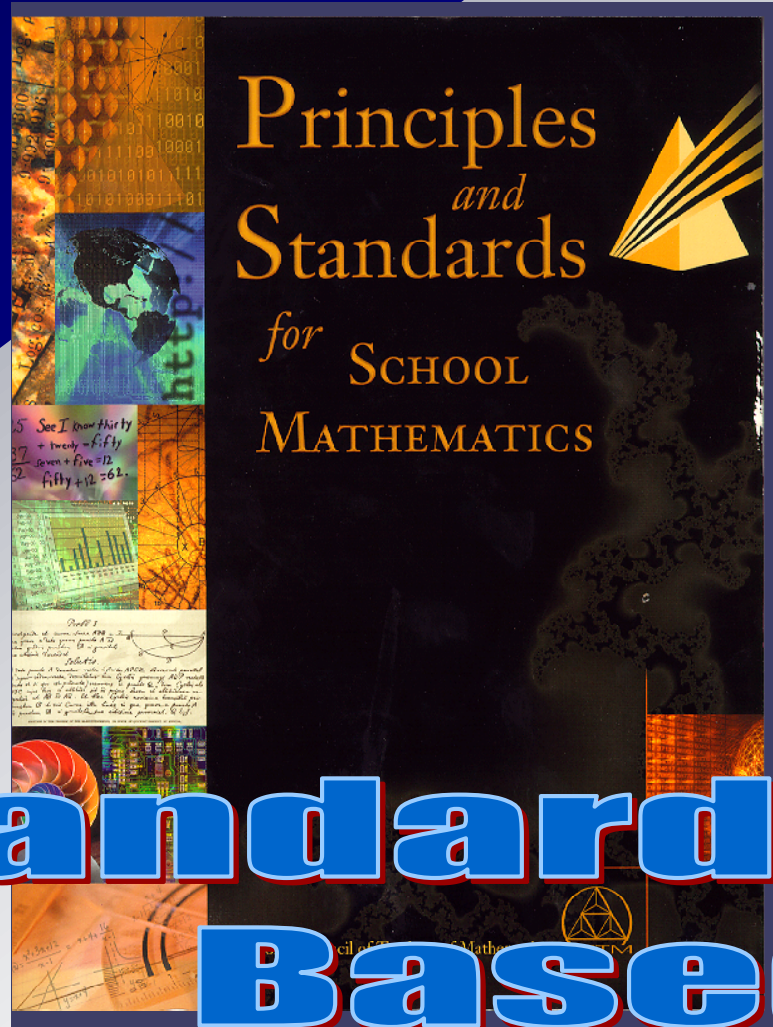
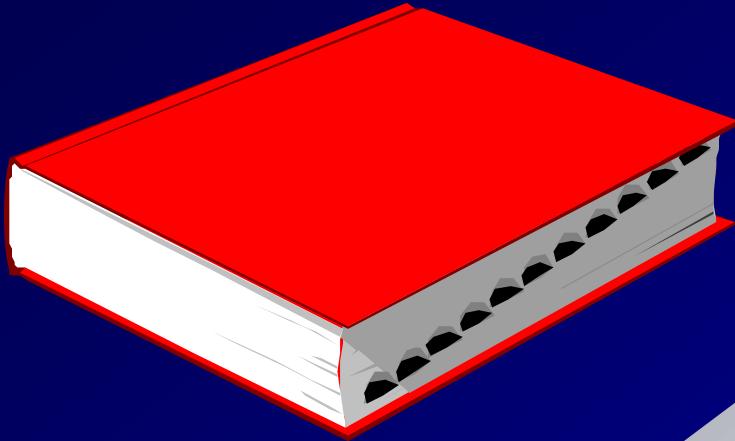


