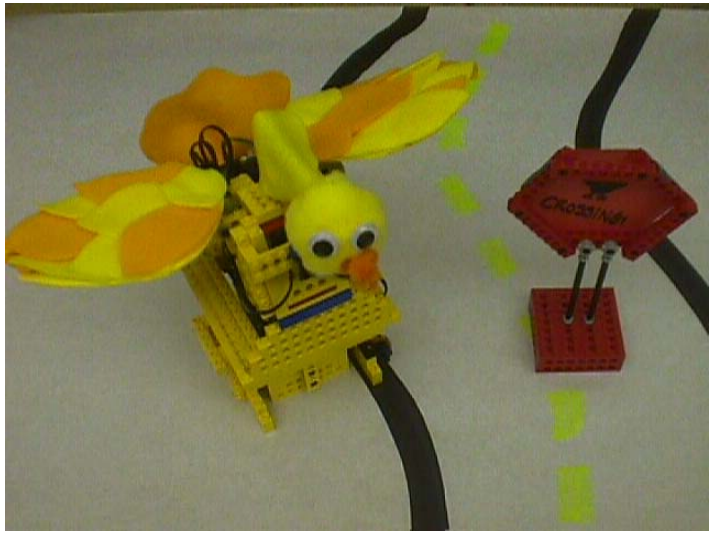
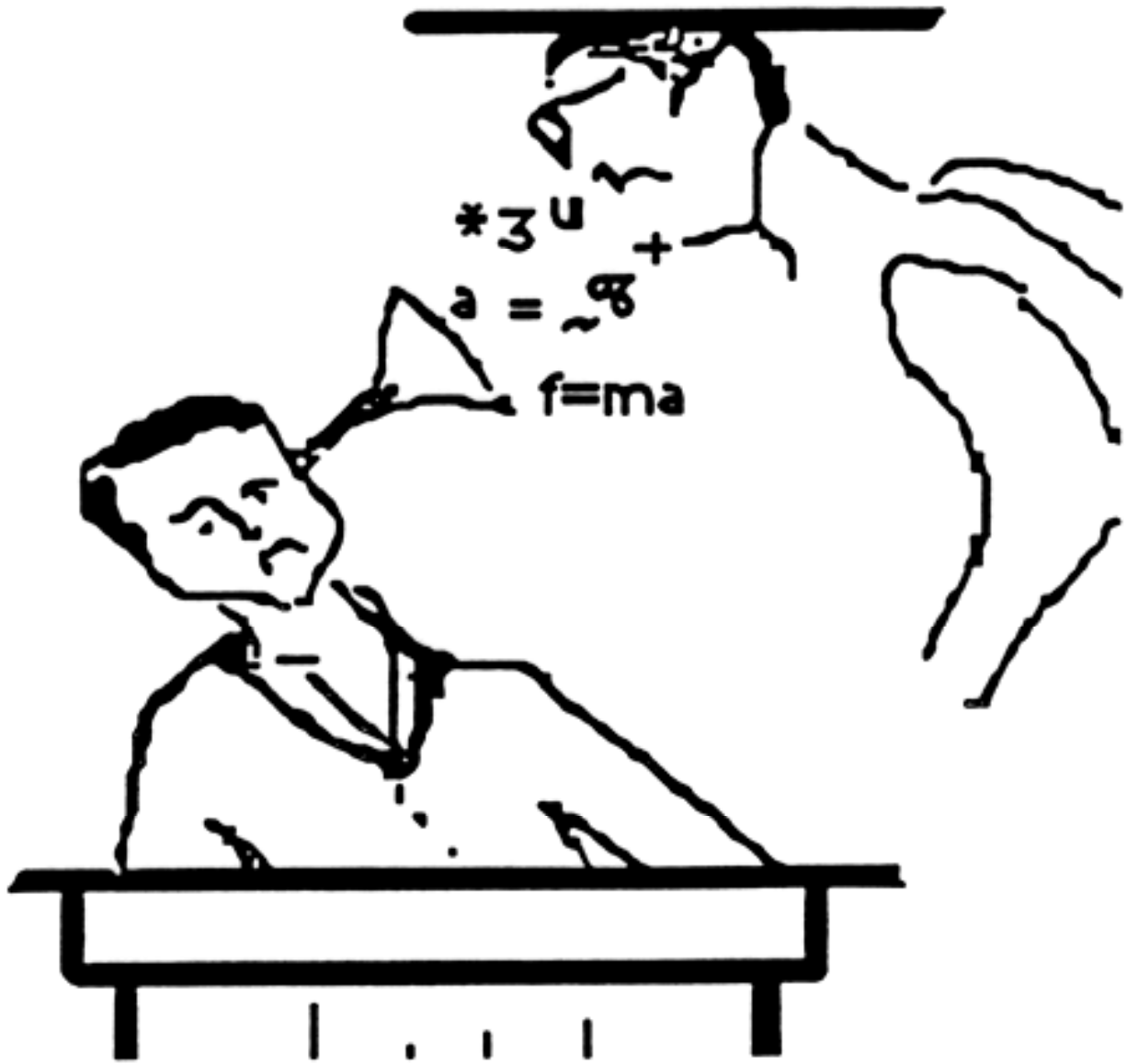


