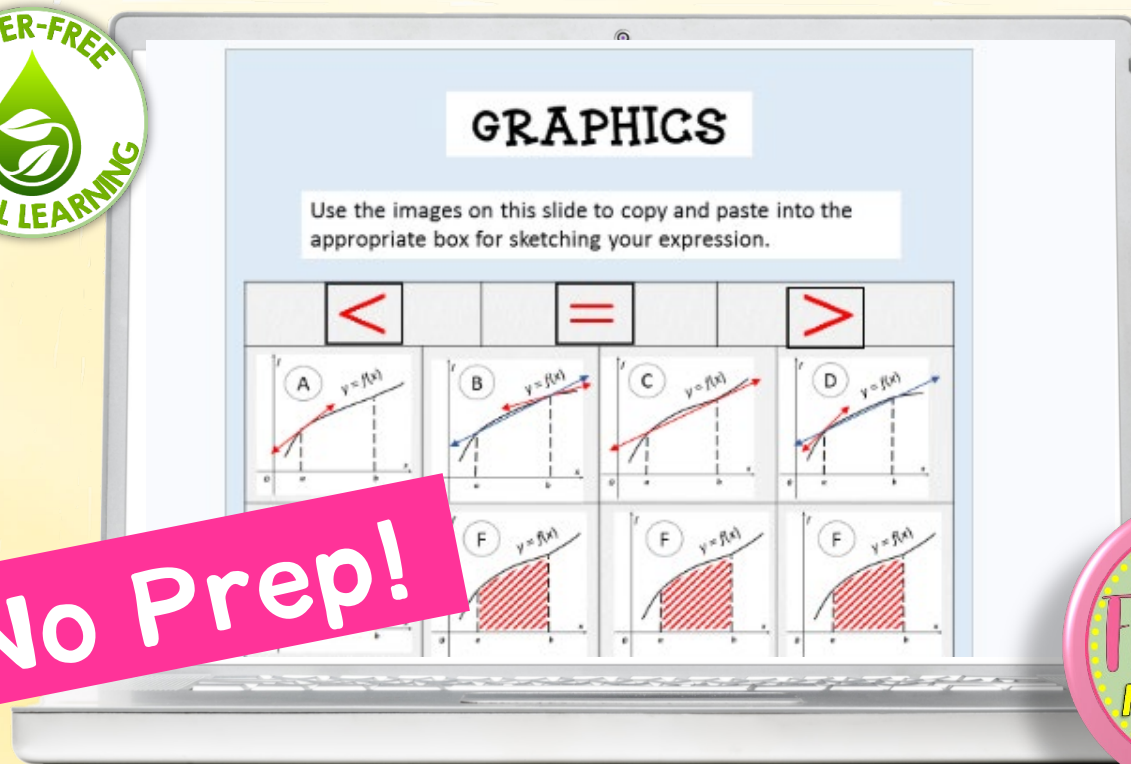
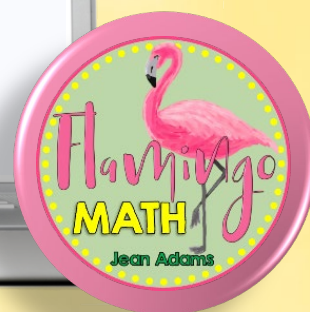


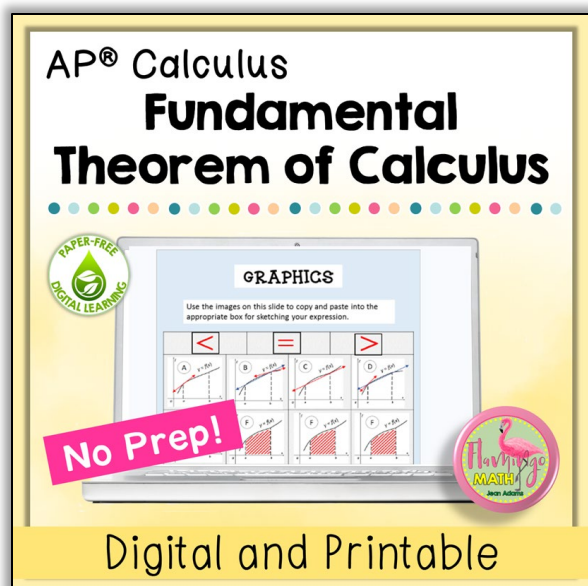
AP[®] Calculus Fundamental Theorem of Calculus



No Prep!



Digital and Printable



AP Calculus Fundamental Theorem of Calculus for Google™ Drive

Your AP Calculus students will have 30 multiple choice prompts that model the calculator section on the AP Calculus AB Exam.

Fundamental Theorem of Calculus

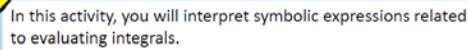
This is a Digital Activity for students enrolled in AP Calculus. The lesson includes 5 GOOGLE® SLIDES each containing a symbolic expressions related to the Fundamental Theorem of Calculus.

Students interact with the slides on their one-to-one devices to verbally explain each symbolic expression. There is a bank of graphs and inequality symbols that are used to copy and paste creating a true statement.

A separate blackline master is provided for differentiation and for absent students.

***NOTE: YOU AND YOUR STUDENTS MUST HAVE ACCESS TO THE INTERNET TO BEGIN TO INTERACT WITH THE LESSON! THIS FILE IS NOT EDITABLE.**

THE FUNDAMENTAL THEOREM OF CALCULUS

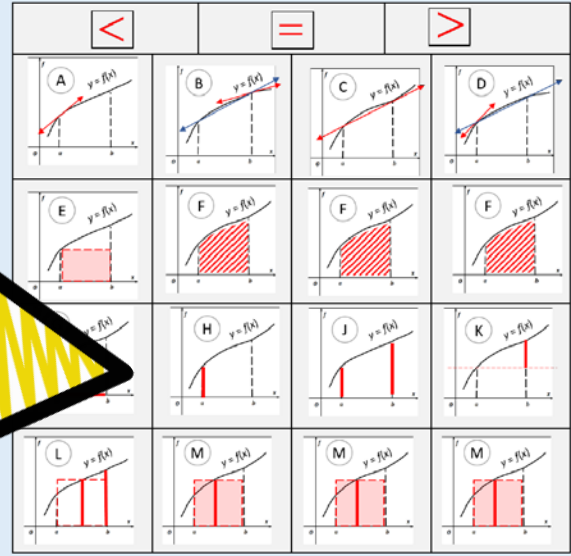


1. Explain the expression verbally, determine whether it is a length, slope, or area for $f(x)$.
2. Find the appropriate sketch for the expression and move the piece to its correct location in the right column.
3. Then compare and contrast two expressions of the inequality. Give a verbal explanation for each comparison.
4. Find the appropriate sketch for the comparison and move the piece to its correct location in the right column.

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GRAPHICS

Use the images on this slide to copy and paste into the appropriate box for sketching your expression.



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Note: All graphics and inequality symbols are contained on a single page. Students simply copy and paste the images into the activity.

There are four slides of questions and prompts. They can be assigned independently of each other or all together. Students write verbal responses in the textboxes provided.

FTC Part 1
 GEOMETRIC INTERPRETATIONS

Given $f(x) = F'(x)$, complete the table below.

Expression	Verbal Explanation	Is this a length, area or slope on $f(x)$?	Sketch on $f(x)$
1 $b - a$			
2 $f(b) - f(a)$			
3 $\frac{f(b) - f(a)}{b - a}$			
4 $f'(a)$			
5 $\int_a^b f(t) dt$			
6 $\frac{1}{b-a} \int_a^b f(t) dt$			
7 $F(b) - F(a)$			
8 $\frac{F(b) - F(a)}{b - a}$			
9			

FTC Part 1
INEQUALITIES
 Given $f'(x) = F'(x)$. The graph of f is a continuous monotonic (strictly increasing) function on the interval $[a, b]$. For each of the following symbolic statements below, make the statement true with one of the three choices:

Then, justify your choice and sketch the colored pencil to clearly identify the segment.

Symbolic Statement	Verbal Statement
10 $f(a) \quad \square \quad f(b)$	13 $F(a) - F(b) \quad \square \quad \int_a^b f(x) dx$
11 $f(b) - f(a) \quad \square \quad \int_a^b f(x) dx$	14 $F(b) - F(a) \quad \square \quad \frac{1}{b-a} \int_a^b f(x) dx$
12 $F'(b) \quad \square \quad \frac{1}{b-a} \int_a^b f(x) dx$	15 $f'(b) \quad \square \quad \frac{f(b) - f(a)}{b - a}$
16 $\frac{1}{b-a} \int_a^b f'(x) dx \quad \square \quad F''(a)$	

Symbolic Statement	Verbal Explanation	Sketch on $f(x)$
13 $F(a) - F(b) = \int_a^b f(x) dx$		
14 $F(b) - F(a) = \int_a^b f(x) dx$		
15 $f'(b) = \frac{f(b) - f(a)}{b - a}$		
16 $\frac{1}{b-a} \int_a^b f'(x) dx = F''(a)$		