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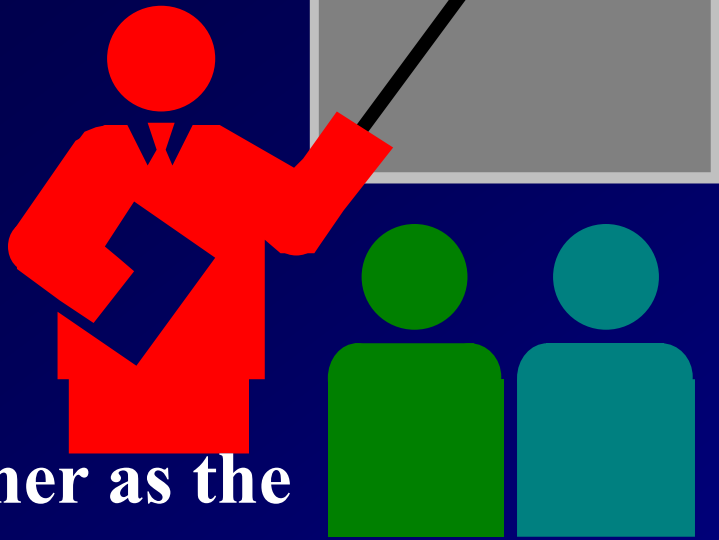
Textbook Driven



Standards Based

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**Teacher as the
expert imparting
knowledge**

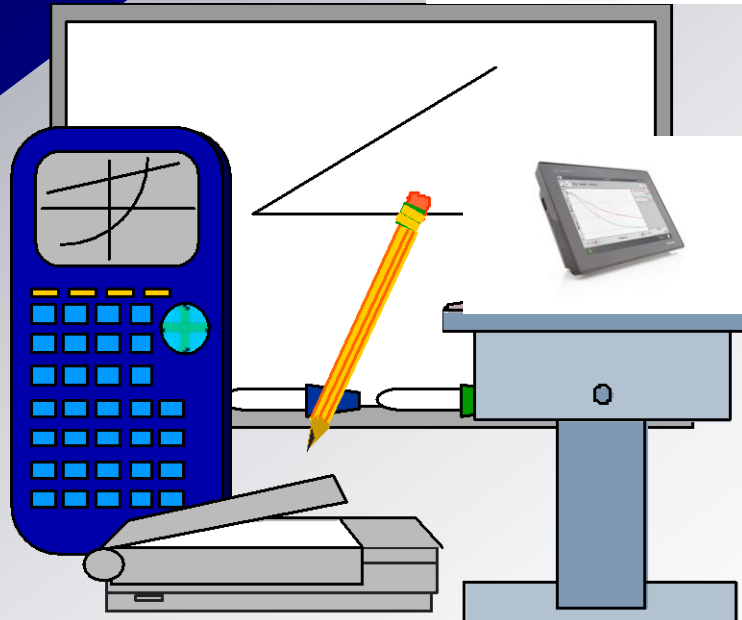
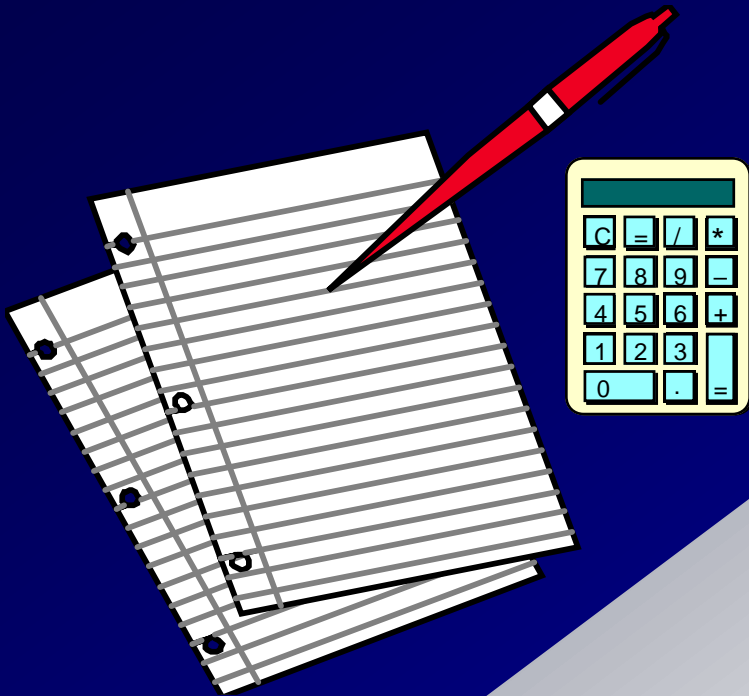


