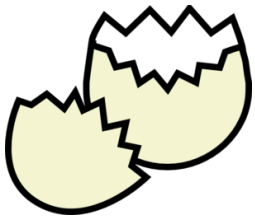

Rotor Egg Drop

Description	A team will construct an unpowered, autorotation helicopter device which uses one or more helicopter rotor(s) to safely transport a raw chicken egg from a specified height to the floor.
Time Limit	Test Time: 10 minutes
Team Size	Up to 2 students
Details	➢ The device must use wings or blades that rotate around a central axis to slow the descent of the egg. ➢ The device must not be or contain an airplane, balloon, parachute, rubber band or an electric motor. ➢ Students must seal the egg in a plastic sandwich bag and place it in a plastic cup. ➢ Students must mount or suspend the cup from the bottom of the helicopter device in such a position that the cup will be the first thing to touch the floor. Masking tape will be provided to attach the egg and cup to the device. ➢ No shock absorbing or cushioning materials can be used inside or outside the cup. ➢ The entire device including the cup must fit in a 60 cm cube. ➢ If competitors break the egg before they drop their device they will receive a 2 second penalty. ➢ Teams will be allowed 2 drops and may choose which result they would like scored. ➢ Time starts when the device leaves the student's hand and stops when the cup touches the floor. It is suggested that three separate timers be used. ➢ A broken egg is defined as a crack leaving a wet spot on a paper towel.
Competition Scoring	➢ Teams will earn points based on the **greatest descent time** within each of the following tiers. o Tier 1: Met Construction Parameters and Egg Survived (65-70 Points) o Tier 2: Met Construction Parameters and Egg is Broken (60-65 Points)

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	○ Tier 3: Did Not Meet Construction Parameters and Egg Survived (55-60 Points) ○ Tier 4: Did Not meet Construction Parameters and Egg is Broken (50-55 Points) ➢ The tiebreaker is the mass of the heaviest helicopter (without the egg and cup)
Notebook Requirements	➢ Rotor Egg Drop Design Notebook ➢ Notebook Points: 30
Timeline	Building and Testing Days: Official Practice Run on: Competition Date: