Unit 3 Applications of Differentiation

Content Area: **21st Century Life & Careers**
Course(s): **Generic Course**
Time Period: **Generic Time Period**
Length: **Weeks**
Status: **Published**

Unit Introduction

Standards

4.1.12A	4.2.12A	4.2.12D	4.3.12B	4.4.12A
4.1.12B	4.2.12B	4.2.12E	4.3.12C	4.4.12C
4.1.12C	4.2.12C	4.3.12A	4.3.12D	

Essential Questions

- How can derivatives be used to describe the motion of an object?
- How can derivatives be used to find the rates of change of two or more related variables that are changing with respect to time?
- How can derivatives be used to sketch a complete and accurate graph on a given interval?
- How can derivatives be used to determine maximum and minimum values in real word applications?

Content / Skills

CONTENT

- Relevant vocabulary, notation and symbols.
- Position, Velocity and Acceleration
- Rates of Change
- Related Rates
- Extrema
- Applications of the First and Second Derivative Test
- Curve Sketching
- Optimization

SKILLS

- Use relevant vocabulary, notation and symbols.
- Use the graphing calculator where appropriate.

- Solve applications of velocity and acceleration.
- Solve related rate problems.
- Find and classify extrema.
- Sketch curves using derivatives.
- Solve optimization problems using derivatives.