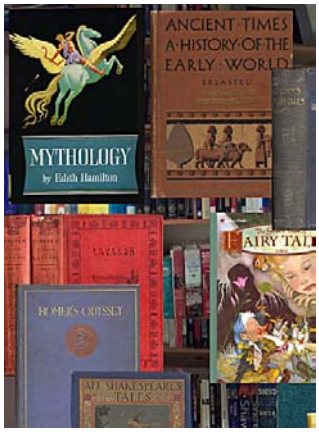
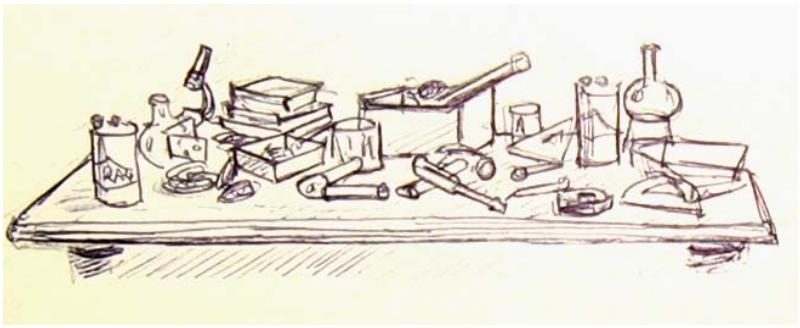
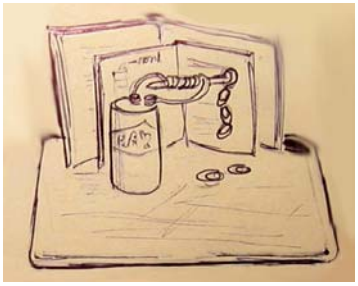

iewpoints Research Institute

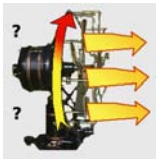

ANCIENT TIMES
A HISTORY OF THE EARLY WORLD
MYTHOLOGY
by Edith Hamilton
HOMER'S ODYSSEY

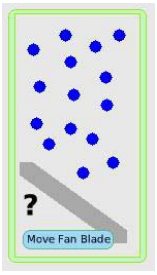

Look, Dick.
See Sally and Tim.
Funny, funny Sally.
Funny, funny Tim.

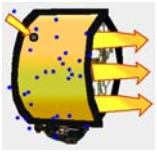


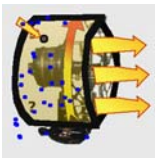


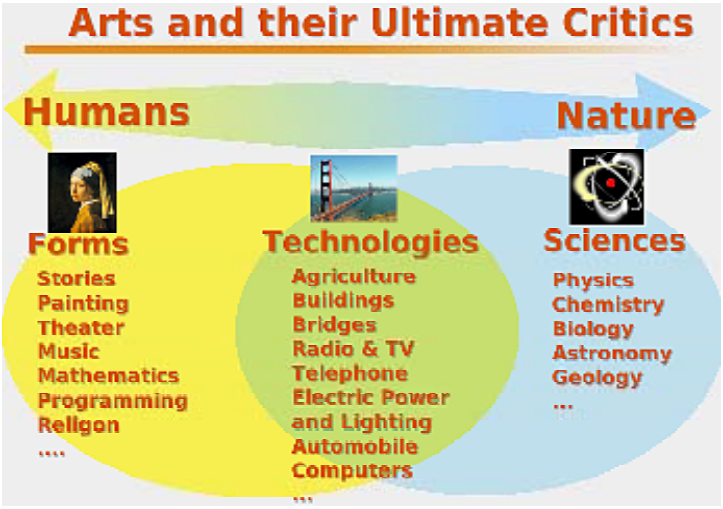

motor
fan
?

