

Broward & Palm Beach County Region

SECME 2007-2008

Rules Manual and Survival Guide

The 2007–2008 Broward and Palm Beach Region SECME Rules Manual and Survival Guide was written in an effort to better prepare local programs to offer their students the best possible SECME experience. Included in this manual are updated rules for District Competition, County Calendar of Events, and a complete section of competition forms. Additionally, readers will find helpful hints on how to develop exciting programs at the school level.

Broward/Palm Beach Region Rules Committee

| | |
|------------------------|---|
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SECME OVERVIEW

2007-2008 THEME

SECME: Lighting the Torch to Empower Future Leaders

SECME is a strategic alliance to renew and strengthen the professional capacity of K-12 educators, motivate and mentor students, and empower parents so that all students can learn and achieve at higher levels.

Our Mission

SECME's goal is to increase the pool of historically under-represented,* geographically under-served, and differently-abled students who will be prepared to enter and complete post-secondary studies in science, technology, engineering and mathematics (STEM), thus creating a diverse and globally competitive workforce.

Profile

SECME, Inc., a premier pre-college (K-12) alliance, links engineering universities, school systems, and corporate/government investors. Its mission is to increase the pool of historically under-represented,* under-served, and differently-abled students who will be prepared to enter and complete post-secondary studies in science, mathematics, engineering, and technology.

SECME was established in 1975 by the Engineering Deans at seven Southeastern universities: Alabama, Florida, Georgia Tech, South Carolina, Tennessee, Tennessee State, and Tuskegee. Today that alliance extends to schools, universities, science- and technology-based business and industry, and public and private agencies in 17 states (from New York to Arizona), the District of Columbia, and Grand Bahamas.

For its first 22 years, SECME was an acronym for Southeastern Consortium for Minorities in Engineering. In 1997, the name was changed to SECME, Inc. SECME is chartered in the State of Georgia as a nonprofit, 501(c)(3) corporation. From the beginning, its National Office and administrative home has been in the College of Engineering at the Georgia Institute of Technology in midtown Atlanta.

In creating SECME, the founding Deans acted to address two urgent--and enduring--national challenges: 1) declining engineering enrollments on campuses across the U.S., and 2) growing evidence of shortfalls in technical talent to sustain an economy--and global leadership position--increasingly dependent on technology and innovation as primary engines of growth. Their solution: to tap new talent in two groups then grossly under-represented (at less than 1 percent each) in the engineering profession--namely, minorities and women.

Thus SECME began as a collaborative effort of school districts, engineering universities, business and industry, and government. The noble dream and determined pursuit of the founders was excellence and equity as well as needed change in K-12 education. The school-university partnership was the defining element in the original SECME "framework." That model is, very intentionally, teacher-centered. By impacting teachers, all students benefit.

Vision

To be a beacon and benchmark for excellence and equity in pre-college education.

* African American, Hispanic, Mexican American, Native American, Pacific Islander and "differently-abled".

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Broward & Palm Beach County Region

SECME 2007-2008

Rules Manual and Survival Guide

GENERAL INSTRUCTIONS:

To participate in any level of competition, schools must be registered with the SECME National Office in Atlanta and must be in good standing. A school will be considered in good standing if the school has submitted its longitudinal data for the current year, any applicable final grant reports for the previous school year, and the End-of-Year Summary report for the previous school year to the District Program Director and to SECME's National Office in Atlanta.

To compete at the District level, each school must enter the following contests: Essay/Poem, Mousetrap Car Design, Poster Design, and Banner. However, schools are encouraged to participate in all scheduled events in order to increase their chances of winning the overall championship. **Directors, Industry Partners, Coordinators, Students and Parents are advised to check the SECME.org website often throughout the year in order to receive rule and policy changes, themes and general information that may occur after the publication of the Survival Guide.**

To compete in the Bridge Car Design, Mousetrap Car Design and the Water Rocket Design competitions, a team must enter all parts of the design competition. A team must enter in all of the following categories for each competition:

- ✓ **Bridge:** Technical Drawing, Technical Report, Construction and Testing
- ✓ **Mousetrap Car:** Technical Drawing, Technical Report, Construction and Operation
- ✓ **Water Rocket:** Technical Drawing, Technical Report, Patch Design, Construction and Launching

Should a team fail to enter a project in any one or more of the above required components, the team may not compete in any area of the competition.

The schools placing 1st, 2nd & 3rd in the events offered at each level will earn participation points. Overall competition winners will be selected at all three levels of competition, elementary, middle and high school. Elementary school students will compete only with other elementary school students. Middle school students will compete only with other middle school students. High school students will compete only with other high school students.

Each school entering the DISTRICT level Olympiad may enter a maximum of two (2) design teams. Each design team will consist of three students and may enter a mousetrap car, a balsa wood bridge and a water rocket. Teams must remain constant for the design team contests – Bridge, Mousetrap Car, and Water Rocket (*i.e. no changes may be made in the composition of the team except at the district level under extreme circumstances.*)

Additionally, each school may enter one (1) Essay/Poem, one (1) Poster, one (1) Banner, and one (1) Brain Bowl Team. Each school may not exceed a total of Fifteen (15) student participants.

The middle school and high school District first place essay and poster are submitted to National SECME competition as well as the mousetrap car.

The middle school and high school District and National Mousetrap Car Contests require the following:

- Mousetrap Car Construction: Mousetrap Car Run
- Design Drawing
- Technical Paper
- Interview with the Judges

Elementary school teams are not required to complete the technical paper or design drawing. Elementary school teams will be judged on the basis of the mousetrap car run alone.

Essay/Poem and the Poster Contests are individual contests and will be judged as such. Elementary first place essay and poster winners are submitted to National SECME competition.

Each pre-designed project (Bridge, Mousetrap Car and Rocket) must be packaged separately and will be turned in at registration. The packaging must be sufficient to protect the project during normal handling and transporting. Each package must be labeled with the following information:

- Team name
- Team member's names and grades (could we delete?)
- School coordinator's name
- School name (could we delete?)
- Date of competition

*Note: Disqualified projects will not be judged.

Note: Only a Design Team member can represent that team's projects. A Design Team member should be available at each design competition. **If a member is responsible for another simultaneous competition, make sure a substitute from that Design Team is available.

SECTION 1

GETTING STARTED

SECME: Lighting the Torch to Empower Future Leaders

Getting Started

Initiating a SECME program at your school can be one of the most rewarding experiences of your educational career. When starting a SECME program, one of the first questions that come to mind is “How Do I Get Started?” Here are a few ideas that may be of assistance as you are planning your school’s SECME program.

1. If your school has had an established SECME program in the past, check with your administration and/or the previous SECME coordinator to see if a SECME Implementation Plan exists for your school. This plan will provide you with such items as SECME program goals, objectives, rationale, recruiting strategies, and past SECME activities. After reading through this plan, you will be able to identify items that need to be updated, added or deleted in order to make the plan more relevant to the program you wish to implement.

If this is the first year for SECME at your school, you will have the opportunity to begin building from the ground up. This is a rewarding and exciting venture. You may wish to meet with coordinators from other SECME schools inside and outside of your area to review their SECME Implementation Plans. This will give you ideas of proven successful program activities.

A successful SECME program is one that meets the needs of students on a variety of academic levels. Through SECME competitions, students are trained in scientific and research methodologies, are exposed to state of the art technology inside and outside of the classroom, and solve real-world engineering problems. However, SECME is much more than engineering design contests. SECME provides students with the opportunity to develop a comprehensive educational plan designed to prepare students to be successful in science, mathematics, engineering, and technology educational programs through college and into their chosen professions. Thus it is important to plan a program that will provide students with the following experiences:

- Career and occupational orientations
- College and university visitations
- Mentoring and internship programs with local industries
- Problem-solving strategies and higher-level thinking skills
- Comprehensive test preparation for exams i.e., FCAT, PSAT, SAT and ACT exams

By addressing all of these educational needs, your SECME program will be the stepping stone your students will need in order for them to successfully make tracks in the 21st century.

- 2. Read carefully through this guide (the Broward and Palm Beach Region SECME Rules and Survival Guide). This document will give you a basic outline of program activities and contests, important dates and deadlines, scholarship opportunities, and a plethora of other valuable information you will need to establish your program.**

1. Select three, four or more staff members from your school to serve on the SECME team. These staff members might include a math teacher, a science teacher, a technology teacher, a guidance counselor, and/or an assistant principal. This SECME team led by the SECME Coordinator will work together to develop and carry out the SECME program plan.
2. After the SECME team establishes the annual SECME activities and meeting calendar, the coordinator is encouraged to begin advertising the program. This is generally best accomplished via the public address announcements, posters, flyers to teachers and students, classroom visits,

etc. Make sure all advertising materials include the date, time and location of the first SECME meeting of the year.

3. The first meeting should include both parents and students and should be a general orientation and registration meeting. A sample agenda for this meeting might include:
 - An overview of the SECME program (brochure)
 - Philosophy and rationale
 - Goals and objectives
 - Calendar of events and schedule of club meetings
 - Competitions and contests
 - Membership requirements
 - Introduction to the Broward and Palm Beach Region Survival Guide
 - Distribute and collect completed student membership application forms
 - Refreshments
4. Following the first general meeting, you should continue to advertise the program. Once a core group of students who attended the first general meeting get involved in the program, they will establish duties of club officers and schedule meetings for campaign speeches and elections.
5. Begin building a database of SECME members inputting the member applications collected at your first meeting into your favorite computer file or word processing program.
6. Once you have determined the competitions and contests in which your club will participate, you must begin gathering the materials and supplies your students need to get started. It is not necessary to supply students with everything they need. Allow students to be creative in the designs and in the materials they use. They will collect some of the needed materials on their own. For example, when building the mousetrap car, provide the students with one victor mousetrap. Challenge them to gather household materials and other sources for the materials they need. Don't let them go too long without needed materials. Provide materials they can't locate to avoid frustration.
7. At this point, you should be well on your way to establishing a successful SECME program at your school. Remember, how the program is initiated at each school site varies. Select the implementation method that best meets the needs of your student population. Here are a few more suggestions:
 - Meet at least once every week or two after school
 - Include other disciplines in developing projects (English Department when writing essays)
 - Offer SECME as an elective course (daily experience)
 - Offer SECME as a part of your after-school program, if possible
 - Combine activities with a SECME school in your area
8. Be sure to attend all district-level coordinator meetings. These meetings will keep you updated on all SECME information and provide additional ideas on how to manage your SECME program. Best wishes for a wonderful "SECMEtized" experience.

SECME IMPLEMENTATION PLAN GUIDELINES

SECME: Lighting the Torch to Empower Future Leaders

- I. Overview
 - A. Description of school (name, grade levels, population, location, etc.)
 - B. Brief history of school's SECME program
- II. Rationale and Philosophy (to support the program expressed in needs of the community, students, teachers and parents)
- III. Program Goals (Non-measurable, timeless, directional expressed in terms of student outcomes, broad based – e.g. involve parents in SECME program)
- IV. Program Objectives (measurable, specific, expressed in terms of student outcomes – e.g. program will involve a minimum of 50% of my students' parents in our orientation program)
- V. Activities
 - A. Identification of SECME team members
 1. School coordinator
 2. Role of the administration
 3. Role of counselors
 4. Role of the media specialist
 5. Role of math, science, English, technology, art and other teachers
 6. Parents and volunteers
 - B. Method of infusing diversity instruction (diverse heritages, diverse learners)
 - C. Method of interdisciplinary curriculum and team planning
 - D. Identification and follow-up of SECME students
 1. Criteria for selection (i.e. test scores, grades, teacher recommendation, classroom performance, student interest, parent interest)
 2. Process for follow-up on student academic progress
 - E. Guidance and motivational activities
 1. Parent involvement
 2. Career counseling
 3. Field trips
 4. Club activities
 5. Speakers, films, video tapes
 6. Engineering and math competitions
 7. Science fairs
 8. SECME Olympiads
 9. Math Counts and JETS (Junior Engineering Technical Society)
 10. Competitions (Drop It-Build It-Fly It, First Lego)
 11. Induction and awards ceremonies
 12. Role models and mentors
 13. Programs with feeder schools
 14. Involvement with professional organizations (NSBE, MSME)
 15. Career exploration technical portfolios

- F. Enrichment and instructional programs
 - 1. Integration of curriculum materials
 - 2. Use of computers as an instructional tool (email, internet research, SECME Website)
 - 3. Hands-on activities
 - 4. Study skills and time management
 - 5. Oral presentations
 - 6. Comprehensive test preparation, i.e., FCAT, PSAT, PACT, ACT, SAT, NEAS
 - 7. Enrichment and instructional programs align to Sunshine State benchmarks (see appendix)

