



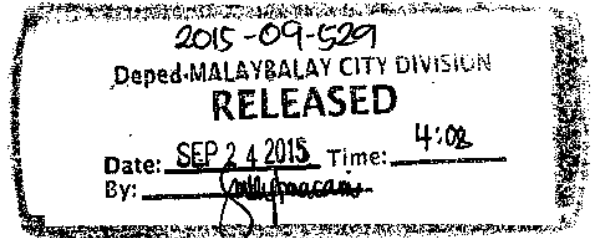
Department of Education  
Region X- Northern Mindanao  
**DIVISION OF MALAYBALAY CITY**  
Casisang, Malaybalay City



**DIVISION MEMORANDUM**

No. 307 s. 2015

To: Chief Education Supervisors – SGOD & CID  
Education Program Supervisors/Specialists  
Public Schools District Supervisors  
Elementary and Secondary School Heads



From:   
**EDILBERTO L. OPLENARIA**  
Schools Division Superintendent

Date : September 24, 2015

Re : **7<sup>TH</sup> MALAYBALAY CITY DIVISION INTEL – PHILIPPINES SCIENCE FAIR (IPSF) AND YOUTH FOR ENVIRONMENT SCIENCE (YES) CAMP**

The 7<sup>th</sup> Malaybalay City Division Intel Philippine Science Fair (IPSF) and Youth for Environment Science Camp will be conducted on November 6-7, 2015 at Bangeud national High School at 8:00 in the morning. Write Ups of the Investigatory Project and Science Intervention Materials for both elementary and secondary school entries must be submitted in 4 copies on or before October 30, 2015 at the Division Office Attention: Analay L. Oicer , EPS in Science.

No registration fee will collected. Expenses incurred for the said activity such as trophies and honorarium of Judges for the Science Congress ( IPSF) will be charged to Local School Board fund (Division). Expenses of the participants, and trainers/coaches and other miscellaneous expenses shall be charged to their Local School Board fund (District), non- government organization and other non DepEd sources.

Attached are the contest mechanics and guidelines.

Immediate dissemination of this Memorandum is desired.

Enclosure

7<sup>th</sup> MALAYBALAY CITY DIVISION INTEL – PHILIPPINE SCIENCE FAIR (IPSF) AND  
YOUTH FOR ENVIRONMENT IN SCHOOLS (YES) CAMP 2015  
Contest Guidelines

I. General Guidelines

1. The contest is open to all registered participants.
2. A participant is qualified to compete in any contest, whether individual or group, provided he/she duly registers and, provided further, there is no conflict in the schedule.
3. Participants are only allowed to join their respective educational level, that is elementary pupils are only allowed to join contests identified for the elementary level and high school students are only allowed to join contests in the secondary level.
4. Contestants shall indicate their contests of interest at the Contest Registration Form (CRF) and submit the same to the secretariat during Day O immediately after the general camp registration.
5. As a rule, an elimination round shall be conducted.
6. There shall be a contest briefing 15 minutes before the contest proper.
7. Decisions of the Board of Judges are final.

II. Specific Guidelines

**A. On the Spot Poster-Making Contest (Individual, Elementary and High School Levels)**

1. Only one (1) contestant per secondary school and 1 per district for elementary level shall participate in the contest.
2. The poster should revolve around the theme which will be announced by the contest administrator during the contest proper.
3. The medium for visual artistry shall be oil pastel only. The required base paper to be used during the contest, however, is a 20" x 30" illustration board.
4. All materials to be used will be provided by the contestant. Borrowing of materials from other contestants shall not be allowed.
5. The allotted time for the contest is one and a half (1 ½) hours, after which all entries shall be submitted to the contest administrator. Contestants may decide to submit his/her poster earlier without waiting for the lapse of one and a half (1 ½) hours. Late submission shall be deducted 1% from the total for every extension of five (5) minutes. A fraction of five (5) minutes shall already be considered five (5) minutes for purposes of deduction.
6. Each poster shall be identified by a number that corresponds to the number and identity of the contestant for the judging process.
7. Judging shall be based on the following criteria:

<b>Originality of Idea</b>	<b>40%</b>
<b>Relevance to the Theme</b>	<b>40%</b>
<b>Overall Impact</b>	<b>20%</b>
<b>Total</b>	<b>100%</b>

**B. Environmental Quiz (Individual, High School level and Elementary Level)**

1. Only 3 participants per school for the secondary and 3 participants per district for the elementary .
2. English and Filipino shall be used as the official languages in the conduct of the quiz.
3. Questions shall focus on environmental facts, laws, current events, initiatives and other subjects pertaining science and health for elementary and science and technology for secondary level.

