

COMMON CORE CONNECTION

CANON OF PROPORTIONS IN EGYPTIAN ART

COMMON CORE STANDARDS

CCSS.Math.Practice.MP2 Reason abstractly and quantitatively

CCSS.MATH.PRACTICE.MP7 Look for and make use of structure.

OVERVIEW

By following stylized principles, Egyptians created an idealized human form that was pleasing to the eye and reflected a sense of order, even if it was not realistic. This resulted in art that is readily identifiable throughout a span of more than 3000 years. In this lesson, students will examine and attempt to discern the rules that Egyptian artists employed, both mathematical and aesthetic.

SUPPLIES

- Copies of Samples of Egyptian Art
- Copies of Determining Mathematical Proportions
- Ruler (centimeters and inches)
- Tape Measure

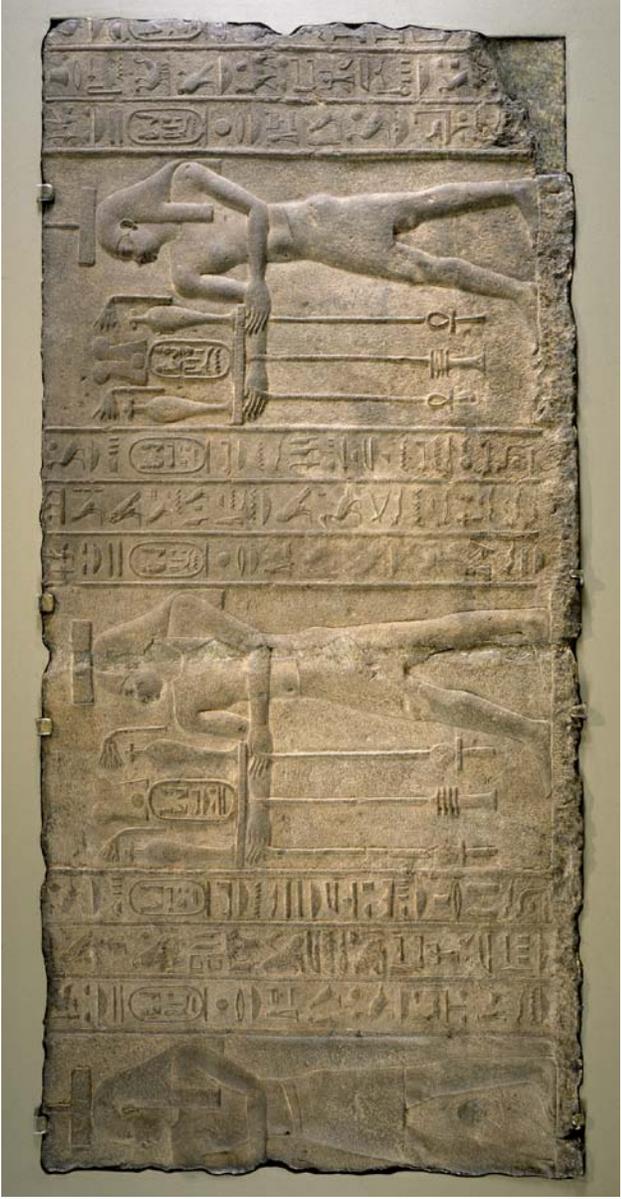
ACTIVITIES

1. Ask students to examine examples of Egyptian art found on the **Samples of Egyptian Art** Worksheet. Additional examples may be found at art.thewalters.org.
2. Ask students how we know that the art that they are looking at is from Egypt. Explain that since Egyptians developed a set of standards for the depiction of the human form, we can easily recognize artwork as Egyptian. Ask them to come up with some of the similarities between the artworks to create a list of “rules” for Egyptian art. Direct students to examine how each section of the body is depicted. (For example, the feet are shown in profile while the upper body is shown facing forward.) Students may come up with this list individually, in pairs, or as a whole class.
3. To create the proportions of human form in artwork, Egyptians used the canon of proportions, or a set of guidelines, to give order to their art. This system was based on a grid of 19 squares high (including one square from the hairline to the top of the head, usually hidden under a crown). These proportions were not just a way to scale figures larger or smaller; Egyptians used this grid to correctly represent ideal proportions of the human figure. Using the directions on Part One of the **Determining Egyptian Proportions** Worksheet, students should create a grid composed of squares measuring 1 cm x 1 cm and find measurements for the length of various body parts. NOTE: Teachers may suggest that students measure twice to ensure straighter lines (see answer key).
