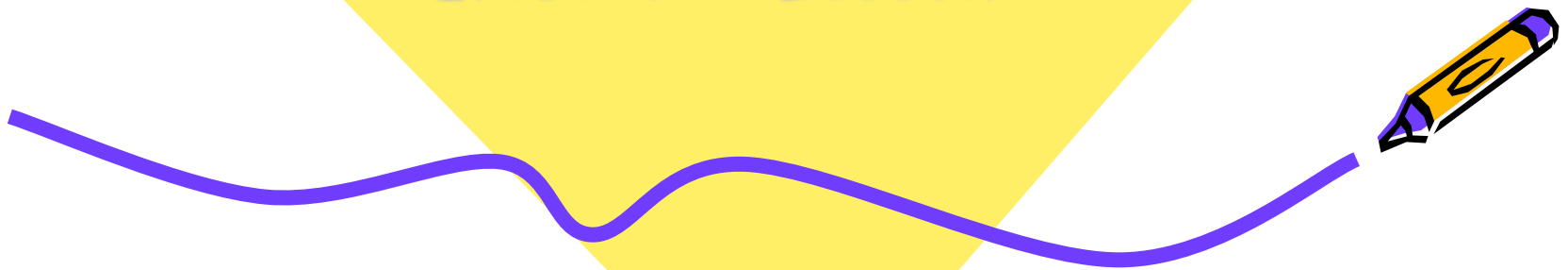




Invention and Innovation

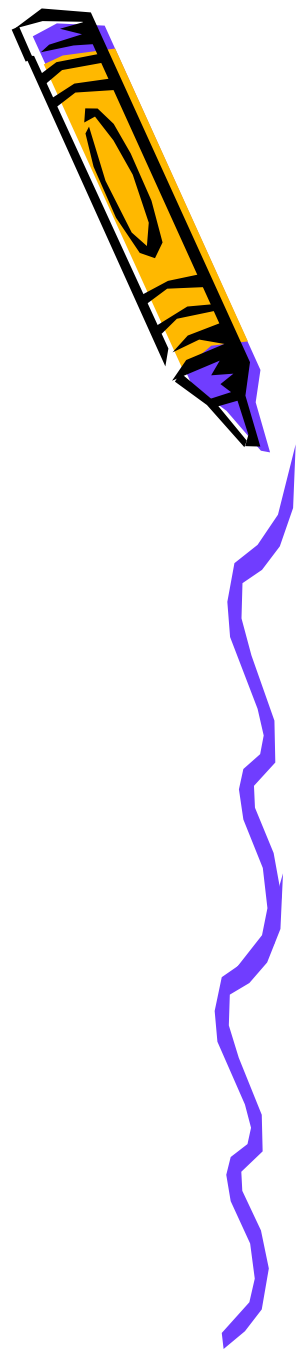
ENGR 7-2 Lesson 1



Written by Roland Williams

Big Idea:

- ENGR-II-1: Students will learn the concept of invention and innovation.



Critical Knowledge/Elements



A. Define related invention and innovation terms

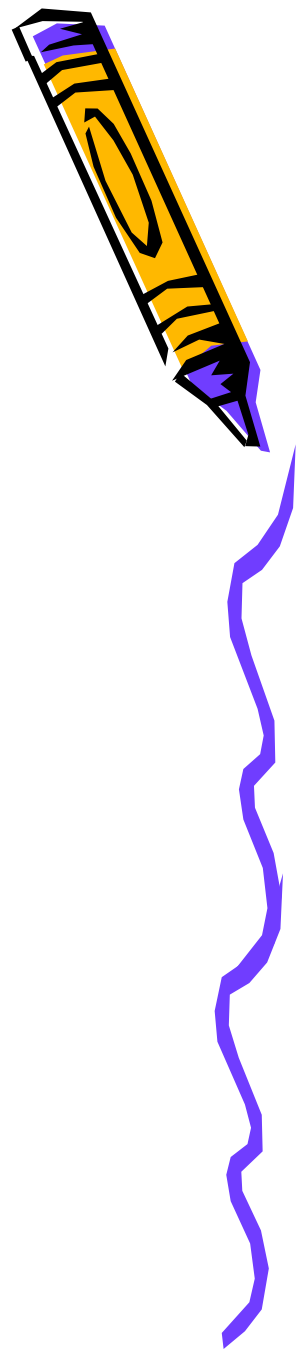
B. Compare invention to innovation

C. Identify an important past invention or innovation

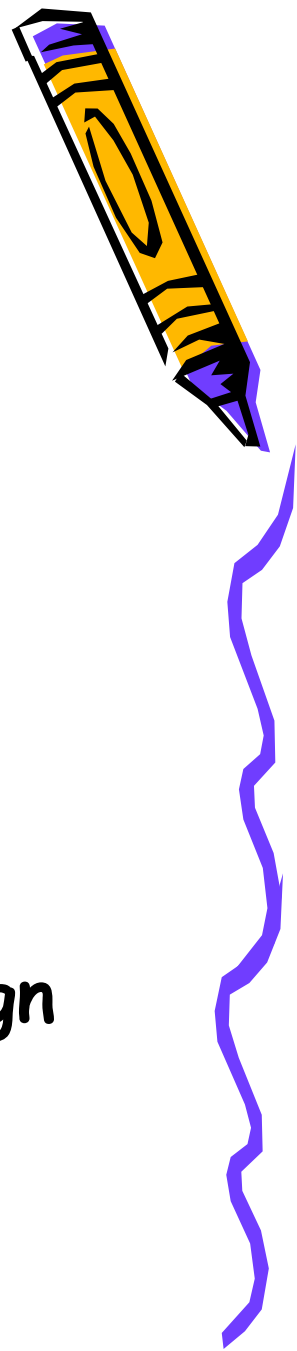


Essential Question

What is invention and innovation?



Word Wall



Invention

Science

Innovation

Technology

Attributes

Artifact

Societal Impacts

Prototype

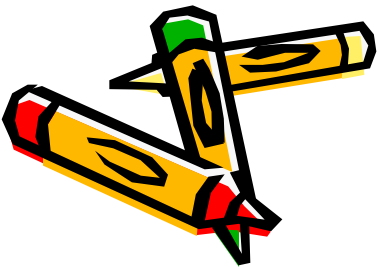
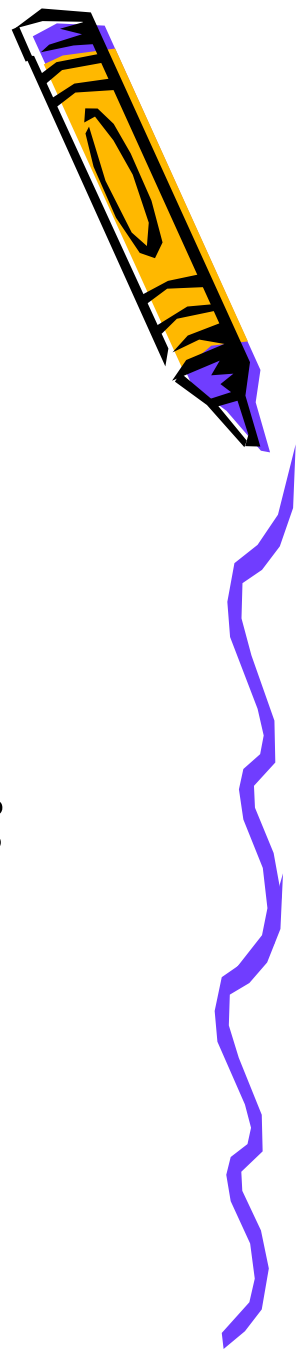
**Specialization of
Function**

**Engineering Design
Process**



One Minute Drill

Take out a sheet of
paper!



One Minute Drill

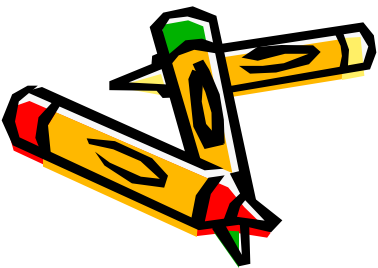
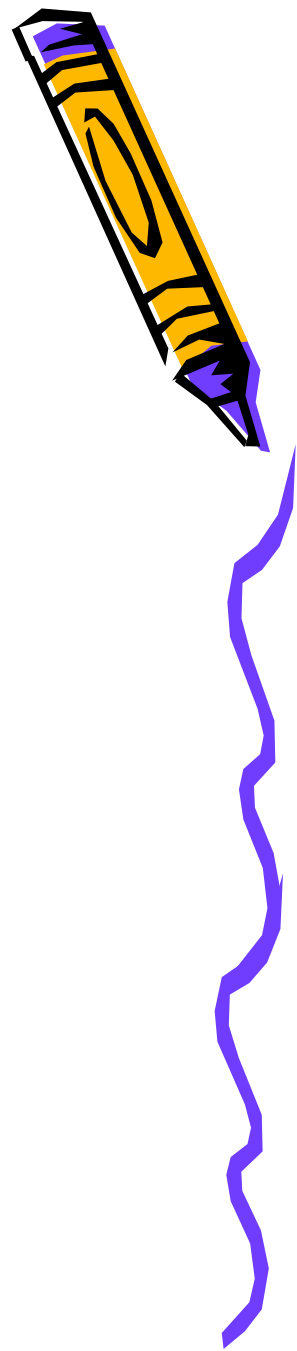
Write the names of
who you think are the
three most famous
inventors of all time.



READY



SET



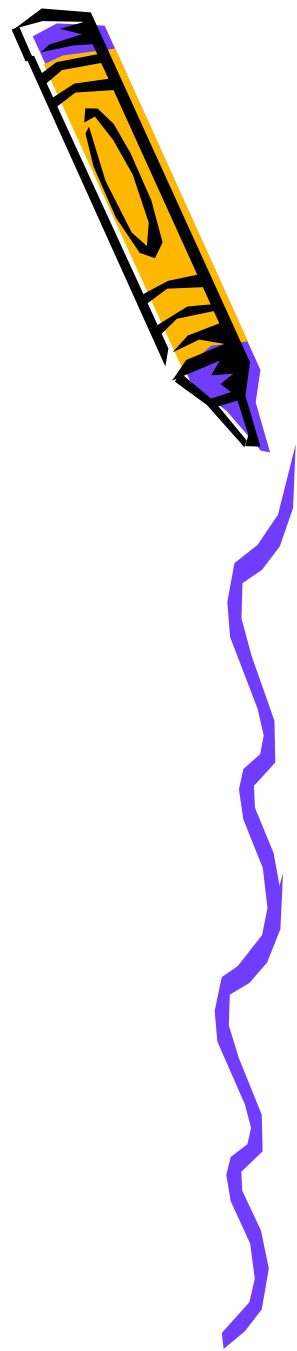
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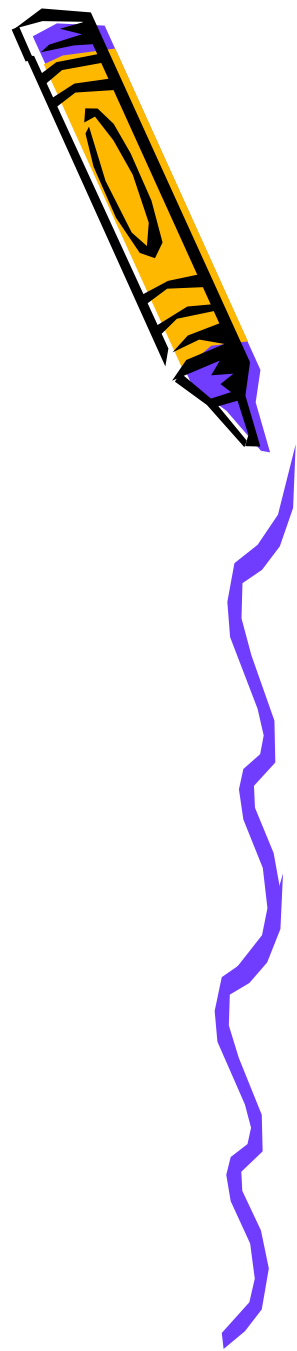


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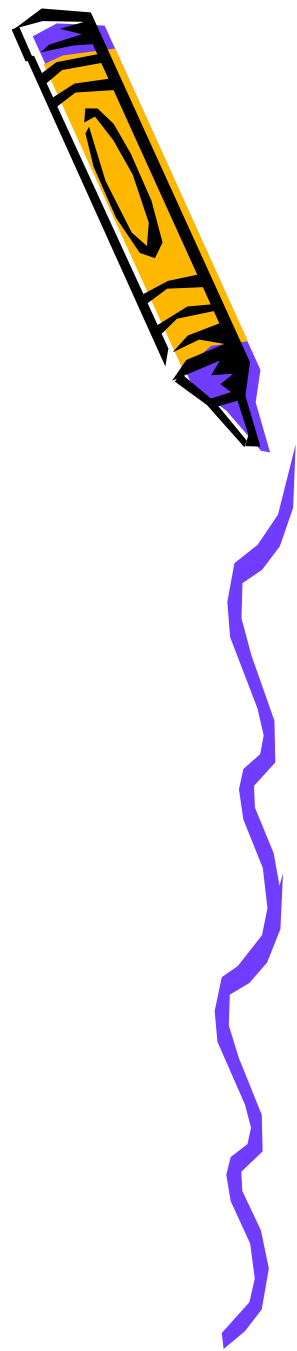


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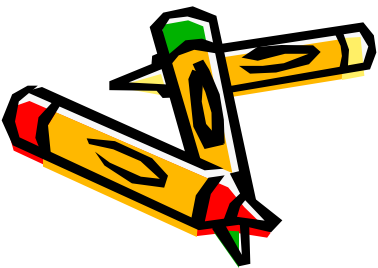
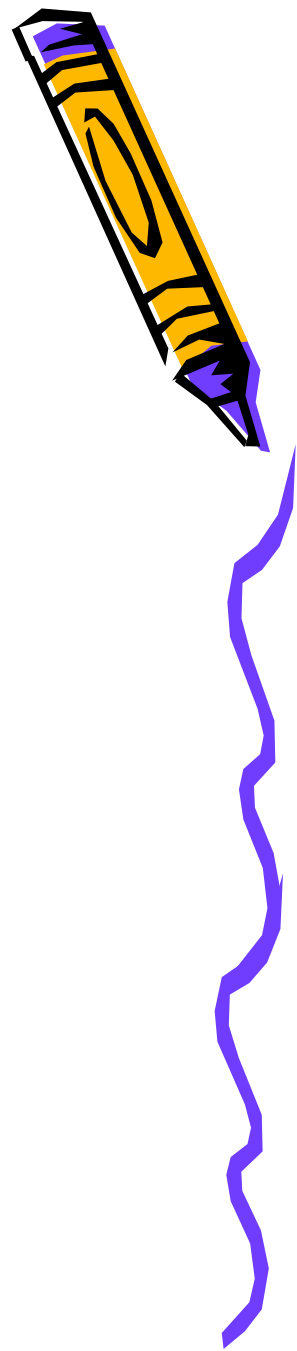