Robotic Design Studio: Engineering for Everyone

Robbie Berg, Dept. of Physics
Lyn Turbak, Dept. of Computer Science

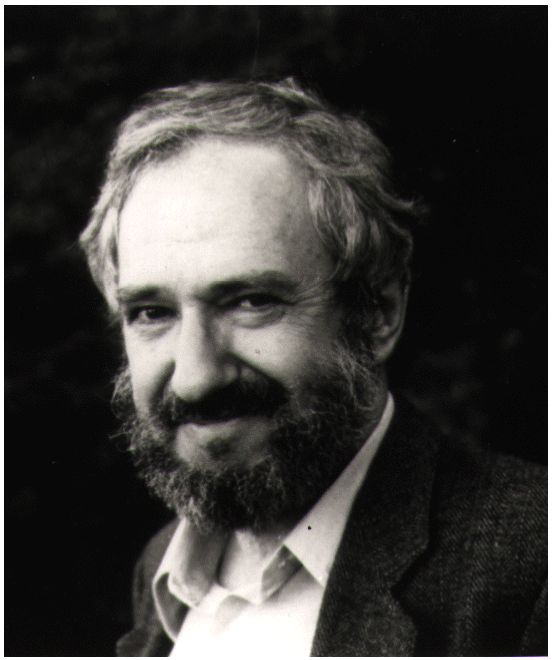

*3u
a = -8+
f=ma

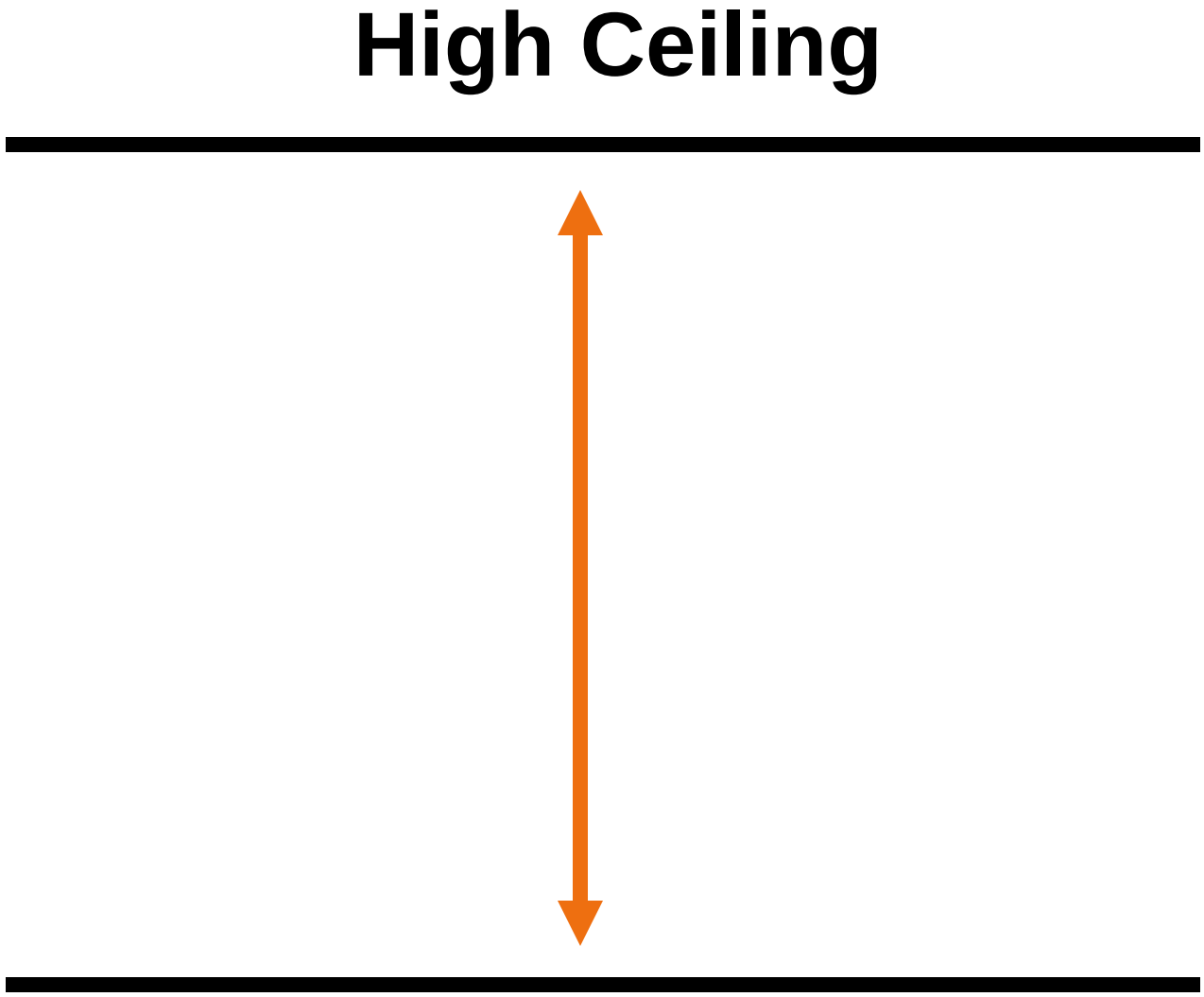
Constructivism (Piaget):

learning by “constructing your own knowledge”