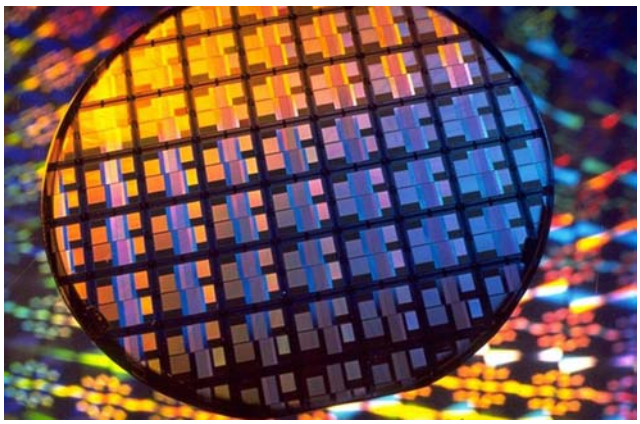

?
?

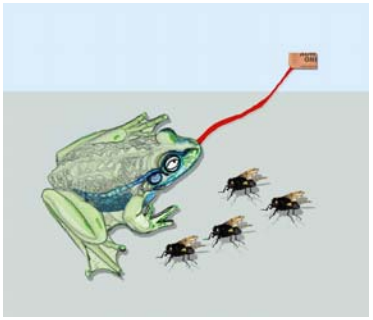

?
Move Fan Blade

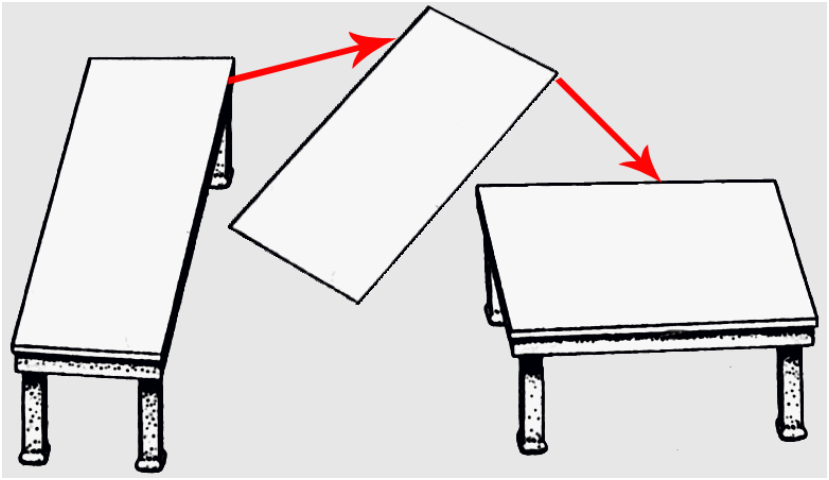


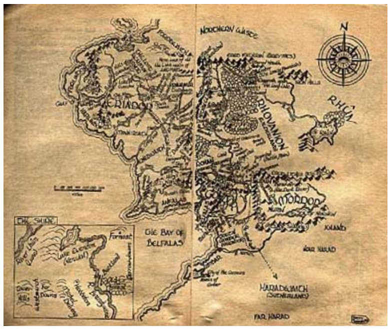



Arts and their Ultimate Critics
Humans
Nature
Forms
Stories
Painting
Theater
Music
Mathematics
Programming
Religon
....
Technologies
Agriculture
Buildings
Bridges
Radio & TV
Telephone
Electric Power
and Lighting
Automobile
Computers
...
Sciences
Physics
Chemistry
Biology
Astronomy
Geology
...