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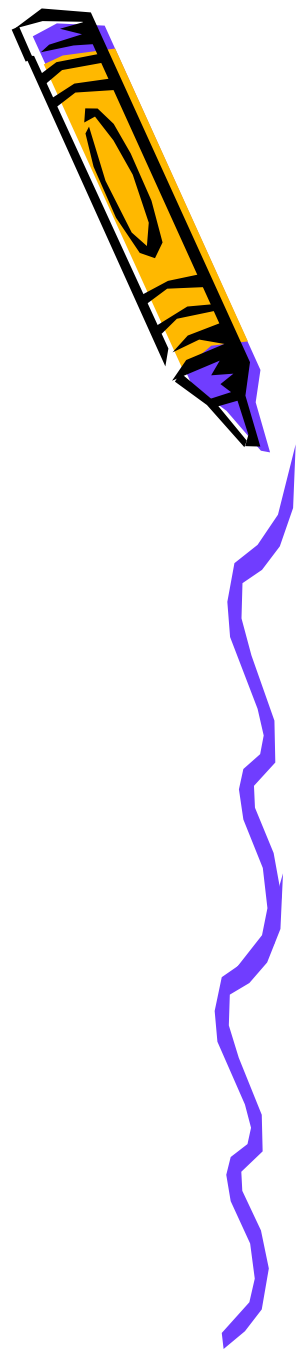


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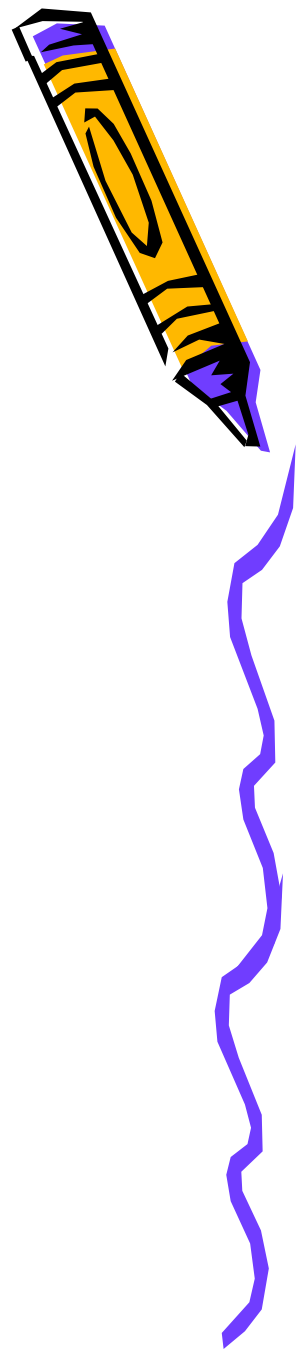


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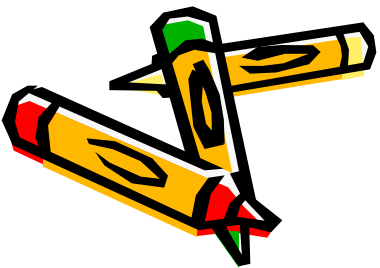
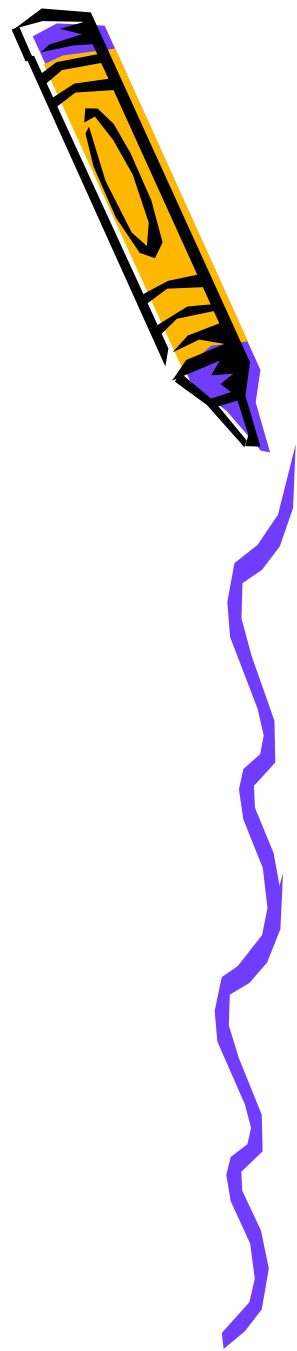




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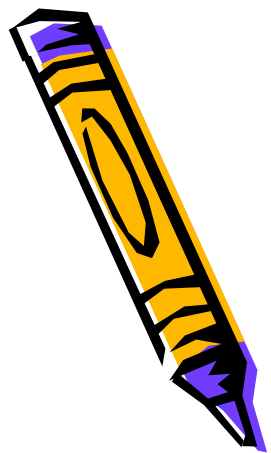
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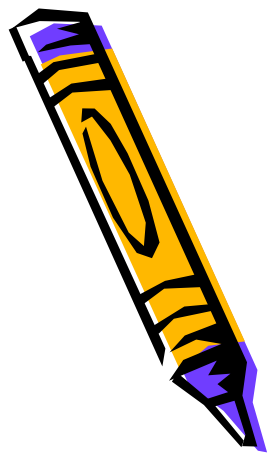
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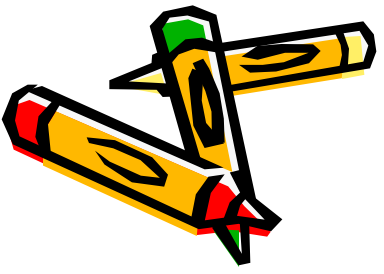


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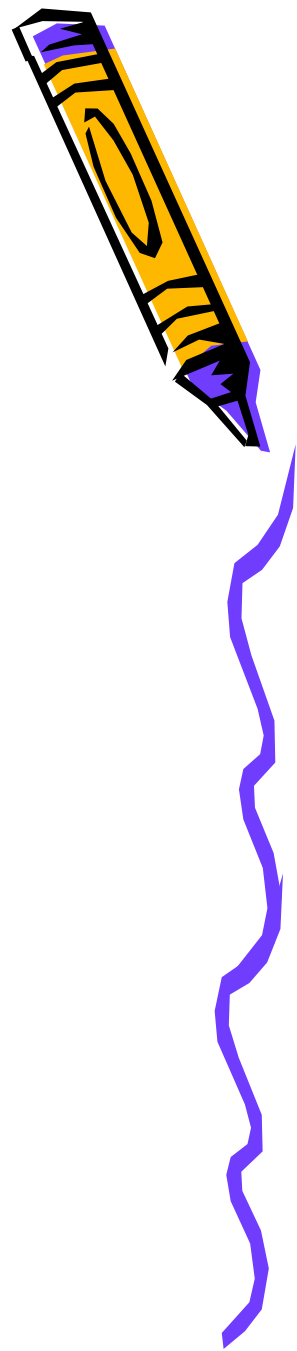




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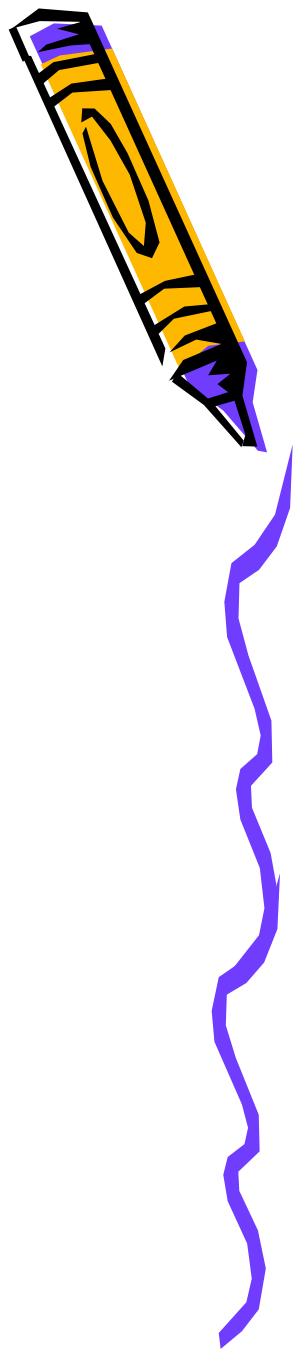
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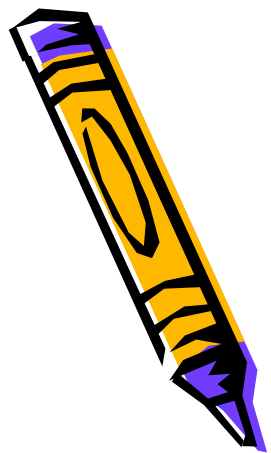
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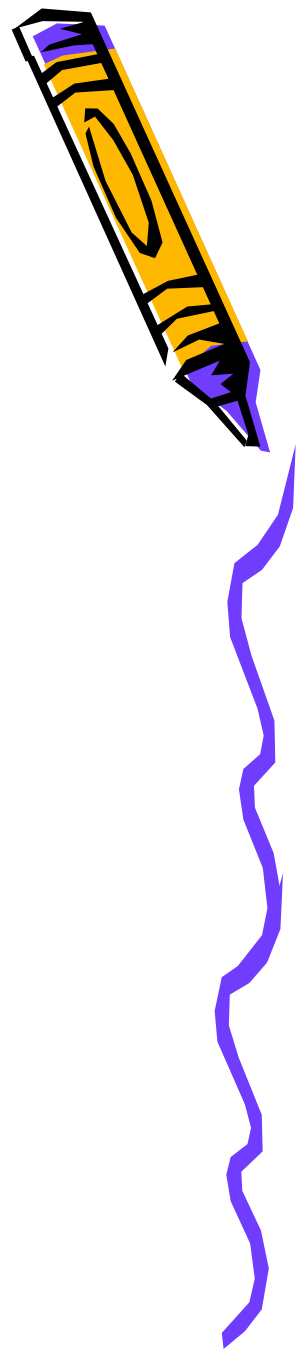


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3 3



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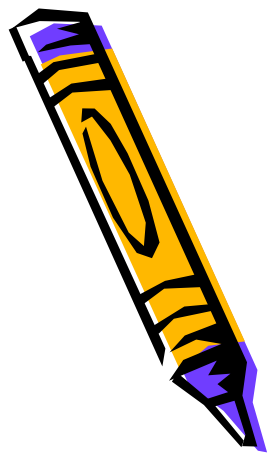
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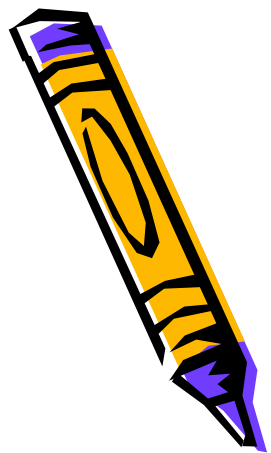
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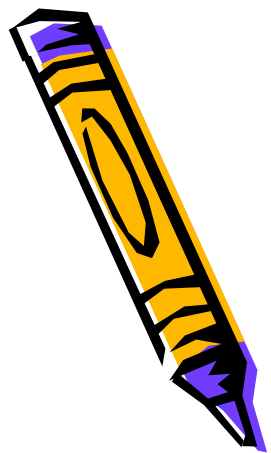
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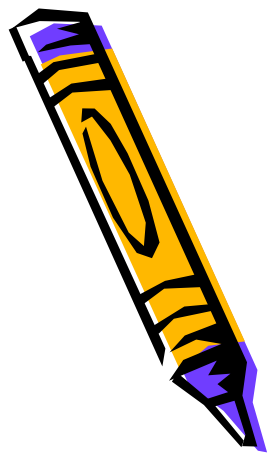
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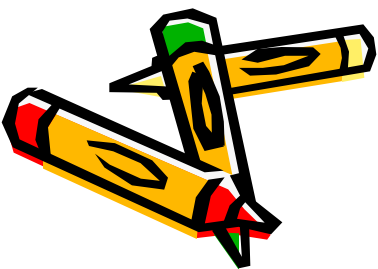
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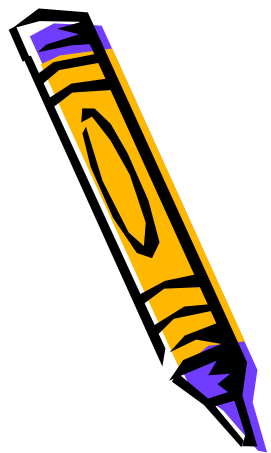
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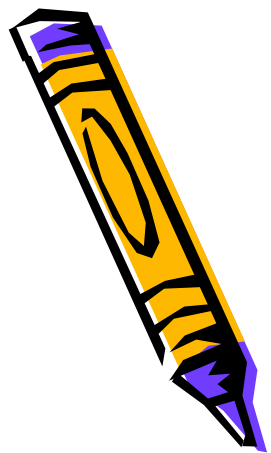
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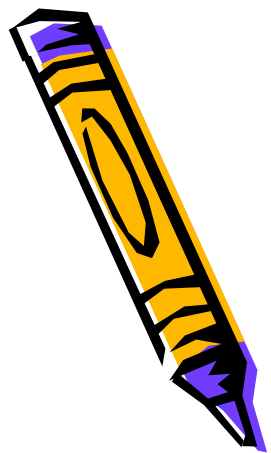
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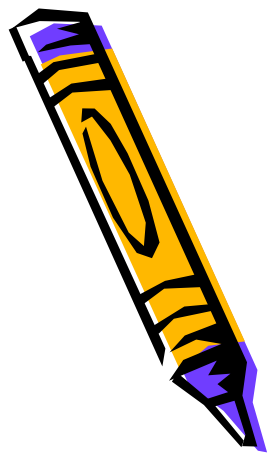
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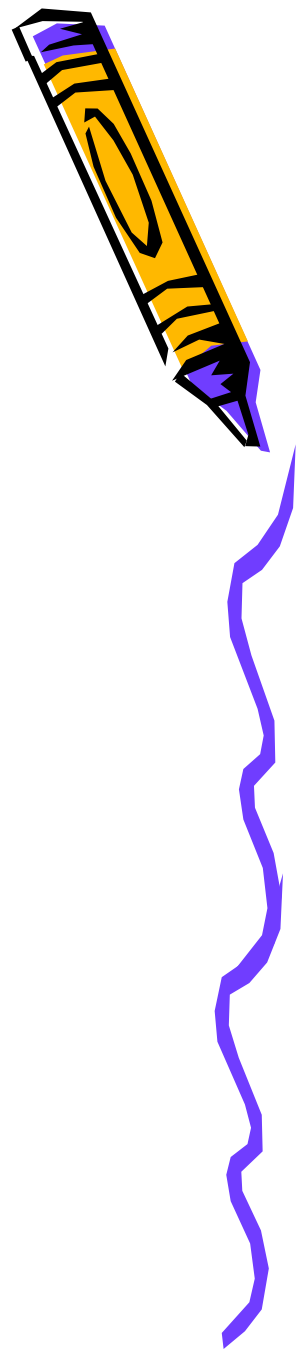


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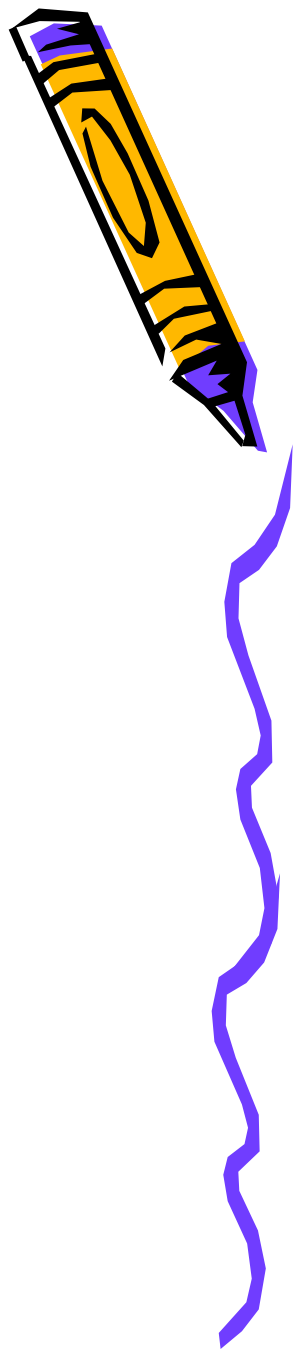