4. Each question shall be read twice by the quizmaster. The contestants shall only answer as soon as the quizmaster shall have read the question twice and have so indicated their time to write the answer in big bold letters. Countdown shall start immediately thereafter.
5. Contestants shall be given a maximum of twenty (20) seconds to answer questions that require computation. Other questions shall only be allotted ten (10) seconds.
6. The contestants shall bring their own pens, answer sheet shall be provided by the organizers. Should the contestant decides to change an answer, he/she shall cross out the answer so written with only one horizontal line and the new answer shall be written legibly above the crossed out answer. The contestant is allowed to change answer within the time allotted for a particular question.
7. The contestants shall raise their pens as soon as the allotted time to answer is over.
8. If applicable, depending on the number of entries, an elimination round shall be held.
9. During the elimination round, failure to answer seven out of ten questions correctly shall disqualify and eliminate the contestant. The elimination round shall involve easy, average and difficult questions.
10. For the easy round, one (1) point shall be given for each correct answer, two (2) points for every correct answer for the average round and three (3) points for each correct answer for the difficult round.
11. The three highest scoring contestants shall be declared the winners.

### C. Kabataang Bayani ng Kalikasan Awards (Individual, Elementary and High School Level)

#### 1 entry for Environmental Leadership Category and another entry for Environmental Heroism Act Category

1. The award is open to all registered participants.
2. Upon registration, applicants for the awards shall submit an essay on why he/she deserves to be included in the roster of young environmental heroes. The essay (at least 300 words) must be supported by properly labeled evidence such as appropriate and duly authenticated certificates, pictures, audio-visual presentations and others.
3. The applicant shall be subjected to a panel interview.
4. Judging shall be based on the following:

<b>Essay/Supporting Evidence</b>	<b>40%</b>
<b>Panel Interview</b>	<b>40%</b>
<b>Overall Impact</b>	<b>20%</b>
<b>Total</b>	<b>100%</b>

### D. Science Intervention Materials ( SIM) ( Teachers Category Grade 3 to Grade 10 Teachers)

<b>1.</b>	<b>Subtasking</b>	<b>15%</b>
	<i>a. Competency based</i>	5
	<i>b. Blooms Taxonomy</i>	6
	<i>c. SMAR C</i>	4
<b>2</b>	<b>Congruency</b>	<b>15%</b>
	<i>a. Activities in line with Content and skills</i>	5
	<i>b. Assessment in line w/ Content and skills</i>	10
<b>3</b>	<b>Usability / Functionality</b>	<b>45%</b>
	<i>a. Language</i>	3
	<i>b. Title Card</i>	3
	<i>c. Guide Card</i>	5
	<i>d. Activity Card</i>	14
	<i>e. Assessment Card</i>	3
	<i>f. Enrichment Card</i>	3
	<i>g. Reference Card</i>	3

	<i>h. Answer Card</i>	3	
	<i>i. Packaging</i>	8	
<b>4</b>	<b>Replicability</b>		<b>25%</b>
	<i>a. Validated before Classroom use</i>	5	
	<i>b. Developed material Based on Least Learned Skill</i>	5	
	<i>c. Materials used to improve Mastery level</i>	10	
	<i>d. Handy and easy to copy</i>	3	
	<i>e. Low Cost</i>	2	

### E. Robotic Dance Contest (Elementary Only)

1. Consist of 10 to 15 robotic dancers.
2. Science oriented presentation.
3. Non dangerous props are allowed.
4. Performance Time is 5 – 7 minutes.