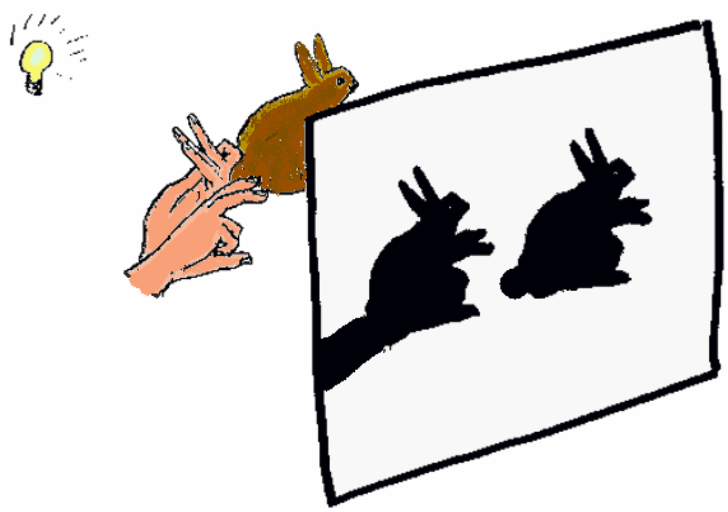


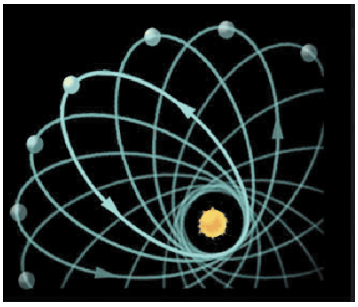


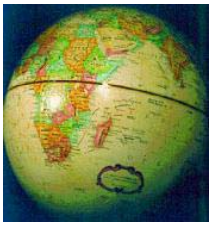



N
NORTHERN WASTE
ERIADOR
RHOVANION
RHÛN
MORDOR
THE SHIRE
Fornost
THE BAY OF
BELFALAS
KHAND
NEAR HARAD
HARADWAITH
(SOUTHERLANDS)
FAR HARAD


INDIA







$$\mathbf{F} = G\frac{mM}{d^2}$$

$$E = mc^2$$

$$e^{i\pi} + 1 = 0$$

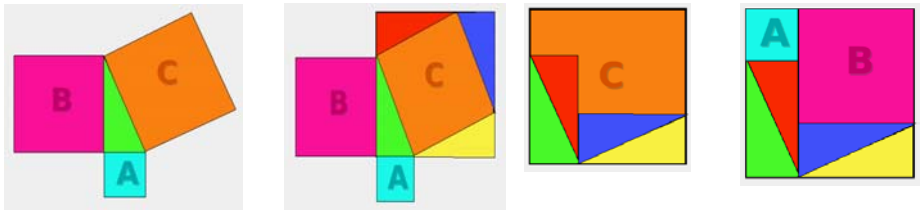
$$\nabla \cdot \mathbf{E} = 4\pi\rho$$

$$\nabla \cdot \mathbf{B} = 0$$

$$\nabla \times \mathbf{E} + \frac{1}{c}\dot{\mathbf{B}} = 0$$

$$\nabla \times \mathbf{B} - \frac{1}{c}\dot{\mathbf{E}} = \frac{4\pi}{c}\mathbf{j}$$

$$A^2 + B^2 = C^2$$

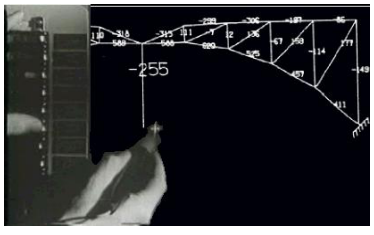


```
apply[fn;x;a] =
      [atom[fn] —>  [eq[fn;CAR]  —> caar[x];
                     eq[fn;CDR]  —> cdar[x];
                     eq[fn;CONS] —> cons[caar[x];cadr[x]];
                     eq[fn;ATOM] —> atom[car[x]];
                     eq[fn;EQ]   —> eq[car[x];cadr[x]];
                     T —> apply[eval[fn;a];x;a]];
      eq[car[fn];LAMBDA] —> eval[caddr[fn];pairlis[cadr[fn];x;a]];
      eq[car[fn];LABEL]  —> apply[caddr[fn];x;cons[cons[cadr[fn];
                                                   caddr[fn]];a]]]

      eval[e;a] = [atom[e] —> cdr[assoc[e;a]];
                   atom[car[e] —>
                                [eq[car[e];QUOTE] —> cadr[e];
                                 eq[car[e];COND]  —> evcon[cdr[e];a];
                                 T —> apply[car[e];evlis[cdr[e];a];a]]
```

pairlis and assoc have been previously defined.

```
      evcon[c;a] = [eval[caar[c];a] —> eval[cadar[c];a];
                                       T —> evcon[cdr[c];a]]
and
      evlis[m;a] = [null[m] —> NIL;
                    T —> cons[eval[car[m];a];evlis[cdr[m];a]]]
```



