

# AP GridWorld Worksheet 1 Movement

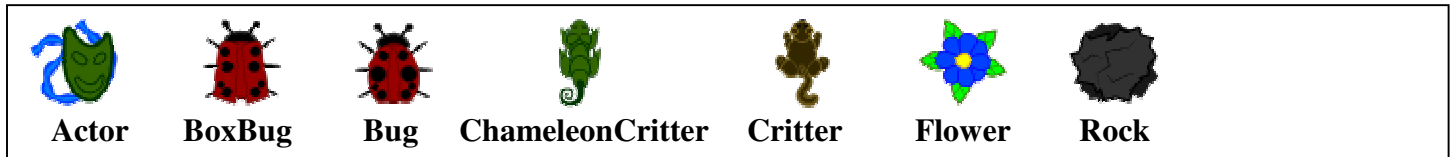
Name (1/2 pt) \_\_\_\_\_

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Pts: 25

class hour \_\_\_\_\_

Below are the actors and their icons that you will need to know for the AP Test:



I. Answer the following using the actors above (1/2 pt each correct answer)  
(Note: The use of *move* below means moving to a new grid cell.)

1) Which of the above actor(s) do *not* have an act method?

\_\_\_\_\_

2) Which of the above actor(s) have an act method with no code in it?

\_\_\_\_\_

3) Which of the above actor(s) will never turn but will move when it acts?

\_\_\_\_\_

4) Which of the above actor(s) has the ability to move but will turn when it cannot move when it acts?

\_\_\_\_\_

5) Which of the above actor(s) will turn in the direction that it moves at the same time it moves when it acts?

\_\_\_\_\_

6) Which of the above actor(s) cannot move to a new location when it acts?

\_\_\_\_\_

7) Which of the above actor(s) cannot move to a new location but does do something when it acts?

\_\_\_\_\_

8) Which of the above actor(s) can move to a new location occupied by a different actor when it acts?

\_\_\_\_\_

**over**

II. In a 10 x 10 bounded grid there is an actor facing EAST at location (0, 0) and Rocks at locations (0, 1), and (1, 0). (1 pt each answer)

A) Answer the following

1) If the actor at (0, 0) is an Actor, when it acts  
a) what grid will it be in now? 1a) \_\_\_\_\_

b) what direction will it now be facing?  
(Note: Use word directions as the answer.) b) \_\_\_\_\_

2) If the actor at (0, 0) is a Bug when it acts  
a) what grid will it be in now? 2a) \_\_\_\_\_

b) what direction will it now be facing?  
(Note: Use word directions as the answer.) b) \_\_\_\_\_

3) If the actor at (0, 0) is a BoxBug when it acts  
a) what grid will it be in now? 3a) \_\_\_\_\_

b) what direction will it now be facing?  
(Note: Use word directions as the answer.) b) \_\_\_\_\_

4) If the actor at (0, 0) is a Critter when it acts  
a) what grid will it be in now? 4a) \_\_\_\_\_

b) what direction will it now be facing?  
(Note: Use word directions as the answer.) b) \_\_\_\_\_

5) If the actor at (0, 0) is a ChameleonCriticr when it acts  
a) what grid will it be in now? 5a) \_\_\_\_\_

b) what direction will it now be facing?  
(Note: Use word directions as the answer.) b) \_\_\_\_\_

B) If the Rocks at locations (0, 1), and (1, 0) were Flowers, then which of the above 5 actors (Actor, Bug, BoxBug, Critter, ChameleonCriticr) (1 pt each correct answer)

1) would have to have the same answer as above?  
1) \_\_\_\_\_

2) could still have the same answer as above?  
2) \_\_\_\_\_

**continued**

III. In a 10 x 10 bounded grid there is an actor facing NORTH at location (1, 1) with no other actors in the grid. Answer the following. (2 pts each)

- 1) If the actor above was a Bug and the Bug's act method code were completely removed from the Bug class, which of the following would be true? 1) \_\_\_\_\_
- a) The bug would move to (0, 1) and face NORTH.
  - b) The bug would stay in (1, 1), turn 45° and face NORTHEAST.
  - c) The bug would stay in (1, 1), turn 180° and face SOUTH.
  - d) The bug would stay in (1, 1), turn 90° and face EAST
  - e) A compile-time error would occur.
- 2) If the actor above was a BoxBug and the BoxBug's act method code were completely removed from the BoxBug class, which of the following would be true? 2) \_\_\_\_\_
- a) The boxBug would move to (0, 1) and face NORTH.
  - b) The boxBug would stay in (1, 1), turn 45° and face NORTHEAST.
  - c) The boxBbug would stay in (1, 1), turn 180° and face SOUTH.
  - d) The boxBug would stay in (1, 1), turn 90° and face EAST
  - e) A compile-time error would occur.