Unit 4: Vector Functions

Content Area: **Mathematics**
Course(s): **Multivar Calc H**
Time Period: **Semester 2**
Length: **9 weeks**
Status: **Published**

Standards

MA.K-12.7	Look for and make use of structure.
MA.K-12.8	Look for and express regularity in repeated reasoning.

Enduring Understanding

Multivariable Calculus uses vector functions.

The knowledge just aquired about functions of two variables, their graphs, vectors, etc. will be put together to create vector functions.

Uses of these functions will follow previously learned Calcuulus

Essential Questions

What makes functions, vector functions?

How do I apply "Calculus" to these functions (limits, derirvatives, integrals)?

What uses will finding the Calculus of these vector functions have?

Knowledge and Skills

- Find the limit of a vector function
- Determine continuity of a vector function
- Describe and sketch vector functions
- Use previoulsy learned relationships to sketch and find equations
- Find derivatives of vector functions
- Find integrals of a vector functions
- Find the lenght of a vector curve
- Find the curvature of a function
- Find the normal and binormal vectors of a function
- Fidn the motion in space using velocity and acceleration

Transfer Goals

Build upon the themes learned in PreCalculus and Calculus to extend the thinking to vectors.

Describe the movement of complicated patterns.

Resources

AP Calculus, by Finney

Desmos.com

MIT Opencourseware