- G. Means for generating community support (university, business/industry, Adopt-A-School, cooperative programs, internships, Saturday/summer programs, museum programs, professional organizations)

- VI. Projected timelines and/or calendar of events

- VII. Public relations (school wide, system wide, community, national promotion of your SECME program)

- VIII. Program evaluation
 - A. Cooperative planning with district program director and university consultants

 - B. Periodic reporting to the Atlanta SECME Office
 - 1. Longitudinal data
 - 2. School information
 - 3. Annual summary report
 - 4. Senior surveys (high schools only)
 - 5. Grant reports (when applicable)

 - C. Identify indicators of success or progress for each objective

SECME IMPLEMENTATION PLAN
SECME: Lighting the Torch to Empower Future Leaders

I. Overview

A. Name and description of school: _____

B. Brief history of school's SECME program: _____

II. Rationale and philosophy to support the SECME program (expressed needs of the community, students, teachers, parents):

V. Activities

A. Identification of SECME team members in school:

1. SECME school coordinator(s): _____

2. Names and roles of team members (principal, counselors, other teachers, media specialist, etc.):

| <u>Team Member</u> | <u>Role</u> |
|--------------------|-------------|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

B. Method(s) of infusing diverse instruction: _____

C. Method(s) of interdisciplinary curriculum and team planning:

D. Identification and follow-up of SECME students:

1. Criteria used in selection: _____

2. Process for following up on students' academic progress: _____

E. Guidance and motivational activities:

1. Parental involvement: _____

2. Career counseling: _____

3. Field trips: _____

4. Club activities: _____

5. Speakers, films, videotapes, etc.: _____

6. Engineering, mathematics, science fairs, tournaments, Olympiads:

7. JETS: _____

8. Recognition activities: _____

9. Role models and mentors: _____

10. Programs with feeder schools: _____

11. Involvement with professional organizations: _____

12. Career exploration: _____

13. Technical portfolios: _____

F. Enrichment and instructional programs:

1. Integration of curriculum materials: _____

2. Use of the computer as an instructional tool (email, Internet research, SECME Website): _____

3. Hands-on activities: _____

4. Study skills and time management: _____

5. Oral presentations: _____

6. PSAT/PACT/ACT/SAT/NEAS participation: _____

G. Means for generating community, university and industrial/business support:

VI. Projected timeline and calendar of events:

| <u>Month</u> | <u>Event/Activity(s)</u> |
|---------------------|---------------------------------|
| August | <hr/> <hr/> |
| September | <hr/> <hr/> |
| October | <hr/> <hr/> |
| November | <hr/> <hr/> |
| December | <hr/> <hr/> |
| January | <hr/> <hr/> |
| February | <hr/> <hr/> |
| March | <hr/> <hr/> |
| April | <hr/> <hr/> |
| May | <hr/> <hr/> |
| June, July | <hr/> <hr/> |

SECME Elementary School Membership Application
Year _____

Last name _____ First name _____

Home address _____

City and zip code _____

Home phone number _____

Emergency contact/phone number _____

Grade level/Age _____

Ethnic background/Gender (e.g. W/F) _____

Teacher Name/Room # _____

STUDENTS: PLEASE READ AND SIGN

As a SECME member, I pledge to obey the rules of SECME, listen to my SECME Coordinator, and follow the conduct code of my school.

Student signature _____ Date _____

PARENTS: PLEASE READ, ANSWER AND SIGN

Will your child be able to attend competitions on Saturdays? _____

Will you be able to assist as a chaperone on occasion? _____

Will your child be able to stay after school to prepare for competition on a day other than the regular SECME club-meeting day? _____

Will you accept the liability for any injury to your child that might occur while he/she is working on a SECME project or participating in a SECME competition? _____

Parent signature _____ Date _____

TEACHER RECOMMENDATION

I do recommend _____ I do not recommend _____ at this time.

Teacher signature _____ Date _____

(Please keep a copy for your records)

SECME Middle and High School Membership Application
Year _____

Last name _____ First name _____ MI _____

Home address _____

City _____ State _____ Zip code _____

Student number _____ School coordinator's name _____

Social security (last 4 digits) XXX-XX-_____ Birth date _____ Grade level _____

Home phone () _____ Gender _____ Ethnic background _____

Teacher name _____ Years of SECME experience _____

Previous SECME contest experience _____

Un-weighted GPA _____ Weighted GPA _____ Current math course _____

Current science course _____ Current computer course _____

Current course schedule:

Period/ Block 1 _____ Room# _____ Teacher _____

Period/ Block 2 _____ Room# _____ Teacher _____

Period/ Block 3 _____ Room# _____ Teacher _____

Period/ Block 4 _____ Room# _____ Teacher _____

Period/ Block 5 _____ Room# _____ Teacher _____

Period/ Block 6 _____ Room# _____ Teacher _____

Period/ Block 7 _____ Room# _____ Teacher _____

Period/ Block 8 _____ Room# _____ Teacher _____

Student signature _____ Parent signature _____

Date _____ Date _____

(Please keep a copy for your records)

SECTION 2

REGIONAL CALENDARS

SECME: Lighting the Torch to Empower Future Leaders

SECME 2007 – 2008 Regional Calendar of Events

Florida Atlantic University Scholarship Application Deadline: February XX, 2007

TBA.....SECME Annual Banquet
TBA.....32nd Annual SECME Summer Institute Tuskegee University

Tentative Broward County Coordinator Meeting Dates: Dates to be determined by Coordinators and Industry Partners after the first organizational meeting. An addendum will be distributed to all interested parties as a separate attachment.

September 5, 2007.....4:15 P.M.
Introductory meeting and distribution of the Survival guide
October 10, 2007.....4:15 P.M.
New Coordinators meeting
November 17, 2007.....9:00 A.M.
Broward SECME Symposium / Exposition Olympiad
January 9, 2008.....4:15 P.M.
Final tune up prior to Olympiad and paperwork due date
January 30, 2008.....4:15 P.M.
Reports, Drawings, Essay, etc due
February 6, 2008.....4:15 P.M.
Pre-Olympiad tour and final instructions
February 16, 2008.....8:00 A.M.
Broward County Olympiad (**high & middle schools only**)
May 16?? Elementary school Olympiad and Field Day.....TBA

Mousetrap Car Seminar date and time to be announced pending interest and convenience to the Industry Partners.

Tentative Palm Beach County Coordinator Meeting Dates

September 15 **New Coordinators (required) Mtg**.....8:30 A.M. – 1:00 P.M.
District Boardroom

September 22 Coordinator Meeting.....8:00 A.M. – 3:00 P.M.
District Boardroom

November 05 Coordinator Meeting.....4:30 P.M. – 6:00 P.M.
TBA

January 22, 2008 Coordinator Meeting4:30 P.M. – 6:00 P.M.
TBA

April 16, 2008 Coordinator Meeting.....4:30 P.M. – 6:00 P.M.
TBA

Broward County District Olympiad

Date: February 16, 2008 **Location:** Boyd Anderson High School

Essay, Poem Due Date: January 30, 2008

Registration Paperwork Due Date: January 30, 2008

Written Reports and Drawings Due Date: January 30, 2008

Rocket Technical Report, Technical Drawing and Patch Design

Mousetrap Car Technical Report and Technical Drawing

Bridge Technical Report and Technical Drawing

Mousetrap Cars, Bridges, Rockets, Banners and Posters will be submitted on February 16, 2008 at the Olympiad.

Pony Essay, Poem, Drawings, Technical Reports, Patches and all Registration forms to Mark Eyerman @ Blanche Ely High School

Mousetrap Car Seminar date and time to be announced pending interest and convenience to the Industry Partners.

Palm Beach County District Olympiads

Elementary: March 22, 2008, **Location:** TBA

Secondary: March 29, 2008 **Location:** TBA

Essay, Poem, Patch Registration Paperwork Due Date: February 8, 2008 – by end of business day

Technical Reports and Drawings Due Date: February 15, 2008 – by end of business day

Rocket Technical Report and Technical Drawing

Mousetrap Car Technical Report and Technical Drawing

Bridge Technical Report and Technical Drawing

Constructed Mousetrap Cars, Bridges, Rockets, Banners and Posters will be submitted on competition day.

Implementation plan due date; December 14, 2007

Deliver Essay, Poem, Drawings, Technical Reports, Patches, and Registration forms to Trevor Roberts, FHESC, Division of Curriculum & Learning Support, C-206.

Palm Beach County Design Seminars

Essay/Poem and Brain Bowl Seminar

Date: October 13, 2007

Time: 8:00 – 1:00

Location: TBA

Mousetrap Car

Date: October 27, 2007

Time: 8:00 – 1:00

Location: TBA

Bridge

Date: November 03, 2007

Time: 8:00 – 1:00

Location: TBA

Water Rocket

Date: November 17, 2007

Time: 8:30 – 1:00

Location: Freedom Shores Elementary

SECME in the Glades

Date: December 01, 2007

Time: 8:00 –1:00

Location: Lake Shore Middle

SECTION 3

ELEMENTARY LEVEL RULES

&

COMPETITION GUIDELINES

SECME: Lighting the Torch to Empower Future Leaders

ELEMENTARY SCHOOL

DISTRICT

2008 SECME BANNER COMPETITION GUIDELINES

DESIGN AND CONTEST RULES:

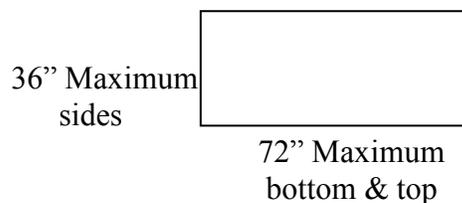
1. Banners must be 70 inches long and 34 inches wide (plus or minus 2 inches) including all embellishments (borders, perimeter decorations, etc.), and must be submitted on quality fabric (cloth or vinyl).
2. All entries must include school name, school mascot, school colors, city, state, current year (2007-2008), and the SECME emblem. **Any entries not bearing these items will be automatically disqualified.**
3. Banners must be a hand-made work.
4. Banners must be two-dimensional.
5. The banners will be scored in the following categories:
Content – Quality and organization of the information on the banner
Originality – Innovativeness of the design and how well it presents the ideas on the entry
Creativity – The uniqueness of the information depicted
Appearance – The attractiveness and neatness, scale and balance of the presentation

Please Note: Any attachments for pole supports will not be included in the measurement of the banner.

Please Note: The SECME emblem is:



Please Note: The manner of presentation:



ELEMENTARY SCHOOL

DISTRICT

2008 SECME BRAIN BOWL COMPETITION GUIDELINES

The Brain Bowl Competition is a contest between two or three teams. **The questions are generated randomly in the following areas: Science, Mathematics, Engineering, *Technology* and selected fields within these areas of study. The questions abide and follow the Sunshine State Standards for Elementary and Secondary Schools. The random questions are generated by an outside source, and the judges will read them in their random order.** Each team must consist of a minimum of three (3) to a maximum of four (4) members. One of the members must be designated as the team captain.

GENERAL RULES:

Before the beginning of the match, the judge will ask each contestant to test his or her buzzer as well as designate a team captain. The match starts with the toss-up round and is followed by the bonus round. In the toss-up round, the judge will ask the question and an answer must be given without conferring. In the bonus round, the judge will ask the question and the team may confer, but only the captain may give the answer.

In the toss-up round, any contestant, at any time (interruption of a question is allowed), may buzz in to answer the question. A correct answer will give that contestant's team ten (10) points. An incorrect answer will result in a five (5)-point deduction from the team's total and the question will be reread for the opposing team.

At the end of the toss-up round, the bonus round will begin. The team with the lower point total will begin. The number of correctly answered questions from the toss-up round will be the number of bonus questions each team will be asked. When the question is read, the contestants may confer and the team captain may then deliver an answer. A correct answer will receive ten (10) points. There is no penalty for an incorrect answer in this round.