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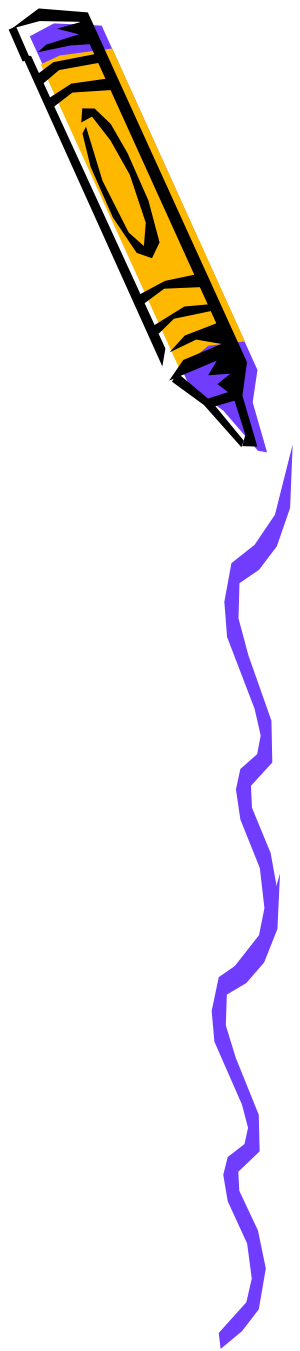


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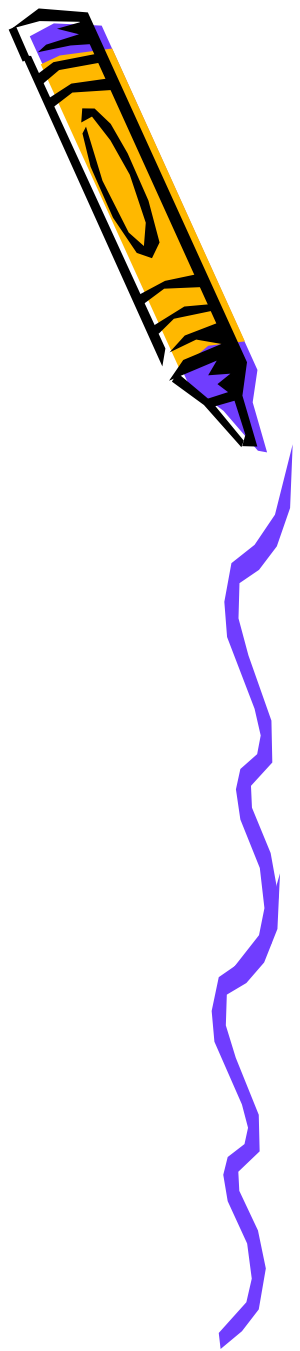


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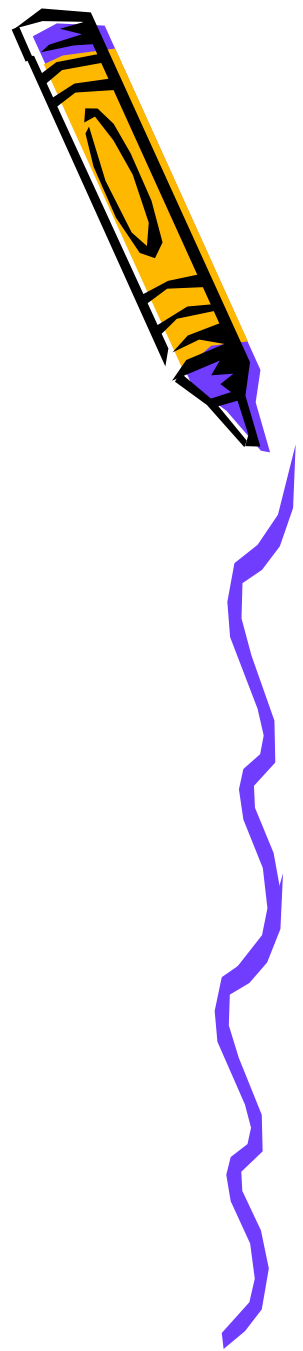


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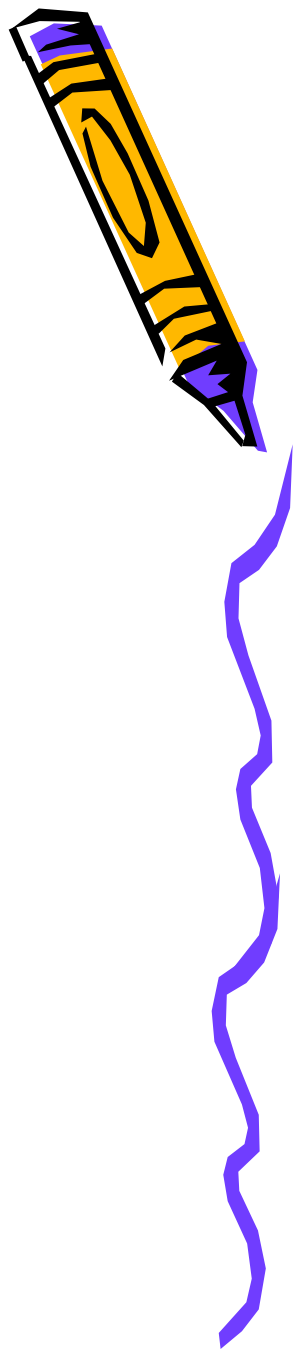


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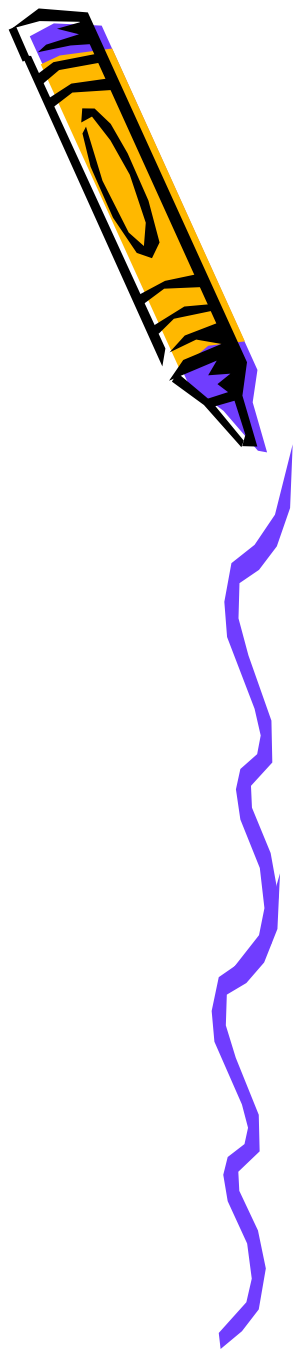


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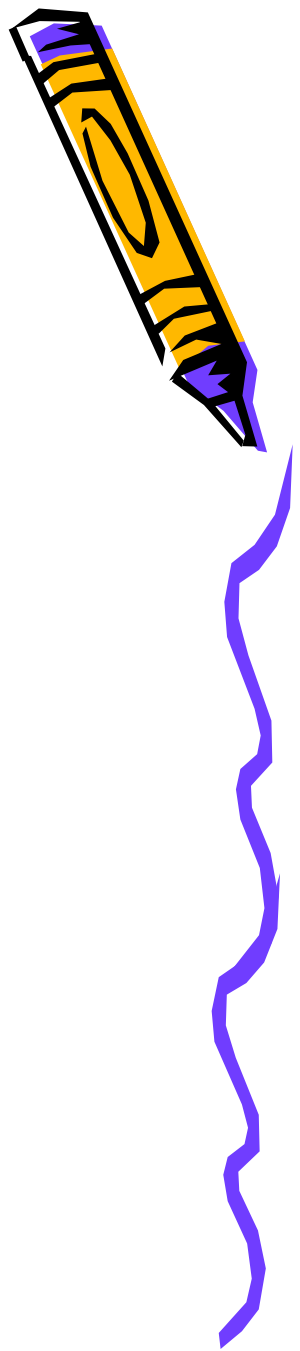


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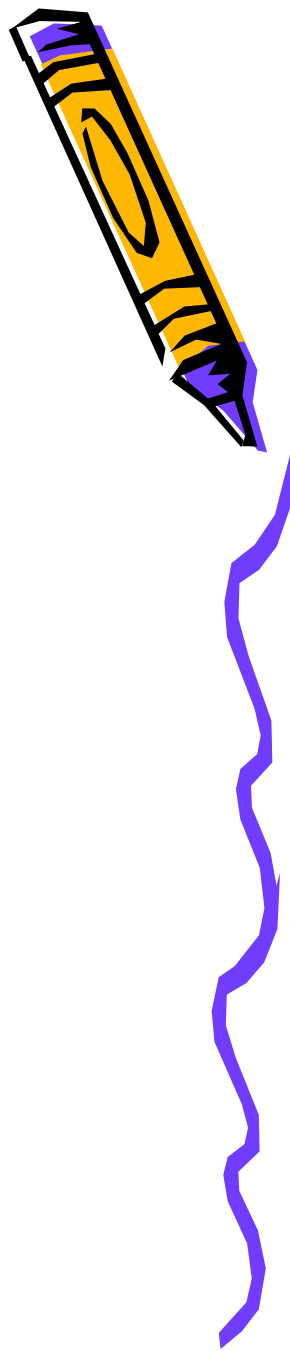


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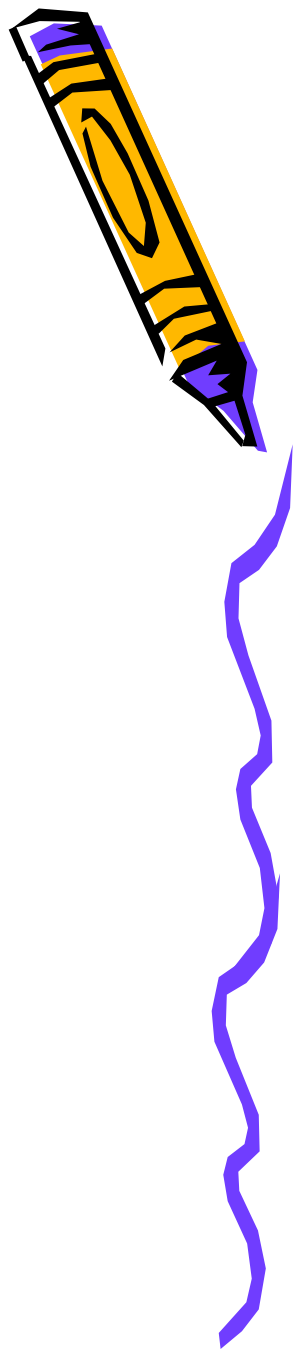


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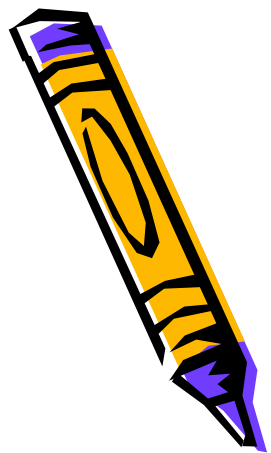




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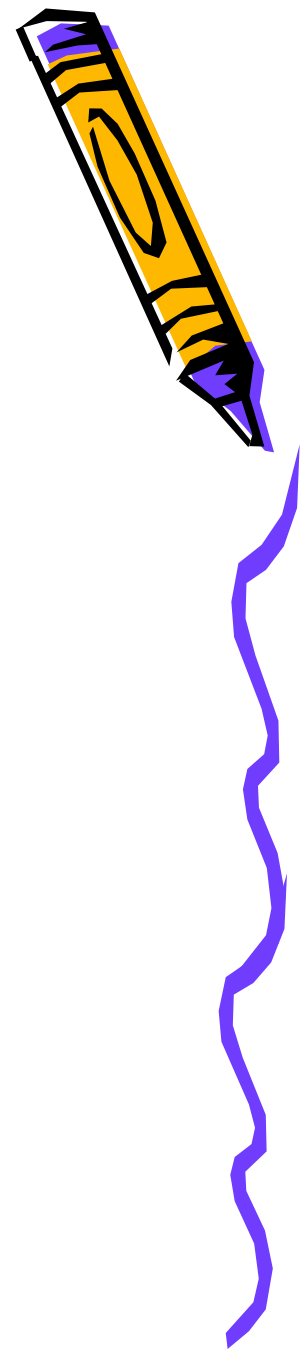


STOP



One Minute Drill

Get ready again!!!



One Minute Drill

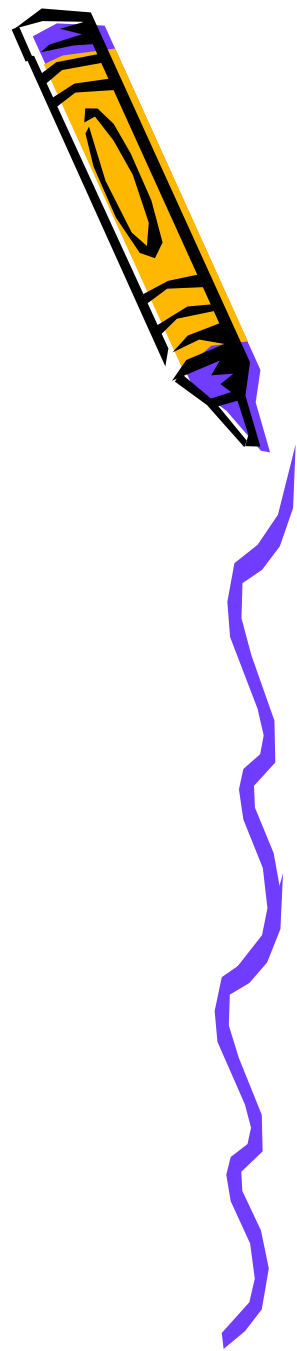
Write down what they
invented.



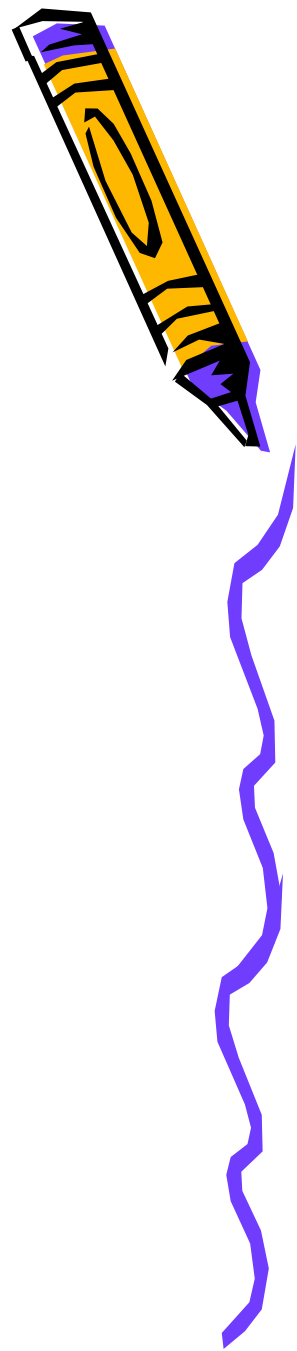
READY



SET



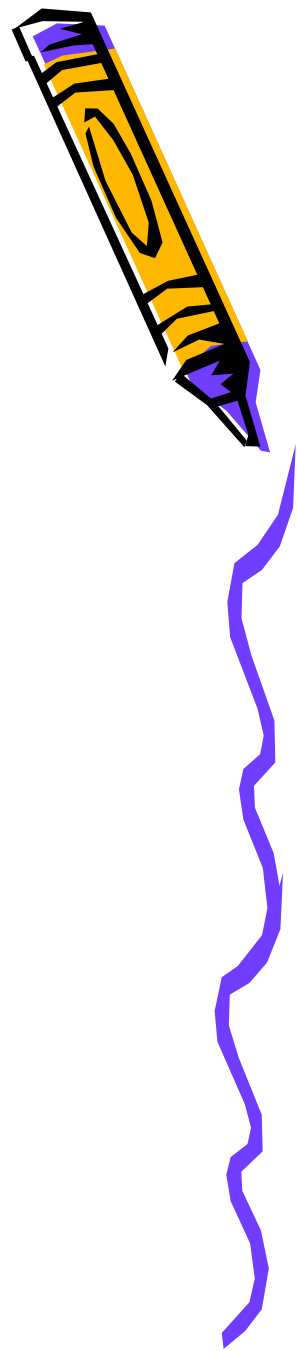
GO



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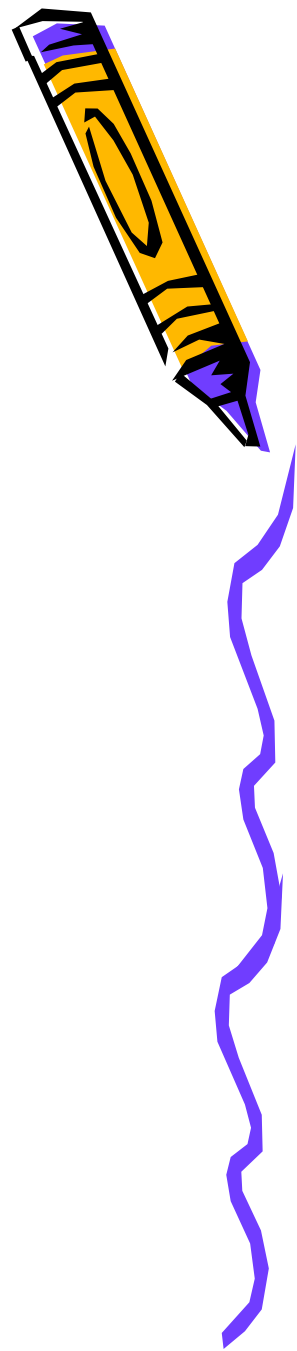


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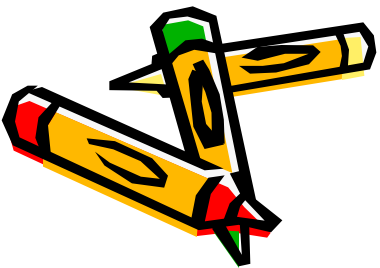
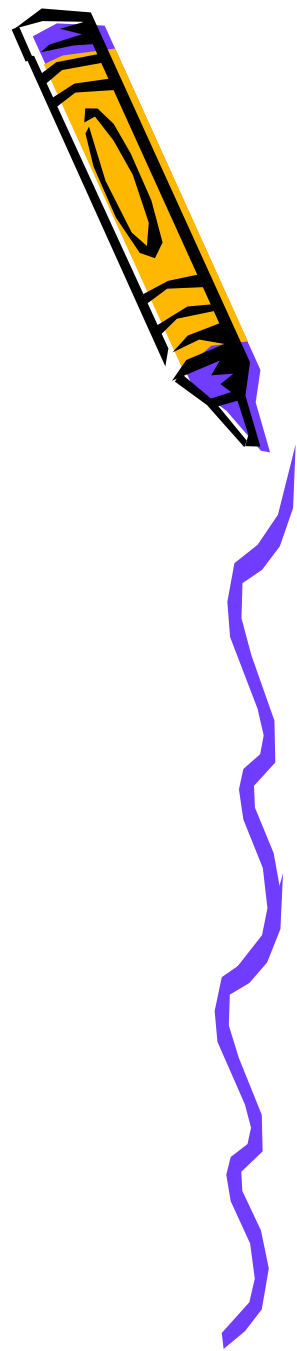




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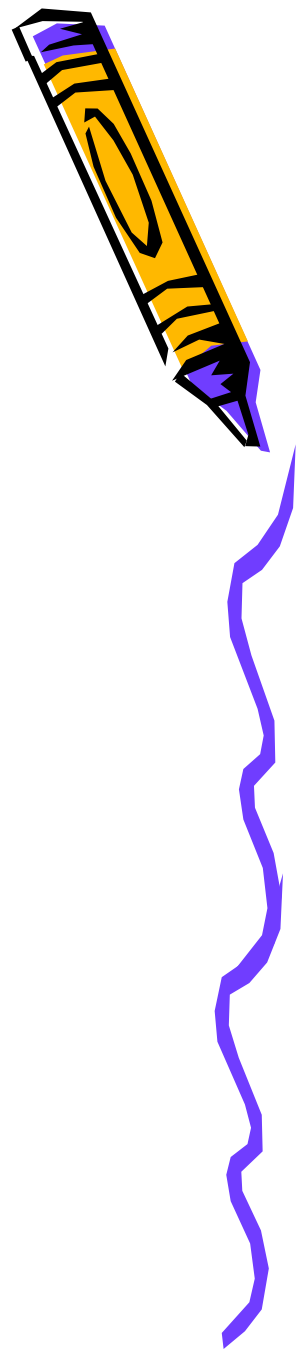


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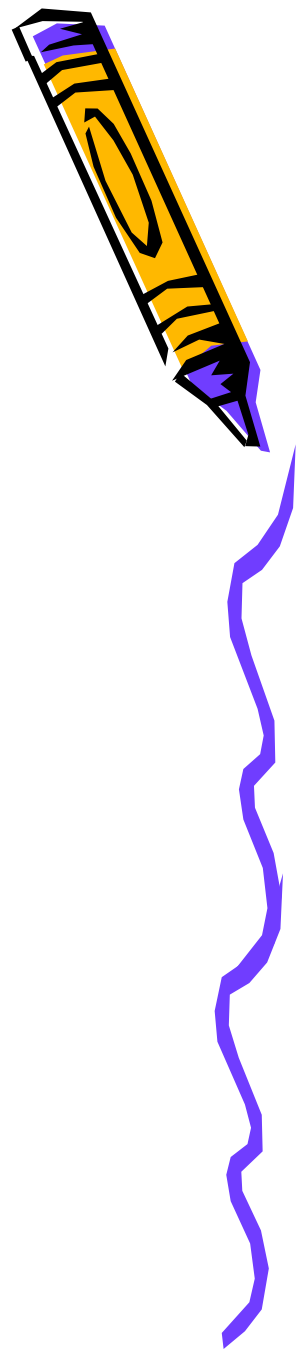


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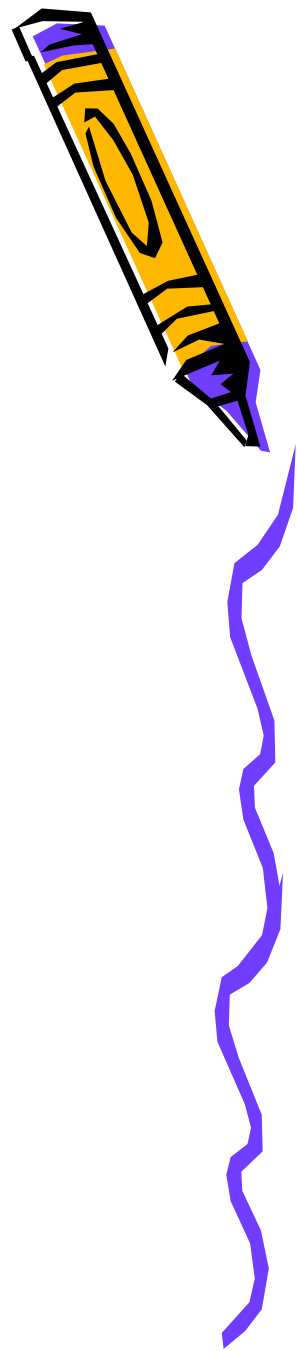




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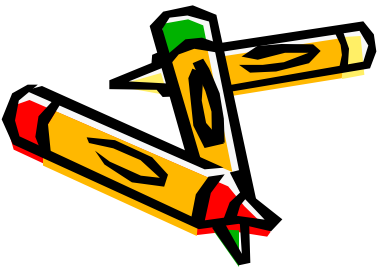


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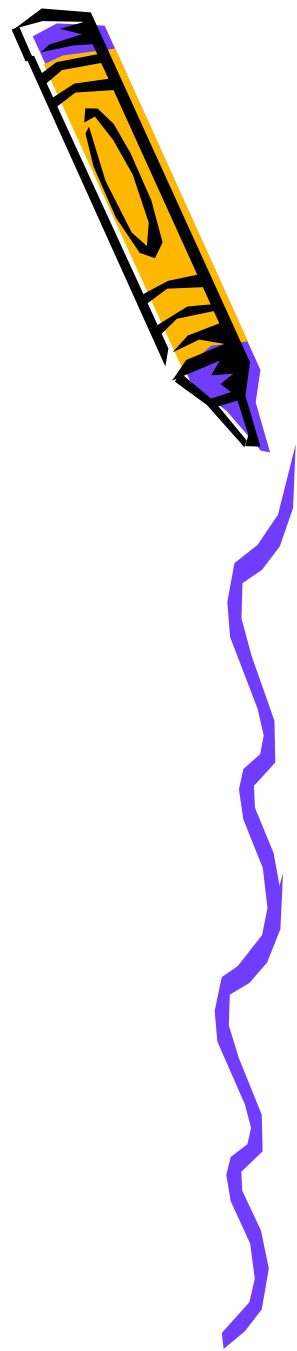




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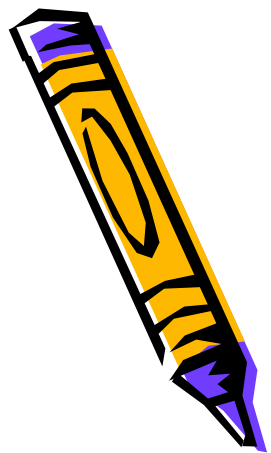
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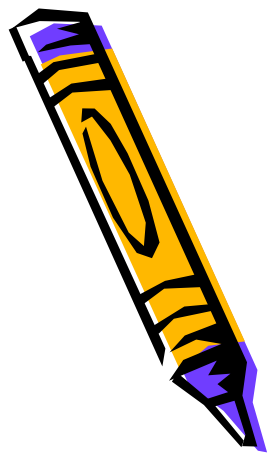
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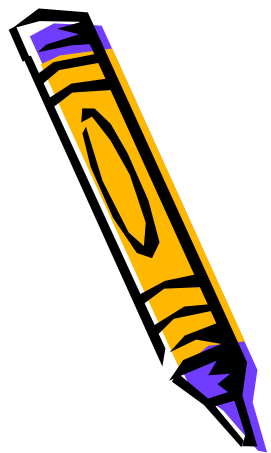
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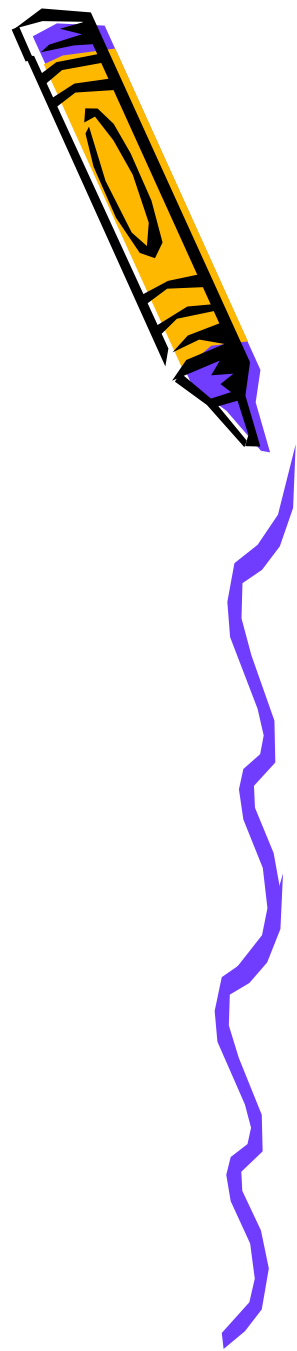


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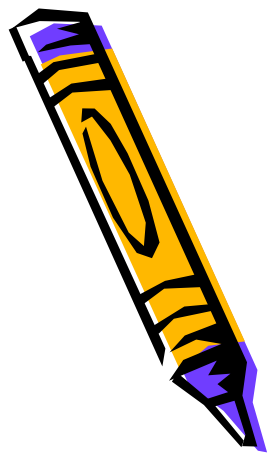
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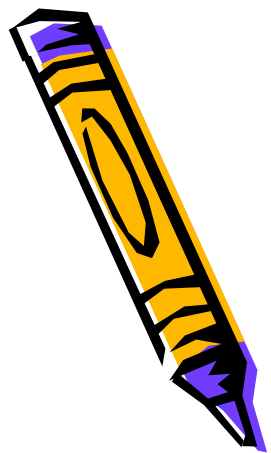
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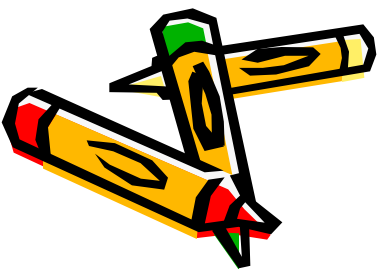
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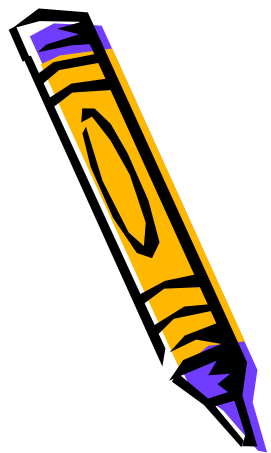
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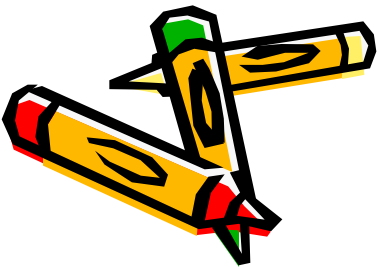
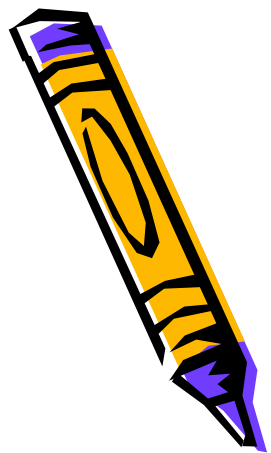
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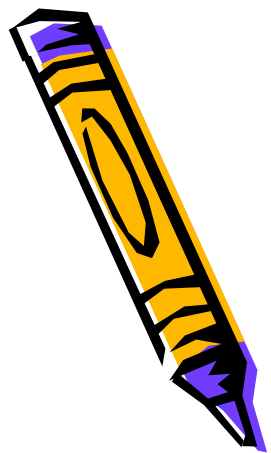
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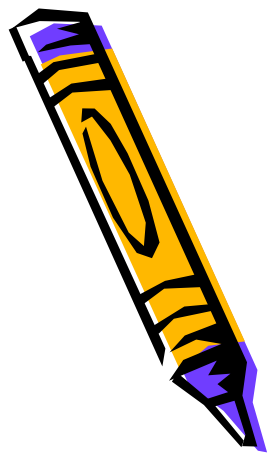
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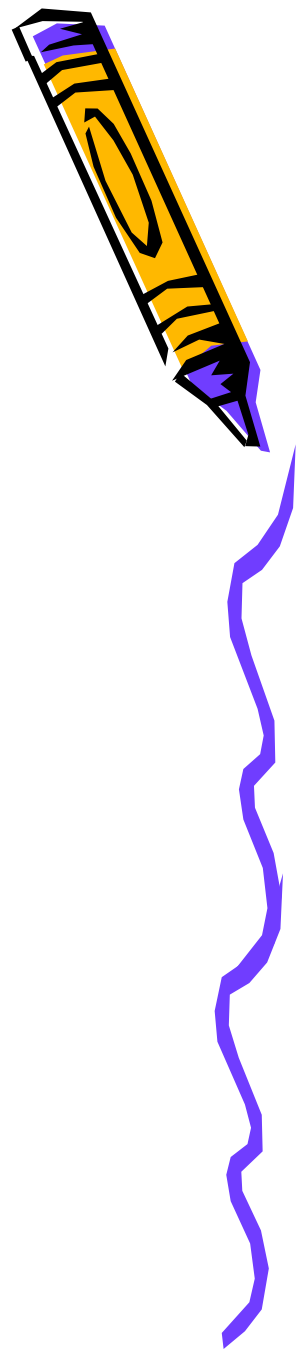