Criteria	
Robot Costume	30%
Gracefulness and Style	40%
Stage Presence	10%
Coordination	20%

---

100%

### F. Guidelines for Collage Making

- Collect materials for your collage and find inspirational to them.
- Create a photo collage make a collage using your digital photo.
- Traditional collage materials include scraps of paper and other float materials: Newspaper and magazine clippings, shopping bags, photographs (or photocopies of photographs). Wallpaper, and foil.
  - Objects such as string beads, and feathers, and fabric
  - Collage may encompass image, text, solid colors, or a mixture of these. You may want recognizable image or word, or simply a suggestion, feel, color, or texture.
  - Use what you have. Start from available materials and work out from there.
  - Create what you don't have . Since collage is an assemblage or blend of elements, it lends itself well to mixed media. You could paint, draw, stamp, or stencil in between the elements you find. Or cover over them.
  - Don't rule out unusual materials, like sandpaper, blurry photographs etc.
2. Choose a base for your collage. The base is usually flat paper or poster board because these are easiest o work with.
  - The background does not have to be white, and it does not have to be plain. The background should could be a page from the magazine or book, a large photograph, or a page of text. Paint or draw on it, or cover over with it with anything that glue will stick.
  3. Prepare the base by cutting the base to desired size and shape. Add any decorations or embellishments you want to the background.
  4. Use scissors to cut out pieces for you collage, try cutting your scraps into unusual shapes, cutting out words or letter from a variety of sources to make phrases on your collage.
- Cut out a whole picture, an identifiable part, or just enough to evoke texture , colour or, feeling.
  - Cut different shapes for both words and images.

5. try tearing materials too. The rough, random edges give parts of your collage a different character than cutouts.
6. Arrange items on you background.
- Play with the different elements and don't be afraid to make this part a messy process. Serendipity may hand you something interesting that you hasn't thought of.
7. apply glue to each item.
- You don't have to cover the whole surface if you don't want to, and not every piece has to be glued flat on the collage. You can fold or crumple pieces of paper, for example, to get interesting textures.
8. Let the finished collage dry completely. Depending on the glues you used, you may need to let the collage dry for a few hours or more than a day.

Criteria for Collage Making Contest

1. Relevance to them	30%
2. Creativity	30%
3. Originality	30%
4. Visual Impact	10%

---

Total 100%

**H. ON THE SPOT PAINTING CONTEST (Elementary and Secondary Level)**

1. Only one (1) contestant per secondary school and 1 per district for elementary level shall participate in the contest.
2. The painting should revolve around the theme which will be announced by the contest administrator during the contest proper.
3. The medium for visual artistry shall be paint or water color only. The required base paper to be used during the contest, however, is a 20" x 30" illustration board.
4. All materials to be used will be provided by the contestant. Borrowing of materials from other contestants shall not be allowed.
5. The allotted time for the contest is one and a half (1 ½) hours, after which all entries shall be submitted to the contest administrator. Contestants may decide to submit his/her poster earlier without waiting for the lapse of one and a half (1 ½) hours. Late submission shall be deducted 1% from the total for every extension of five (5) minutes. A fraction of five (5) minutes shall already be considered five (5) minutes for purposes of deduction.
6. Each poster shall be identified by a number that corresponds to the number and identity of the contestant for the judging process.
7. Judging shall be based on the following criteria:

Criteria

Relevance to the Theme	20%
Technique	20%
Creativity	20%
Impact	40%

---

100%

**J. YES O EXHIBITS ( Secondary Only )**

1. The exhibit shall touch on the school based YES O Implementation of environmental projects as mandated in the YES O constitution and by laws . It shall also feature the organizations plans and success stories on environmental action and initiative.
2. The exhibits shall consist of pictures appropriately labeled , certifications, approved and implemented project proposals, publications, reports, write ups, and other materials that comply with number 1.
3. Exhibits shall be mounted in two (2) manila papers measuring 3 ft. x 4 ft each.
4. All materials shall be provided by the contestants.
5. Only registered members of the YES O delegation shall set up the exhibits.
6. Judging shall be based on the following criteria :

<b>Compliance with YES O mandate</b>	<b>80%</b>
<b>Design/Appearance of Exhibits</b>	<b>20%</b>
	<hr/>
	<b>100%</b>

