

5. Speedometer

Student learning outcomes

- Students will create an SVG image that has a static part (number dial) and a moving part (needle).
- Students will move the needle to a random MPH reading and a random angle.
- Students will learn how to use algebra to compute a drawing angle based on a MPH reading.
- Students will load a sound file and play it when the needle moves.

Real world applications:

- Students will explore how algebra performs a useful computation. These computations are needed in animation and scientific applications.

Assignment requirements:

- This page has an SVG image drawn in layers or groups, some stationary and some moving.
- The page has a button that initiates moving the needle to a different setting.
- The needle will move gradually to the new setting using a timer to move in small increments.
- The page will play a sound when the needle moves.
- SVG concepts:
 - **<use>** to draw a small portion of the dial, then duplicate it
- JavaScript concepts:
 - setTimeout or setInterval
 - getElementById
 - onclick

