavily-armored knight of noble birth was the dominant force on the medieval battlefield from the 9th to the mid-14th century. This armor is a typical example of armor worn for jousts in mid-16th-century Germany. The black painted trim and the rope-like edging seen, for example, around the couters (elbow protectors) and along the top of the breastplate would have been common in that time and place. The lance would have rested below the right shoulder. The closed helmet provides full-face protection and has a movable visor that could be lifted as a demonstration of good will or when there was no danger. Most of this suit is made of solid steel plating, which was very heavy and made movement difficult. A full suit of armor might weigh 45 to 50 pounds.



Suit of armor

Artist: Myochin Munechika

Location: Japan

Date: Late 18th century (Edo period)

Materials: iron, mail, lacquer, gold, and textile

Measurements: 55" × 16" × 20" approx.

Armor such as this was made for foot soldiers during the peaceful Edo period (1615–1868) in Japan. The artist, Myochin Munechika, was responsible for the beautiful ironwork, but the rest of the armor would have been an effort by several artisans. A dragon decorates the iron breastplate, and the iron face-mask is molded into expressive human facial features. It even includes a mustache and small beard! This suit of armor was designed for fancy dress parades, not battle. Only portions of the armor are made of solid iron. The rest of the suit is constructed of mail (small, linked loops of metal that were lighter and more flexible than solid iron), lacquer, woven cloth, and gold embellishments.

COMMON CORE CONNECTION: THE ART OF WAR WORKSHEET

		Your measurement (in.)	Equation	1/6 scale (in.)
A	Total height		$A / 6 = ?$	
B	Width of shoulders		$B / 6 = ?$	
C	Width of abdomen		$C / 6 = ?$	
D	Width of hips		$D / 6 = ?$	
E	Length of legs		$E / 6 = ?$	
F	Length of arms		$F / 6 = ?$	
G	Height of head		$G / 6 = ?$	
H	Width of head		$H / 6 = ?$	

