

**Subject/Course:** Algebra

**Topic/Unit:** Quadratics

**Lesson Title:** Modelling Parabolas

**Level:** 12th Grade

**Objectives:**

Students will model real-life parabolic motion.

**Agenda**

Icebreaker (5)

Warm up Review (10)

Equations from a graph notes (10)

Basketball or Skateboard Photo Shoot and Measurements(15)

Graphing and Calculating Equation (20)

**Tasks:**

Students will discuss the icebreaker of the day in small groups, then whole group:

Would you rather be attacked by one horse-sized duck, or one hundred duck-sized horses? Justify your answer.

Next, students will complete three review questions from last class.

Interactive notebook page: From Graph to Equation. How do we write a quadratic equation from a graph of a parabola?

In small groups, students will decide if they would rather model the motion of a basketball being thrown into a hoop or a skateboarder doing a jump. Students will either go to the basketball court or the skatepark and take photos of the motion in "burst mode" to be able to see the action in one photo. Students will then measure starting point and end point, as well as the vertex of the jump or shot. Once all measurement are completed, students will return to class to graph their parabola and create their unique equation of the motion they captured.