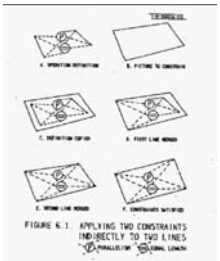
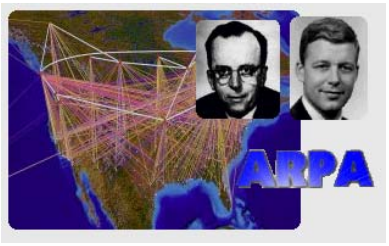
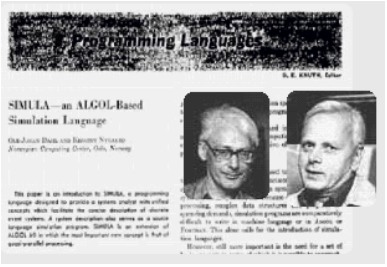
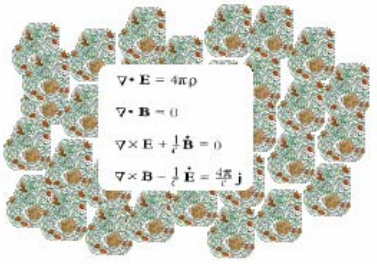
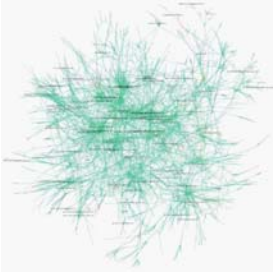


FIGURE 6.1. APPLYING TWO CONSTRAINTS INDIRECTLY TO TWO LINES

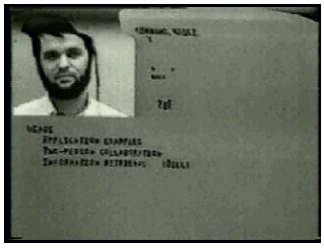

ARPA

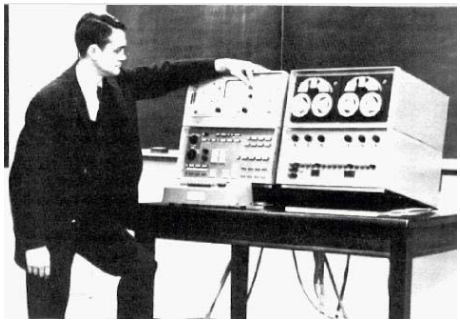

Programming Languages
SIMULA—an ALGOL-Based
Simulation Language

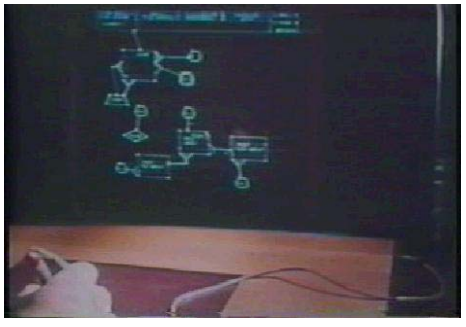

$\nabla \cdot \mathbf{E} = 4\pi\rho$
$\nabla \cdot \mathbf{B} = 0$
$\nabla \times \mathbf{E} + \frac{1}{c}\dot{\mathbf{B}} = 0$
$\nabla \times \mathbf{B} - \frac{1}{c}\dot{\mathbf{E}} = \frac{4\pi}{c}\mathbf{j}$