Constructionism (Papert):

learning by– literally - building and designing

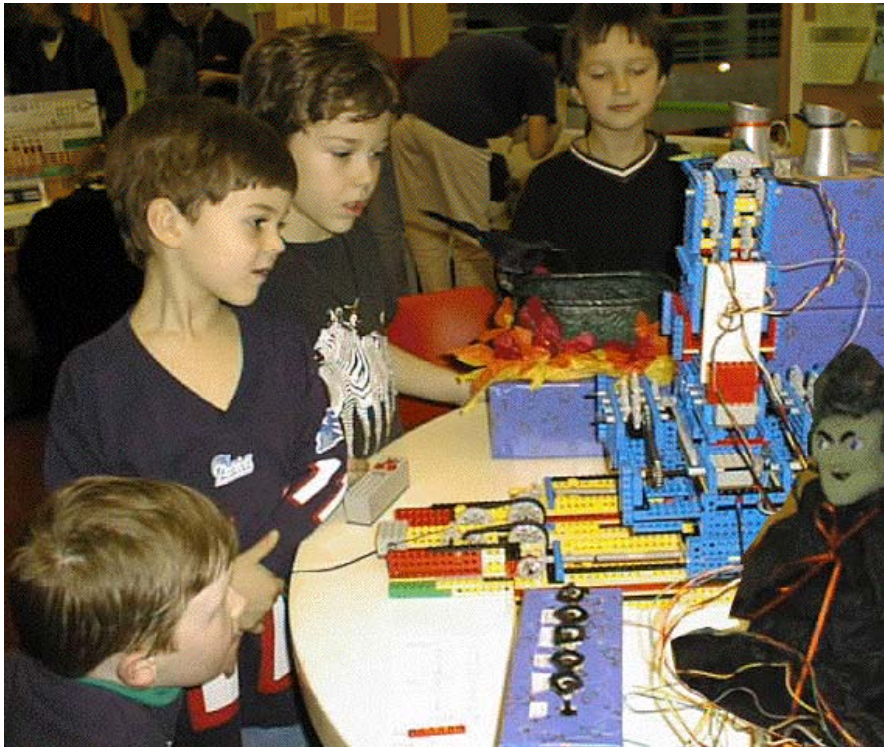


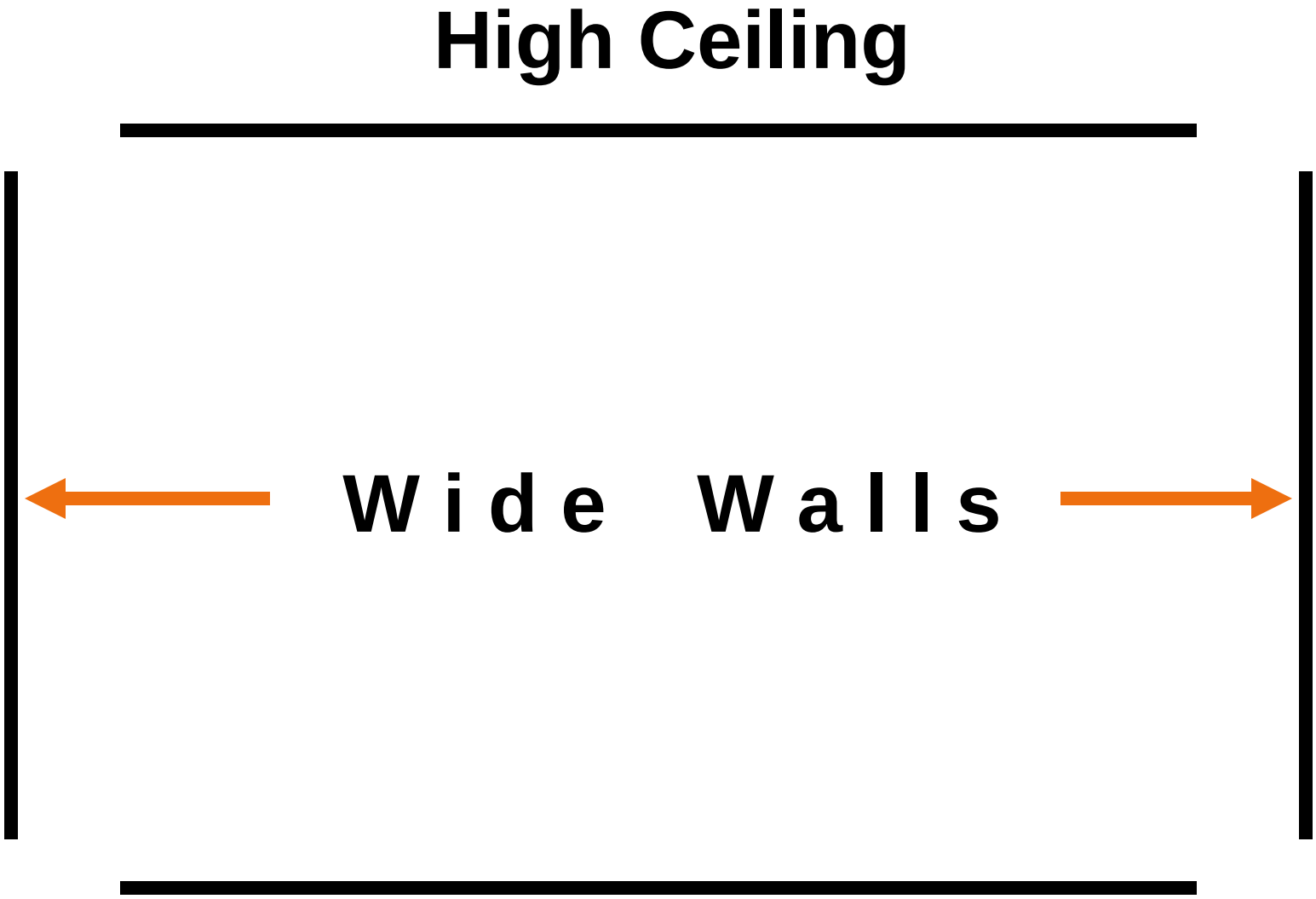

High Ceiling
Low Floor

With exhibitions you can’t lose…

Multiple paths