**K. YES O SPOTLIGHT ( Secondary Only )**

1. The exhibit shall touch on the school based YES O Implementation of environmental projects as mandated in the YES O constitution and by laws . It shall also feature the organizations plans and success stories on environmental action and initiative.
2. The exhibits shall consist of pictures appropriately labeled , certifications, approved and implemented project proposals, publications, reports, write ups, and other materials that comply with number 1.
3. The spotlight must be presented using MS PowerPoint Presentation only.
4. The presentation must be saved in a CD or USB.
5. The organizers shall only provide an LCD projector and a computer to be used during the actual presentation.
6. Only registered participants are allowed to present the spotlight in eight (8) minutes . No time extension shall be allowed. Once the time has elapsed, the presentation will be stopped. The presenter will be subjected to questions by the Board of Judges.
7. Judging shall be based on the following criteria :

<b>Compliance with YES O mandate</b>	<b>60%</b>
<b>Design/Appearance of Exhibits</b>	<b>20%</b>
<b>Actual Presentation</b>	<b>20%</b>
	<hr/>
	<b>100%</b>

**I. Lakambini and Lakan ng Kalikasan**

1. The candidates must be registered camp participants.
2. The pageant shall consist of three (4) portions, namely;

- A. School Uniform
- B. Kalikasan attire Competition  
(Contestants shall wear creative costumes using indigenous or recycled materials.)
- c. Talent Show  
(Talent to be presented must have relevance to environmental awareness or cause. The presentation must not exceed five minutes. Only maximum props and costumes are allowed.)

d. Question and Answer

(The questions to be answered must have relevance to the environment.)

3. Judging shall be based on the following criteria:

<b>Beauty and Personality</b>	<b>30%</b>
<b>Talent and Execution</b>	<b>25%</b>
<b>Intelligence and Wit</b>	<b>30%</b>
<b>Stage Presence/Overall Impact</b>	<b>15%</b>
<b>Total</b>	<b>100%</b>

## GENERAL RULES

1. In the construction of devices, what is not expressly prohibited in the written rules are allowed.
2. For each event/game/contest, the First Place winner will be given 20 points; the 2<sup>nd</sup> Place winner, 15 points; and the 3<sup>rd</sup> Place winner, 10 points.
3. In case of a tie, each of the concerned teams will get the same points assigned to the particular winning position (1<sup>st</sup>, 2<sup>nd</sup>, or 3<sup>rd</sup>). If two teams tie for the 1<sup>st</sup> Place, each will get 20 points; but the next in rank will be declared as only a 3<sup>rd</sup> Place winner and will be given only 10 points. If, on account of a tie, there are already three or more winners in the 1st Place and 2nd Place, none will be declared a 3<sup>rd</sup> Place winner. If a tie occurs in the 3<sup>rd</sup> Place, each concerned team will be awarded 10 points.
4. Each delegation shall be composed of only one school/institution.
5. There should be at most only one team per delegation per event. No two members of a delegation may join more than one team for a given event; otherwise it forfeits points that would otherwise be earned by any member of the delegation for the event.
6. A team may be composed of members coming from different delegations. If a team wins, the points it earns will be equally divided among the delegations composing it. If a member of the team forfeits the points, the forfeited points shall not be enjoyed by the other member.
7. The over-all winners shall be determined by adding the points earned by the members of each delegation.
8. There shall be three Grand Champions, one for each category: professional, college, high school.
9. In case the Regular and Beach Olympics are both conducted in the same seminar, convention, or gathering, there shall be three Grand Champions for each.
10. The PPS President, or his designate, shall serve as the ultimate judge, whose decision shall be final and cannot be appealed or questioned in any venue. All participants are understood to subscribe to this. Those who do not shall not participate; and if they do, their participation shall be void ab initio.
11. The Regular Physics Olympics shall consist of one or more of the following events (games): egg drop, egg transport, bridge building, super magnet, large barge, paper tower, paper airplane, and master robot.
12. The Beach Physics Olympics shall consist of one or more of the following events (games): tallest sand tower, most popular sand castle, longest single span sand bridge, sand buggy, water transport straw, unsinkable boat, electronically-controlled toy boat, and water rocket.

## REGULAR PHYSICS OLYMPICS

The Regular Physics Olympics consists of one or more of the following events (games): egg drop, egg transport, bridge building, supermagnet, large barge, paper tower, paper airplane, and master robot.

### EGG DROP (Elementary + Secondary)

**OBJECT:** To provide a container that will protect a raw egg when dropped from an altitude to a hard surface like a concrete flooring.