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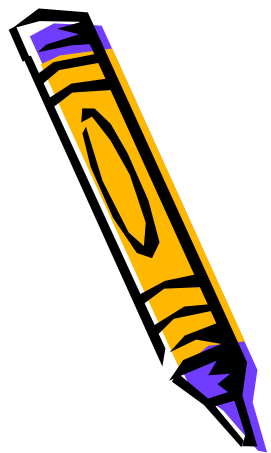




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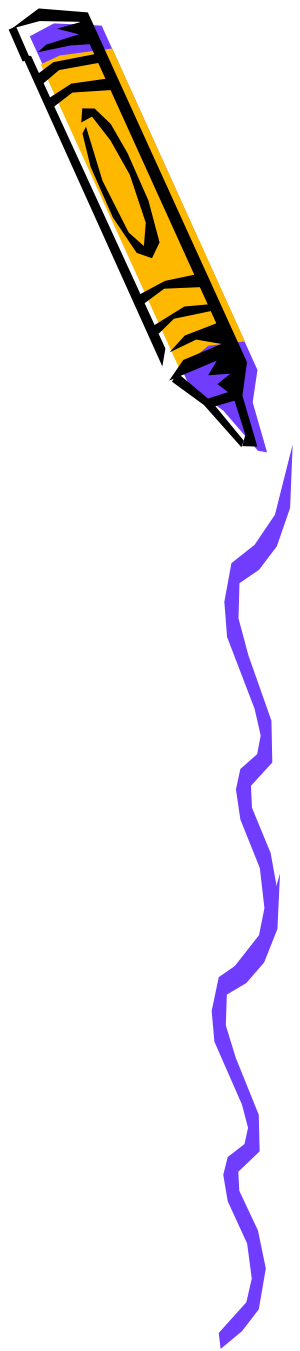


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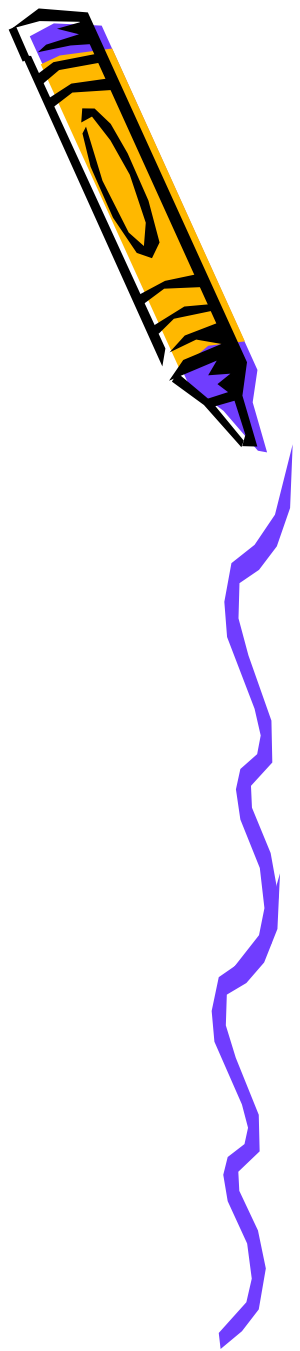


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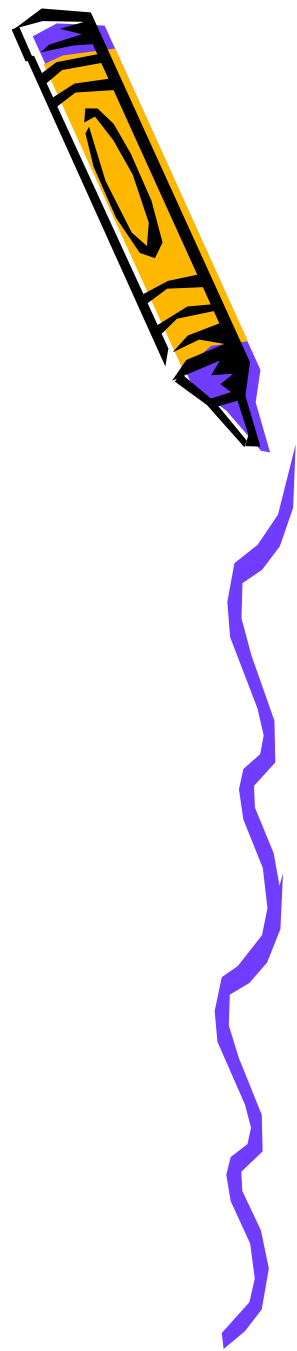


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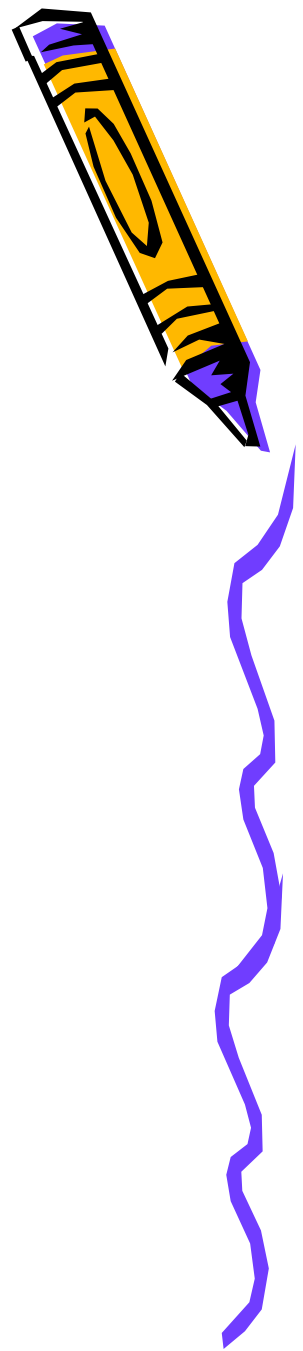


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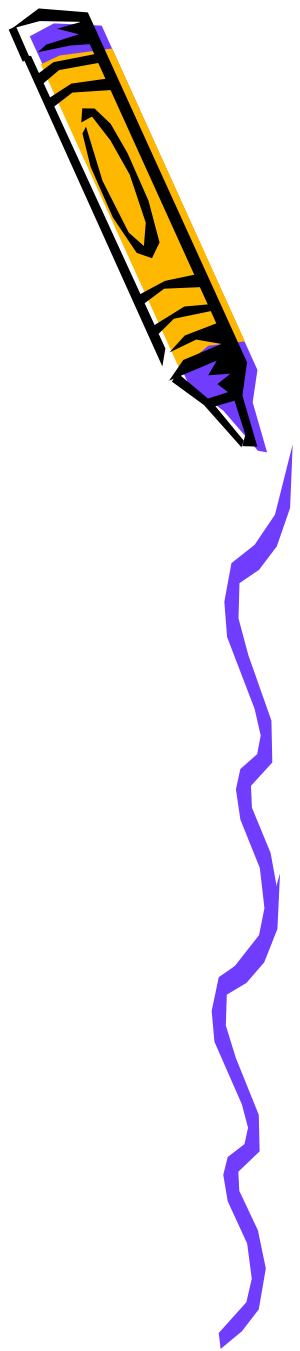


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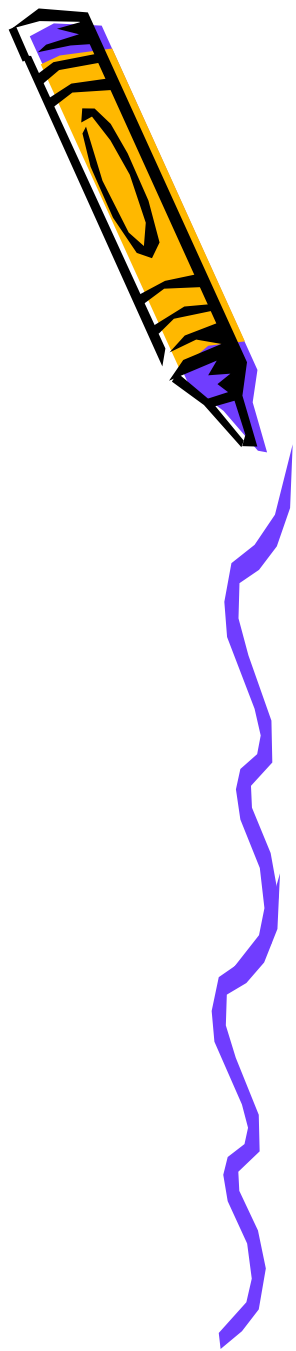


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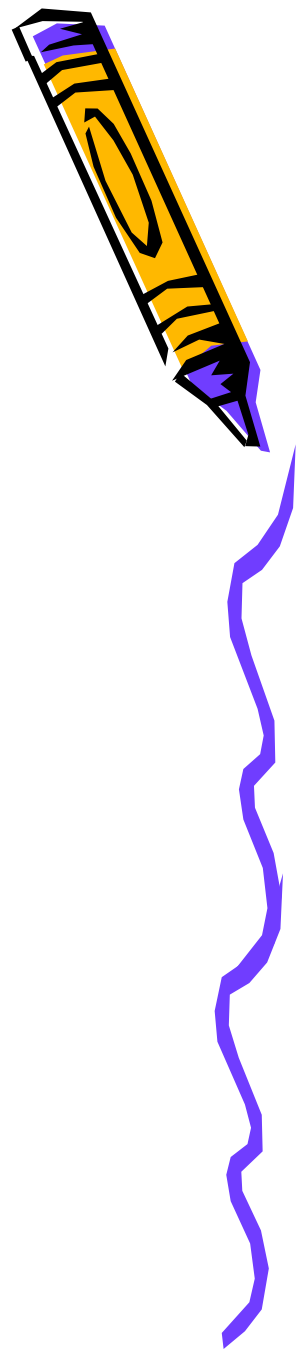


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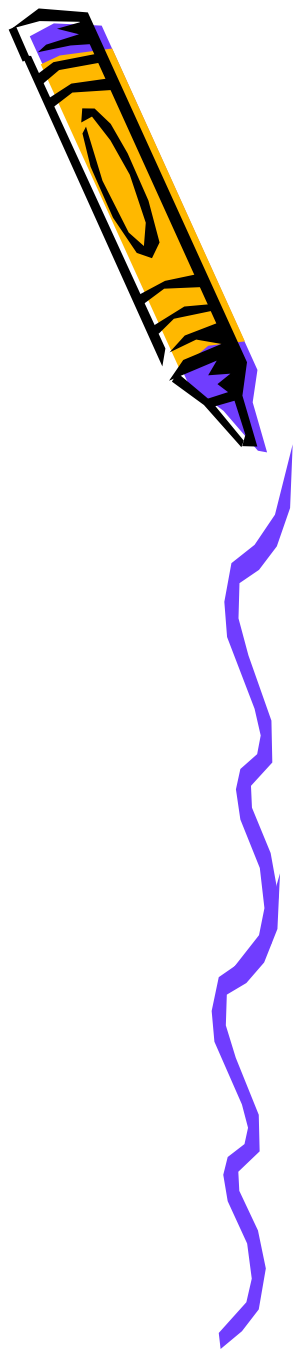


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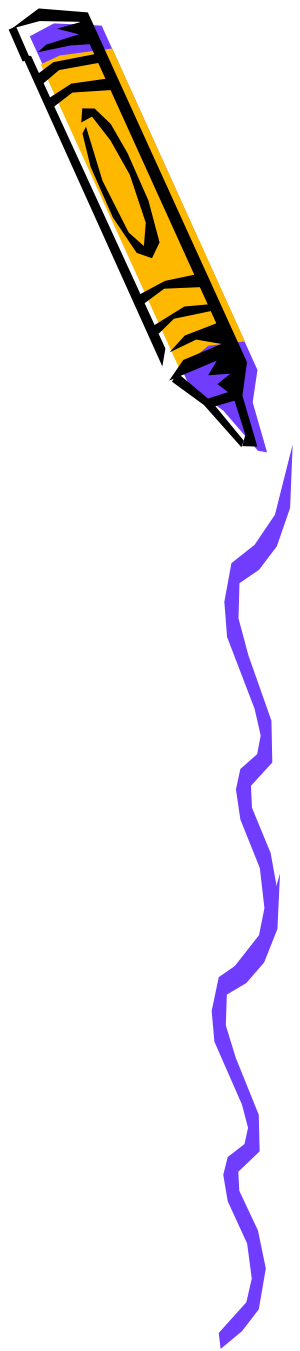


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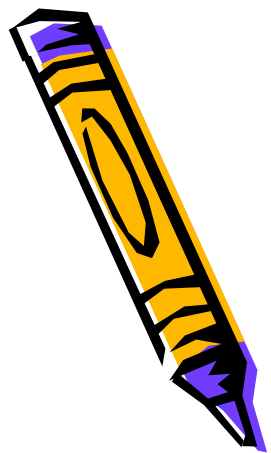