4. Using a combination of a ruler and the grid, students should find measurements for the length of various body parts listed on the worksheet. They may estimate to the closest centimeter / block.
5. For Part Two of the **Determining Egyptian Proportions** Worksheet, students should use the information from Part One to create a grid. First, students must determine the scale. Teachers may lead a discussion to help students figure this step out. The easiest way to accomplish this is to remember that the height of the entire body is 19 units. By measuring the total body from the feet to the top of the head, students can divide by 19 to find a scale of 0.25 inches. Students should then create a grid and measure the Egyptian figure as in the previous step.
6. For Part Three of the **Determining Egyptian Proportions** Worksheet, students should work in groups of 2–3. In small groups, students will use tape measures to determine the scale of one of the group members. They should use the information from Part One to determine the units. Again, the easiest way to determine scale is to remember that the entire body is 19 units high. By measuring the height of the body from the feet to the top of the head in inches, students can divide by 19 to find the units.

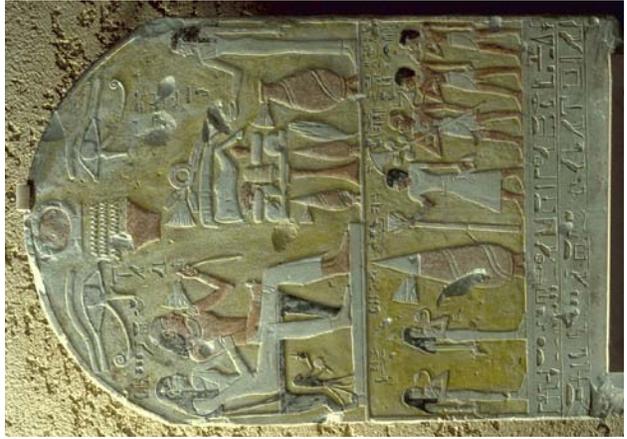
7. Students should use this scale to measure the body parts listed. Students should use the determined "unit" to list their answers in units, not inches.
8. Have students discuss: how do real measurements compare with those from the artwork? Are they close to "real" proportions?

EXTENSIONS

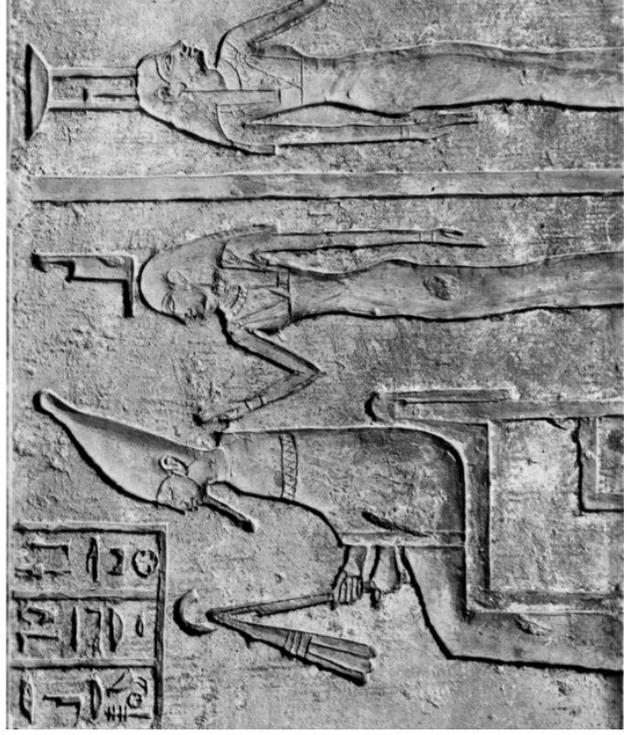
- Determine "rules" for artworks from different times or different cultures. Is the sense of idealized human form as rigid as the Egyptian canon of proportions? Types of art could include Greek, Roman, medieval, or modern art.
- Research the symbolism of color in Egyptian art. Find examples of how color was used in artwork from various cultures and time periods.
- Discuss why Egyptians created such structured art and what this tells viewers about Egyptian culture (possible connections could be the construction of the pyramids and the periodic flooding of the Nile).