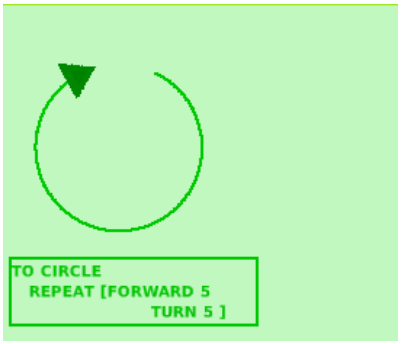


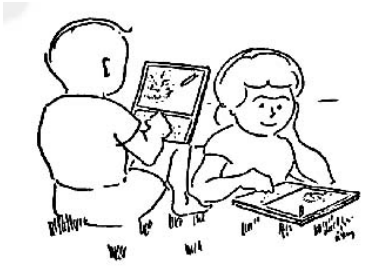

ONE



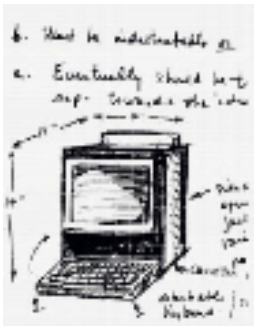


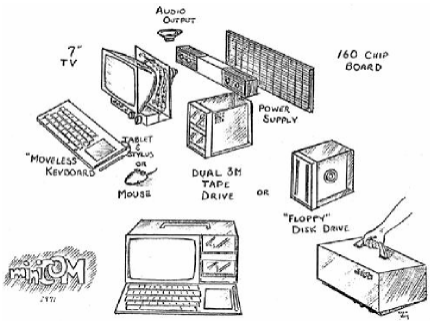


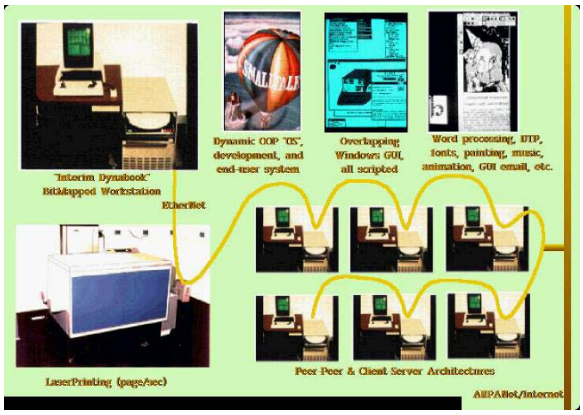

TO CIRCLE
REPEAT [FORWARD 5
TURN 5]

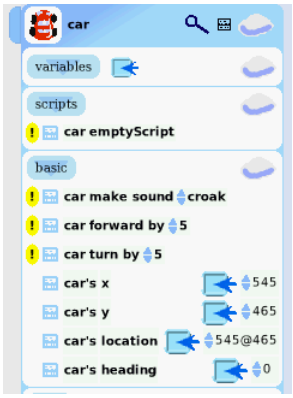


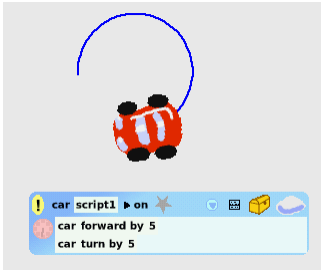

Computers As Metamedium

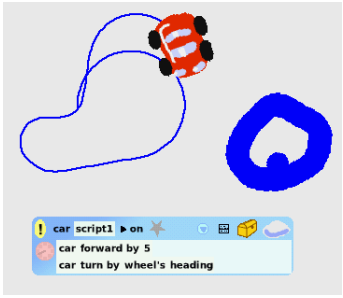


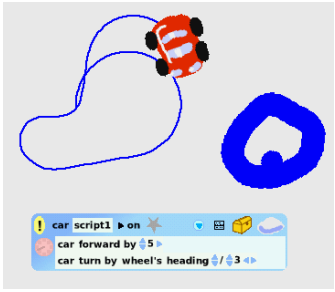

AUDIO OUTPUT
7" TV
160 CHIP BOARD
POWER SUPPLY
"MOVELESS" KEYBOARD
TABLET & STYLUS OR MOUSE
DUAL 3M TAPE DRIVE
OR
"FLOPPY" DISK DRIVE


Dynamic OOP "OS", development, and end-user system
Overlapping Windows GUI, all scripted
Word processing, DTP, fonts, painting, music, animation, GUI email, etc.
"Interim Dynabook" BitMapped Workstation
Ethernet
LaserPrinting (page/sec)
Peer Peer & Client Server Architectures
ARPANet/Internet

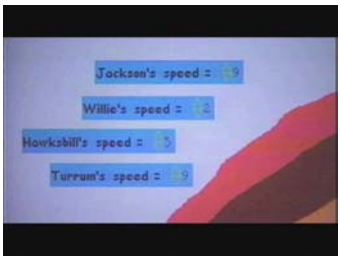

car
variables
scripts
car emptyScript
basic
car make sound croak
car forward by 5
car turn by 5
car's x 545
car's y 465
car's location 545@465
car's heading 0


car script1 on
car forward by 5
car turn by 5

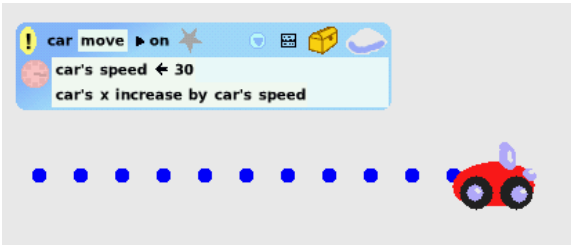

car script1 on
car forward by 5
car turn by wheel's heading

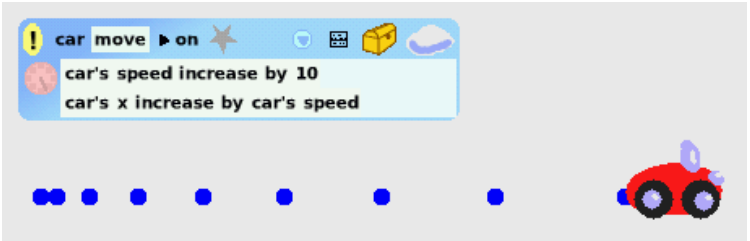

car script1 on
car forward by 5
car turn by wheel's heading / 3

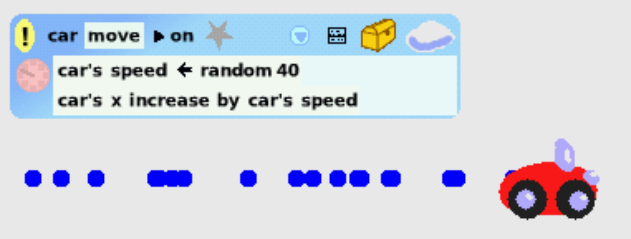

PIG RACE

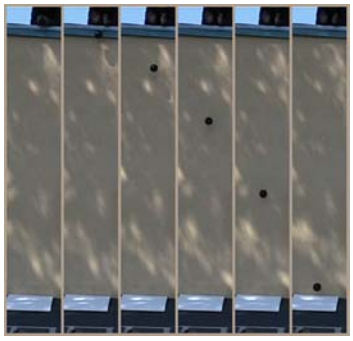

Jackson's speed =
Willie's speed =
Hawksbill's speed =
Turrum's speed =

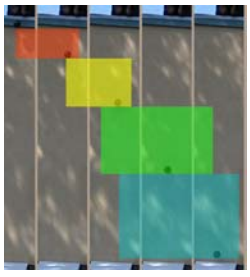

RACE

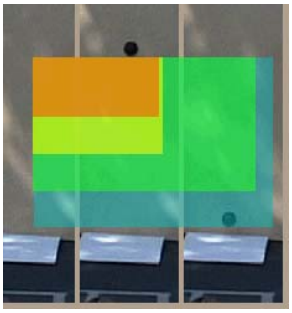

car move on
car's speed 30
car's x increase by car's speed

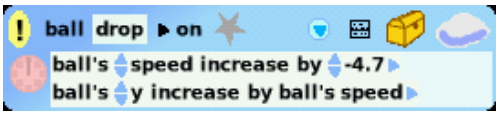

car move on
car's speed increase by 10
car's x increase by car's speed

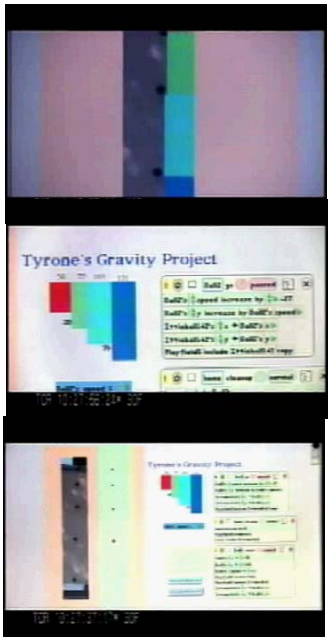

car move on
car's speed ← random 40
car's x increase by car's speed

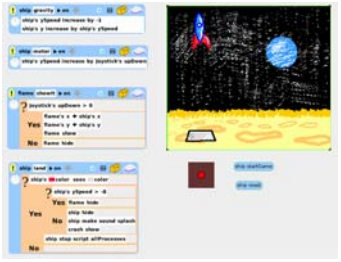


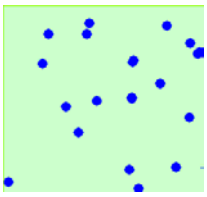


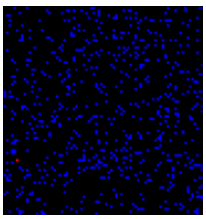



ball drop on
ball's speed increase by -4.7
ball's y increase by ball's speed


Tyrone's Gravity Project



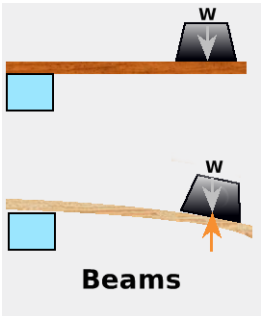