1



STOP



**Discuss the
inventors and
their inventions**





ALEXANDER

GRAHAM

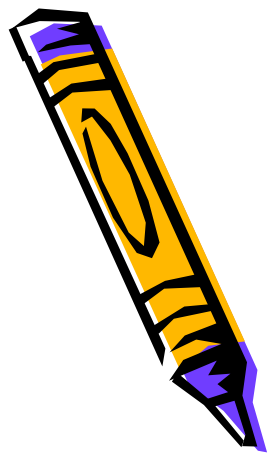
BELL



TELEPHONE

**GEORGE
WASHINGTON
CARVER**

PEANUT BUTTER





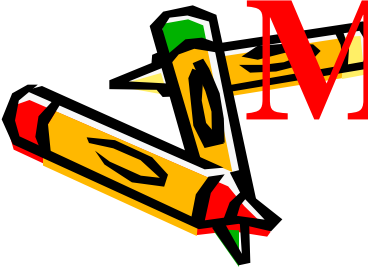
LEONARDO DAVINCI



**WALT
DISNEY**

**MULTIPLANE
CAMERA**

MICKEY MOUSE

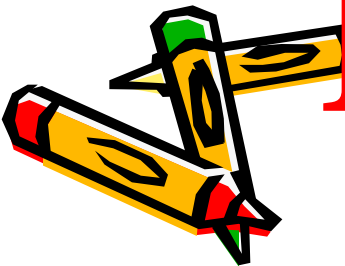


THOMAS

EDISON

PHONOGRAPH

LIGHTBULB





**ALBERT
EINSTEIN**

ATOMIC BOMB

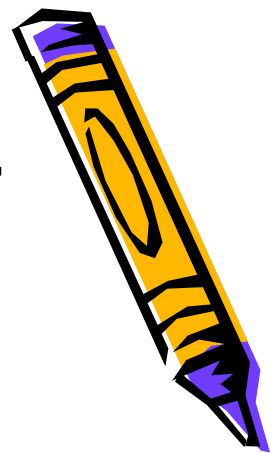


HENRY FORD



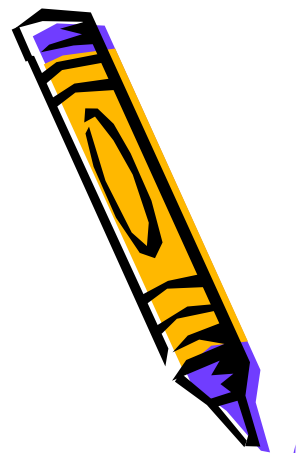
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FRANKLIN**

**BIFOCALS
LIGHTNING ROD
ODOMETER**



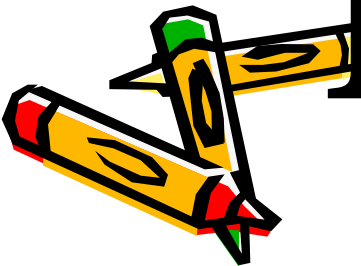
**JOHANNES
GUTENBURG
PRINTING
PRESS**



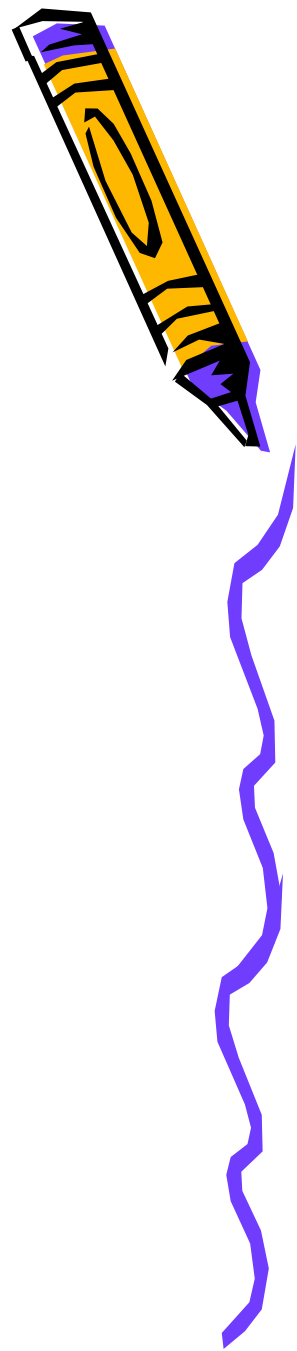


LEWIS

LATIMER



**SIR
ISAAC
NEWTON
REFLECTING
TELESCOPE**



**LEVI
STRAUSS**

BLUE JEANS





ELI

WHITNEY

COTTON GIN



WILBUR &

ORVILLE

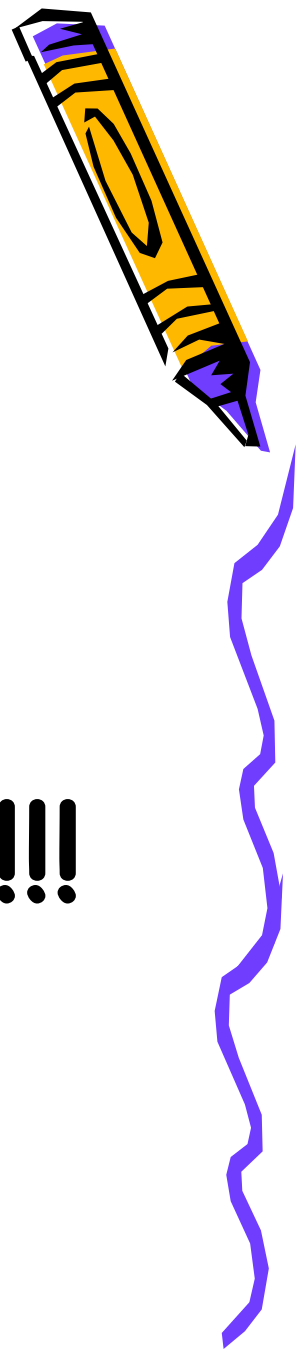
WRIGHT

AIRPLANE



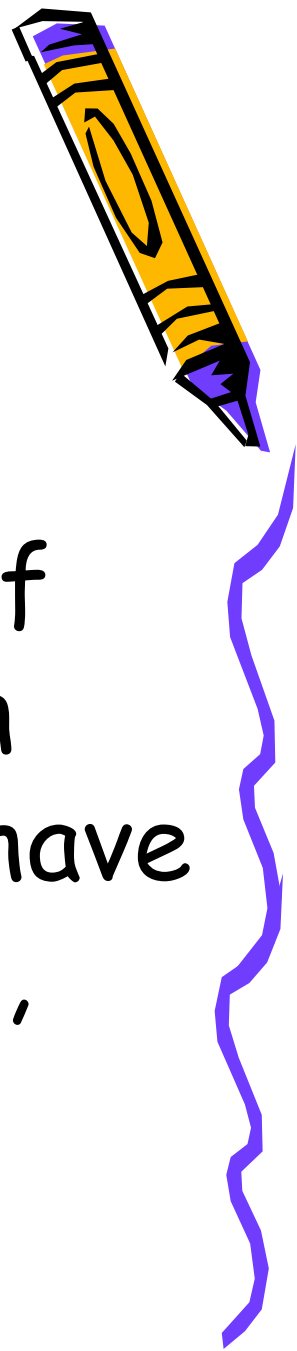
One Minute Drill

Last time, Get ready!!!



One Minute Drill

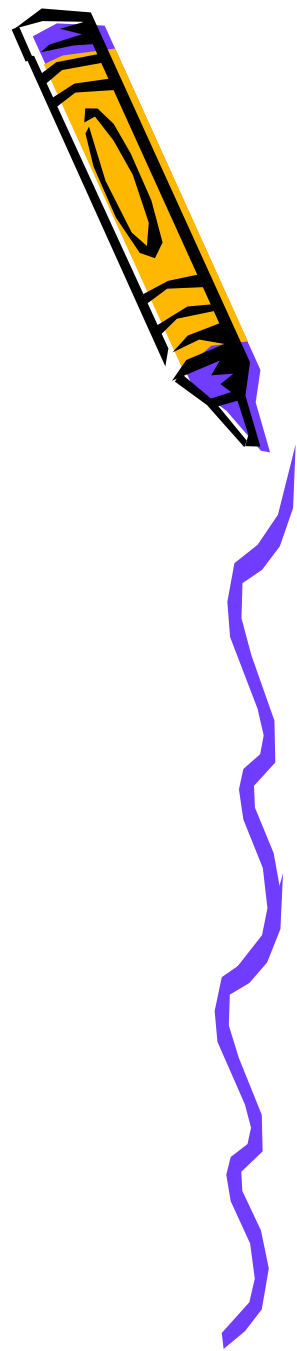
Now the hard part, pick one of your inventors and write down how his or her invention may have impacted the way people lived, worked, or produced things.



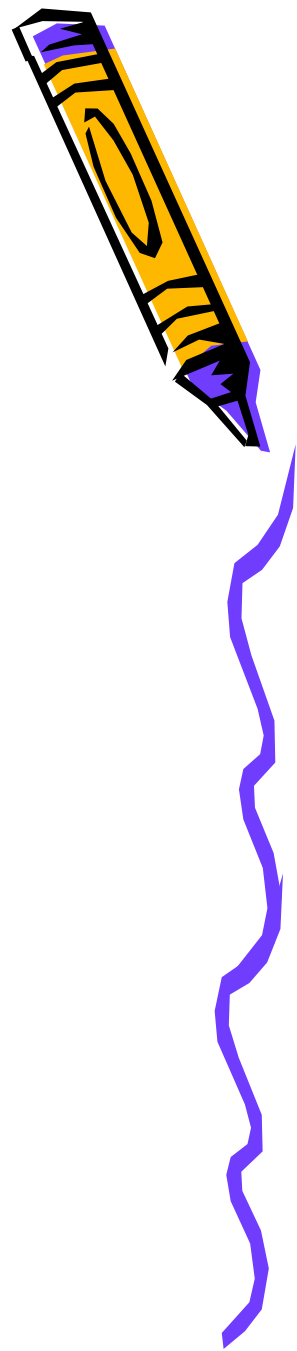
READY



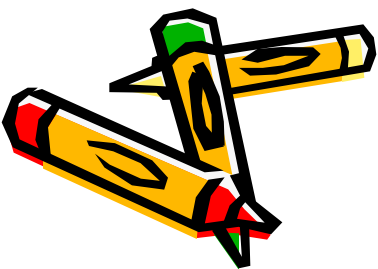
SET



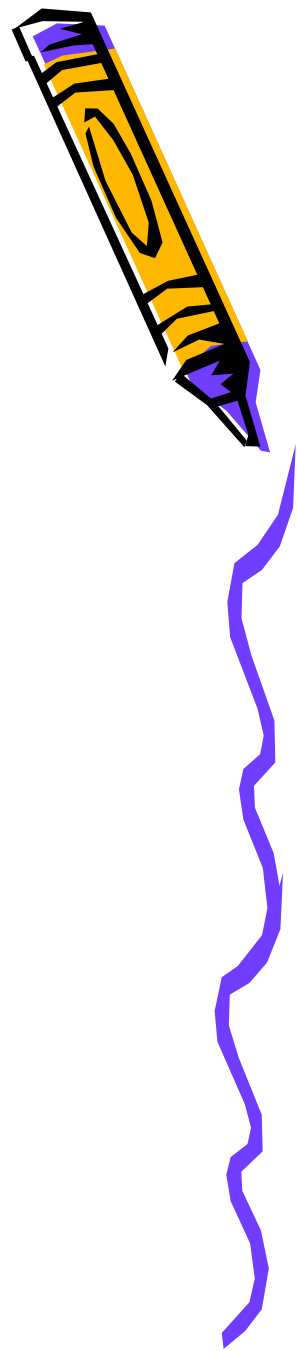
GO



59



58



57

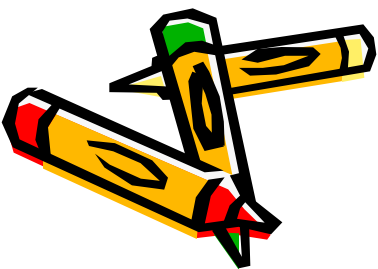


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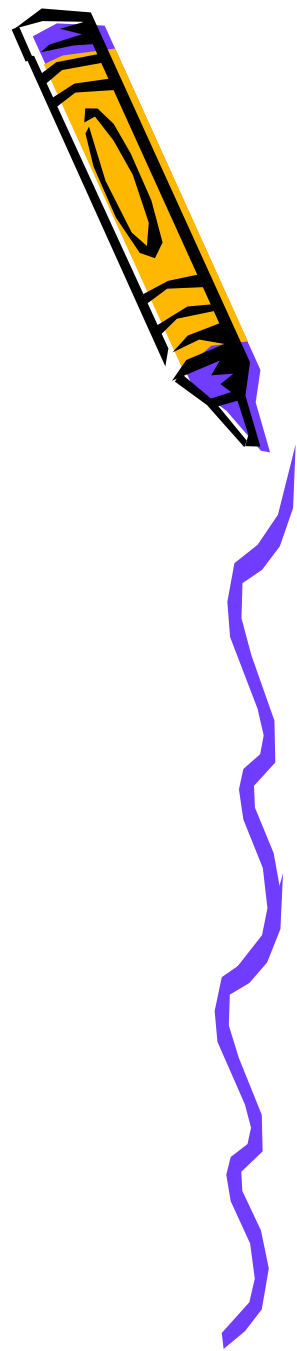


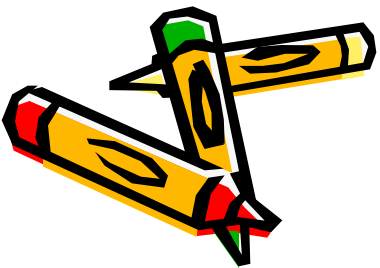


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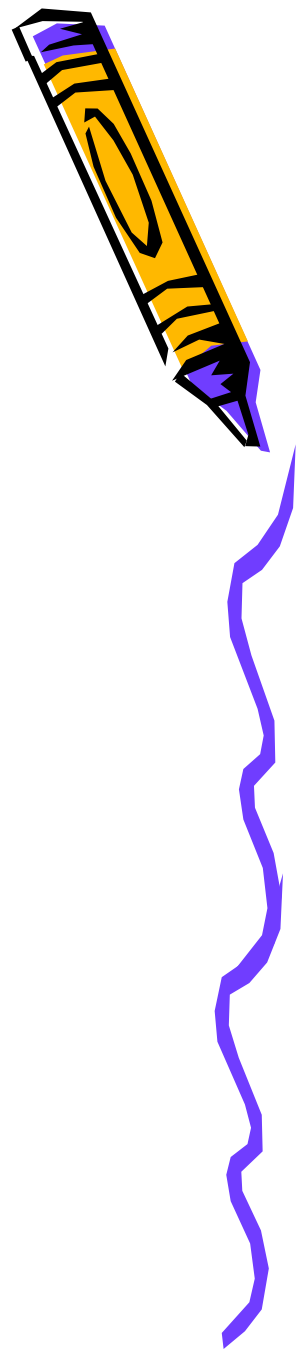


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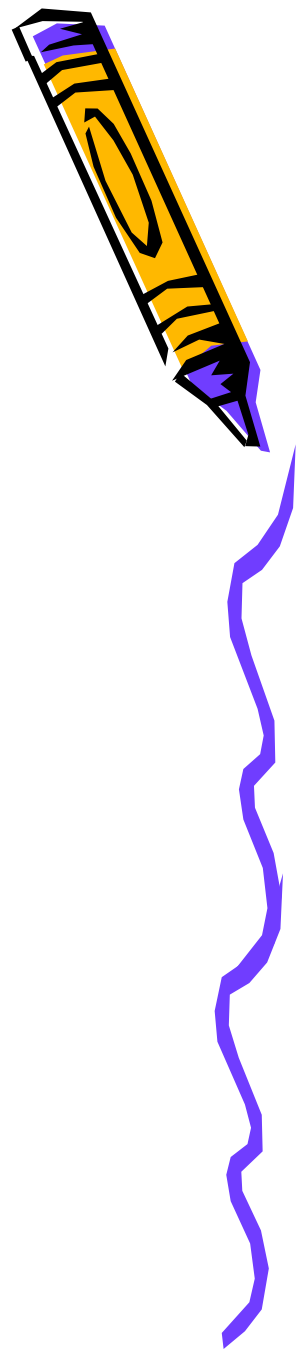


