Use this document to record your observations and describe your work as you explore the Rotate Family. If you get stuck, ask a friend or use the hint videos.

## Warm-Up

**Q1** What did you notice about moving the balls? What did you wonder?

**Q2** Which player made it easiest to score? Which made it hardest? Why?

**Q3** Paste your screen capture below.

## Introduction

**Q1** Drag *x* to make a shape, and draw your traces in this box. Also show *x, C,* *θ*, and *RC,θ*(*x*).

**Q2** What do you notice, and wonder, when you drag *x*? What can you say about their relative speeds?

**Q3** On page 2 construct a rotate function using a different angle. Trace a shape, and paste your screen capture here.

**Q4** What do you notice, and wonder, about the fixed point(s) of this function?

## Interlude

**Q1** How does this video relate to the rotate function you just constructed?

## Where, Oh Where, Can the Center Be?

**Q1** On Develop Your Methods page 1, how can you tell where the rotated image is?

**Q2** On Develop Your Methods page 2, how can you tell where the rotated image is?

**Q3** On Develop Your Methods page 3, how can you tell where the center could be?