PROCEDURES:

1. The toss-up round consists of thirteen (13) questions. The moderator will call "last question" at the end of the round to signal the round's conclusion. Bonus questions will then follow. **In the case of a three-way competition, the toss-up round will consist of fifteen (15) questions instead of thirteen (13) questions.**
2. Once a toss-up question is read, the contestants will be allowed five (5) seconds to buzz in. The first contestant who signaled and is recognized by the moderator will then be allowed five (5) seconds to answer the question. The timekeeper will mark the time from the moment the contestant is recognized to the time of the answer's initiation. Going over this time limit will be considered an incorrect answer.
3. If a contestant answers the question without being recognized, that will be considered an incorrect answer as well. If a contestant signals before a toss-up question is completed, the moderator will discontinue reading the question immediately. The person who signaled first and is recognized by the moderator must answer the question within five (5) seconds.
 - a. If the response is correct, the team will be duly credited with the ten (10) points and an opportunity to answer a bonus question at the end of the heat.
 - b. If the response is incorrect, the moderator will repeat the question for the contestants of the other team. The team that incorrectly answered the question may not respond again to this question.

4. If a question is completed and a team's response is incorrect, the other team will have a chance to answer. If the other team's answer is incorrect, the other team will then be asked a new toss-up question.
5. Only one team member may raise the dispute flag and voice a concern regarding a question, answer or procedure. This dispute must be made immediately following the incident. The judge's ruling is final.
6. The bonus round is conducted without the buzzers. Once the moderator finishes reading the question, the team captain has ten (10) seconds to give an answer. If there is a tie at the end of the bonus round, one final sudden death toss-up question will be given in order to determine the winner.
7. If at the end of the toss-up round, it is impossible for one team to win (i.e., even if all their bonus questions are answered correctly, they would still not at least tie), then there is no need to proceed into the bonus round. The leading team will be declared the winner.
8. A team will compete with one or two other teams in a head-to-head competition. All questions will be taken from the disciplines of mathematics, science, engineering, and technology.
9. Elementary school teams (K-5) will compete against other elementary school teams.
10. The scheduling of competitions will be done by a draw. All rounds will be by single elimination.
11. A question will be stated only once. Coaching from the audience will disqualify the question and its points.
12. The scorekeeper will record the running total of points for each team on a board visible to all contestants and spectators. At the end of each heat, the scorekeeper will then turn in the score sheet for each heat to the competition coordinator.
13. If a discrepancy regarding a particular question occurs for any reason, the contest judge has the right to discard the old question and replace it with a new question. Please remember that challenges to a question asked or answer given can only be voiced by a school's team captain.
14. No pictures, video recording or audio recording will be permitted during the brain bowl competition. These activities tend to be distracting to the members of the brain bowl teams.
15. Disruptive behavior will not be tolerated and may lead to disqualification. The judges' discretion will apply.

SCORING:

1. The value of a toss-up question is ten (10) points for a correct response and minus five points for an incorrect response. It is therefore possible for a team to have a negative score.
2. Points will not be deducted for an incorrect response to a bonus question. The team with the most points at the end of the bonus round will be declared the winner of the round.
3. The question will be stated only once. Coaching from the audience will disqualify the question and its points.
4. In order for a team scoring zero (0) points to be declared the winner, they must have answered at least one question.
5. An official audit sheet will be maintained during each round of the brain bowl competition. This audit sheet will document the total number of questions asked, the number of questions discarded, the number of questions replaced, and the length of contest time. Additionally, a formal scoring log will be included on the audit sheet.

ELEMENTARY SCHOOL

DISTRICT

2008 SECME BRIDGE COMPETITION GUIDELINES

MATERIALS:

Balsa wood and any type of glue are to be the only materials used.

DESIGN AND COMPETITION REQUIREMENTS: (Any entry not meeting the following requirements will be disqualified).

NOTE

**Some rules have been added and some have been changed.
These additions/changes have been highlighted in bold type.**

1. A design team of students shall construct the bridge.
2. The bridge must be free standing and stable during inspection and testing or the bridge will be disqualified from competition.
3. Refer to the Bridge Illustration on page 55 for an explanation of dimensions.
4. The bridge must be built from balsa wood. **Bass wood** may **not** be used. No piece of wood may be greater than 0.635cm (1/4") by 0.635cm (1/4"). Individual pieces with these dimensions may be glued together to form larger sections to be used in the construction of the bridge. No exposed surface of the bridge may be coated with any substance (i.e., resin, glue, paint, etc.).
5. The total mass of the bridge must not exceed 110 grams in weight.
6. The length of the bridge, including all supports, must be between 40.0cm and 50.0cm.
7. The maximum width of the bridge, including all supports, is 10.0cm.
8. The highest point of the bridge, called the roadway, is measured from the base of the bridge to its tallest point. This distance must be between 10.0cm and 20.0cm in height.
9. The roadway must be of a **solid** design that will allow a small metal car to roll from one end to the other.
10. The surface of the roadway must have a width of between 4.3cm and 5.2cm.
11. The length of the roadway must be between 30.0cm and 50.0cm.
12. The roadway may have a slight arc, provided the center of the arc is no higher than 2.54 cm (1") above the end points.
13. **Sufficient clearance must be provided at the base of the bridge as to allow an object measuring 40.0cm in length by 2.0cm in height to pass freely underneath it.**
14. At no time during the test may the bridge flex to such a point or break in such a way that any part of the bridge becomes a solid support leg directly under the ram. If so, then the test is stopped and the force will be recorded at that point.
15. No fastening method other than the interlock of the balsa wood pieces and /or glue is allowed.
16. The bridge design must allow the testing equipment to easily fit the roadway. See the drawing of the SECME Bridge Tester on page 56.

JUDGING:

Once a bridge has been submitted for competition, no modifications may be made. Any deviation will result in disqualification.

Every bridge will be inspected, measured and weighed for compliance with all rules. If all guidelines are satisfied, the bridge will be qualified for competition. Each bridge that qualifies for competition will be tested first. **NOTE: If, at the discretion of competition staff and there is time available, any bridge which did not pass inspection may be tested if the student wishes. This testing will be only for experience and not for any award.**

Points are awarded solely on the basis of how much force the bridge holds. No additional points will be awarded for craftsmanship or originality. The decision of the judges will be final.

Every effort will be made to place the bridge on the centerline of the testing device. If the team wishes they may place an "X" on the roadway surface, and every effort will be made to place that point on the centerline of the testing device. However, setting the bridge in place is done by the human eye, and missing the center will not be the sole reason for filing a grievance.

Using a SECME testing device, the bridge will be load tested until it fails. The total load will be recorded. The bridge that holds the highest load will be the winner.

Any bridge that does not break after having the maximum amount of load applied by the testing device will be sawed in half.

COORDINATOR/PARENT'S BRIDGE CHALLENGE CUP

Welcome to all teachers and parents!

Please join this exciting competition and put your skills to the test.

Your challenge is to build a balsa wood bridge that will compete not only against your fellow SECME coordinators but also against SECME students. Are you ready?

RULES:

1. The Coordinator/parent's bridge will be built following the same rules as the grade level of the competition. **Exception:** A Technical Drawing or Report is **not** required.
2. Each bridge will be inspected and must pass in order to be included in the competition.

Participation by all Coordinators/parents will make this a fun addition to an already exciting competition!

ELEMENTARY SCHOOL

DISTRICT

2008 SECME ESSAY COMPETITION GUIDELINES

The elementary essay is a National SECME competition.

- ✓ Each entry is to be prepared and submitted by an individual student (not team).
- ✓ An individual elementary student will compete only with other elementary students.

The theme for the 2007-2008 SECME Essay Competition will be announced by the National SECME Office by October. Students must choose a topic within the theme because the theme is too broad for an essay.

ESSAY COMPETITION REQUIREMENTS:

1. Title page
Essay's title (same as 2007-2008 theme)
Student's name, grade, age (*Can we delete?*)
Home address, zip code, and telephone number (Can we delete?)
Name of school and address (Can we delete?)
SECME school coordinator's name (Can we delete?)
Date
2. Essay
Three to four computer or typed pages (excluding title page and bibliography)
8.5" x 11" white paper
Double-spaced with one-inch borders on each side
Times New Roman or CG Times font, 12 point size
3. Bibliography
Reference sources and direct quotations are required to be identified numerically by page and sources, cited in standard bibliography form. **Bibliography must contain at least one source.** (*our suggestions to national is to use MLA or APA format for referencing of sources.*)
4. Authenticity
Students must sign a form stating that their submission is their original work and that all sources have been cited properly.

JUDGING:

Essays will be judged on organization, grammar and sentence structure, mechanics, spelling, punctuation, and creative style.

ELEMENTARY SCHOOL

DISTRICT

2008 GUIDELINES FOR SECME DESIGN COMPETITION: MOUSETRAP CAR DESIGN AND CONSTRUCTION

REQUIREMENTS: (Any entry not meeting the following requirements will be disqualified).

1. The Engineering Design Competition requires participation in the following areas:
 - a. Mousetrap Car construction
 - b. Mousetrap Car run
2. This is a team competition and should reflect the coordinated efforts of all members.
3. Three (3) students must be on each team.
4. Each member is expected to be able to serve as a spokesperson and be fully involved with all aspects of the entry.
5. Use a standard “**VICTOR**” (usually about 4.5 x 10 centimeters and weighing about 25 grams) mousetrap to build a car. The goal of the mousetrap car design shall be to build a car that will travel in a straight line a maximum distance of 25 meters crossing the target zone marked on the test site.
6. Components of the mousetrap are: base (on which all other components are mounted), spring, bail, locking lever, and bait hook. (See component sketch on page 33.)
7. Use the spring on the mousetrap as the sole source of power. (**DO NOT USE RUBBER BANDS, CO2 BOOSTERS OR ANYTHING ELSE FOR EXTRA POWER**). No primary or secondary remote control is allowed.
8. In design and construction of the car, the original mousetrap spring and wood base **MUST** remain intact. These two components may NOT be cut or altered in any way, physically, chemically, or thermally. Only the locking lever and bait holder may be removed from the base, if desired. **The bail may be modified but must remain as a component.**
9. The spring must be visible and/or accessible to the judges for inspection.
10. The car must have a minimum of three wheels, and **must not exceed 27 centimeters maximum length measured in any direction** with the bail **extended or retracted**.
11. In most cases, the car will be tested on a smooth flat surface, such as a gym floor. The distance will be measured from the starting line to the farthest point traveled utilizing a straight line (vector) to connect the two points. However, if the surface at the competition site available on the date scheduled is not perfectly smooth, there will be no special consideration for cars that encounter any problems with the existing surface imperfections.
12. **The car should be designed so that it travels through a four-meter target zone located 2500 centimeters from the center of the starting line.** The starting line is exactly 100 centimeters in length. The car can be released at any point along the starting line.

13. There will be two runs for each car; the best single performance will be used for final scoring. (Please clarify the word “net” in this sentence—should we take the average between the two?) The car with the net longest distance traveled (and goes through the target) will be declared the winner. (Can the second run be an option if the car performed very well the first time?).
14. All cars must be packed in a rigid container to protect them during transport. The car will be checked and registered on the day of the competition and returned to the team after registration is completed. Any modifications or changes made to the configuration of the car after registration will result in disqualification from the competition.
15. The formula used to judge the performance of the car will give the best score for the car that travels through the target zone.

The formula is: **Net Distance Traveled, N = D x R**

D = is the distance traveled in a straight line from the starting point to the stopping point in centimeters.

