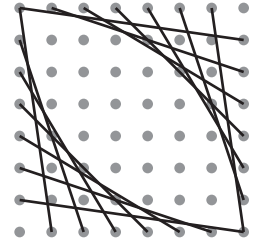


**CHAPTER**  
**1**

**Project**  
**Picture This**

**Activity 1: Segment Art** *Use after Lesson 1-1*

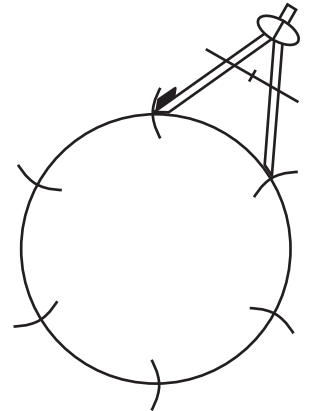
The design consists of line segments that connect points on a grid. In this activity, you will create your own design that is based on line segments.



1. Use a geoboard and colored rubber bands or colored string to make a design based on line segments.
2. When you have a design that you like, share it with the class. Point out an example of each of the following in your design.
  - a line segment
  - the endpoints of a line segment
  - three collinear points
  - three noncollinear points
  - an intersection

**Activity 2: Around the Circle** *Use after Lesson 1-2*

Follow these instructions to make a geometric design using a compass and straightedge.



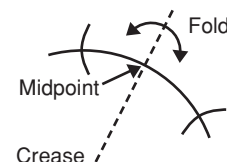
1. Use a compass to draw a large circle. Without changing the compass setting, place the point of the compass on the circle and make a mark that intersects the circle. Move the point of the compass to the mark you made and make another mark that intersects the circle. Continue in this way around the circle until you come back to the first mark.
2. Choose one of the marks on the circle. Use a straightedge to draw line segments connecting that mark to all the marks that are not next to it. Repeat the process for each mark on the circle.
3. What type of design did you create?

\_\_\_\_\_

4. How many line segments are in the design? \_\_\_\_\_

**CHAPTER** **Project****1** **Picture This** continued**Activity 3: Fold It Up** *Use after Lesson 1-3*

In this activity, you will learn how to use paper folding to make your design from Activity 2 more complex.



1. Begin with the design you created in Activity 2. Choose a pair of adjacent compass marks on the circle. Make a crease by folding the paper so that the two marks coincide with each other. When you open the paper, the crease will show you the midpoint along the circle between the two marks.
2. Repeat the process to find the midpoint between each pair of marks on the circle.
3. Choose one of the midpoints. Use a straightedge to draw line segments connecting that midpoint to all the midpoints that are not next to it. Repeat the process for each midpoint.
4. What type of design did you create? \_\_\_\_\_
5. Point out an example of each of the following in your design.
  - an acute angle
  - an obtuse angle
  - a pair of congruent angles
  - an angle bisector

**Activity 4: String Art** *Use after Lesson 1-4*

Now you are ready to make your own piece of string art!

1. Place the design you made in Activity 3 on top of a wooden board. Hammer small nails into the board at each mark along the circle. Then carefully lift off your paper.
2. Wind colored string or thread from nail to nail to make a design. You can copy the design from Activity 3, or make it more complicated.
3. Share your art with the class. As you do so, point out an example of each of the following.
  - adjacent angles
  - a linear pair of angles
  - vertical angles