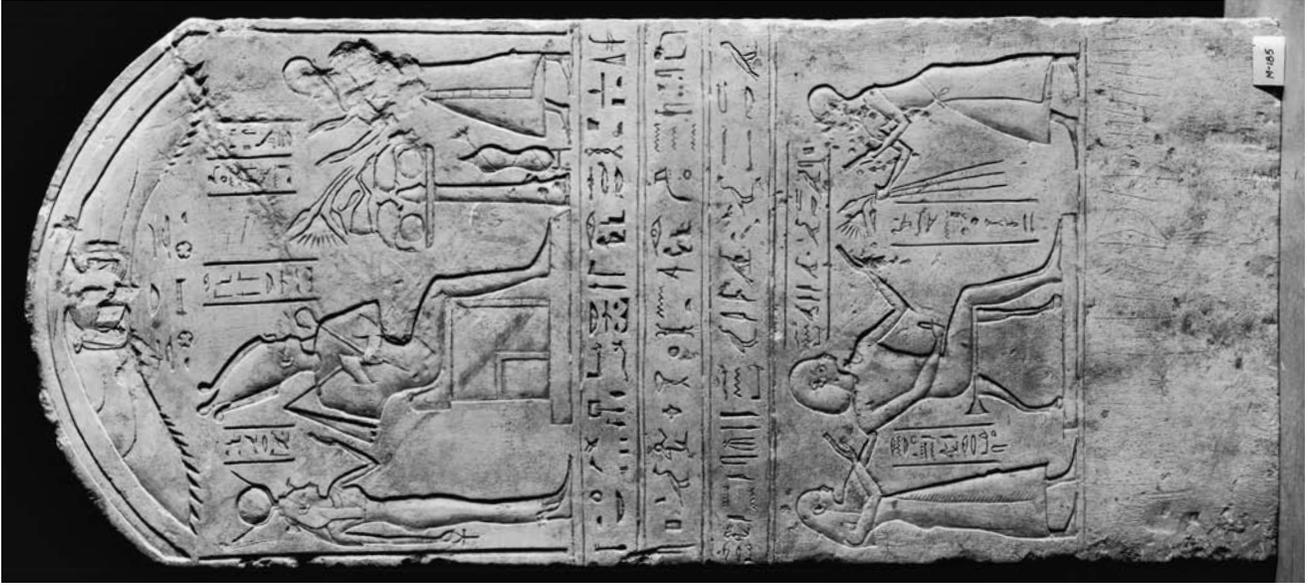
22.1119, ca. 350 BC



22.92, 1500–1470 BC



22.89 (detail), 664–525 BC

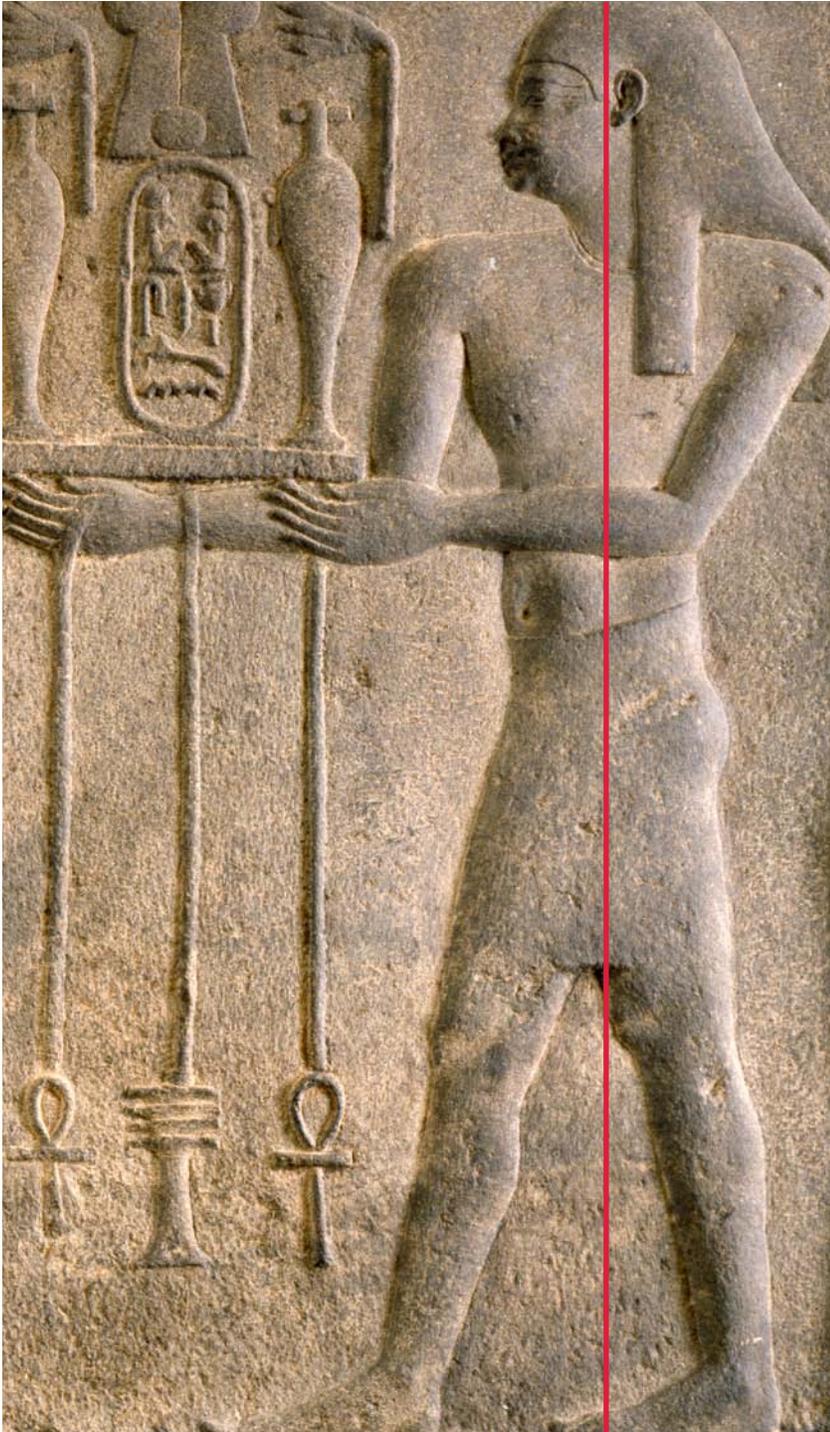


22.123, 664–525 BC

DETERMINING MATHEMATICAL PROPORTIONS

PART ONE DIRECTIONS

1. On the image below, create a grid composed of 1-cm-square units to uncover the canon of proportions used in this artwork. Start from the top of the artwork to create horizontal lines. The vertical axis runs just before the ear and is included for you.
2. Using a combination of a ruler and your grid, find measurements for the length of various body parts listed below. You may estimate to the closest centimeter / block.



MEASUREMENTS

- 3 units** Feet
- _____ Torso
- _____ Head
- _____ Hands
- _____ Forearm
- _____ Upper Arm
- _____ Ear
- _____ Eye
- _____ Total Body

22.119 (detail)

PART TWO DIRECTIONS

1. Use the information from Part One to determine the scale for this grid (hint: use inches, not centimeters). The vertical axis runs just before the ear and is included for you. **1 unit = _____ inches**
2. Using a combination of a ruler and your grid, find measurements for the length of various body parts listed below. You may estimate to the closest unit / block.
3. Compare the measurements for the two artworks.