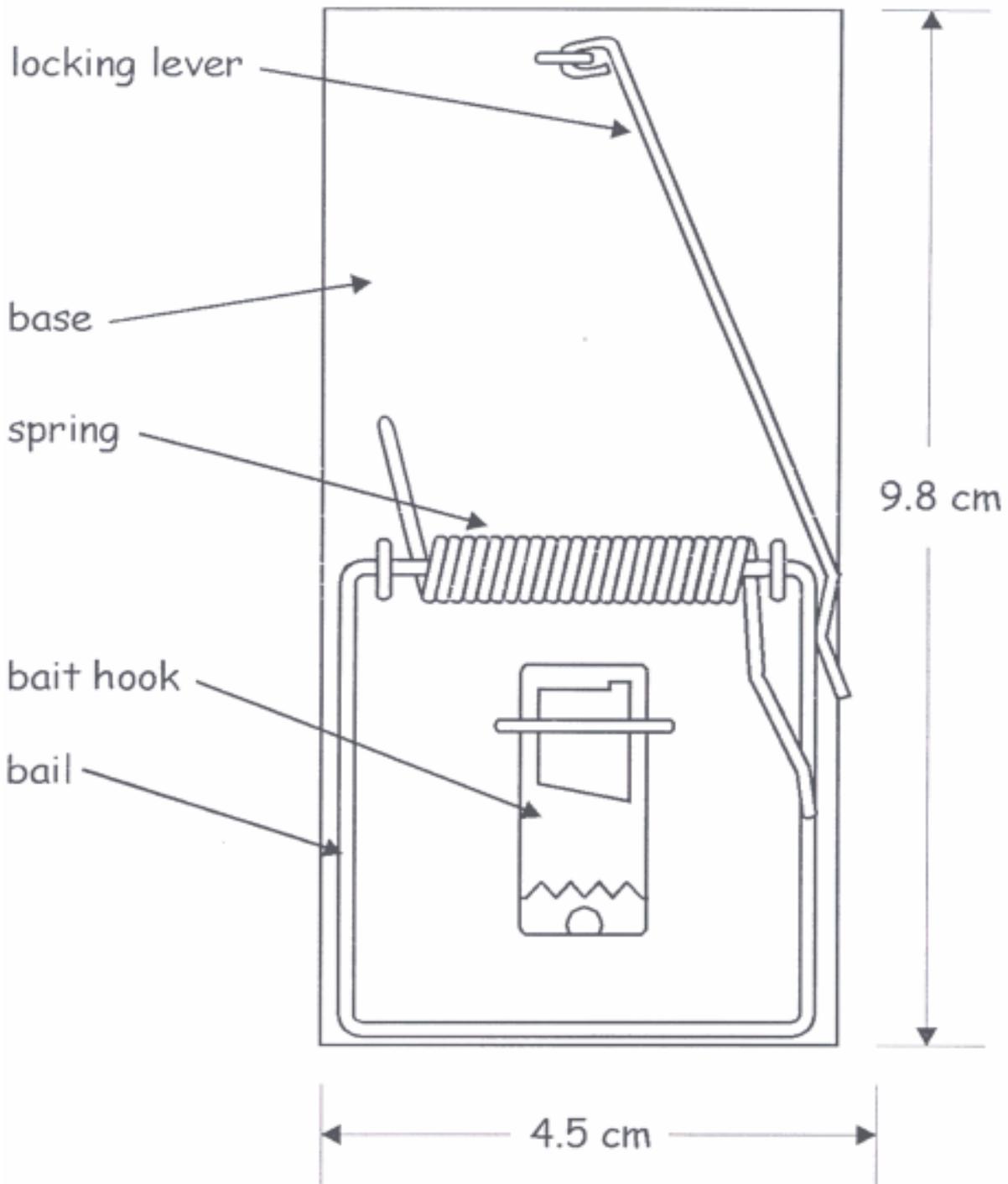
R = the target range.

R = 1.25 if the car comes to a complete stop with the front wheel crossing the 4.0 meter target zone.

R = 1.0 if the car does not cross the 4.0 meter target zone.

SPECIAL NOTE: The car is considered to have crossed the target zone ONLY if a portion of at least one of the car’s wheels is actually in contact with the floor inside the target zone.

Component Sketch of Original Mousetrap



ELEMENTARY SCHOOL

DISTRICT

2008 SECME POEM COMPETITION GUIDELINES

Each entry is to be prepared and submitted by an individual student (not a team).

NOTE: This is not a National SECME competition.

An individual elementary school student will compete only with other elementary school students.

The theme for the 2007-2008 SECME Poem Competition will be announced by the National SECME Office by October. Students must choose a topic within the theme because the theme is too broad for a poem.

POEM COMPETITION REQUIREMENTS:

1. Title page
Poem's title (same as the 2007-2008 theme)
Student's name, grade and age (*can we delete?*)
Name of school (*can we delete?*)
SECME school coordinator's name
Date
2. Poem
25-line poem
8.5" x 11" white paper
typed
double spaced
Times New Roman font, size 12 point

NOTE: Correct Rules of mechanics must be consistent throughout the poem.

JUDGING:

Poem will be judged on the criteria listed on Judges' Evaluation Sheet on page 116.

ELEMENTARY SCHOOL

DISTRICT

2008 SECME POSTER COMPETITION GUIDELINES

The poster is a National SECME competition.

Each entry is to be prepared and submitted by an individual student (not team).

An individual elementary school student will compete only with other elementary school students.

The theme for the Poster Competition will be announced by the National SECME Office by October.

POSTER COMPETITION REQUIREMENTS:

1. Theme This year's theme must be included on the poster.

2. Title card Title of poster: based on 2007-2008 theme
Student's name, grade, age (*can we delete?*)
Home address and telephone number (*can we delete?*)
School's name (*can we delete?*)
School coordinator's name
Date of competition
(Place on a 4" x 6" index card on back of poster in lower-left corner.)

3. Poster The size of poster board is required to be 22" x 28".
All posters must be framed in a standard 22" x 28" black slide-on metal or plastic poster frame.
Framed posters are not to use glass.
**Any poster not properly framed will be disqualified.

The poster must be an original work using any medium:
 - Cut and Paste
 - Hand Drawn (paints, charcoal, markers, crayon,)
 - Computer (complete work cannot be generated by computer)
 - Or any combination of the above(Three-dimensional posters are not allowed.)

:

ELEMENTARY

Rules and Guidelines



for **SECME**

Revised 07/07



What is the mission? *The mission is to design a Water Rocket Vehicle capable of reaching the highest altitude possible given specific launch criteria.*

While promoting Space Propulsion Awareness, the Water Bottle Rocket Competition serves to familiarize students with the basic principles of rocketry, design engineering, and manufacturing engineering. Students will design and manufacture a water rocket using a 2-Liter bottle as the pressure vessel. The rocket must be capable of launching from the SECME Water Rocket Launcher given specific launch criteria. Additionally, each team will develop a patch design, used to symbolically commemorate the objectives of each team. The team's complete success will not solely be judged on rocket performance, but the combined effort of the team.

MISSION SUCCESS and Safe Flying !!

***** Remember you will never be a winner unless you try and if you try your best, you have already made it to the bullseye :-)** ***

(Refer to Rules & Guidelines and "How to Build Rockets" manual for detailed information.)

General Rules and Guidelines

1. Maximum number of 5 teams per school, each team consisting 3 students. *(Note: Only 2 teams are allowed to enter in the District Olympiad and 1 team is allowed to enter in the Regional Olympiad per school.)*
2. Each team is required to submit a completed entry form and patch design, no later than two weeks prior to competition date to qualify for the competition. Have your school SECME coordinator mail all entries from your school (maximum of four team entries) to your County's SECME office .
3. On the day of competition, but, prior to launch an actual operating rocket in order to compete in the competition.

Note: At this time each entry must pass a visual inspection and height requirement in order to be eligible to compete. Entries that fail inspection will be given ONE opportunity to make modifications to pass inspection, prior to the beginning of the water rocket launching competition.

4. An overall winner will be judged upon the following criteria (based on 100%):

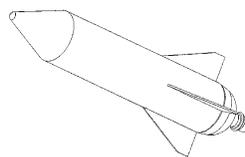
| | |
|---|------|
|  Hang Time of Rocket | 70 % |
|  Patch Design | 30 % |

Con't

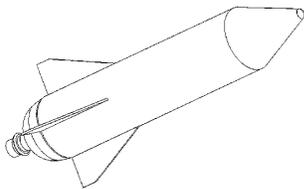
General Rules and Guidelines

5. The objective of the contest is for each team to launch a rocket propelled by water and air and reach a maximum height. The launch angle which can be adjusted from approximately **70 to 80 degrees**, will be kept the SAME for all rockets launching during a particular competition. Each rocket will be launched using 12 ounces of water and at 60 psi of air pressure. The “hang time” of the rocket will be measured using a stopwatch. **The “hang time” is defined as the time from when the rocket leaves the launch pad until the time it reaches the ground.** This measurement will be taken by at least three qualified judges; the average of the judges times will be used as the final “hang time”. The final score for hang time will be calculated based on the maximum hang time recorded during the competition, using the following formula:

$$\left(\frac{\textit{hangtime}}{\textit{max hangtime}} \right) \times 100$$



Construction and Operation Requirements



1. The pressure vessel must be ONE clear 2 liter bottle (i.e. NO green bottles allowed for use as pressure vessel), see Diagram 1.
2. Water and air pressure will be the sole source of propellant.
3. **Do not use metal, glass, or spikes to construct the rocket. *Use of these materials will automatically disqualify the team from the competition.***
4. On the bottom of the rocket, leave 7.5 cm from the throat of the exit plane clear of any coverings (paint, markings, drawings, etc.), see Diagram 1.
5. Maximum total height of rocket is 76.0 cm, see Diagram 1.
6. Nose-cone tip must have a minimum radius of 1.5 cm, see Diagram 2.
7. Fins must start 10.0 cm from throat exit plane, see Diagram 2.
Note: no forward swept type of fins are allowed to be used on the rocket.
8. The maximum fin width distance from the bottle is 10.0 cm (or 16.5 cm from center of bottle axis). See Diagram 3.
9. The use of parachutes is NOT allowed.