**TEAM:** Maximum of two (2) members. At least one (1) team member must be assigned to drop the container.

**MATERIALS:** 1 Team per district for elementary  
1 Team per school for secondary

To be prepared by host:

1. Balance/ weighing scale
2. Empty/Open box, 10 cm x 10 cm x 20 cm



3. Empty/Open box, 20 cm x 20 cm x 40 cm
4. Dozens of medium size chicken eggs (one for each team)
5. meter stick

#### APPARATUS:

1. The members of the team must construct (at home, etc.) the container prior to the contest.
2. Each container must meet the following specifications:
  - a. Maximum mass - 30 g.
  - b. Body size - the container must fit inside a rectangular box 10 cm x 10 cm x 20 cm.
  - c. Parachute - 20 cm x 20 cm x 40 cm, when spread at flight (fair estimate)
3. A variety of materials may be used: paper, cardboard, foam materials (like styrofoam), rubber bands, feathers, string, glue, etc.
4. Fins and other aerodynamics paraphernalia may be added. They should not exceed the 10 cm x 10 cm x 20 cm limit before the container is dropped. Also, they must not exceed a 20 cm x 20 cm x 40 cm dimension while in flight.
5. At no time during the fall may any part of the container have any material exceed the maximum dimensions as outlined above. This allows for parachutes and other wind dragging elements, provided they remain within 20 cm x 20 cm x 40 cm dimensions throughout the fall.
6. All containers must be checked in during registration. No further work will be permitted after the entry has been checked in.

#### COMPETITION:

1. A medium size chicken egg will be supplied for each entry. Eggs will be furnished at the physics olympics site. Contestants must be able to secure their eggs in the containers within 10 minutes immediately prior to the drop.
2. The container will be dropped from successive heights until a breakage occurs. The minimum height a container must survive is one meter.
3. Between drops, repairs may be made provided no additional material is added to the container.
4. The mass of the entry container will be determined before the first drop.
5. The entry that survives the fall from the highest height wins. If two or more entries survive the same height, their winning rank will be based on their masses. The entry with the lighter mass will have the higher rank. An entry that does not survive a height of one meter shall not be declared a winner and shall not earn any point.

#### PAPER TOWER *(Elementary + Secondary)*

**OBJECT:** To construct a free-standing tower of maximum height using a single sheet of bond paper (long size).

**TEAM:** Maximum of two (2) members in a team. No one other than those actually constructing towers will be permitted in the room (or contest area) during the contest.

#### MATERIALS:

To be prepared by host:

1. Two-meter long measuring scale
2. Scotch tape (smallest size of roll, one roll for each team; or one-meter long piece of tape for each team)
3. bond paper, 8.5" x 13"

To be supplied by the contestant:

1. Ruler

2. Pair of scissors, cutter, and/or blade

**RULES:**

1. Each team will be given one sheet of paper and one small roll of cellophane tape at the start of the contest. Only one entry will be allowed for judging. Each team should have only one entry.
2. The sheet of paper may be cut into pieces and reassembled as desired. Parts may be rolled, folded, or slit.
3. Cellophane tape may be used to fasten the parts of the tower together. It may not be used to attach the tower to the floor or any other object.
4. No other glues or tapes may be used. The paper may not be soaked, painted or chemically treated to add rigidity.
5. A tower shall be declared free-standing if it remains self-supporting until measurements on all entries are finished. This means standing during the time between the end of the construction period and the end of the measurement period. If a tower has been measured but collapses or falls before all other towers are measured, it shall be disqualified from winning.
6. Height is determined by measuring the perpendicular distance from the highest point of the tower to the floor.
7. Each team must complete the construction of each tower within an hour.
8. The three tallest towers will be declared First, Second and Third Place Winners, respectively.

