

Name _____

EXPLORING PROPORTIONAL REASONING THROUGH ARTWORK

Analyze the images provided by your teachers to answer the following questions. Use millimeters for all measurements.

Jules Pascin, *Landscape with Figures and Carriage*

1. What ratio is formed when you compare the height of the person on the front left of the painting to the height of the person near the far right (standing next to the child)?
2. Given your own height, estimate your height in millimeters if you were in the painting standing next to the horses and buggy.

Henri Rousseau, *View of Montsouris Park, the Kiosk*

3. What is the ratio of the height of the woman in the red dress and feathered hat in the front of the painting compared to the silhouette of the woman with a round hat to the left of the gazebo (two people to the left of the tree)?
4. If you were to be painted in the middle of the field (between the figures in the front and the gazebo), use the ratio found above to approximate your height in millimeters.

Paul Cézanne, *Gardanne*

5. What is the ratio of the height of the rectangular window on the left front building (above the door) compared to the height of a rectangular window in the very back row of buildings (on the building with four windows to the right of the tower)?
6. Given the relationship of the height of the two windows in question 5, to maintain the same ratio how tall should the door be for the back building?

El Greco, *Apparition of the Virgin and Child to Saint Hyacinth*

7. What is the ratio of the length of the hand of the man in the painting compared to the hand of the woman in the painting?
8. a. Compare the size of the man's hand to the size of his head. Do the same for your hand and your head. Is the relationship similar?

b. About how many heads tall is the man? What is the ratio?

activity sheet (continued)

Name _____

- c. How many heads tall are you? Is that approximately the same ratio as the man in the painting?
- d. Compared to your own body proportions, how many millimeters long should the man's arm be in the painting?
- e. Are this man's body proportions similar to your own? Why or why not?
- f. Why do you think an artist might paint a person using proportions that are not the same as the average human?

Édouard Manet, *Laundry*

- 9. What is the ratio of the height of the red flower in the front of the painting compared to the red flower toward the back of the painting?
- 10. Given the height of the child and the height of the woman, how many millimeters tall would you need to be if you were painted right beside them in the painting?

Giorgio de Chirico, *The Arrival*

- 11. What is the ratio of the height of the archway in the front of the painting (facing the front) compared to the height of the archway in the back right of the painting?
- 12. If the statue were moved to the back of the painting near the back right archway, using the ratio above, approximately what would be the new height of the statue in the painting (in millimeters)?

Culminating Questions

- 13. Describe, in your own words, how the mathematical concepts of ratios and proportional thinking are used in paintings.
- 14. Why does an artist need to know about ratios when creating a painting? Provide concrete examples from the paintings you worked with in this activity.
- 15. Where else in real-life situations have you seen ratios used?