Diagram 1

Rocket Identification

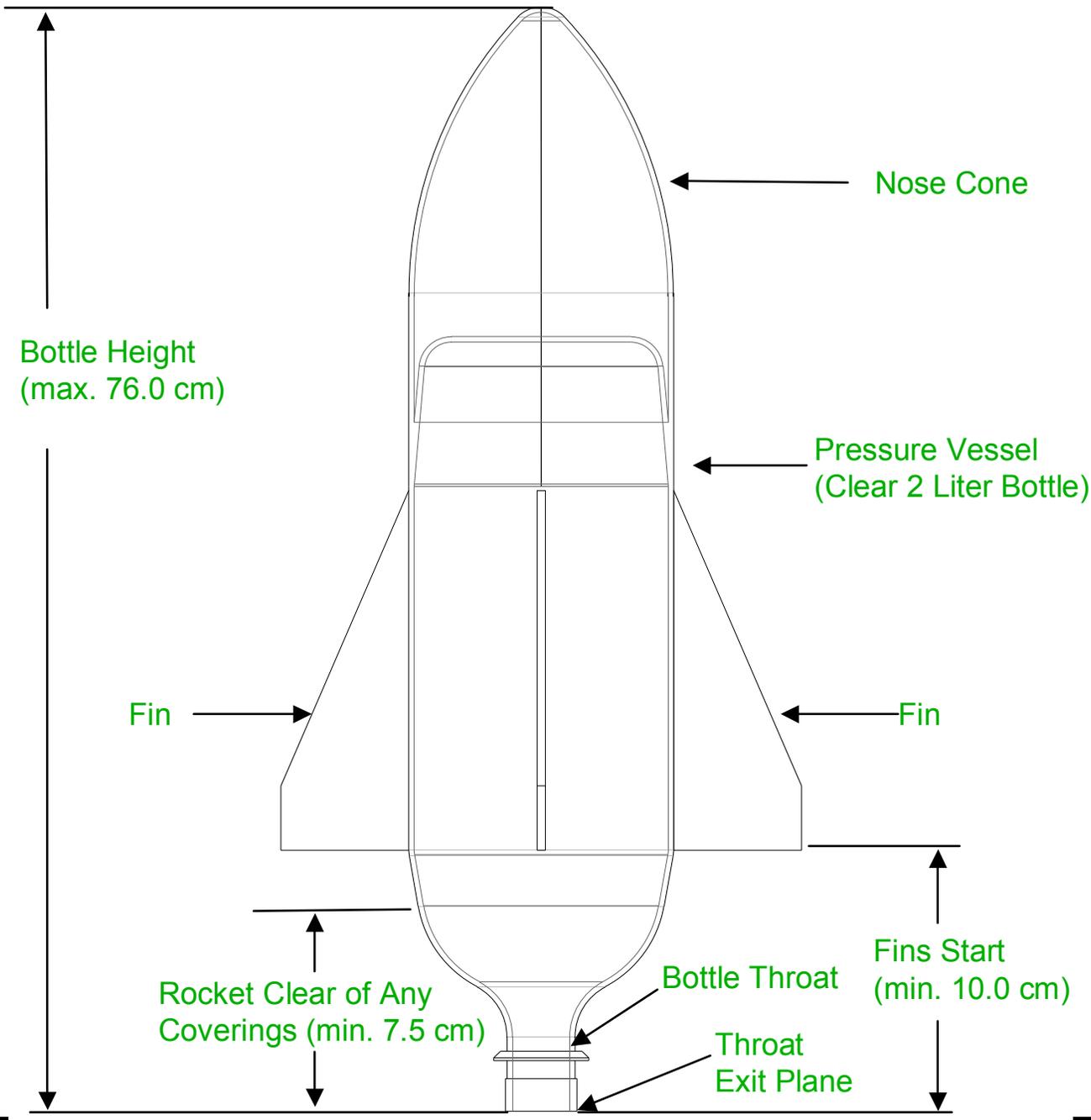


Diagram 2

Nose Cone Diagram

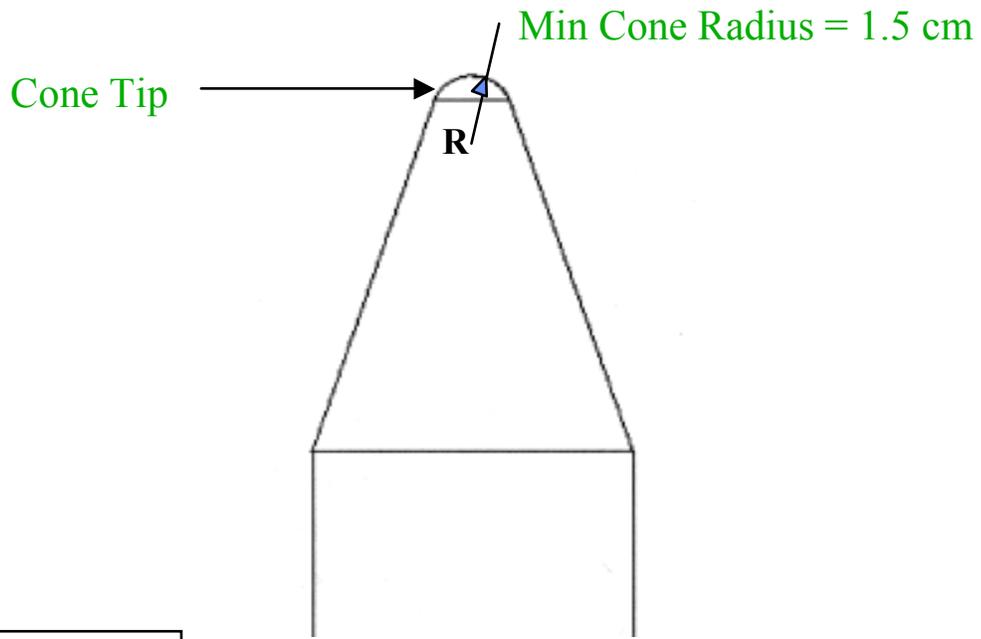
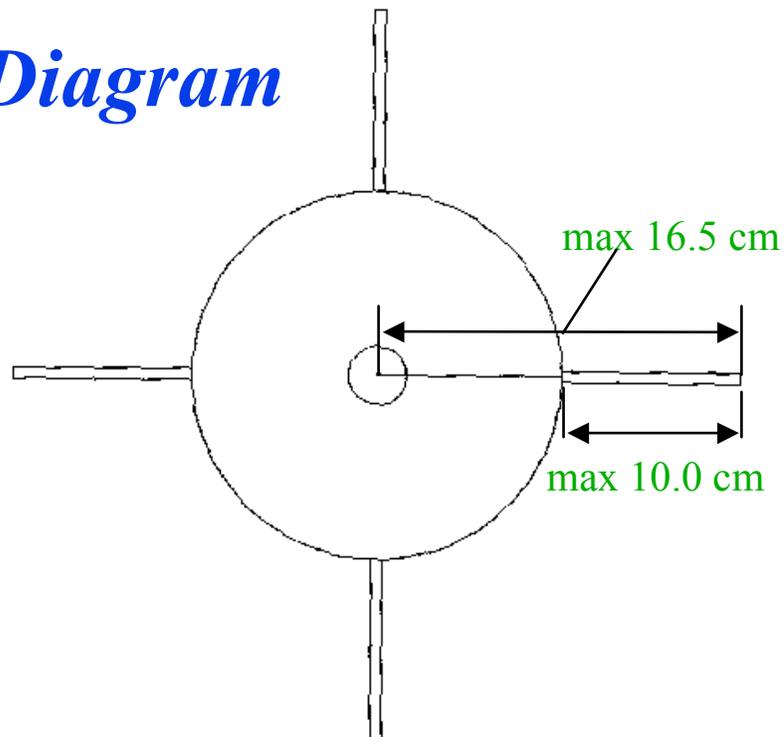


Diagram 3

Fin Diagram



Patch Design

Patch Design

What is a “Patch”?

It is a creative display that reflects the dedication and mission of the team. This symbolic picture must comply with the following rules:

-  Each entry is to be prepared and submitted by the SECME School Teams who will be participating in the Water Rocket Design Competition.
-  Patch designs must be submitted on 13” X 13” poster board.
-  All entries must contain the team name and follow the theme of this year’s SECME competition.
-  All teams participating in the Water Rocket Competition must be prepared to display their patch prior to the launch of their rocket.
-  Patches must be hand-made original work.
-  Ink pens, pencils, markers or paint may be used.
-  *A short (less than 1-page) explanation of the symbols of the patch should be included on the back of the patch. See page 45.*

AT THE COMPETITION, THE PATCH DESIGN WILL BE JUDGED ON:

| | |
|---|-----------|
| ORIGINALITY - Innovativeness of the design. | 30 |
| CREATIVITY - Uniqueness of the information depicted | 30 |
| APPEARANCE - The attractiveness and neatness of the presentation | 20 |
| CONTENT - Design representation of the Team’s name and SECME theme | <u>20</u> |
| | 100 |

“Here is an Example...”

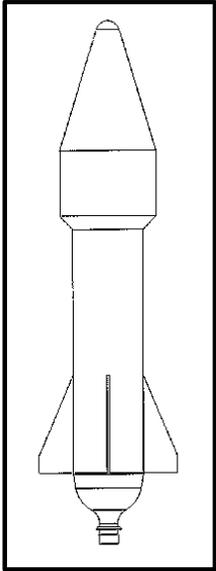
Patch Design

Patch Design



Explanation of Patch

The propelled rocket represents the school system, supported by the educators and students, following a path towards excellence. The radiant five 4-point stars symbolize the enrichment of Science, Engineering, Communication, and Mathematics. Where as, the seven 8-point stars represent for the seven Universities that founded SECME. The three distinct contrails steaming behind the rocket, symbolize the support offered through SECME, Universities, and Industry partners. The ring before the rocket depicts the student's path through the SECME program, returning full circle to support the efforts of the program. As we have entered the new millennium, the sun over the horizon symbolizes of the induction of the new Water Rocket Design Competition into the SECME Programs. Accuracy, the focus of the contest, is represented by the target created by the outer ring, deep space, and the earth. The border is supported on the left and right by symbols, respectively, for water and compressed air, which are the fluids used to propel the rockets.



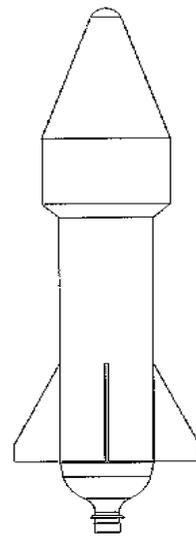
Overall Winners

 **1st**

 **2nd**

 **3rd**

 **Honorable Mention**



SECTION 4

**SECONDARY LEVEL
RULES**

&

**COMPETITION
GUIDELINES**

SECME: Lighting the Torch to Empower Future Leaders

MIDDLE AND HIGH SCHOOL
DISTRICT
2008 SECME BANNER COMPETITION GUIDELINES

DESIGN AND CONTEST RULES:

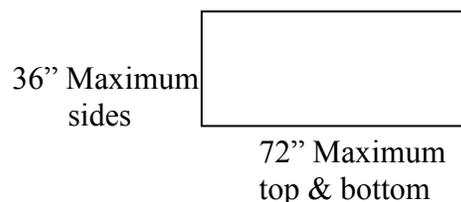
1. Banners must be 70 inches long and 34 inches wide (plus or minus 2 inches) including all embellishments (borders, perimeter decorations, etc.), and must be submitted on quality fabric (cloth or vinyl).
2. All entries must include school name, school mascot, school colors, city, state, current year (2007-2008), and the SECME emblem. **Any entries not bearing these items will be automatically disqualified.**
3. Banners must be a hand-made work.
4. Banners must be two-dimensional.
5. The banners will be scored in the following categories:
Content – Quality and organization of the information on the banner
Originality – Innovativeness of the design and how well it presents the ideas on the entry
Creativity – The uniqueness of the information depicted
Appearance – The attractiveness and neatness, scale and balance of the presentation

Please Note: Any attachments for pole supports will not be included in the measurement of the banner.

Please Note: The SECME emblem is:



Please Note: The manner of presentation:



MIDDLE AND HIGH SCHOOL

DISTRICT

2008 BRAIN BOWL COMPETITION GUIDELINES

The Brain Bowl Competition is a contest between two or three teams. **The questions are generated randomly in the following areas: Science, Mathematics, Engineering, *Technology* and selected fields within these areas of study. The questions abide and follow the Sunshine State Standards for Elementary and Secondary Schools. The random questions are generated by an outside source, and the judges will read them in their random order.** Each team must consist of a minimum of three (3) to a maximum of four (4) members. One of the members must be designated as the team captain.

GENERAL RULES:

Before the beginning of the match, the judge will ask each contestant to test his or her buzzer as well as to designate a team captain. The match starts with the toss-up round and is followed by the bonus round. In the toss-up round, the judge will ask the question and an answer must be given without conferring. In the bonus round, the judge will ask the question and the team may confer, but only the captain may give the answer.

In the toss-up round, any contestant, at any time (interruption of a question is allowed), may buzz in to answer the question. A correct answer will give that contestant's team ten (10) points. An incorrect answer will result in a five (5)-point deduction from the team's total, and the question will be reread for the opposing team.

At the end of the toss-up round, the bonus round will begin. The team with the lower point total will begin. The number of correctly answered questions from the toss-up round will be the number of bonus questions each team will be asked. When the question is read, the contestants may confer and the team captain may then deliver an answer. A correct answer will receive ten (10) points. There is no penalty for an incorrect answer in this round.

PROCEDURES:

1. The toss-up round consists of thirteen (13) questions. The moderator will call "last question" at the end of the round to signal the round's conclusion. Bonus questions will then follow.
*In case of a three-way competition, the toss-up round will consist of fifteen (15) questions instead of the above stated thirteen (13) questions.
2. Once a toss-up question is read, the contestants will be allowed five (5) seconds to buzz in. The first contestant who signaled and is recognized by the moderator will then be allowed five (5) seconds to answer the question. The timekeeper will mark the time from the moment the contestant is recognized to the time of the answer's initiation. Going over this time limit will be considered an incorrect answer.
3. If a contestant answers the question without being recognized, that will be considered an incorrect answer as well. If a contestant signals before a toss-up question is completed, the moderator will discontinue reading the question immediately. The person who signaled first and is recognized by the moderator must answer the question within five (5) seconds.
 - a. If the response is correct, the team will be duly credited with the ten (10) points and an opportunity to answer a bonus question at the end of the heat.

- b. If the response is incorrect, the moderator will repeat the question for the contestants of the other team. The team that incorrectly answered the question may not respond again to this question.
4. If a question is completed and a team's response is incorrect, the other team will have a chance to answer. If the other team's answer is incorrect, the moderator will then ask a new toss-up question.
5. Only one team member may raise the dispute flag and voice a concern regarding a question, answer or a procedure. This dispute must be made immediately following the incident. The judge's ruling is final.
6. The bonus round is conducted without buzzers. Once the moderator finishes reading the question, the team captain has ten (10) seconds to give an answer. If there is a tie at the end of the bonus round, one final sudden death toss-up question will be given in order to determine the winner.
7. If at the end of the toss-up round, it is impossible for one team to win (i.e., even if all their bonus questions are answered correctly, they would still not at least tie), then there is no need to proceed into the bonus round. The leading team will be declared the winner.
8. A team will compete with one or two other teams in a head-to-head competition. All questions will be taken from the disciplines of math, science, engineering, and technology.
9. Elementary school teams (k-5) will compete against other elementary school teams. Middle school teams (6-8) will compete against other middle school teams, and high school teams (9-12) will compete against other high school teams.
10. The scheduling of competitions will be done by a draw. All rounds will be by single elimination.
11. A question will be stated only once. Coaching from the audience will disqualify the question and its points.
12. The scorekeeper will record the running total of points for each team on a board visible to all contestants and spectators. At the end of each heat, the scorekeeper will record the scores on the competition score sheets. The scorekeeper will then turn in the score sheet for each heat to the competition coordinator.
13. If a discrepancy regarding a particular question occurs for any reason, the contest judge has the right to discard the old question and replace it with a new question. Please remember that challenges to a question asked or answer given can only be voiced by a school's team captain.
14. No pictures, video recording or audio recording will be permitted during the brain bowl competition. These activities tend to be distracting to the members of the brain bowl teams.
15. Disruptive behavior will not be tolerated and may lead to disqualification. The judges' discretion will apply.

