This contest is designed to give youth an opportunity to demonstrate their knowledge of aerospace principles, their ability to successfully launch and land a model rocket and their proficiency at identifying difference model rockets parts and tools. Safety will be stressed throughout the contest.

**REQUIREMENTS:**

- Each county may send any number of contestants as long as they meet the requirements listed below. **NOTE:** This event is being treated as an invitational event making it open to all youth who meet the minimum requirements cited below.
- Participants must be in grades 3 to 12 as of January 1, 2011.
- Participants must be enrolled in 4-H.

**MODEL ROCKET EVENT DESCRIPTION**

**Purpose**

The activity is designed as a demonstration of skills and knowledge acquired by youth in the area of model rocketry.

**Divisions (Grade categories)**

Youth will participate in one of the following Divisions based upon their grade in school as of January 1, 2011

- Division 1 = Youth in grades 3 to 5
- Division 2 = Youth in grades 6 to 8
- Division 3 = Youth in grades 9 to 12
EVENT COMPONENTS

**Written Examination and Parts Identification** (30 minute time limit)

The purpose of the written examination is to determine the participant's understanding of model rocketry design, construction and operation. The questions will be based on information found in the 4-H aerospace literature.

The written examination will consist of a minimum of 10 questions related to aerospace. For 2010 the emphasis will be on model rockets although a few questions may pertain to other aerospace-based areas. Each question incorrectly answered will result in a 10 point penalty.

**Parts Identification**

A minimum of 10 model rocket parts will also be provided for identification and description of its function. Each item missed will count 10 points toward the participant's penalty point accumulation.

**Rocket Demonstration and Launch**

The youth will conduct at least one launch attempting to meet two main criteria; that the rocket reach an altitude of AT LEAST 200 FEET, and that the landing is within a 10 foot diameter target area. The participant may use a model rocket of their choice. Model rockets on display at the Indiana State Fair may NOT be used.

The participants will be observed for proper and safe procedures during this event.

All rockets must have a recovery system.
STATE 4-H AEROSPACE CHALLENGE
Parts Identification

Items to be identified have a number attached to them. Select the most correct name from the list. Write the item’s identification number in the blank before the item’s name. Penalty points – 10 points per item incorrectly identified or unanswered.
Time limit – 30 minutes.

_______ Body Tube
_______ Engine
_______ Engine Holder Tube
_______ Engine Hook
_______ Fin
_______ Fin Aligner
_______ Igniter
_______ Launching Lug
_______ Nose Cone
_______ Parachute
_______ Shock cord
_______ Shock Cord Mount
_______ Shroud Lines
_______ Spacing Ring
_______ Streamer
_______ Tracker

TOTAL ____________________
The individual contestant will accumulate penalty points and/or bonuses for his/her performance. Scoring will be based as follows:

**Rocket Preparation**
- Improper installation of engine (10)
- Improper installation of ignite (5)
- Incorrect engine (10)

**Launcher Preparation**
- Improper setup (5)
- Improper angle of launch rod (5)
- Unsafe connection of igniter (10)

**Rocket Launch**
- No ignition or a burnout (5)
- Initial flight path non-vertical (5)
- Initial flight unstable (5)
- Wiggle in powered flight and coast (5)
- Recovery system does not deploy (10)
- Partial recovery system deployed (5)
- Rocket not usable after launching (5)
- Distance from target _____ feet
  Roundup to the next 10 feet _______ divide by 10 _______
  multiply by 5 to obtain score

**TOTAL**