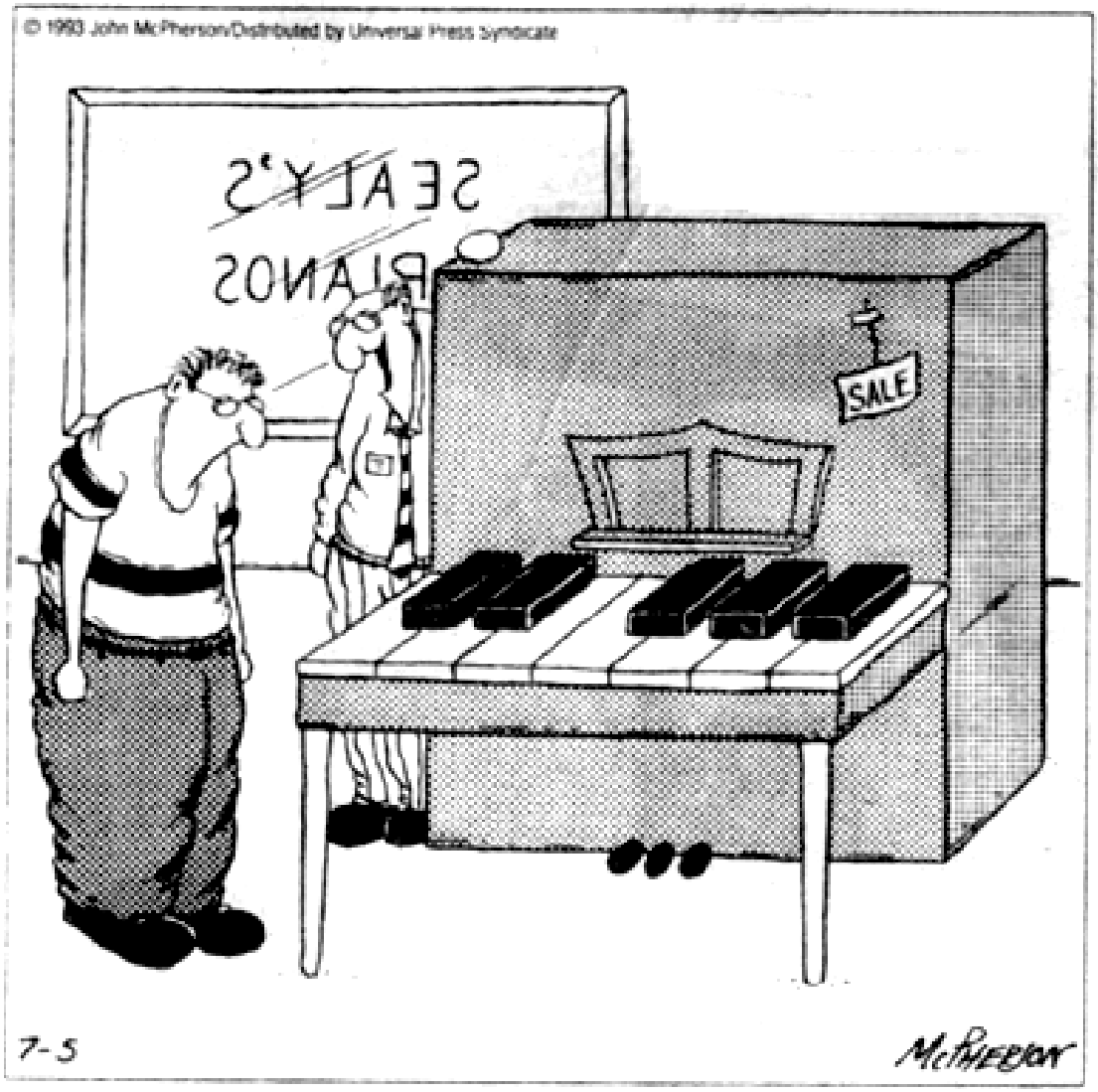
Personal connections




High Ceiling
Wide Walls
Low Floor

Robots that tell a story…

CLOSE TO HOME



"Granted, it doesn't have the versatility of our other models, but most people find it much easier to play."