**Students
engaged
as
learners seeking
understanding**

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Limited tools and technology



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Variety of tools and technology

Mostly individual work

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Collaborative group work

Skill Driven

$$2x^2 - 12x + 11 = 0$$

$$2(x^2 - 6x) = -11$$

$$(x^2 - 6x + 9) = -\frac{11}{2} + 9$$

$$(x - 3)^2 = \frac{7}{2}$$

$$x - 3 = \pm \sqrt{\frac{7}{2}}$$

$$x = 3 \pm \sqrt{\frac{7}{2}}$$

Using your graphing calculator, graph five lines in the form of $y = 4x + p$ where p is a different number.

Describe in a paragraph the changes to the line as you changed the value of p .

Problem Solving

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Problems devoid of context

Find the maximum of the equation of $y = x^2 - 3x + 8$



Problems embedded in reality

Using Imaging Software, determine the height of this bridge whose span is 50 feet and which is 20 ft. above the road.

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The technology allows the students to explore the mathematics which underlies real life experiences--such as a bouncing ball--fully utilizing multiple representations of the event.

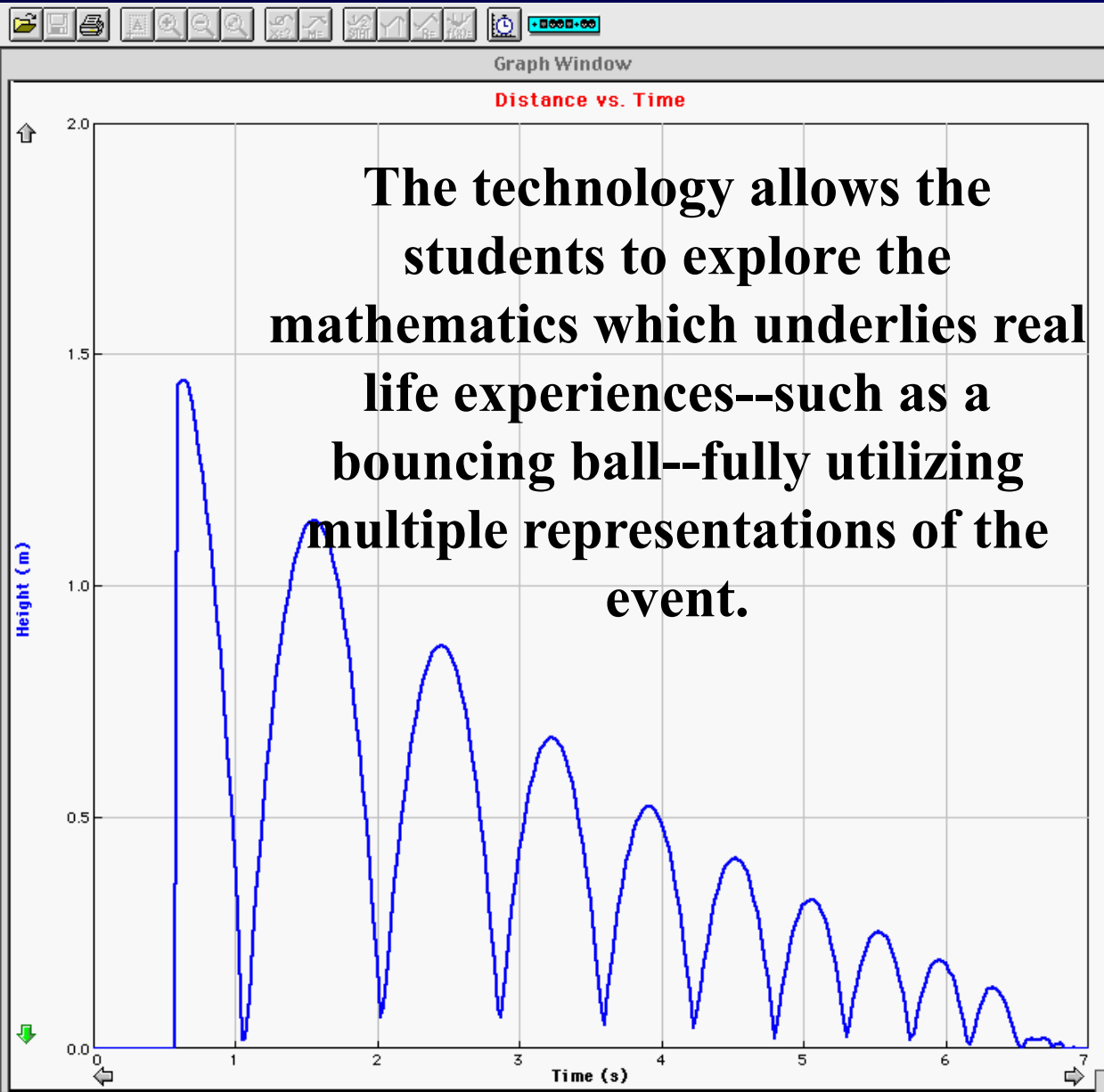


Table Window

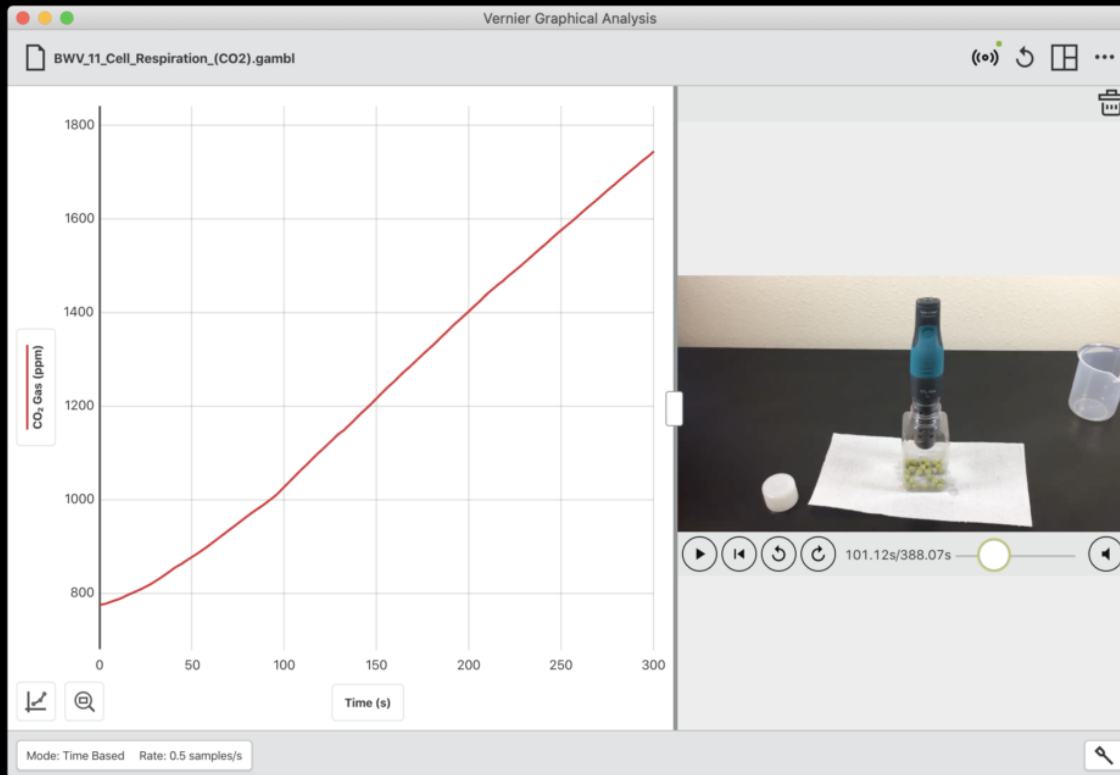
All	D (m)	Time (s)	Height (m)	Velocity (m/s)
130	1.21	3.225	0.67	0
131	1.21	3.250	0.67	-0.1
132	1.22	3.275	0.66	-0.2
133	1.23	3.300	0.65	-0.3