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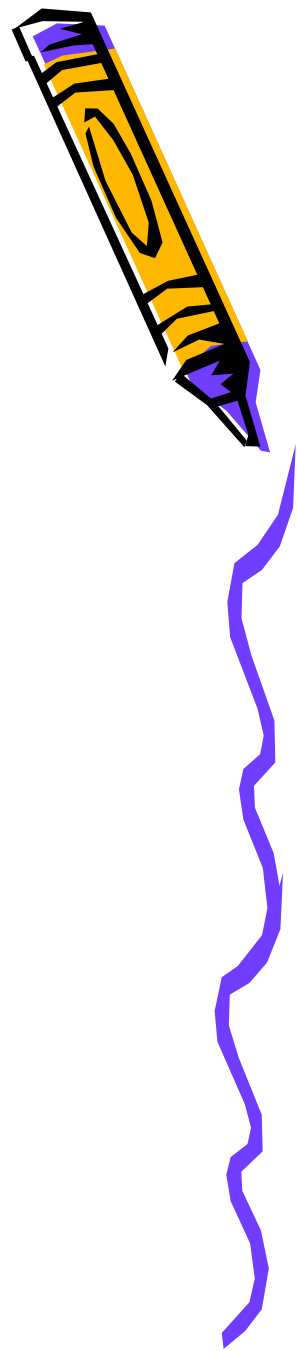




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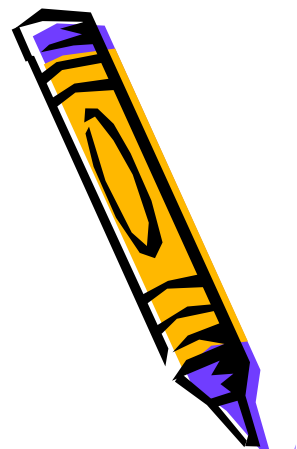


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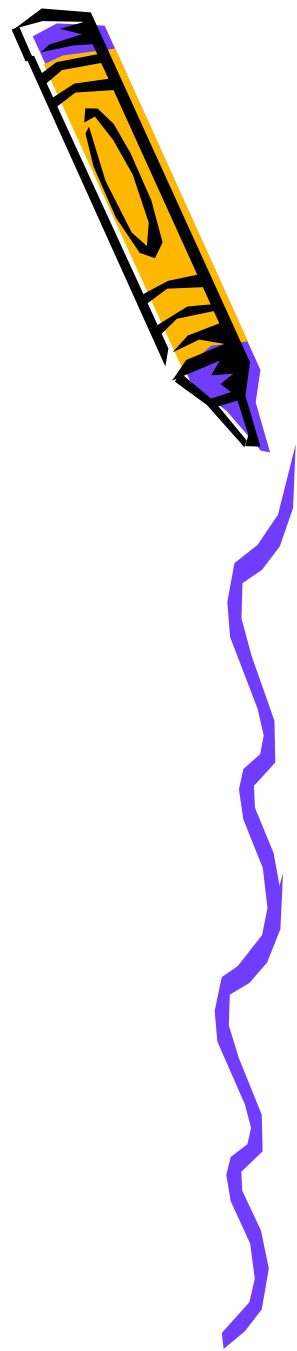




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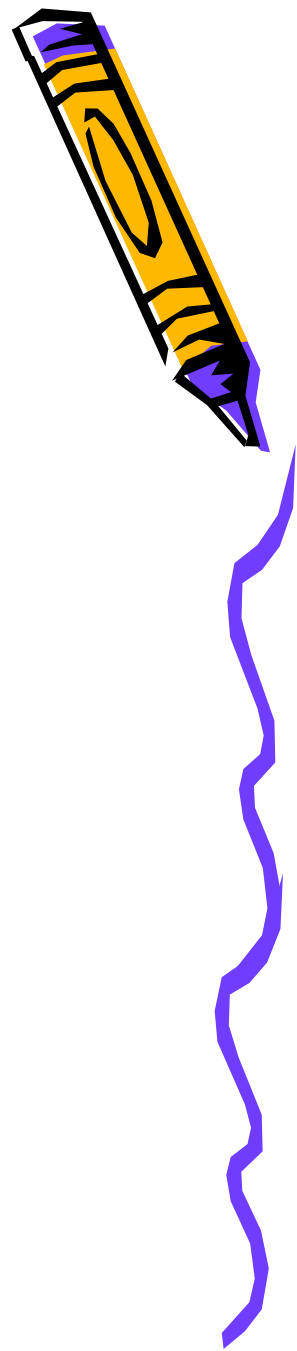
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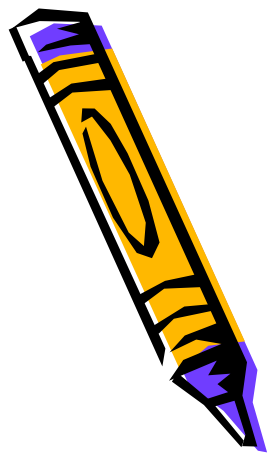
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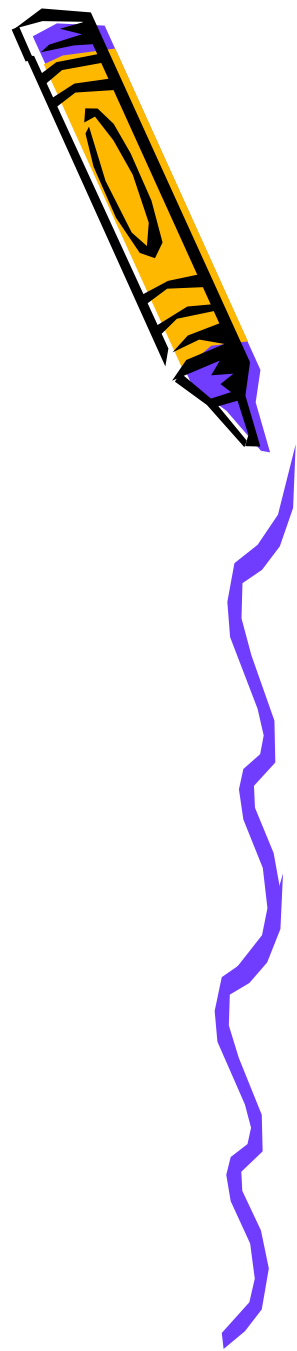


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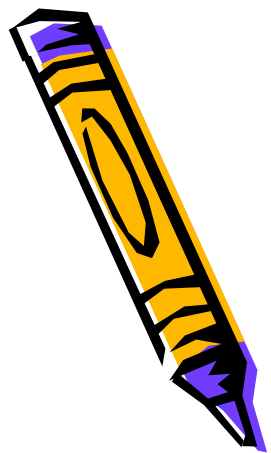




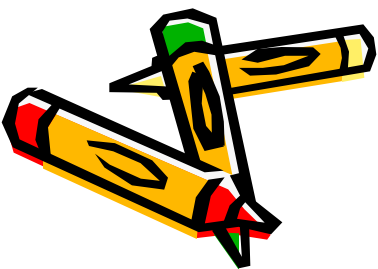
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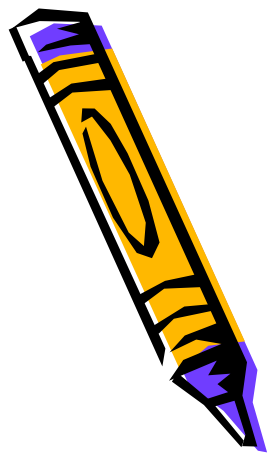
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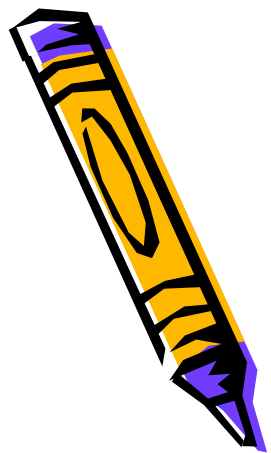
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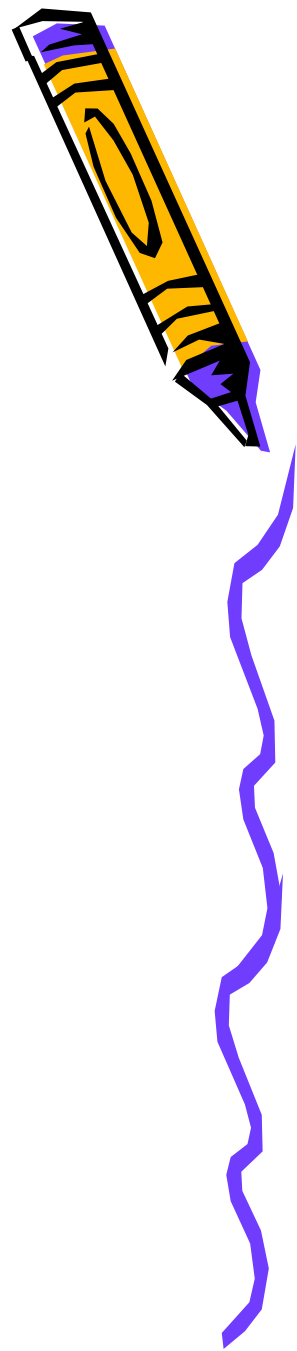
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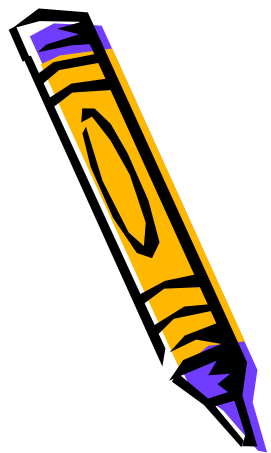
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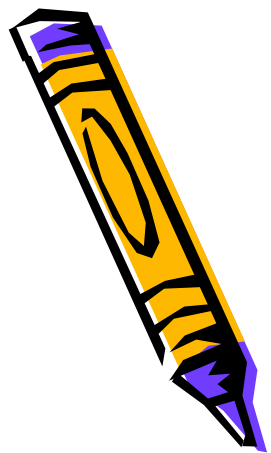
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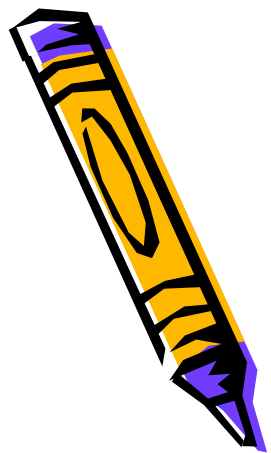
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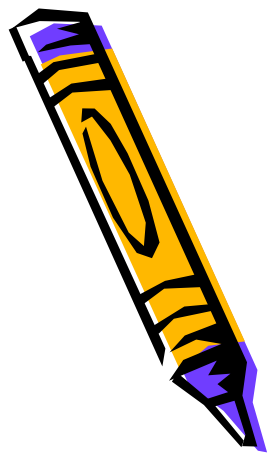
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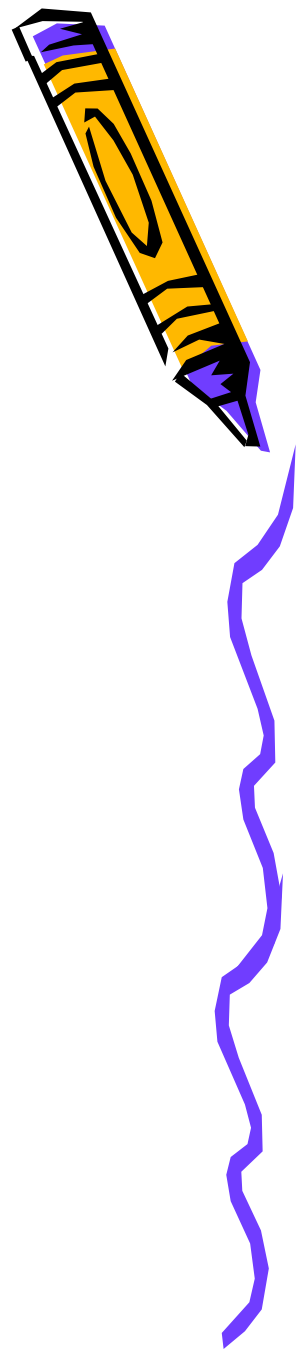


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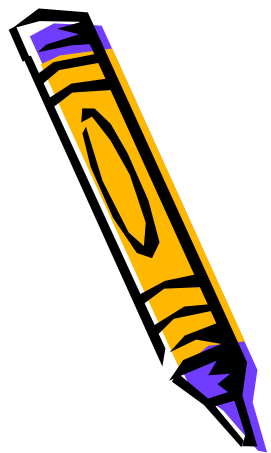




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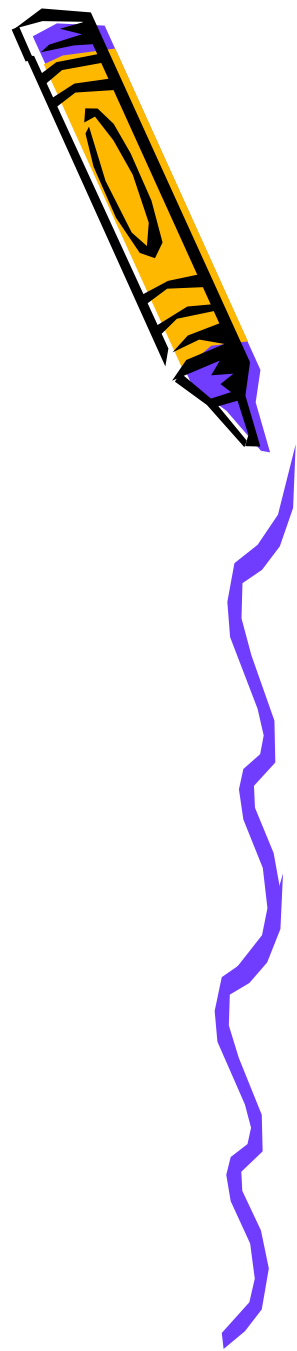


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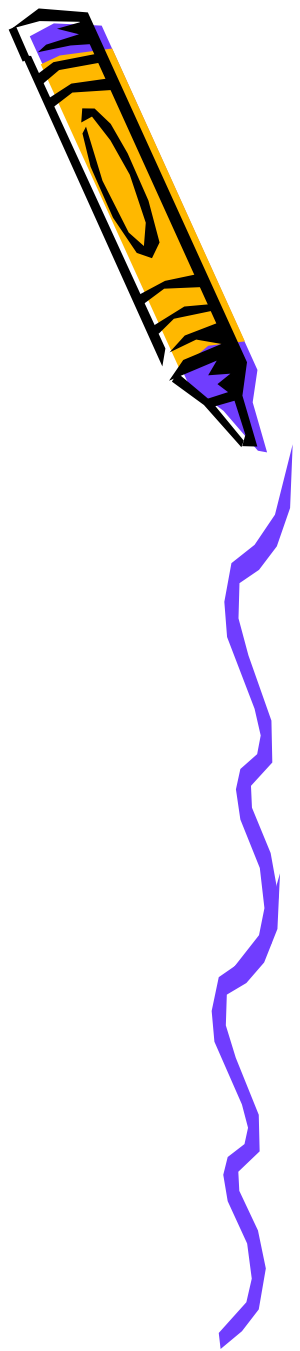


