What to learn and why learn it.

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This talk will be near the top of my home page
http://sep.stanford.edu/sep/jon/

Too many things to learn

- PC or Mac
- Word smithing
- PowerPoint
- data base
- Photoshop
- Spread sheet
- MIT Scratch!
- Lego robotics
- html web page
- data graphing
- C, Python, Fortran....
- LaTeX, Mathematica...
- more.....

MIT Scratch is taught middle school through high school.

We don't use it in my lab at Stanford.

So why am I here?

Grandson age 8 wants Lego Robotics

MIT Scratch is taught middle through high school,
but fun for all ages,
and covers(!) programming principles.

Some middle schoolers have narrated the best
beginner videos

http://info.scratch.mit.edu/Video_Tutorials

Let's turn off this slide show

and try out Scratch !

.....

but first a teeny bit of math

x measures horizontal distance to the right,
if negative, to the left.

y measures vertical distance up,
if negative, down

(x,y) locates a point, like where your sprite is.

If you paint a dot on the rim of a wheel
and spin the wheel,
the dot will move up and down y(t)
and it will move left and right x(t).

x(t)=sin(t) Say "Sine of time t"
y(t)=cos(t) Say "Cosine of time t"

(x,y)=(x(t),y(t)) locates your dot.

This is the most important mathematical function
in science and engineering because of waves.

Now let's really turn off this slide show

and try out Scratch !

You can browse the MIT Scratch web site examples,
but I don't recommend that.

Most of what you'll find there is amateur stuff
like what I showed you. If you want computer games,
go buy real ones that aren't so dumb.

Grabbing other people projects to get started is OK.
You'll need to register first.
You can find my projects (if you can spell Claerbout)

Downloading MIT Scratch

Google will find it for you.
mit.edu is a safe place to get stuff.
You should need the password for your PC.

Scratch is fun from middle school to all ages.
Introduces programming basics.

For the mechanically oriented, continuing steps are:

Scratch (free), great diversity of activities
Pico board, $50, maybe not
Lego Wedo, $125, Scratch with motor, sensors
Lego Mindstorms NXT, $279, robotics, wow!
Lego NXT $279 + LabView $99 (required for Mac)

Scratch (free), fun for middle school to all ages.

Pico board, $50, a few almost boring sensors
http://www.picocricket.com/picoboard.html

Lego Wedo, $125+, has motor, tilt and distance sensor
http://www.legoeducation.us/eng/product/lego_education_wedo_robotics_construction_set/2096

Lego Mindstorms NXT, $279+, robotics, wow! (not Scratch)
http://www.legoeducation.us/eng/product/lego_mindstorms_education_nxt_base_set/2095

Lego NXT $279+ & LabView $99 (required for Mac)
Hey, after you learn LabView, maybe you can get a paying job!