LEGO Mindstorms

CRICKET
With PicoCrickets, you can create musical sculptures, interactive jewelry, dancing creatures, and other playful inventions.
www.picocricket.com
CREATE. PROGRAM. PLAY.

Meet the PicoCricket

www.picocricket.com

Motor & Motor Board
Make the motor move.

Display
Display numbers.

Beamer
Send programs from your computer to your PicoCricket.

Resistance Sensor
How much resistance is there between the alligator clips?

Sound Sensor
How loud is the sound?

Colored Lights
Light up any color.

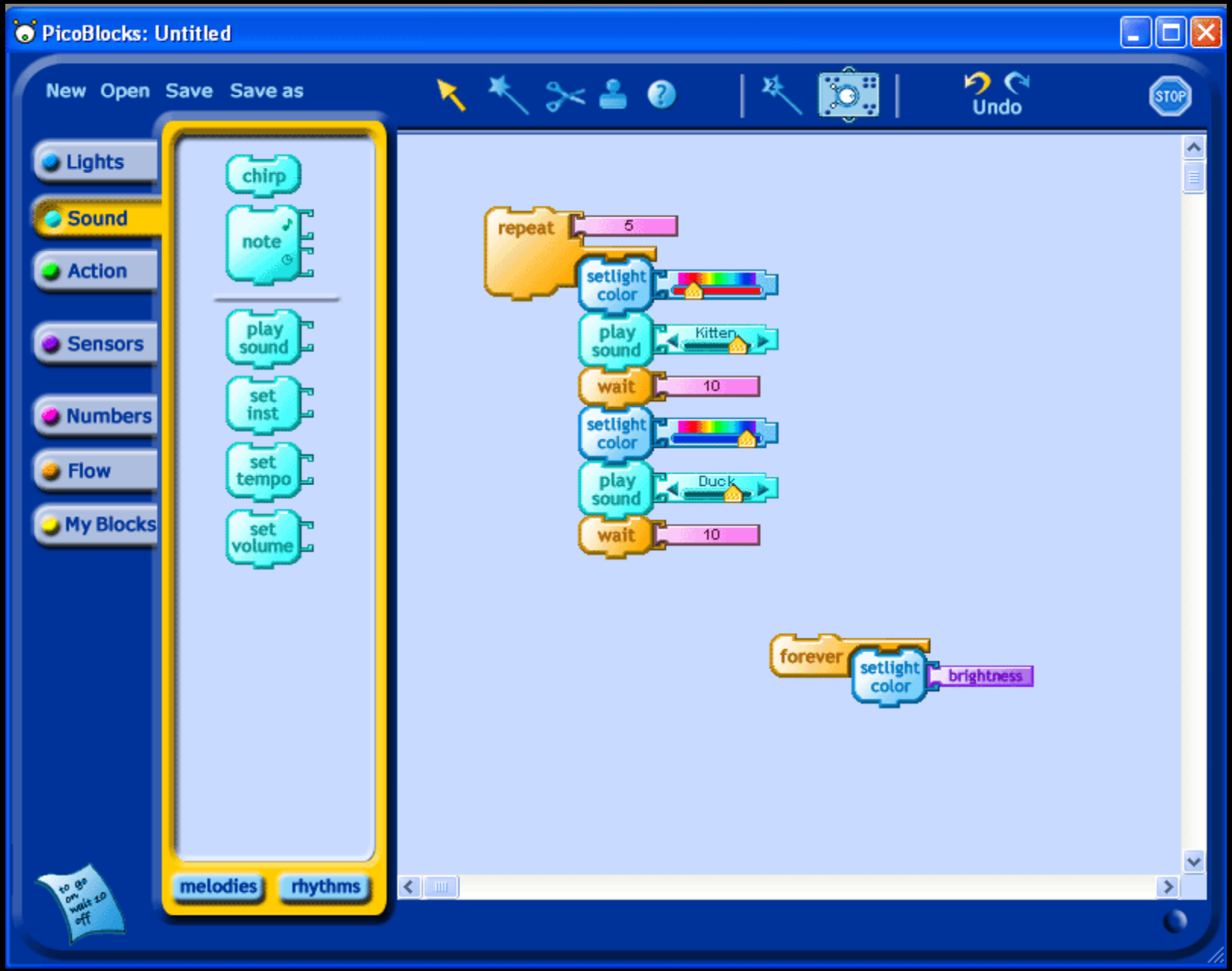
Sound Box
Make a melody or rhythm.

PicoCricket
Program it to control your creations.

Touch Sensor
When is the button touched?

Light Sensor
How bright is the light?

