Unit #8 Calculus

Content Area: **Mathematics**
Course(s): **Honors Pre-Calculus**
Time Period: **June**
Length: **Length of 20 days**
Status: **Published**

Enduring Understandings:

- A concept of a limit allows you to determine the value of a function by getting really close to a specified value o Evaluate a limit as x approaches a given value for continuous functions
- A function's continuity at a given point affects its limit o Evaluate a limit for functions with discontinuities o Use the formal definition of continuity to explain whether or not a function is continuous at that point
- When a function has vertical or horizontal asymptotes, the limits involving infinity are utilized. Determine the end behavior of a function analytically and confirm it graphically. Determine the limit as x approaches $\pm\infty$

Essential Questions:

- How do you determine the value of a function for a value that is restricted in the domain?
- What are one-sided limits and infinite limits?
- What are the methods used to determine limits?

Lesson Titles:

- Evaluating Limits
- Graphs of Limits

Career Readiness, Life Literacies & Key Skills

WRK.K-12.P.4	Demonstrate creativity and innovation.
WRK.K-12.P.5	Utilize critical thinking to make sense of problems and persevere in solving them.
WRK.K-12.P.8	Use technology to enhance productivity increase collaboration and communicate effectively.
WRK.K-12.P.9	Work productively in teams while using cultural/global competence.

Inter-Disciplinary Connections:

LA.RL.11-12.4	Determine the meaning of words and phrases as they are used in the text, including figurative and connotative meanings; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings or language that is particularly fresh, engaging, or beautiful. (e.g., Shakespeare as well as other authors.)

LA.RST.11-12.4	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.
LA.RI.11-12.4	Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze how an author uses and refines the meaning of a key term or terms over the course of a text (e.g., how Madison defines faction in Federalist No. 10).
LA.WHST.11-12.1.E	Provide a concluding paragraph or section that supports the argument presented.
9-12.HS-ETS1-4.5	Using Mathematics and Computational Thinking

Instructional Strategies, Learning Activities, and Levels of Blooms/DOK:

- Introduce direct substitution of a limit
- Introduce how to find a limit from the graph of the function
- Introduce how to find the limit of a function in the indeterminate form
- Introduce how to find the limits of piecewise functions algebraically
- Introduce limit notation
- Introduce one sided limits and how to find them from the graphs of the functions
- Review simplifying rational expressions
- Review synthetic divison
- Students will work in their groups on practice problems
- tutoring during Delsea One
- Work through several practice problems with students

Modifications

Benchmark Assessments

Skills-based assessment- math practice

Alternative Assessments

Performance tasks
Project-based assignments
Problem-based assignments
Presentations

Formative Assessment:

- Anticipatory Set
- Closure
- Groupwork
- guided practice
- Quiz on limits
- Teacher observation
- Warm-Up

Summative Assessment:

- Alternate Assessment
- Benchmark
- Marking Period Assessment
- Midchapter test on graphing and evaluating limits

Resources & Materials:

- Advanced Mathematical Concepts Precalculus with Applications textbook
- Calculus Teacher generated worksheets
- Calculus textbook
- Google Classroom
- Mathpower4u math videos