Part One

Do You Know?

Set 1

1.Does the bug always move to a new location? Explain.

No, bug only move to a new location in front of it, in the situation that the cell of this location must be valid and empty or occupied by a flower.

2.In which direction does the bug move?

The bug move forward.

3.What does the bug do if it does not move?

It will turn right 45 degree and find out whether it can move now, if not, continue turning.

4.What does a bug leave behind when it moves?

It will leave a flower behind.

5.What happens when the bug is at an edge of the grid? (Consider whether the bug is facing the edge as well as whether the bug is facing some other direction when answering this question.)

If facing the edge:It will turn right 45 degree and find that still can't move, so it will turn right 45 degree again.

If facing other direction:It will find out whether it can run first, if it can ,it will move forward in this direction, else it will turn right 45 degree.

6.What happens when a bug has a rock in the location immediately in front of it?

It will turn right 45 degree.

7.Does a flower move?

No, it doesn't.

8.What behavior does a flower have?

It will "die away" and its color will fade out to dark gray as the time increases.

9.Does a rock move or have any other behavior?

A rock does not move but stay in its own cell even we press the “step” or “run” button.

10.Can more than one actor (bug, flower, rock) be in the same location in the grid at the same time?

No, it can't. A cell can only occupied by an actor instance.

Degrees	Compass Direction
0	North
45	Northeast
90	East
135	Southeast
180	South
225	Southwest
270	West
315	Northwest
360	North

2.Move a bug to a different location using the moveTo method. In which directions can you move it? How far can you move it? What happens if you try to move the bug outside the grid?

We can use the moveTo method to move a bug to any valid grid, but we can't change its original direction. And the two method turn() and setDirection() are available for us to change its direction;The farthest distance we can move is the sun of the squares of gridworld;It will throw an IllegalArgumentException if we try to move the bug out of the grid.

3.Change the color of a bug, a flower, and a rock. Which method did you use?

I will use the setColor() method.

4.Move a rock on top of a bug and then move the rock again. What happened to the bug?

When we move a rock on top of a bug, the bug will disappear. When we move the rock again, the bug will be removed from the grid and never show up again.