134	1.25	3.325	0.63	-0.4
135	1.28	3.350	0.60	-0.5
136	1.31	3.375	0.57	-0.6
137	1.35	3.400	0.53	-0.7
138	1.39	3.425	0.49	-0.8
139	1.44	3.450	0.44	-0.9
140	1.50	3.475	0.38	-1.0
141	1.56	3.500	0.32	-1.1
142	1.63	3.525	0.25	-1.2
143	1.71	3.550	0.17	-1.3
144	1.79	3.575	0.09	-1.4
145	1.83	3.600	0.05	-1.5
146	1.75	3.625	0.13	-1.4
147	1.69	3.650	0.19	-1.3
148	1.63	3.675	0.25	-1.2
149	1.57	3.700	0.31	-1.1
150	1.52	3.725	0.36	-1.0
151	1.48	3.750	0.40	-0.9
152	1.44	3.775	0.44	-0.8
153	1.41	3.800	0.47	-0.7
154	1.39	3.825	0.49	-0.6
155	1.37	3.850	0.51	-0.5
156	1.36	3.875	0.52	-0.4
157	1.36	3.900	0.52	-0.3
158	1.36	3.925	0.52	-0.2
159	1.36	3.950	0.52	-0.1
160	1.38	3.975	0.50	0
161	1.39	4.000	0.49	0.1
162	1.42	4.025	0.46	0.2
163	1.45	4.050	0.43	0.3
164	1.48	4.075	0.40	0.4
165	1.53	4.100	0.35	0.5
166	1.58	4.125	0.30	0.6
167	1.63	4.150	0.25	0.7
168	1.69	4.175	0.19	0.8
169	1.76	4.200	0.12	0.9
170	1.83	4.225	0.05	1.0
171	1.81	4.250	0.07	1.1
172	1.75	4.275	0.13	1.2

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Hands on Mathematics

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Technology has become an integral component in the teaching of mathematics.

The technology requires that the teachers re-think what are the important concepts of math which need to be learned by the students.

The classroom experience shows:

- The classroom environment and atmosphere is generally very positive and students want to attend class.
- Students prefer being in the SATEC courses rather than the regular courses.
- Students benefit from working with others in the group settings.
- Students are more apt to share ideas in a SATEC classroom.
- Students have a more global understanding of the mathematical concepts.
- Students are more willing to experiment, because the technology makes tedious tasks easy (i.e. Graphing)
- The students are actively engaged in their own learning as they progress through the SATEC lessons and curriculum.
- The students were aware of the high expectations of the teachers and were able to meet this challenge.

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Impact on the teacher

- Teachers benefit from the collaborative efforts of their colleagues in developing lessons.
- Teachers develop a better conceptual understanding of the mathematics.
- Teachers move from “skills driven” lessons to emphasizing the process and the meaning of the process through the use of technology.
- Teachers become involved in the planning and development of the scope and sequence and lessons of the courses they teach.
- The teachers come to the realization that they don’t “have all the answers” and need to model the learning experience for the students.
- The program provides the teachers with a wide variety of professional development to improve their own understanding of mathematics and their level of expertise in technology.
- The teachers move from math in the abstract to an understanding of how the math is applied in “real world experiences.

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