SCORING:

1. The value of a toss-up question is ten (10) points for a correct response and minus five (5) points for an incorrect response. It is therefore possible for a team to have a negative score.
2. Points will not be deducted for an incorrect response to a bonus question. The team with the most points at the end of the bonus round will be declared the winner of the round.
3. The question will be stated only once. Coaching from the audience will disqualify the question and its points.
4. In order for a team scoring zero (0) points to be declared the winner, they must have answered at least one question.
5. An official audit sheet will be maintained during each round of the brain bowl competition. This audit sheet will document the total number of questions asked, the number of questions discarded, the number of questions replaced, and the length of contest time. Additionally, a formal scoring log will be included on the audit sheet.

MIDDLE SCHOOL AND HIGH SCHOOL

District

2008 SECME BRIDGE COMPETITION GUIDELINES

Note:

**Some rules have been added and some have been changed.
These additions and revisions have been highlighted in bold type.**

MATERIALS:

Balsa wood and any type of glue are to be the only materials used.

DESIGN AND COMPETITION REQUIREMENTS: (Any entry not meeting the following requirements will be disqualified).

1. The bridge competition requires participation in three (3) areas:
 - A. Technical Drawing
 - B. Technical Report
 - C. Load testing of the balsa wood bridge
2. A design team of students shall construct the bridge.
3. The bridge must be free standing and stable during inspection and testing or the bridge will be disqualified from competition.
4. Refer to the Bridge Illustration for an explanation of dimensions.
5. The bridge must be built from balsa wood. Bass wood may not be used. No piece of wood may be greater than 0.635cm (1/4") by 0.635cm (1/4"). Individual pieces with these dimensions may be glued together to form larger sections to be used in the construction of the bridge. No exposed surface of the bridge may be coated with any substance (i.e., resin, glue, paint, etc.).
6. The total mass of the bridge must not exceed 110 grams in weight.
7. The length of the bridge, including all supports, must be between 40.0cm and 50.0cm.
8. The maximum width of the bridge, including all supports, is 10.0cm.
9. The highest point of the bridge, called the roadway, is measured from the base of the bridge to its tallest point. This distance must be between 10.0cm and 20.0cm in height.
10. The roadway must be of a solid design that will allow a small metal car to roll from one end to the other.
11. The surface of the roadway must have a width of between 4.3cm and 5.2cm.
12. The length of the roadway must be between 30.0cm and 50.0cm.
13. The roadway may have a slight arc, provided the center of the arc is no higher than 2.54 cm (1") above the end points.
14. **Sufficient clearance must be provided at the base of the bridge to allow an object measuring 40.0cm in length by 2.0cm in height to pass freely underneath it.**
15. At no time during the test may the bridge flex to such a point or break in such a way that any part of the bridge becomes a solid support leg directly under the ram. If so, then the test is stopped and the force will be recorded at that point.
16. No fastening method other than the interlock of the balsa wood pieces and/or glue is allowed.
17. The bridge design must allow the testing equipment to easily fit the roadway. See the drawing of the SECME Bridge Tester.
18. **The Middle and High School Technical report shall have all references cited internally and externally using MLA or APA style.**

JUDGING:

Once a bridge has been submitted for competition, no modifications may be made. Any deviation will result in disqualification.

Every bridge will be inspected, measured and weighed for compliance with all rules. If all guidelines are satisfied, including the completion of a technical report and drawing, the bridge will be qualified for competition. Each bridge that qualifies for inspection will be tested first. **If, at the discretion of competition staff and there is time available, any bridge which did not pass inspection may be tested if the student wishes. This testing will be only for experience and not for any award.**

Every effort will be made to place the bridge on the centerline of the testing device. If the team wishes they may place an “X” on the roadway surface, and every effort will be made to place that point on the centerline of the testing device. However, setting the bridge in place is done by the human eye and missing the center will not be the sole reason for filing a grievance.

Points are awarded on the following basis with no additional points awarded for craftsmanship or originality. The decision of the judges will be final.

Middle School:

Using a SECME testing device, the bridge will be load tested until it fails. The total load will be recorded. The total points earned from the Technical Drawing and the Technical Report will be added to the total load that the bridge held to determine the total score. The team with the highest score will be the winner. If there is a tie, then the team with the lightest bridge will be the winner.

High School:

Using a SECME testing device, the bridge will be load tested until it fails. The total load will be recorded. This value will be divided by the weight of the bridge to obtain the bridge’s efficiency value.

Example:

$$\text{Total load} \div \text{bridge weight} = \text{efficiency value}$$

$$310.6 \text{ lbs.} \div 110 = 2.82 \text{ efficiency value}$$

(Note: no conversion is made between pounds and grams)

The total points earned from the Technical Drawing and the Technical Report will be multiplied by the bridge’s efficiency value to determine the total score. The team with the highest score will be the winner. If there is a tie, then the team with the lightest bridge will be the winner.

See “SCORING FOR THE BRIDGE DESIGN COMPETITION” for an example of calculations.

Any bridge that does not break after having the maximum amount of weight applied by the testing device will be sawed in half.

MIDDLE SCHOOL AND HIGH SCHOOL

DISTRICT

2008 GUIDELINES FOR SECME DESIGN COMPETITION BRIDGE DESIGN TECHNICAL DRAWING

As part of the Design Competition the team is required to prepare a scale drawing depicting the bridge that they have designed and built.

BRIDGE DRAWING REQUIREMENTS AND GUIDELINES: (Points will be deducted if all requirements are not completed).

1. The bridge drawing is required to illustrate the actual bridge built by the team for competition. (Photographs or computer-generated drawings will NOT be allowed).
2. **The bridge will be drawn full scale. Half scale is not accepted. Drawing units will be in centimeters.**
3. **The drawing may be on either 22" x 34" or 24" x 36" size drawing paper. This is typically referred to as "D" size paper. No margin is required around the outside of the drawing. No mounting of the drawing or frames are allowed. When submitted, please fold the drawing so it is approximately 8 ½" by 11" in size with the title block showing in the lower right corner.**
4. **The drawing is to be fully dimensioned including but not limited to length, width, and height. Include all dimensions that will fully illustrate the size of the bridge.**
5. **The drawing is required to show three (3) correctly orientated views as indicated on the Bridge Illustration drawing. The views are top, side, and end, and they should be oriented as shown.**
6. All parts of the bridge are required to be labeled. Roadway and supports are an example; however, use as many descriptions as needed to clearly explain the bridge design.
7. Ink pens, pencils or markers may be used.
8. The bottom right corner of the drawing will have a title block, 1 ½" x 6" in size containing:

| | |
|---------------------------------|--------|
| School Name: | |
| School Coordinator's Name: | |
| Team Name: | |
| Team Members' Names and Grades: | |
| Date of Competition: | Scale: |

9. **Do not use 3" x 5" index cards to identify drawings.**
10. The specific details for the evaluation of the bridge Technical Drawing and Technical Report are located on the Judges' Evaluation Sheets.

MIDDLE AND HIGH SCHOOL

DISTRICT

2008 GUIDELINES FOR SECME DESIGN COMPETITION BRIDGE DESIGN TECHNICAL REPORT

As part of the design competition the team is required to write a Technical Report describing the design and construction of the bridge. The Technical Report should be a computer printed or typed document on “8 x 11” white paper with one-inch borders at the top, bottom, and on each side. Font size is to be 12 point and the type is to be Times New Roman.

The main body of the report, sections 4 through 6, should be a maximum of 5 pages total. Drawings, sketches, and tables may be included in an Appendix if desired, but this is optional and not required.

While two (2) teams from each school may compete and to some extent their bridges may be similar, the two reports must be original and distinctly different. If not, then both teams will receive a score of zero.

TECHNICAL REPORT REQUIREMENTS AND GUIDELINES: (Points will be deducted if all requirements are not completed).

1. Cover Page containing:
 - ✓ Title of the Technical Report
 - ✓ Name and grade of each team member (no home address required)
 - ✓ School name and address
 - ✓ School coordinator’s name
 - ✓ Team’s name
 - ✓ Date of Competition
2. Table of Contents (one page)
3. Introduction (**History of Bridges, designs, structures, etc. with citations**)
4. Design (**Philosophy of Design derived from the Introduction section**)
5. Construction Procedure
6. Description of Possible Failure Areas
7. Appendix (optional)
The appendix may contain sketches, tables and charts not included in the five pages.

The specific details for the evaluation of the bridge Technical Drawing and Technical Report are located on the Judges’ Evaluation Sheets.

SCORING FOR THE BRIDGE DESIGN COMPETITION

The scoring for the Bridge Design competition is based on three categories as set forth in the SECME Design Competition Guidelines: the Bridge Technical Drawing, the Bridge Technical Report and load testing of the bridge. To compete in the competition, a team must complete all three (3) categories or be disqualified. The final score will be based on all three areas of competition and not based solely on the load testing of the bridge.

The maximum number of points that may be earned is as follows:

| | |
|--------------------------|------------|
| Bridge Technical Drawing | 100 points |
| Bridge Technical Report | 100 points |

To determine the winning BRIDGE the following formulas will be used and the team with the highest number of points will be the winner.

Middle School:

Total points awarded for the Technical Drawing and the Technical Report will be **added** to the total load that the bridge held.

Example:

| | |
|--------------------------|------------------|
| Bridge Technical Drawing | 76 points |
| Bridge Technical Report | <u>82</u> points |
| Total Points | 158 points |

Total Load the Bridge held 427.6

$$158 \text{ (Points)} + 427.6 \text{ (Total Load)} = 585.6$$

$$\text{Total Score} = 585.6$$

High School:

Total points awarded for the Technical Drawing and the Technical Report will be **multiplied** by the efficiency factor of the bridge.

Example:

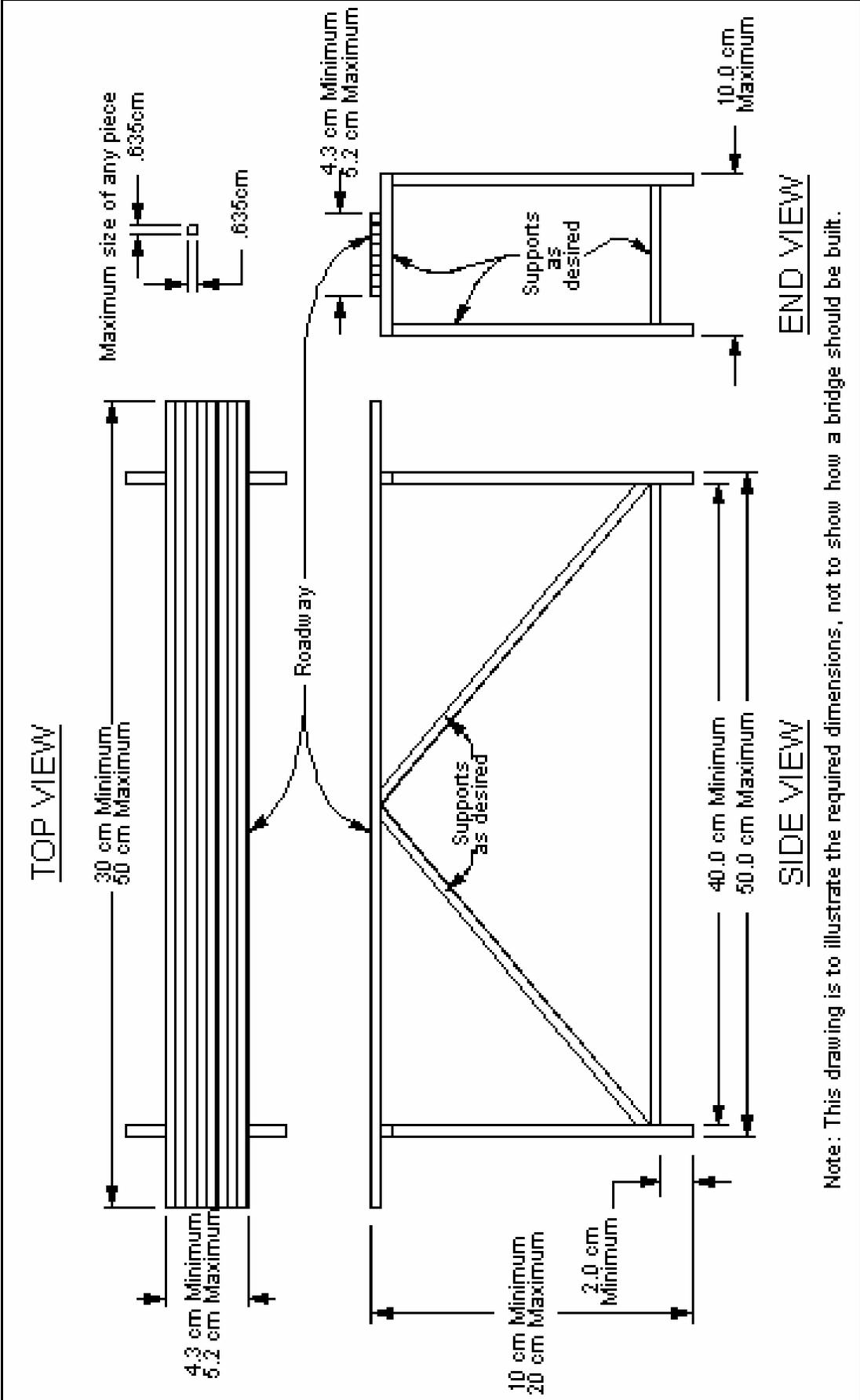
| | |
|--------------------------|------------------|
| Bridge Technical Drawing | 76 points |
| Bridge Technical Report | <u>82</u> points |
| Total Points | 158 points |