**BRIDGE BUILDING** (Elementary + Secondary)

**OBJECTIVE:** To build a bamboo bridge that can support the heaviest load.

**TEAM** : Maximum of two (2) members

**MATERIALS:**

To be prepared by host:

1. Balance/ weighing scale
2. Vernier caliper or ruler with mm scale
3. Sturdy rope, at least half a meter long
4. Heavy duty weight hanger
5. Weights, a total of 20 kgs with one kg composed of weights of 100 g or smaller
6. Match box type toy car
7. Cube of edge 10 cm
8. Rectangular box, 40 cm wide and 2 cm high

**APPARATUS:** Construction and materials of the bridge are as follows:

1. The bridge shall be constructed by the team before the contest.
2. Bamboo sticks and sewing thread are the only materials to be used.
3. Only cloth sewing thread will be used in tying or fastening the bamboo sticks of the bridge.
4. The total mass of the bridge and sewing thread shall not exceed 100 grams.
5. The bridge shall allow a 10 cm cube to slide underneath perpendicular to the bridge's length without touching the bridge.
6. The bridge shall allow a 40 cm wide by 2 cm high board to slide underneath perpendicular to the bridge's length without touching the bridge.
7. The bridge must be free-standing.

8. The bridge shall provide a smooth and level surface across which a small car of the "Matchbox" variety may roll given a single push of the hand. The road surface (level surface) shall have a minimum length of 20 cm.

9. The bridge shall contain no element wider than 5 mm x 5 mm bamboo stick. Two or more single pieces, each separately qualifying, may be attached by the student without violating this requirement.

10. The bridge design shall allow masses ("weights") to be hung at the center of the bridge. For this purpose, a rope should be used. It should be placed over the level surface, at the center of the bridge, and should be formed into a closed loop such that a weight hanger can be hung at the lower portion of the loop. Weights can then be placed on the weight hanger.

11. Only one bridge may be entered per team. All entries must be submitted during registration.

12. Any bridge not meeting the above restrictions will be automatically disqualified.

13. Once the bridge is checked in, no further work on it will be allowed.

#### TESTING:

1. The bridge shall be placed upon the ends of two level table surfaces approximately 35 cm apart.

2. A weight hanger shall be suspended from the lower portion of the loop of a rope placed over the level surface at the center of the bridge. Standard weights should be slowly added until an audible cracking sound, or any sign indicating the failure of some structural member or joint of the bridge, is noted.

3. The maximum load supported by the bridge before cracking divided by the mass of the bridge will determine the winners accordingly.

### LARGE BARGE *(Elementary & Secondary)*

**OBJECT:** To construct a barge that can support the greatest load without sinking.

**TEAM :** Maximum of two (2) members.

#### MATERIALS:

To be prepared by host:

1. Washers of practically uniform size to serve as weights, to total 1500 g
2. Three or four basins (palanggana/batya)
3. Pieces of aluminum foil of equal sizes, each not exceeding 30 cm in length, one piece per team

#### RULES :

1. Each team will be given a piece of aluminum foil not more than 30 cm in length.
2. Each team will construct within 15 minutes a barge out of the given material without using tape, glue, staples or any other material.
3. The barge must be loaded by the team while floating on a basin of water.
4. Only dry loads should be used. If any water leaks into the barge during the loading process, the barge will be considered sinking. Thus damp or wet cargo must be unloaded, the barge dried and reloaded. Only two reloadings will be allowed.
5. Each team will be allowed one repair of its construction after thorough drying.
6. The barge that supports the heaviest dry load will be considered the winner and others judged accordingly.

7. Loads will consist of washers. The dry load just before the barge sinks will be the one recorded. If the load gets wet, the test must be repeated. Only 2 repetitions will be allowed. Consistently wet cargo will be a cause for disqualification.

8. Winners will be determined on the basis of the number of washers as load before the boat sinks. If entries have the same number of washers as load, a tie shall be declared. This means load is quantized.

## PAPER AIRPLANE (Elementary + Secondary)

**OBJECT:** To construct an airplane of largest range and longest time of flight.

**TEAM :** Maximum of two (2) members per team.

### **MATERIALS:**

To be prepared by host:

1. Long tape or rope (20 m long, marked at one-meter intervals), meter stick
2. Three stop watches, timers

### **A. The competition**

1. Two separate rounds will be run, one for distance and one for time of flight. The same plane must be used for each round. Each team will have only one airplane.
2. Regarding the construction of the paper airplane, the following procedure shall be followed:
  - a. Each team will be given a piece of paper out of which the paper airplane is to be constructed.
  - b. Each team should finish construction of the plane within 30 minutes after the start of the contest.
3. The following rules and requirements shall be followed:
  - a. Preferably, competition will take place in an open air field or gymnasium where wind velocity is negligible and insignificant. Launches will be executed by the competitor horizontally from a standing position, and at shoulder level. If a launch violates this rule, the contestant shall be given another chance. A second violation disqualifies the team.
  - b. Stepping beyond the assigned marker will be a fault.
  - c. A second fault will disqualify the contestant.
  - d. Each team will be allowed two launches in each round with the best score for the set being retained for purposes of the competition.
  - e. Each team will compete in each part of the competition.
  - f. No practice flights will be allowed in the vicinity of the launching area during the duration of the contest.

