



# FreeFall



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Inspired by [https://www.teachengineering.org/activities/view/njit\\_paper\\_activity1](https://www.teachengineering.org/activities/view/njit_paper_activity1)

## The Challenge

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Design a flying device to stay in the air as long as possible and land on a designated target

## Field

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Tape 4 pieces of paper together in the shape of a large rectangle then draw 2 concentric circles with diameters 7" and 16". Cut out and tape the target to the floor ensuring it can't move from its position. Designate a position 5' away from the target, this will be where you launch your device.

## Overview

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Individuals are put into teams of 4 to brainstorm designs for flying devices. Each member of the team must create a unique flying device different from other members of that team. After the brainstorming period, all teams come back into one google meeting while they work on their devices. At halftime, teams are allowed to regroup and brainstorm improvements for 5 minutes.

Note: You are allowed to use any materials you can find in your house

## Rules & Restrictions

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- Teammates are not allowed to talk about designs other than at brainstorming and half-time.
- Each member of a team must create a unique flying device different from other members of the same team with no similar features.
- Once a device is released from a person, that device cannot be interacted with by any external forces.
- Designs cannot include the use of premade devices ie. parachutes

## Scoring

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A final team score will be calculated by taking the average of the scores of its devices.

Scoring Achievements	Points
Each second of air time	+3
Land In Inner Ring	+5
Land In Outer Ring	+3
Misses Target	-5 points deducted from the team score