Multiple Images Activity

When you place an object between two hinged mirrors, light from the object bounces back and forth between the mirrors before it reaches your eyes. An image is formed <u>each time</u> the light bounces off a mirror forming multiple images The *angle between the two hinged mirrors has a special relationship with the number of images you see.* Try to find out what it is!

1. Work with a partner. Take two mirrors and place them together with the shiny sides facing one another. Tape them along the side to form a hinged door. The mirrors should be able to open freely like a book.
2. Take a piece of paper or cardboard. Using a protractor, measure and mark angles (by drawing a line) of 180 degrees, 90 degrees, 60 degrees, 45 degrees, 36 degrees, 30 degrees, and 20 degrees.
3. Place the hinged mirrors at each of these angles and put an object (it could be a coin, a pencil, an eraser, or some other item you may have at your desk) between them as close to the mirrors as possible.
4. Count the number of images you see. Record the degrees on the hinged mirror and the number of images seen.
5. There is a relationship between the size of the angle and the number of reflected images. Can you figure out the formula and can you use the formula to predict how many images you can see?

Can you make a statement about how the angle between the mirrors determines how many images will be produced?

MIRROR   MIRROR

90 degrees

Object