Plug in the parts, program, and play


PicoBlocks: Untitled
New
Open
Save
Save as
Undo
STOP
Lights
Sound
Action
Sensors
Numbers
Flow
My Blocks
chirp
note
play sound
set inst
set tempo
set volume
melodies
rhythms
repeat
5
setlight color
play sound
Kitten
wait
10
setlight color
play sound
Duck
wait
10
forever
setlight color
brightness

adidas

HUGMYNDA SMIÐJAN

Scratch | Home | imagine, program, share

http://scratch.mit.edu/

Google

ie Berg NY Times ESPN Google Wikipedia

SCRATCH

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New version available. Get Scratch 1.2.1 now! (hide)

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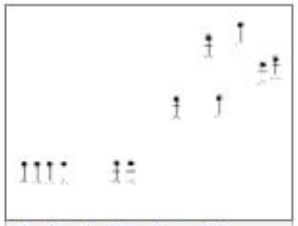

Joshua's Territory W...
by dlaboyrush

Neeta's project
by dlaboyrush

ball
by Lolmo123

Featured Galleries

Scratch Honor ...

TSGU

Original Sprit...

See more

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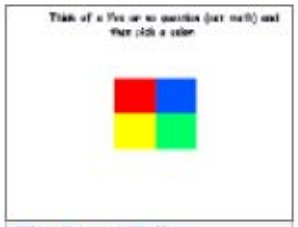
railway
by ordnas



The Future Teller
by Lucario621

Toy horse
by Maanasukas

Scratch Club

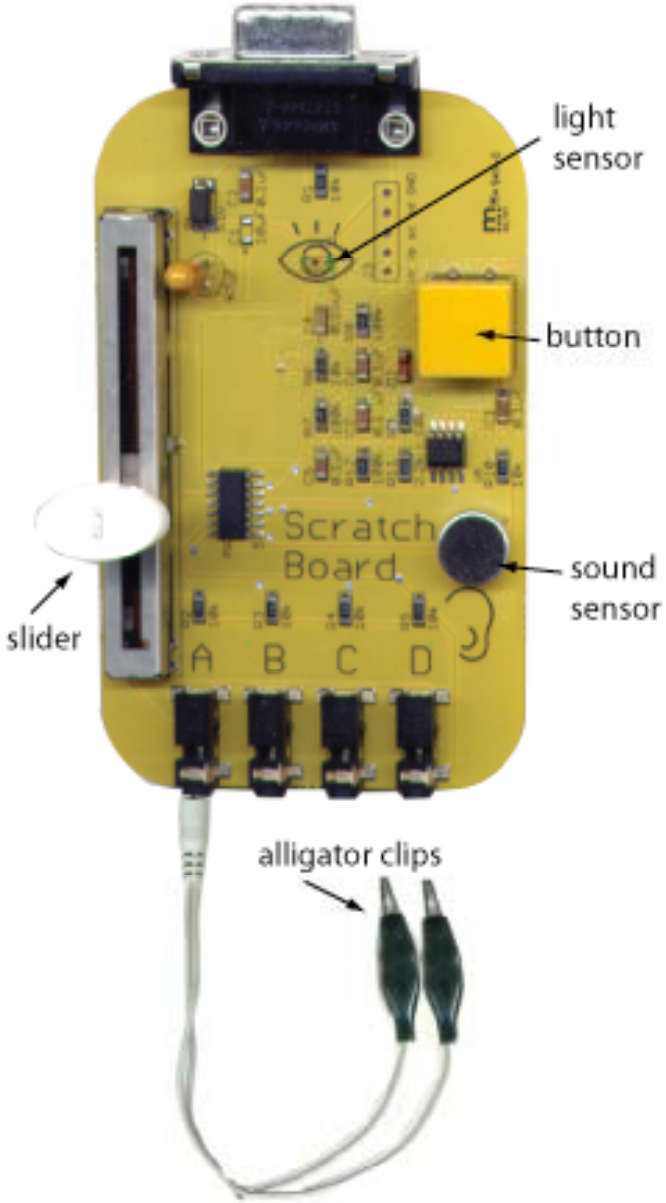
Artist Gallery

Games about drawings or pictures you drew.

Popular Tags

animation, art, awesome, ball, car, cat, color,

Connect real-world sensors to your Scratch projects



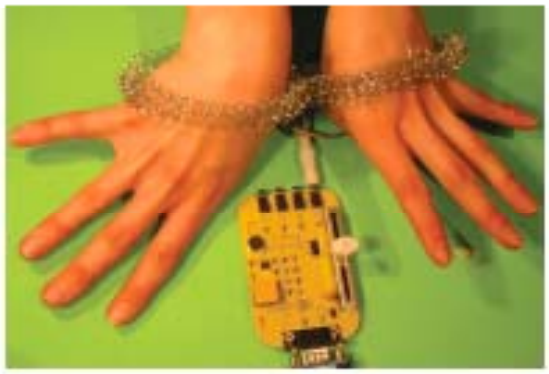
With a **Scratch Sensor Board**, your Scratch projects can sense – and respond to – things going on in the world outside your computer.

For example, using the **sound sensor**, you can make a sprite change how it looks whenever there is a loud sound.