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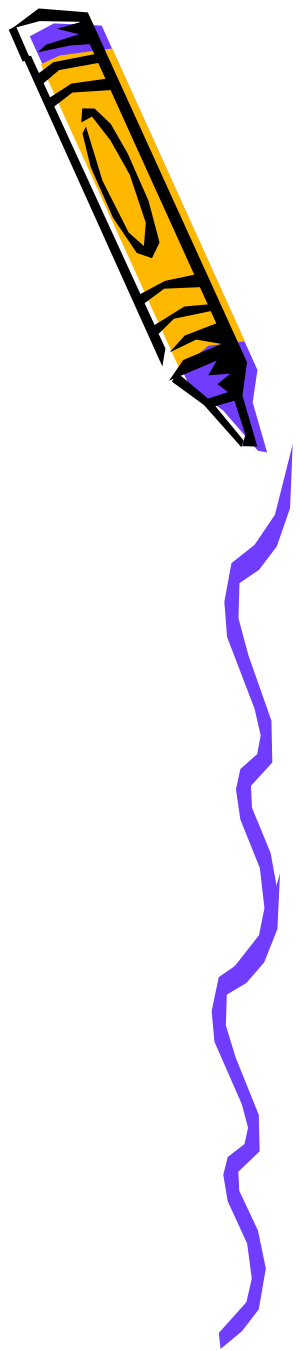


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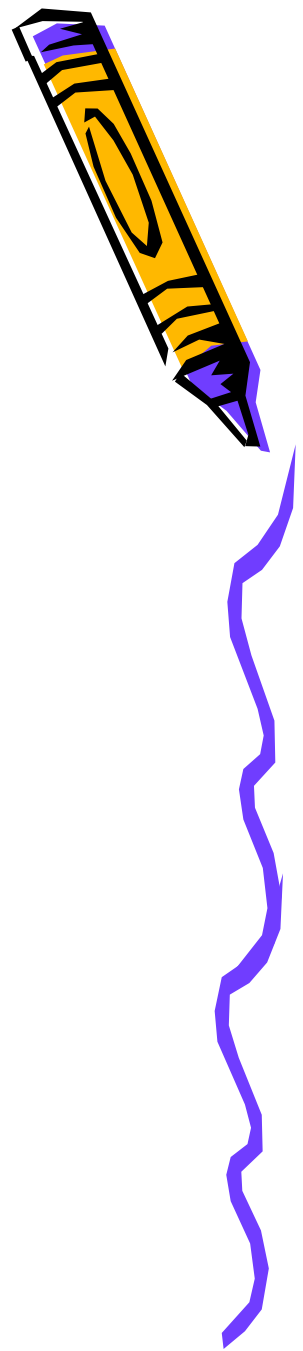


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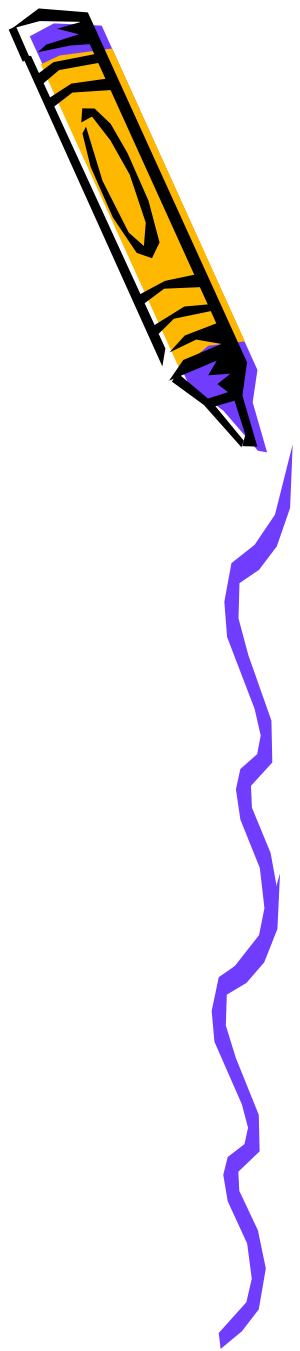


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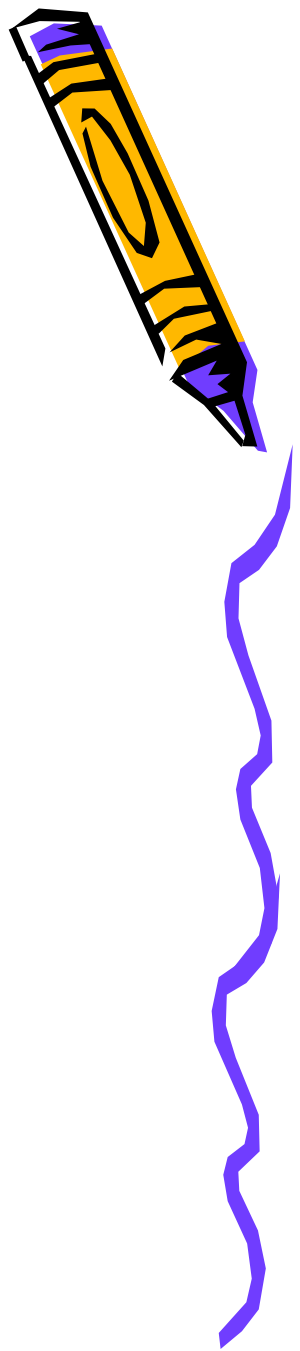


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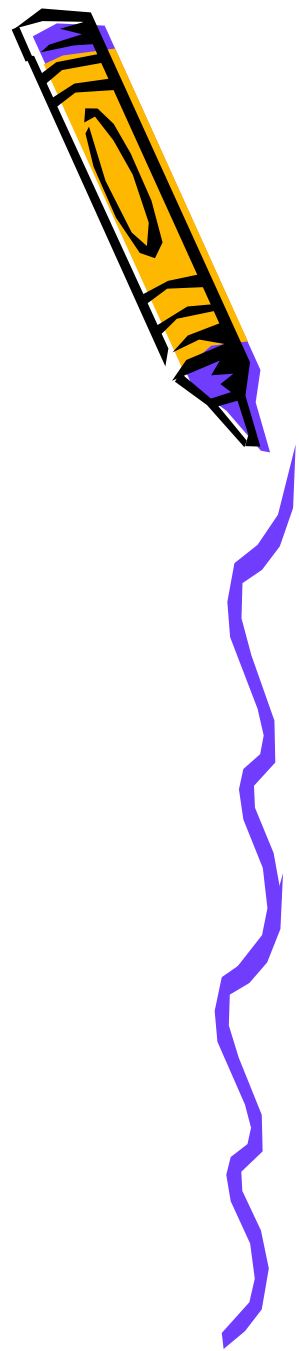


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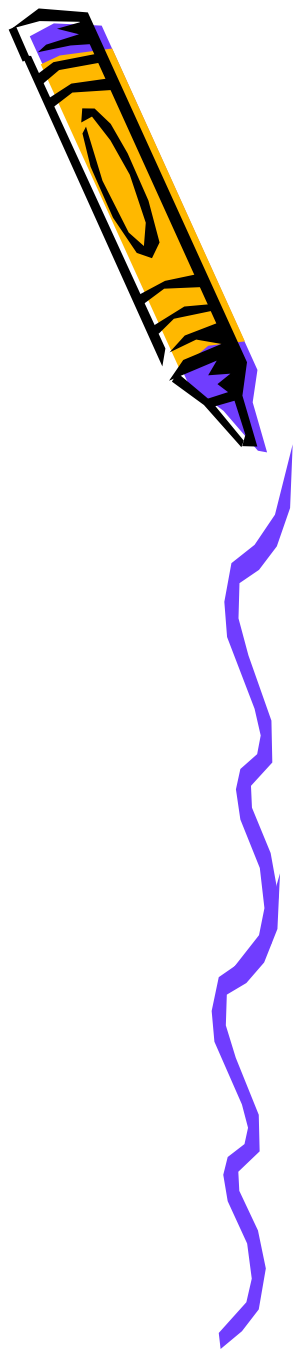


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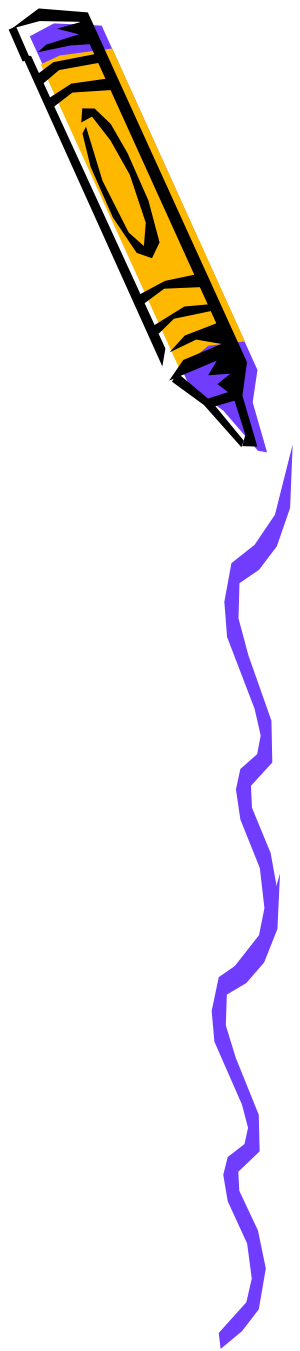


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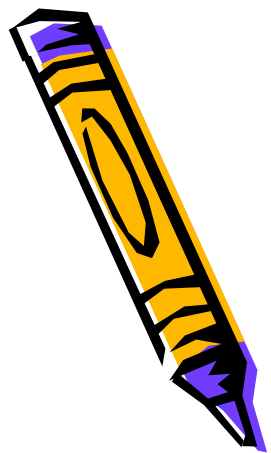




1



STOP



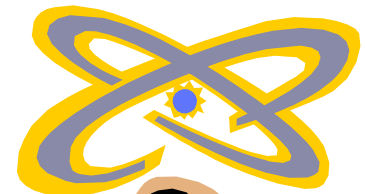
**Discuss the
impacts of their
inventions**



Invention and Innovation Definitions

- According to the Merriam-Webster Dictionary online (2006) an **invention** is "something invented : as (1) : a product of the imagination; *especially* : a false conception (2) : a device, contrivance, or process originated after study and experiment" (p. 1).

• <http://www.m-w.com/dictionary/invention>.



Invention and Innovation Definitions

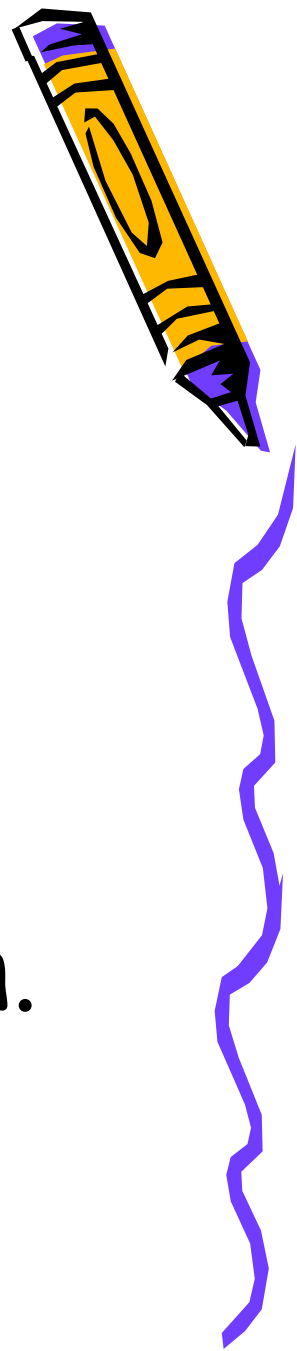
- An innovation, on the other hand, is "a new idea, method, or device" (Merriam-Webster, 2006, p. 1).



<http://www.m-w.com/dictionary/innovation>

But Those Definitions are So Similar...?!

- As you can see by the Merriam-Webster definitions, there's hardly a difference between an invention and an innovation.



But Those Definitions are So Similar...?!



However, *Technology Design and Applications* (Wright, T. & Brown, R., 2004) offers a distinction stating that an invention is:

“A new and unique product created by an inventor ” (p. 703) while an innovation is “The process of altering an existing product or system to improve it” (p. 702).

For our purposes we'll use the *Technology Design and Applications* definitions.



Science

"Science is the study of the natural world."

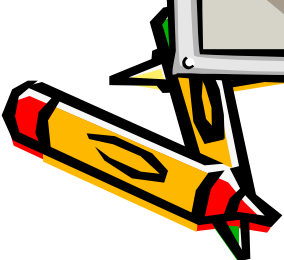
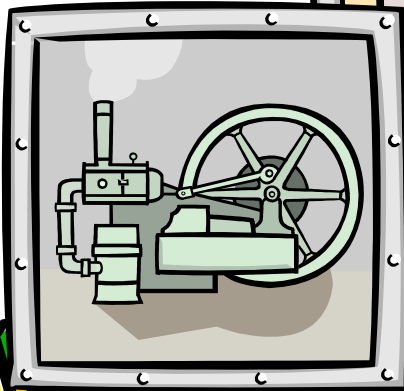
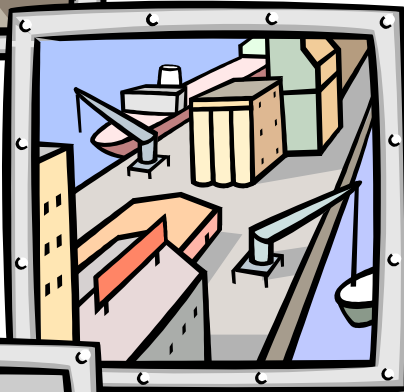
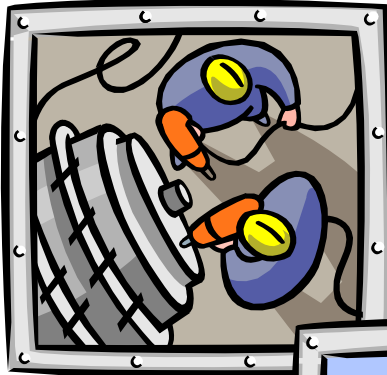
- We study our world by observing, identifying, describing, investigating, and explaining what they see and experience.
- Scientific study helps develop new cures for diseases, new products for consumers, and new ways to work and live.



Technology

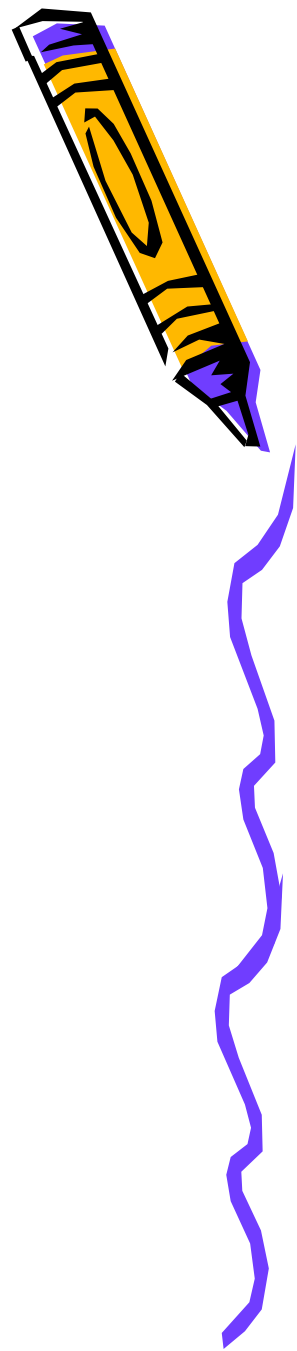
- Technology is not just computers.
- Technology refers to human invention and innovation in action.

"Technology is the use of knowledge to turn resources into goods and services that extend our capability."



Essential Question

What is invention and innovation?





Conclusion

ENGR 7-2 Lesson 1