Efficiency Factor of the Bridge 2.82

$$158 \text{ (Points)} \times 2.82 \text{ (Efficiency Factor)} = 445.56$$

$$\text{Total Score} = 445.56$$

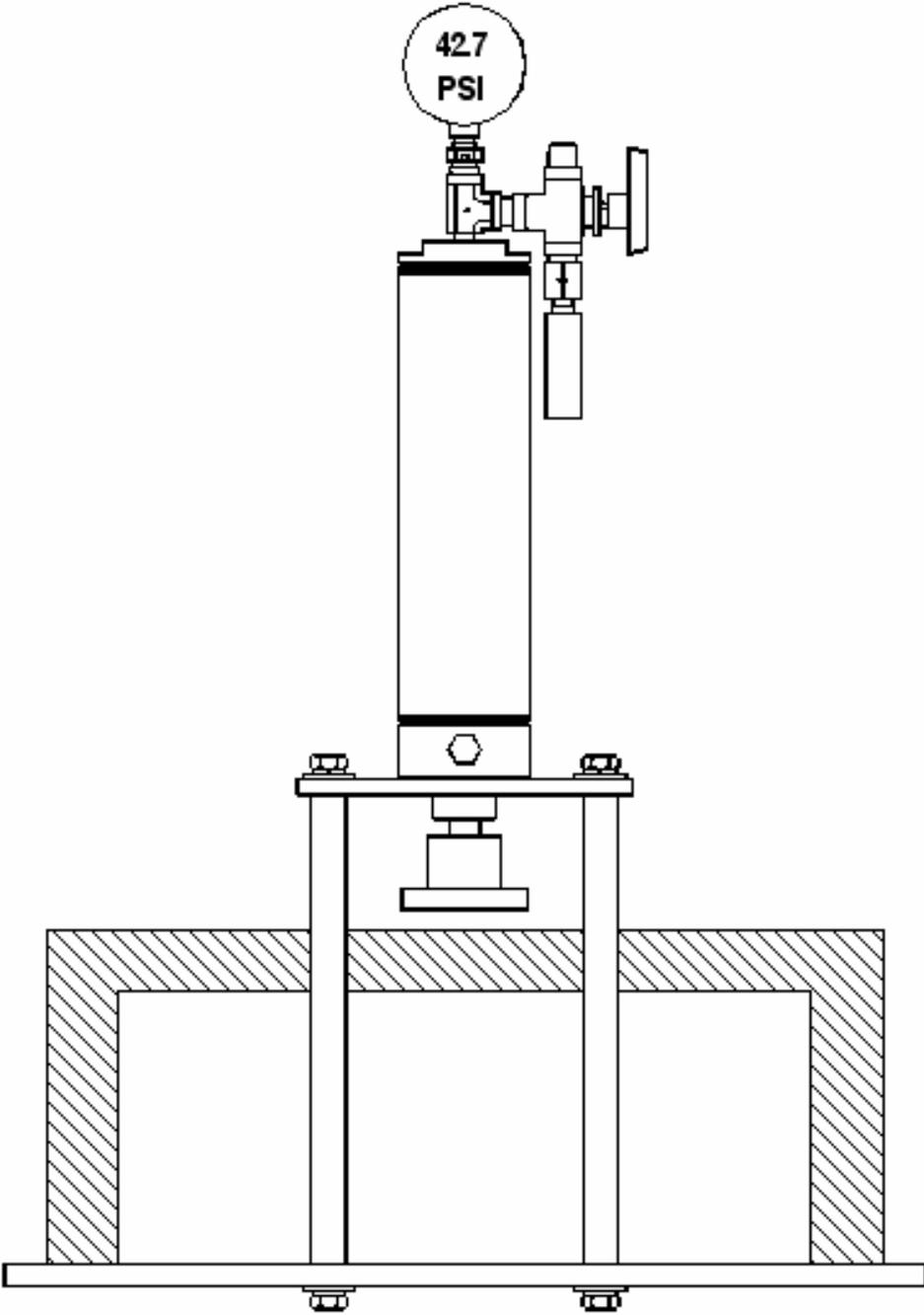
The specific details for the evaluation of the Bridge Technical Drawing and Technical Report are located on the Judges' Evaluation Sheets.



Note: This drawing is to illustrate the required dimensions, not to show how a bridge should be built.

Bridge Illustration

SECME Bridge Tester



MIDDLE AND HIGH SCHOOL
DISTRICT
2008 SECME ESSAY COMPETITION GUIDELINES

The is a National SECME competition. First place winners go to National.

1. Each entry is to be prepared and submitted by an individual student (not team).
2. An individual middle school student will only compete with other middle school students, and an individual high school student will compete only with other high school students.

The theme for the 2007-2008 SECME Essay Competition will be announced by the National SECME Office by October. Students must choose a topic within the theme because the theme is too broad for an essay.

ESSAY COMPETITION REQUIREMENTS:

1. Title page Essay's title (same as 2007-2008 theme)
Student's name, grade, age
Home address, zip code and telephone number
Name of school and address, school system name
SECME school coordinator's name
Date of competition
2. Essay **HIGH SCHOOL STUDENT ENTRY**
Four to six neat computer printed/typed pages
(excluding Title page and Bibliography), on 8.5" X 11"
white paper, double-spaced with one inch borders on
each side in Times New Roman or CG Times font, size 12 point.
MIDDLE SCHOOL ENTRY
Three to four neat computer printed/typed pages
(excluding Title page and Bibliography), on 8.5" X 11"
white paper, double-spaced with one inch borders on
each side in Times New Roman or CG Times font, size 12 point
3. Bibliography Reference sources and direct quotations are required to be
identified numerically by page and sources, cited in standard
bibliography form. Middle and high school should follow MLA or
APA format style.
The bibliography must contain at least one source.
4. Authenticity Students must sign a form stating that their submissions are
their original works and that all sources have been cited
properly.

**ESSAYS WILL BE JUDGED ON: ORGANIZATION, GRAMMAR AND SENTENCE
STRUCTURE, MECHANICS/SPELLING/PUNCTUATION AND CREATIVE STYLE**

MIDDLE AND HIGH SCHOOL

DISTRICT

2008 GUIDELINES FOR SECME DESIGN COMPETITION: MOUSETRAP CAR DESIGN AND CONSTRUCTION

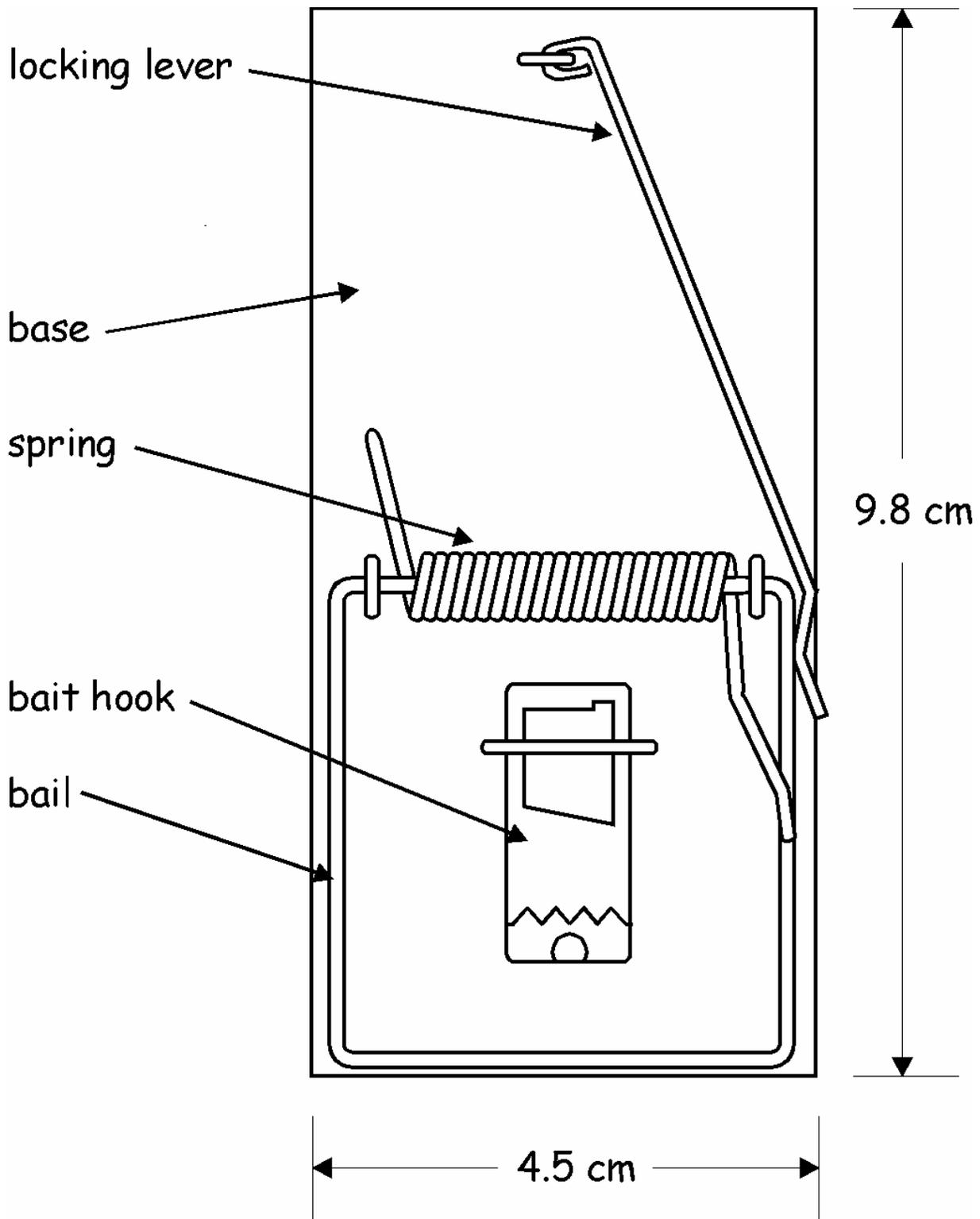
The is a National SECME competition. First place winners go to National.

(Any entry not meeting the following requirements will be disqualified.)