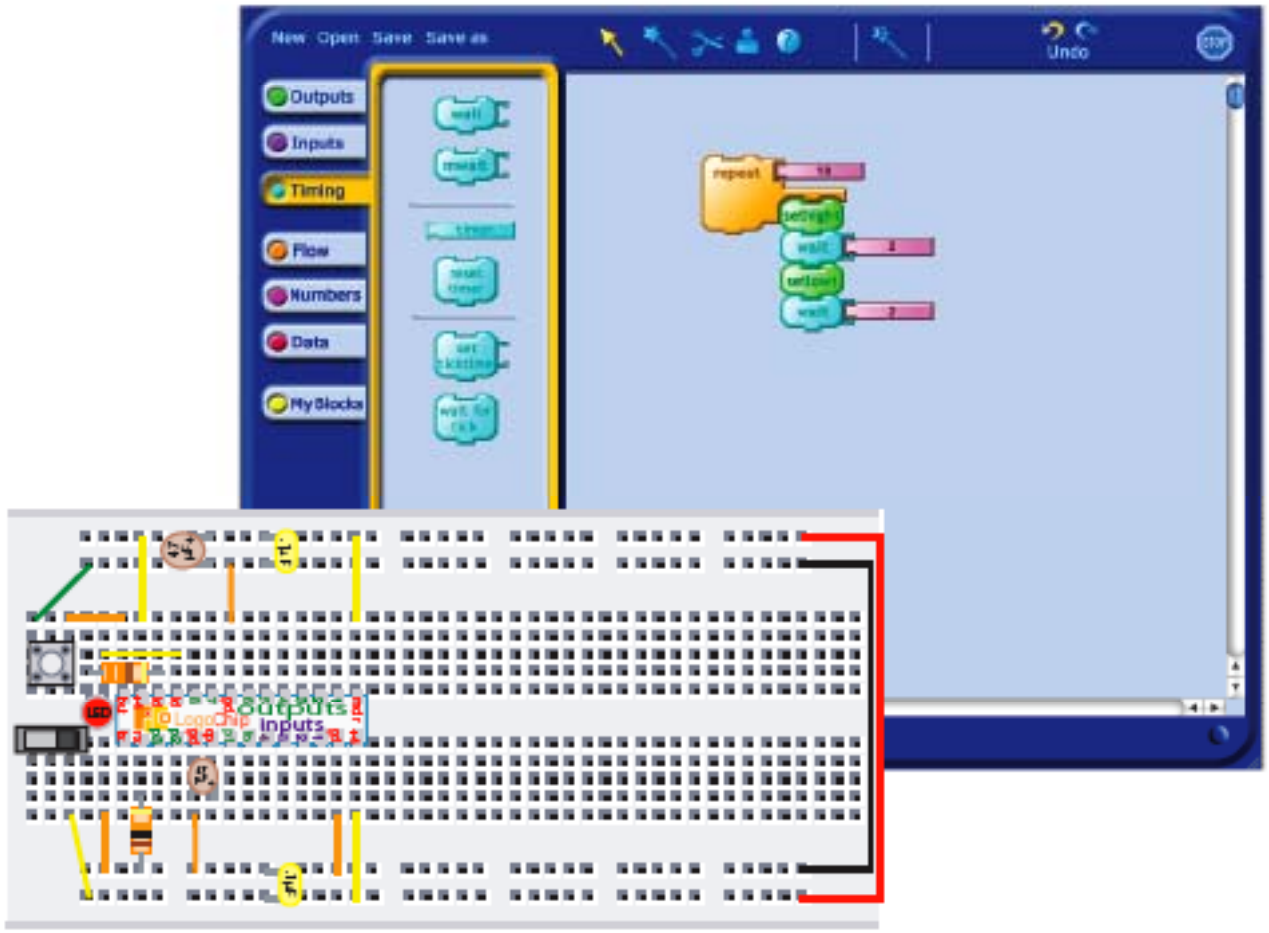
Or, using the readings from a Scratch Board's **light sensor**, you can program a sprite to hop up and down whenever a shadow passes by.

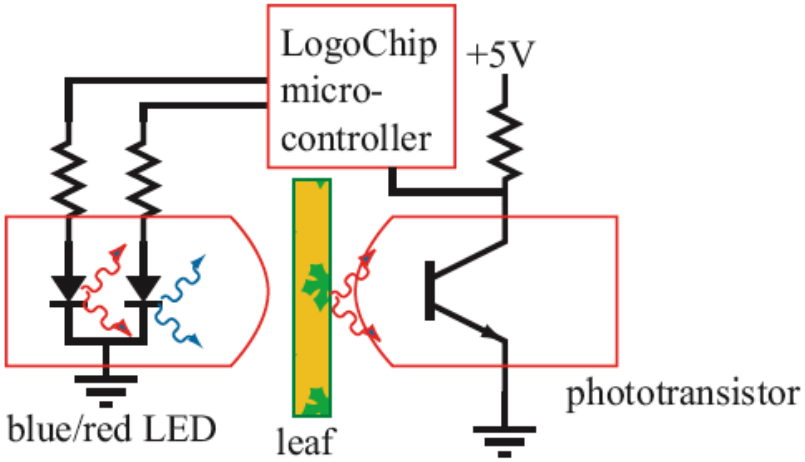
You can use the **slider** and **button** to control a character in a video game.

A Scratch Board also comes with four sets of **alligator clips** that measure the electrical resistance in a circuit. You can use the alligator clips to build all kinds of custom sensors. For example, if you attach the clips to a pair of home-made metal bracelets, you can detect when your wrists touch.