### **B. Scoring**

#### **Distance Round**

1. The plane should be launched horizontally at shoulder level.
2. Horizontal distance from the point in the ground directly below the launch point to the position of first impact with the ground will be measured.
3. Impact with any object prior to hitting the ground will allow a repetition of a launch.
4. The greatest distance achieved will be awarded 20 points with all other scores scaled proportionately to distance achieved to the nearest tenth of a point.

#### **Time-of-Flight Round**

1. In this part of the contest, the airplane may be launched at any angle.

2. Time from the flight of the airplane until first impact with the floor will be measured by two or three timers.
3. Impact with any object prior to hitting the ground will allow a repetition of a launch.
4. The average time of the timers to the nearest tenth of a second will be recorded.
5. Greatest duration will be assigned 20 points with all other scores scaled proportionately to the nearest tenth of a point.

**Total Score** is composed of the two (2) scores thus obtained. The highest scoring team will be awarded 20 points towards the total competition; the second, 15 points; the third, 10 points.

## EGG TRANSPORT *(Elementary + Secondary)*

**OBJECT:** To build a vehicle powered by a rubber band(s) or rubber strip(s), which can carry an egg to the greatest horizontal distance.

**TEAM :** Maximum of two (2) members per team.

**MATERIALS:**

To be prepared by host:

1. Balance/ weighing scale
2. Meter stick

**RULES :**

1. The contestants are to design and construct their own "cart" or vehicle prior to the contest. The cart or vehicle can be made of any inanimate material (commercial or scratch-built) like an empty spool. This is to be checked in. No further work will be allowed after checking in the device during registration.

2. The rubber band(s) or strip(s) as a source of energy must be a part of the vehicle. Catapults or other launching devices external to the vehicle (or initially connected or attached to an object/point external to the vehicle) are not allowed.

3. Up to 6 rubber bands or strips may be used. A strip formed into a loop will be counted as two strips. The width of the band/strip should not exceed 5 mm.

4. The maximum mass of the vehicle or device should not exceed 100 grams.

5. The egg may be rolled or carried by the vehicle.

6. The egg should remain unbroken or undamaged during the roll or transport.

7. A starting line will be marked on the floor.

8. The vehicle must move on a lane 50 cm wide. If the vehicle strikes the boundary side or line in the course of the roll/transport, that point will be marked as the end of the roll.

9. If the egg separates from the vehicle, the point at which the egg separates will be marked as the end of the roll/transport.

10. Winners will be determined on the basis of horizontal distance moved (perpendicular to the starting line) during the roll/transport.

11. Each team will be allowed two trials, with the greater distance retained for purposes of the competition.

## SUPER MAGNET *(Secondary only)*

**OBJECT:** To construct an electromagnet that can support the largest load possible.

**TEAM :** Maximum of two (2) members

**MATERIALS:**

Half-inch nails (suelas)  
Balance (weighing scale)  
DC power supply, about 3.5V

**RULES :**

1. The electromagnet should be constructed before the contest and submitted for weighing before the contest begins.

2. The maximum mass of the electromagnet should not exceed 200 grams.

3. The electromagnet should be constructed in such a way as to leave two ends free (about 10 cm) for connection to a voltage source, preferably a DC power supply of 3-5 Volts. The same power supply should be used for all entries. If dry cells (two 1.5V dry cells connected in series) are used as the voltage source, the dry cells should be changed often so that the same voltage and current, as much as possible, will be used for all entries.

4. The magnet will be dipped into a box of nails (half-inch long, suelas). The nails it lifts will be weighed.

5. The average of three trials will be taken.

6. The winners will be determined from the average mass of the nails lifted.