Announcements

• Assignment 3 storyboards due today!
• Assignment 3 worlds due Thursday
  – Turn worlds in via web page submit on course assignment page
  – Name textfile “README.txt”
  – Upload all three files individually
  – OR Put all three files in a folder and submit a zipped folder
• Check classwork grades on Blackboard, Clwk3 and Clwk4
What we will do today

• Chapter 4 Sec 2 – Parameters
• Classwork

• Read for Next time Chap 4, Sec 3
• Reading quiz
Overview

• The need for more flexible methods
• Creating methods with parameters
• Passing arguments to methods
• Demo
  – Using Alice – methods with parameters
A Beetle Band

- Create an animation for a bug band as an ad for their next concert
- Each band member will perform a short solo
Storyboards

• Each bug member will perform a solo

- Do together
  - Do in order
    - georgeBeetle move up
    - georgeBeetle move down
    - play sound

- Do together
  - Do in order
    - ringoBeetle move up
    - ringoBeetle move down
    - play sound

- Do together
  - Do in order
    - paulBeetle move up
    - paulBeetle move down
    - play sound

- Do together
  - Do in order
    - lennonBeetle move up
    - lennonBeetle move down
    - play sound

• Note: instruments are already vehicled to the band member playing them.
Code for georgeBeetle

- We will need four versions of the code, one for each band member
- This code will only work for georgeBeetle
A Better Solution

• Four versions of similar code is tedious.
• The things that change are
  – The beetle
  – The music the beetle plays

• Better Solution: write a more flexible method
Parameters

• Built-in methods provide **flexibility** by providing parameters such as distance and duration
• Parameters allow you to pass in values
  – The values are **arguments**
• Example:

  What are the parameters?
  What are the arguments?
  How many of each?
Types of Parameters

- Alice provides several types of parameters that can be used in your methods.
The Storyboard

• Write one method and use parameters for
  – Which bandmember to perform
  – Which music to play

Solo:
Parameters: \texttt{bandMember, music}

Do together
  Do in order
    \texttt{bandMember} move up
    \texttt{bandMember} move down

play \texttt{music}
Creating a Method Named Solo

• Can be used for any band member

• Will need
  – An Object parameter – which band member is to play a solo
  – A Sound parameter – which music should be played
World.solo with parameters
Calling the solo method

- Note that in each call, arguments must be given for both parameters
A Number Parameter

• Add a number parameter for **height** the **bandMember** jumps up and down

Must add this argument to each call.

Demo

```plaintext
World.solo  bandMember = georgeBeetle    music = World.bassGuitar    height = 2

World.solo  bandMember = lennonBeetle    music = World.guitarSolo     height = 1

World.solo  bandMember = ringoBeetle     music = World.DRUM            height = 0.5

World.solo  bandMember = paulBeetle      music = World.saxophone       height = 4
```
Classwork Today

• What is the difference between a parameter and an argument?

• Create worlds
  – Beetle band duet
  – Escape from Snake