**Activity 8.2.1 Exploring *Flatland***

Read *Flatland.* You can find the text here:  [www.math.brown.edu/~banchoff/gc/Flatland](http://www.math.brown.edu/%7Ebanchoff/gc/Flatland).  Try to read the entire story.  If you don't have enough time you may skip sections 8 through 12, and skip to section 13.

1. The author was writing in the late nineteenth century at a time when women in most countries were treated as second-class citizens.  How are the prevailing attitudes toward women reflected in his narrative about Flatland?

2. How does the number of sides of a resident of Flatland determine his social status?

3. Is it possible for a resident of Flatland to observe all four sides of a square at the same time? Explain.

4. Why is it that the women in the book *Flatland* (not the movie) can become “practically invisible”?

5. In Flatland the priests are called “circles.” Are they really circles? Explain

6. Why do you suppose the “circle priests” felt threatened by the idea that there might be more than two dimensions?

7. When “A Square” meets the king of Lineland he tries to show the King how he looks in two dimensions. So he enters Lineland and passes through. What did the king see as he does this?

8. In Section 15 of *Flatland* the square says, “We know that 32 or 9 represents the number of square inches in a square whose side is 3 inches long.” The little hexagon then says, “I suppose 33 must mean something in geometry. What does it mean?” The square responds, “Nothing at all.” Answer the hexagon’s question from the point of view of an inhabitant of Space Land.

9. In Section 17 why does the Sphere touch the stomach of “A Square”? How is it possible for him to do so?

10. What did the three-dimensional sphere look like as it passed through Flatland? What do you think a four-dimensional sphere would look like as it passes through 3-dimensional space?