

## Thorough Fly Response Policy

### 1. Inside caves

- a. Will look for light or some sort of source that is not dark and can potentially lead the fly's way out of the cave.
- b. If the fly does not detect any threats while inside a cave or underground, it will remain in an IDLE state until it senses some sort of threat or notices a light source nearby,
- c. If there is a threat detected it will transition into a PANIC mode and be alert for any mobs or players around.
- d. 4-6 block distance for a light source, 2-4 for a threat (since it will be dark and the fly is not going to be able to see it right away).

### 2. Fly falls into water

- a. In this situation, the fly will be in a PANIC state, trying to get out as quickly as possible.
- b. If the fly is able to, it will fly upward or to the nearest edge to avoid drowning.
- c. In the situation where the fly is submerged in the water, it will drown and despawn after several seconds/minutes.
- d. Giving the fly some time (perhaps 30 seconds) to escape or get out of the water, if not then it will die.
- e. If the water is shallow it can also attempt to get out of the water. We would give the fly a 1-2 block range to see if it is successful.

### 3. In Jungle/Forest Environments

- a. Because there are more trees and leaves, the fly will move in smaller directions, avoiding the leaves and vines in this environment.
- b. It will have about 1-2 blocks to respond to any obstacles, its destination would have several detours due to the many leaves.
- c. It will respond the same as if it was in open air but it will have more obstacles and be alert to any threats.

#### 4. In Snow/Ice Environments

- a. The fly will move slowly due to the cold environment
- b. Because a fly naturally prefers lights and heat, it will attempt to look for heat sources such as lights, torches, or even fire.
- c. During this time the fly will be in a PANIC state, as it will try to move as quickly as possible to be out of this scenario.
- d. Evidently, the fly will attempt to avoid snow-covered surfaces or ice as to not get into this situation.
- e. After the fly has reached an environment that does not involve snow/ice, it will transition to an IDLE state where it is going to rest before continuing looking for any attractions.

#### 5. Near farms

- a. It will stay IDLE in its position and stay for awhile before moving on to other sources.
- b. The fly will be attracted to bright colored sources primarily and will move towards the source.

- c. Once it is done it will look for other sources and repeat the process until a threat is detected or the sources are gone.
- 6. Caught in a cobweb from a spider
  - a. In this situation the fly will not have noticed the cobweb since it is stationary and acts as a block inside the game
  - b. It will eventually slow down and stay in place, essentially, as it will try to fly away from it. However, it is in a PANIC state so it will do its best to move away quickly.
  - c. The fly will despawn after a few seconds since it is no longer moving.
  - d. If it does end up getting out of the cobweb it will stay in a PANIC state for about 10 seconds before moving to a SEEK or IDLE state.
- 7. Attempting to fly past glass
  - a. Since the glass is transparent the fly will not recognize this. It will try to fly past it but will not be able to.
  - b. It will be in a SEEK state because it does not identify the glass as a threat but it will not be in an IDLE state as it will try to get past the transparent block.
  - c. After several attempts if it is not able to get past it or moves past the block, the fly will focus on another target/source.
- 8. On top of food
  - a. A fly finding food on a table or laying around may hover and stay on it for awhile. Some foods, such as cake, may cause the fly to stay stuck for some time before it is able to fly again.

- b. During this scenario the fly will be in a SEEK state. If it identifies a player or moving object it will move to a PANIC state and move away.
- 9. Attraction to Honey Blocks
  - a. Similar to cobwebs it will stay stuck for awhile but will eventually find its way out of the sticky block.
  - b. It will try to fly away or move in different directions to get out.
  - c. PANIC state is involved until the fly is able to get out, then it will move to a IDLE or SEEK state.
- 10. Around any food remains
  - a. The fly will remain hovering around the food or remains that are left behind. It will explore these before moving away from them after a few seconds.
  - b. The fly will be in a SEEK state, finding any source it can.

#### Fly with Sticky Feet

- 1. In ordinary situations, such as flying into walls
  - a. In this situation the fly would not have to fly to its destination if it is nearby. It can simply walk over to it because of its feet.
  - b. It would crawl over to the destination.
  - c. Its movement would be facilitated by this added component and would transition easily between different walls, whether they are horizontal or vertical.
  - d. It would still switch between the SEEK and IDLE state, although if there is an object or player approaching it the fly will move to a PANIC state.
- 2. Falls into water

- a. In this situation the fly would benefit from its feet, as it would look for a surface or block that is solid and try to cling onto it to climb out instead of flying, which would be more complicated.
  - b. Example: A fly falls into a pond and notices a lily pad on the surface. It will attempt to hang on to the lily pad and make its way back onto the surface.
  - c. However, if it is in the water for a long time (about 1 minute or so) it will not be able to get out of the water and behave like a normal fly.
3. Near fire/lava
- a. Before, the fly would attempt to fly away or panic when a fire source was nearby. Now it would stick to a wall or a block to not fly into it and that way it will also have a heat source.
  - b. The fly will be close enough to attain the heat from this source but not close enough to set off its PANIC state.
4. During rain
- a. Before, the fly would need an overhead shelter or block to protect itself. Now it would be able to be under a leaf or vines to shelter itself. It would also be able to hang upside down, since its sticky feet allow it to stay stuck to a block.
  - b. Whether it is a leaf, door, or some other solid block, the fly should not have any problems looking for shelter.
5. In Cold/Ice Environments
- a. The fly would react similar as if it does not have sticky feet but it would have more ways to escape the cold conditions.

- b. Preferably, the fly will opt to crawl instead of fly, since its wing might be in danger of freezing.
  - c. It will look for warmer surfaces such as torches, fire, or lanterns for its heat source.
- 6. Flying into glass
  - a. Similar to a fly without sticky feet, the fly will not realize that the glass is a solid block and therefore cannot get past the glass. In this case the fly will crawl looking for a “way out.”
- 7. For any moving objects/players
  - a. The fly would be able to stick to a moving object, as long as the object is not moving quickly. It would ride the moving object for short distances before moving elsewhere.