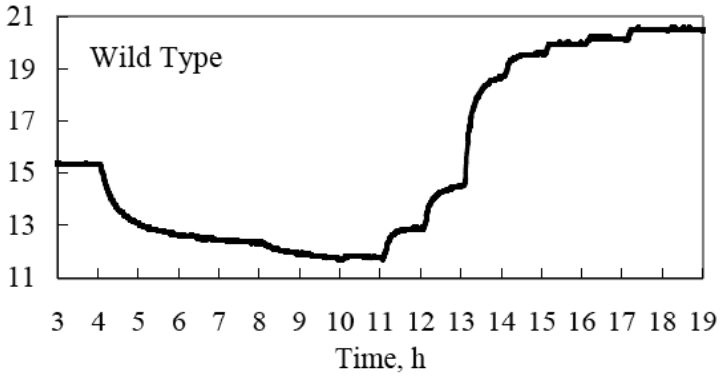
LogoChip

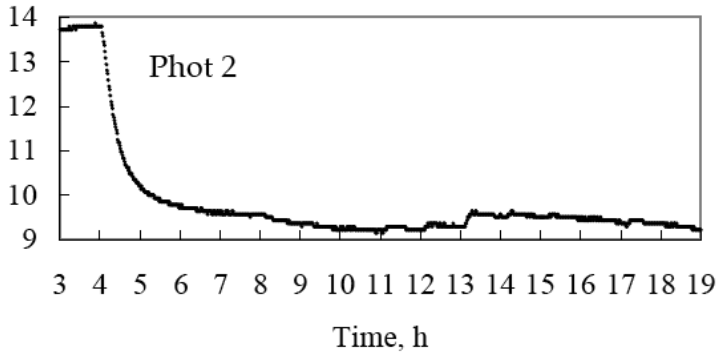

New Open Save Save as
Undo
Outputs
Inputs
Timing
Flow
Numbers
Data
My Blocks
repeat
wait
LogoChip
Outputs
Inputs

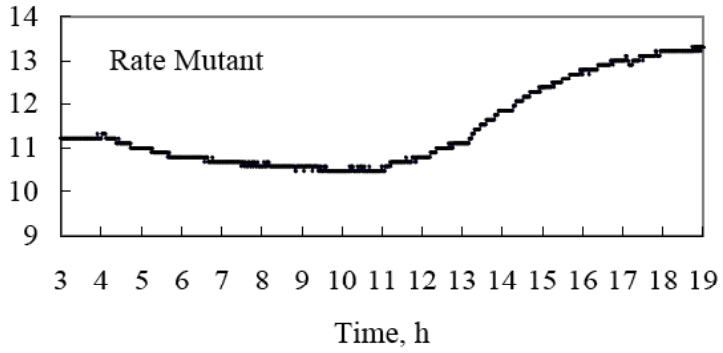


Beyond Black Boxes

A construction kit for building scientific instruments



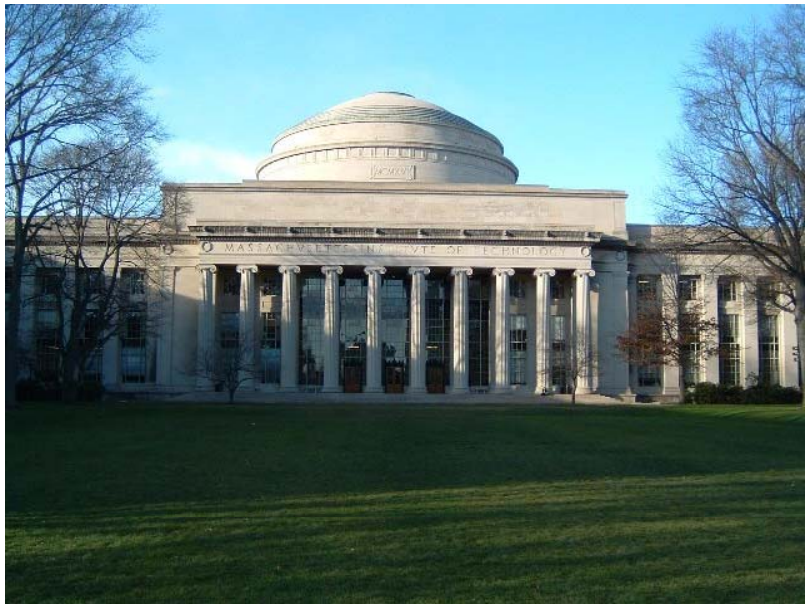




Engineering opportunities at Wellesley

Olin College

MIT



Collaborators

MIT Media Lab

Mitchel Resnick
Brian Silverman
Natalie Rusk
Fred Martin

Playful Invention Company

Paula Bonta

Wellesley College

Scott Anderson
Ruth Chuang
Rebecca Lippman

To be continued….

Workshop:

Hands-on *Robotic Design Studio* workshop in Knapp Media Center, Clapp Library - starts in 15 minutes.

Links:

cs.wellesley.edu/rds (Robotic Design Studio home)

picocricket.com

scratch.mit.edu