



Drone: Mastering Altitude and Precision Navigation

Welcome to Drone Flight Basics!

In this combined lesson, you'll learn how to control the drone's vertical movement and practice flying with precision.

Movement:

`flying_up_distance, flying_down_distance,
flying_left_distance, flying_right_distance,
flying_forward_distance, flying_backwards_distance`



Drone Fly

The screenshot shows the NextWaveSTEM drone simulation interface. On the left is a vertical sidebar with a grid of icons for various functions: Takeoff, Camera, Navigation, Flip, Land, Logic, Loops, Math, Text, Lists, Variables, and Functions. The main workspace is a large grid where a sequence of code blocks is assembled: a blue 'Take off' block, a purple 'fly up 10 cm' block, a purple 'fly left 5 cm' block, and an orange 'land' block. At the top of the workspace are buttons for 'Clear Workspace', 'Launch Simulation', 'Reset Simulation', 'Show Lessons', and 'House Control'. A status bar at the top right displays 'X: 5 cm', 'Altitude: 0 cm', 'Z: 0 cm', and 'Yaw: 0°', along with a 'Measurement View' checkbox and a 'Home' button. The bottom right of the interface features a 3D visualization of a snowy mountain landscape. A yellow line indicates the drone's flight path, starting from a yellow square on the ground and ending at a red square. The drone is currently positioned at the red square.

What is the outcome of this launch?
Note the X, Y, Z coordinates at the
end of the mission

Drone Fly

The screenshot shows the NextWaveSTEM drone simulation interface. The top navigation bar includes buttons for "Clear Workspace", "Launch Simulation", "Reset Simulation", "Show Lessons", and "Mouse Control" (checked). A "Home" button is in the top right. The left sidebar lists categories: Takeoff, Camera, Navigation, Flip, Land, Logic, Loops, Math, Text, Lists, Variables, and Functions. The workspace contains a block-based programming script:

- Take off
- fly forward 5 cm
- fly left 6 cm
- fly backward 4 cm
- fly down 3 cm
- land

The right panel displays the drone's current status: X: 7 cm, Altitude: 0 cm, Z: 0 cm, and Yaw: 0°. A "Measurement View" checkbox is also present. The 3D simulation view shows a drone flying over a snowy mountain landscape. A yellow line indicates the drone's path, starting from a yellow square and ending at a red square.

What is the outcome of this launch? What is the outcome of this launch? Note the X, Y, Z coordinates at the end of the mission



Now It's Your Turn!

Experimenting with Drone Movement

- Experiment with **values between 0 and 10** for each direction.
- Move the drone in the following sequence:
 1. Up
 2. Down
 3. Forward
 4. Backward
 5. Left
 6. Right

Observe & Record:

- Note how far the drone moves for each value.
- Record the **final position** of the drone at the end of the simulation.



Now It's Your Turn!

Experimenting with Drone Movement

Can you Land the Drone on the Yellow Landing pad?

Can you Land the Drone at the Blue Landing Pad?