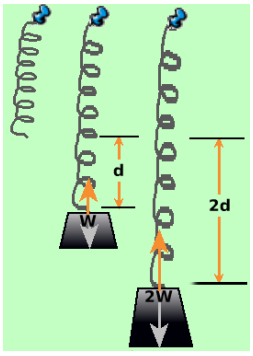


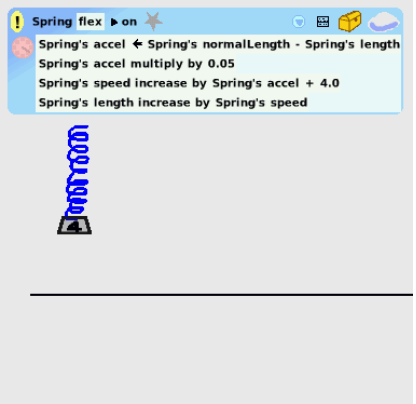

W

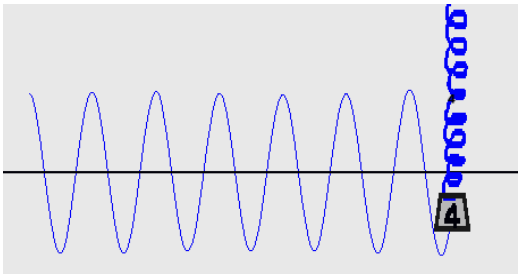

W

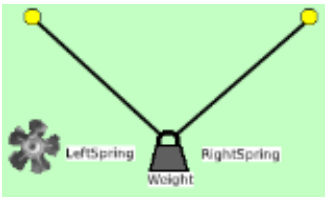

W

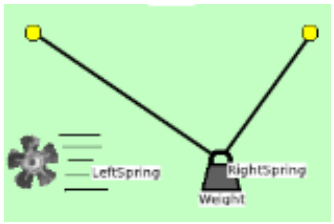

W
W
Beams

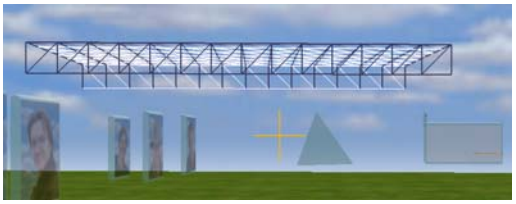

d
W
2d
2W


Spring flex on
Spring's accel ← Spring's normalLength - Spring's length
Spring's accel multiply by 0.05
Spring's speed increase by Spring's accel + 4.0
Spring's length increase by Spring's speed
4


4


LeftSpring
RightSpring
Weight


LeftSpring
RightSpring
Weight



```
Mass compute ▸ on
Test mass <> 0
    Yes
        t <- 0.02.                          delta time
        accel <- force/mass.                compute acceleration
        velocity increaseBy  0.9 * accel * t.   increase velocity
        velocity multiplyBy  0.997.         damp velocity
        location increaseBy  velocity * t.  change location
    End.
force <-  (-0.01 @ -0.5 @ 0.01).            set gravity
```

```
Spring compute ▸ on
k <- -400.                          spring constant
v <- mass1 location - mass2 location.   actual length
n <- v normalized * rest.           rest length
f <- (v - n ) * k.                  compute force
mass1 addForce f.                   add to mass1
mass2 addForce f negated.           and to mass2
```