1. The Engineering Design Competition **requires participation in each of these four areas:**
 - a. Mousetrap Car, construction and run
 - b. Design Drawing of Mousetrap Car
 - c. Technical Report on Mousetrap Car
 - d. Team Interview with Judges (National Competition)
2. This is a **team competition** and should reflect the coordinated efforts of all members.
3. **Three (3) students must be on each team.** Members must remain the same at all levels of competition (school, state/regional site, and national finals).
4. Each team member is expected to be able to serve as a spokesperson and be fully involved **with all aspects of the entry.**
5. **A standard mousetrap**--usually about 4.5 X 10 centimeters and weighing about 25 grams--**must be used to build the car.**
6. Components of the mousetrap are: base (on which other components are mounted), spring, bail, locking lever, and bait hook (see component sketch on next page).
7. The mousetrap spring must be the sole source of power. **(You may NOT use rubber bands, CO₂ boosters, or any other agent or element for extra power).**
8. **In design and construction of the car, the original mousetrap spring and wood base MUST remain intact.** These two components may **NOT** be cut or altered in any way—**physically, chemically, or thermally.** Only the locking lever and bait holder may be removed from the base, if desired. **The bail may be straightened but NOT cut (shortened), added on to, or reinforced. It must remain as a component of the completed car.**
9. The spring must be visible and/or accessible to the judges for inspection.
10. The car must have a minimum of three wheels and can be made as long or short as desired as long as requirement #8 above is met.
11. Cars will be tested on a smooth flat surface. **Distance is measured from the starting line to the farthest point of travel, utilizing a straight line to connect the two points.**
12. **There will be two runs for each car; the better run will be used for final scoring of the mousetrap car's performance.**

(Note: See the page after the mousetrap sketch for Guidelines 13-15.)

Reference Sketch of Original Mousetrap with Component Identifications



13. Two formulas are used to calculate the Performance score for the car run:

$$N = \left(\frac{w}{W}\right) X \left(\frac{D}{L}\right)^2 \quad \text{and} \quad F = \frac{N}{N_L} X 100$$

where:.....N....is the score.

To ensure that cars actually perform and not just be small and light,

N=0 if D is LESS than 300 centimeters (for middle school/junior high teams)

N=0 if D is LESS than 600 centimeters (for high school teams)

w....is the mass of the original mousetrap (always taken as 25 grams). NOTE: At all competitions, this standard value will be used in calculating the Performance score.

W....is the total mass of the completed car in grams.

D....is distance measured in a straight line from the starting point to the stopping point in centimeters. D=2,500 if the car travels 2,500 centimeters or more.

L....is the car's longest dimension in any direction (not necessarily the length) in centimeters, measured with the bail extended or retracted, whichever is greater.*

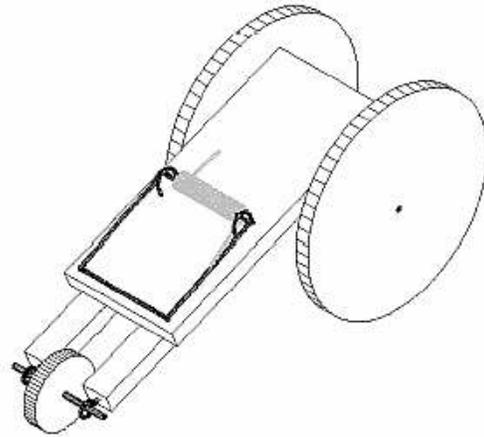
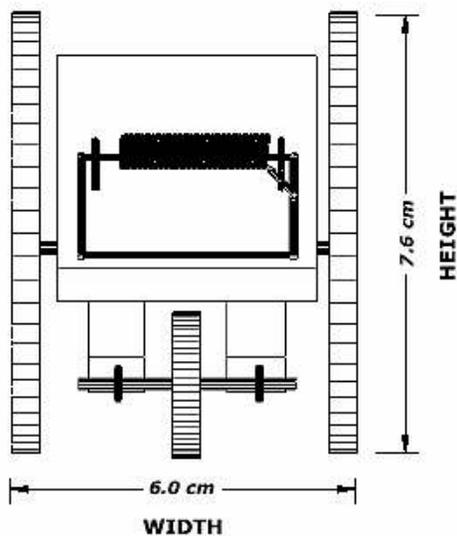
N_L....is the highest Performance score at the competition site

F....is the final Performance score (to be combined with scores for the Design Drawing, Technical Report, and Team Interview).

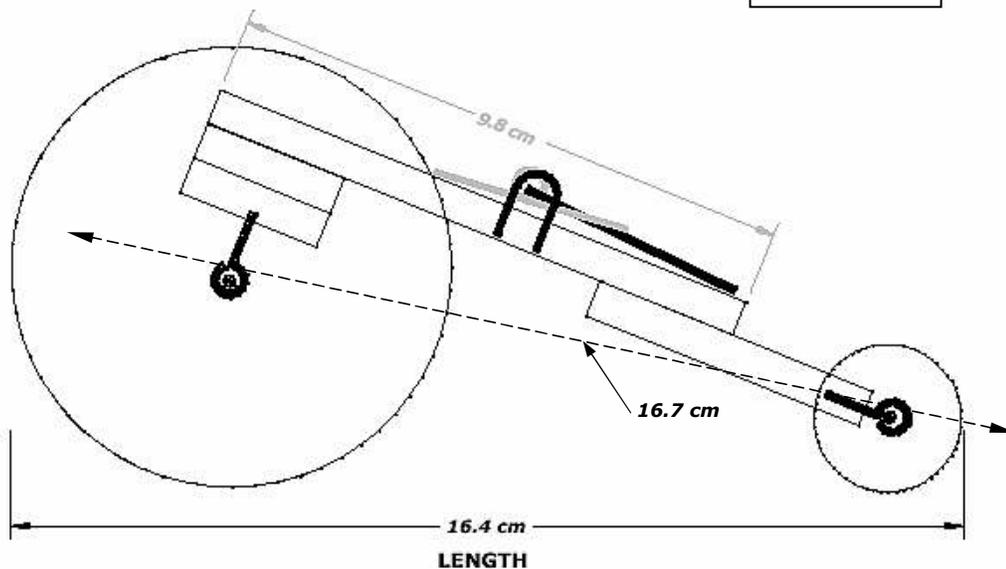
**Judges will measure "L" (see illustration on following page) and "W" prior to the mousetrap car Performance runs. These measurements, together with "D" (determined by the car's run), are used to calculate "N" in the formula above.*

14. Overall Team Score in competition is sum of: 1) Performance (car run) as calculated above (max. 100 points); 2) Design Drawing (max. 50 points); 3) Technical Report (max. 50 points); and 4) Team Interview (max. 50 points). **Thus the maximum total is 250 points.**
15. See pages that follow for guidelines and evaluation sheets on each component of the Engineering Design (Mousetrap Car) Competition.

Measurement of “L,” the Mousetrap Car’s Longest Dimension In Any Direction—Not Necessarily the Length, Width, or Height



SCALE
1.0:1.38



“L” is the car’s longest measurement along one of the three basic dimensions—length, width, or height—in centimeters with the bail extended or retracted, whichever is greater. The length of the car is defined as the distance from the furthest point at the rear of the car to the furthest point at the front. Likewise, the width of the car is defined as the distance from the furthest point on one side to the furthest point on the other. The height of the car is defined as the distance from the travel surface to the highest point of the car.

L (for this example) = 16.7 cm

MIDDLE AND HIGH SCHOOL

DISTRICT

2008 GUIDELINES FOR SECME DESIGN COMPETITION **MOUSETRAP CAR DESIGN TECHNICAL DRAWING**

As part of the Design Competition the team is required to prepare a scaled drawing that represents the car that they have designed and built.

MOUSETRAP CAR DRAWING REQUIREMENTS AND GUIDELINES: (Any entry not meeting the following requirements will be automatically disqualified).

1. The Mousetrap Car Drawing entry is required to illustrate the actual mousetrap car built by the team (photographs or computer generated drawings will NOT be allowed).
2. The size of the engineering paper is required to be the standard 18" x 24" (allowing for the drawn one inch margin, the actual drawing is to cover an exposed area of 16" x 22" of the paper), otherwise it will not be evaluated. **(NO MOUNTING, NO FRAMES ALLOWED.)**
3. All dimensions are required to be illustrated on the drawing.
4. The scale and the units are required to be indicated on the drawing.
5. The team's Mousetrap Car Drawing is required to show a frontal or rear (end elevation), side (elevation) and top (plan) view to be labeled.
6. Ink pens, pencils or markers may be used.
7. A 4" x 6" title card with following information is required:

Team name
School name
Team members' names and grades
School coordinator's name
Date of competition

THE MOUSETRAP CAR DRAWING WILL BE JUDGED BASED ON:

Paper Size
Resemblance (between the actual mousetrap car and drawing)
Scale
Name/Labeling (of all parts used)
Appearance/Neatness
Title Card Information

MIDDLE AND HIGH SCHOOL

2008 GUIDELINES FOR SECME DESIGN COMPETITION MOUSETRAP CAR DESIGN TECHNICAL REPORT

As part of the design competition the team is required to write a Technical Report describing the design, construction and operation of the mousetrap car. The Technical Report should be a computer printed/typed document on 8 ½" X 11" white paper with one-inch borders at the top, bottom, and on each side.

Use 12 pt. Times New Roman text font. The main body of the report shall include all the sections listed on the Technical Report Requirements and Guidelines section below. Drawings, sketches, and tables may be included in an Appendix if desired, but this is optional and not required. The report should be a maximum of five pages total. (Entries not meeting these requirements will automatically be disqualified.)

TECHNICAL REPORT REQUIREMENTS AND GUIDELINES: (Any entry submitted without a cover page containing all of the required information will automatically be disqualified.)

- | | |
|--|---|
| 1. Cover page (required to contain) | Title of the Technical Report a. Name, Addresses and Grades of Team Members b. Team's School Name and Address c. School System Name d. School Coordinator's Name e. Date |
| 2. Abstract | One-half to one page summary of the Technical Report. |
| 3. Table of Contents | |
| 4. Introduction | |
| 5. Design | |
| 6. Construction Procedure | |
| 7. Operation of the Mousetrap Car | |
| 8. Conclusion/Recommendations | |
| 9. Acknowledgments | |
| 10. Appendix | The Appendix may contain sketches, tables and charts. (Not included in the five pages) |

The Mousetrap Car Design Technical Report will be judged on:

- Outline
- Organization
- Precision
- Sentence Formation
- Mechanics

2008 SECME ENGINEERING DESIGN COMPETITION GUIDELINES: MOUSETRAP CAR TEAM INTERVIEW WITH JUDGES

As a part of the Engineering Design (Mousetrap Car) Competition, each student team will be interviewed by a panel of judges.

This 5-10 minute discussion will cover details of the car's design and testing as well as the Design Drawing and Technical Report.

TEAM INTERVIEW REQUIREMENTS AND GUIDELINES:

1. Team members are interviewed as a group.
2. Each member is expected to be able to serve as a spokesperson in response to questions from the judges.
3. The team interview will be conducted apart from the car run and scoring of its performance.
4. Interviews will normally take place after the judges have received and scored the Design Drawing and Technical Report and completed the inspection and measurements (size and weight) that precede the car's run and scoring of its performance.
5. The team interview will be one element – along with the Performance (car run), Design Drawing, and Technical Report – in arriving at the overall score in competition.

AT ALL COMPETITIONS, THE MOUSETRAP CAR TEAM INTERVIEW WILL BE JUDGED ON:

- Teamwork
- Application of technical principles
- Knowledge of design
- Oral communication skills

SCORING FOR THE MOUSETRAP CAR DESIGN COMPETITION

The scoring of the Mousetrap Car Design competition is based on four categories as set forth in the SECME Design Competition Guidelines: Mousetrap Car Technical Drawing, Mousetrap Car Technical Report, Construction and Operation, and the Interview with the Judges. **To compete in the Mousetrap Car Design Competition, a team must complete in all four (4) parts of the competition: the Technical Report, the Technical Drawing, Construction and Operation (the car run), and the Interview with the Judges. Should a team fail to compete in all four (4) parts of the Mousetrap Car Design Competition, the team may not compete in any area of the Mousetrap Car Design Competition.** The final score used to evaluate and determine the winners of the competition are based on these four areas. **Please note that the final score is not based solely on the construction and operation (run) of the Mousetrap Car.** The final score is determined from the sum of the number of points earned in each of the four categories. The maximum number that may be earned for each category is as follows:

| | |
|--|-------------------|
| Mousetrap Car Technical Drawing | 50 points |
| Mousetrap Car Technical Report | 50 points |
| Mousetrap Car Construction and Operation | 100 points |
| Interview with the Judges | 50 points |
| Total possible points | 250 points |

The specific details for the evaluation of the Mousetrap Car Technical Drawing, Technical Report and Interview with the Judges are located on the Judges' Evaluation Forms.

MIDDLE AND HIGH SCHOOL

DISTRICT

2008 SECME POSTER COMPETITION GUIDELINES

Each entry is to be prepared and submitted by an individual student (not a team). An individual middle school student will compete only with other middle school students. An individual high school student will compete only with other high school students.

The theme for the 2007-2008 Poster Competition will be announced by the National SECME Office by October.

POSTER COMPETITION REQUIREMENTS:

1. