

Submission Date:	Late Penalty	
	Total Deductions from below	
	Total Score	
Inheritance and Polymorphism (-40 points maximum) (Have the student show you the relevant areas in his/her implementation.)		Category Deduction
Use of an abstract base class:		
no common base for all creature types	-10	
common base used, but not abstract	-3	
Use of <u>public</u> data in ANY class (protected data is OK)	-10	
Creature update logic:		
location and energy updates not restricted to hierarchy	-5	
eating functionality not restricted to animal classes	-5	
Polymorphic behavior:		
creature accesses are NOT performed via base-type pointers <sup>1</sup>		
accesses use (e.g.) <code>Plant*</code> or <code>Animal*</code>	-5	
accesses use specific type pointers, e.g. <code>Grendel*</code>	-20	
creatures provide type information via a <u>public</u> member function <sup>2</sup>	-20	
creature hierarchy does not provide minimal virtual functions		
NO virtual update (tick) function in base class	-20	
Internal Documentation (-10 points maximum)		
Spot-check comments in a randomly selected pair of class source/header files:		
Class description (header block)	-5	
Function/method headers: (statement of purpose, parameter comments, pre/post conditions)	-5	
Comments:		

<sup>1</sup> This is in addition to the penalty, if any, for not having a common base class at all.

<sup>2</sup> If a public type-reporter is supplied but the student can prove that it is never called, directly or indirectly, from outside the creature hierarchy, deduct 5 points instead of 20. (Using grep or doing a browse build are useful ways to determine this.)

Obviously there are dependencies among the following tests. A program that does not correctly manage movement and energy debits will get little else right, so such a program will lose most of the 50 points that follow. Similarly, a program that does not correctly handle even simple predation will get quite a few incorrect results. That is not, in our opinion, unfair. Implementations that fail such basic tests do not deserve, and should not receive, good scores.

Correctness of Program Operation	(-50 points maximum)	
General:	(-10 points maximum)	
Commands NOT numbered in sequence.	-5	
Creature types not included in output.	-5	
TestAging.txt:	(-10 points maximum)	
Browser1 does not expire on Command #7 (tick #3)	-3	
Grazer1 does not expire on Command #15 (tick #6)	-2	
Grendel1 does not expire on Command #21 (tick #8)	-3	
Bush1 does not have 28 units of energy on Command #30 (last one)	-2	
TestMovement.txt:	(-10 points maximum)	
C 8 not: Browser1      194    (3, 2)	-4	
C 16 not: Grazer1      194    (6, 3)	-4	
C 38 not: Grendel1     76    (13, 12)	-4	
C 46 not: Bush1        28    (1, 1)	-3	
TestGrazing02.txt	(-10 points maximum)	
C 32 not: Grazer2      125    (5, 0)	-5	
C 36 not: Grazer6      21    (5, -4)	-5	
TestPredator03.txt:	(-10 points maximum)	
On final tick of Command #6 (tick #6):		
Browser1 nibbles Bush1	-3	
Grendel1 does not munch Browser1	-5	
Grendel2 does not munch Grendel1	-5	
FreeForAll.txt:	(-10 points maximum)	
C 127 not: Grazer02     46    (14, -8)	-2	
C 133 not: Grazer09     262   (14, -4)	-2	
C 134 not: Grazer01 not found	-2	
C 137 not: Grendel01 not found	-2	
C 141 not: Grendel05    69    (9, 8)	-2	
Comments:		
Other Adjustments		
Build problems: in the event of compile or link errors, the total score is not to exceed 40%.		
Runtime problems		
Runtime exception, program hangs during execution, error on exit	-5	