MEASUREMENTS

- _____ Feet
- _____ Torso
- _____ Head
- _____ Hands
- _____ Forearm
- _____ Upper Arm
- _____ Ear
- _____ Eye
- _____ Total Body

22.123 (detail)

PART THREE DIRECTIONS

1. See how the Egyptian ideal compares with reality. In groups of 3–4, use tape measures to determine the scale of a group member.
1 unit = _____ inches
2. Find measurements for the length of various body parts listed below. Use the determined “unit” to list your answers in units, not inches. You may estimate to the closest unit.
3. Compare real measurements to the ones from the artwork. Are they close to “real” proportions?

MEASUREMENTS

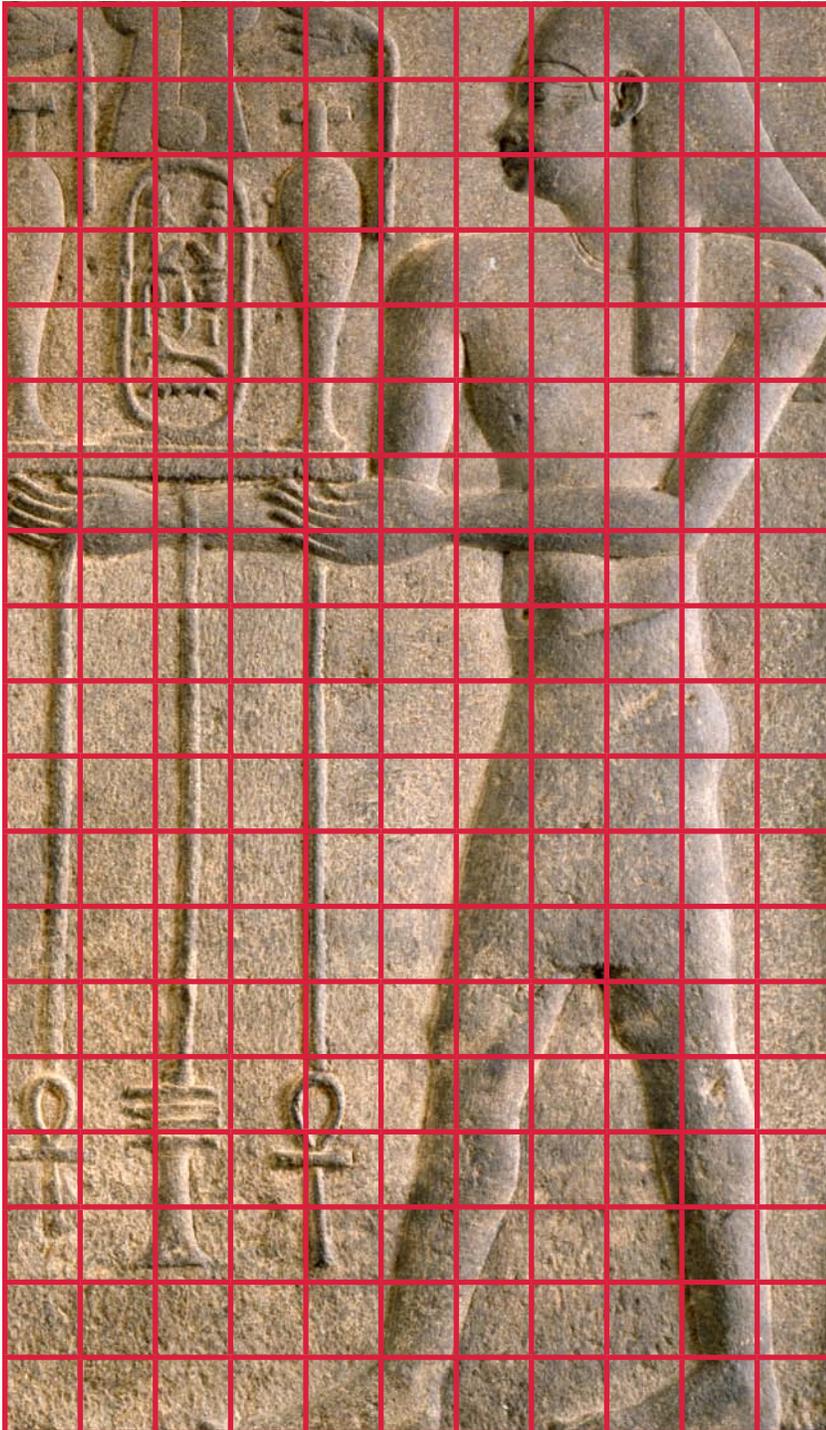
- _____ Feet
- _____ Torso
- _____ Head
- _____ Hands
- _____ Forearm
- _____ Upper Arm
- _____ Ear
- _____ Eye
- _____ Total Body

DETERMINING MATHEMATICAL PROPORTIONS

ANSWER KEY

PART ONE DIRECTIONS

1. On the image below, create a grid composed of 1-cm-square units to uncover the canon of proportions used in this artwork. Start from the top of the artwork to create horizontal lines. The vertical axis runs just before the ear and is included for you.
2. Using a combination of a ruler and your grid, find measurements for the length of various body parts listed below. You may estimate to the closest centimeter / block.



MEASUREMENTS

- 3 units** ___ Feet
5 units ___ Torso
3 units ___ Head
2 units ___ Hands
3 units ___ Forearm
4 units ___ Upper Arm
1 unit ___ Ear
1 unit ___ Eye
19 units ___ Total Body

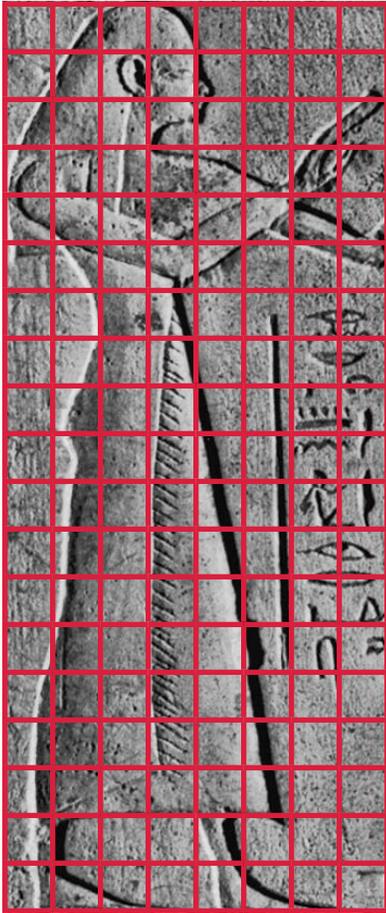
NOTES

To ensure accuracy of scale in a printed answer key, set printer to print at actual size, 100%, or no scaling.

Teachers may suggest that students measure and make marks at each centimeter 2–3 times along each axis. This will help to ensure a straighter grid.

PART TWO DIRECTIONS

1. Use the information from Part One to determine the scale for this grid (hint: use inches, not centimeters). The vertical axis runs just before the ear and is included for you. **1 unit = 0.25 inches**
2. Using a combination of a ruler and your grid, find measurements for the length of various body parts listed below. You may estimate to the closest unit / block.
3. Compare the measurements for the two artworks.



MEASUREMENTS

- 3 units** Feet
- 5 units** Torso
- 3 units** Head
- 3 units** Hands
- 3 units** Forearm
- 4 units** Upper Arm
- 1 unit** Ear
- 1 unit** Eye
- 19 units** Total Body

22.123 (detail)

PART THREE DIRECTIONS

1. See how the Egyptian ideal compares with reality. In groups of 3–4, use tape measures to determine the scale of a group member.
1 unit = answers will vary inches
2. Find measurements for the length of various body parts listed below. Use the determined “unit” to list your answers in units, not inches. You may estimate to the closest unit.
3. Compare real measurements to the ones from the artwork. Are they close to “real” proportions?

MEASUREMENTS

- _____ Feet
- _____ Torso
- _____ Head
- _____ Hands
- _____ Forearm
- _____ Upper Arm
- _____ Ear
- _____ Eye
- _____ Total Body