Absement and 'nth Derivatives of Displacement' Presented Dynamically & Analytically

[pdf & video of this page]

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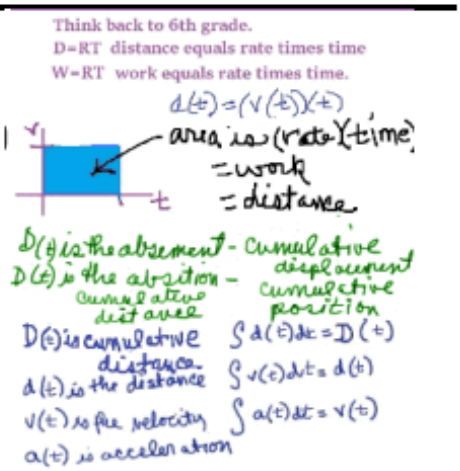
absement
/æbsɪmɛnt/

Cumulative Function

Cumulative Function	F(x)
function	f(x) = F'(x)
rate of change of the function	f'(x) = F''(x)
rate of change of the rate of change	f''(x) = F'''(x)

absement - absence from initial placement
absition - absence from initial position

absition
/æbsɪšən/



Dowload absement.gsp

0 - toc	8 - PARTITION & SUMS 4 boxes
1 - time, t	9 - Reimann & Sums
2 - displacement, distance, s(t)	10 - SUMS absement, input [a,b]
3 - definition of derivative	11 - absement, n=32
4 - s(t), s'(t)	12 - absement plus c
5 - s(t), s'(t), s"(t)	13 - play absement plus c
6 - emojis, f, f', f'', tangent line	14 -arcsine actual fx graphed
7 - trace derivatives	15 - arcsine mesh - useF(x) plot to plot arcsine

The Languages of the Math Classroom

MOTHER TONGUE & OTHER TONGUE(S)

⟵ Most Sophisticated and also the Most Basic ⟶

MOSTLY MATH TONGUES

⟵ Most Sophisticated, Most Basic ⟶

VERBAL / Auditory	WRITTEN / Symbolic	PICTORIAL / Visual	CONCRETE / Kinesthetic
formal spoken mathematics	written word	DIGITAL MANIPULATIVE	object
informal spoken mathematics	written symbol	moving picture	model
spoken symbol	semisymbolic	static picture	manipulative/token
symbol speak	calculator symbol	numeral	
calculatoreze/computereze		graph	
web speak		nonverbal body language	

Communication Environments:
Private Conversation, Lab, Classroom, Lecture Hall, Remote Live, Video, Paper book, E-book, pdf File

Suggestions

- Choose a modality first.
  - VERBAL / Auditory
  - WRITTEN / Symbolic
  - PICTORIAL / Visual
  - CONCRETE / Kinesthetic
- Usually, introduce in the most concrete.
- Summarize in the most abstract.
- The Mother Tongue is both the most concrete & the most abstract.
- Sometimes use multiple modalities at the same time.
- Strive for comfort in all modalities, not just your favorite.

- Repeatition improves retention, especially in different modalities.

- Need a review before new material?
  Don't review with a computation of symbols if you can review with a picture of the computation.

- Before mentioning velocity or acceleration, dynamically/kinesthetically present a derivative with the definition, slope of the secant, slope of the tangent.
- Mention the word absement when you introduce displacement, velocity, and acceleration.
- At that time, just call it the total displacement.

- The concept of "cumulative function" is much more important than "absement."

Cumulative Function

Cumulative Function	$F(x)$
function	$f(x) = F'(x)$
rate of change of the function	$f'(x) = F''(x)$
rate of change of the rate of change	$f''(x) = F'''(x)$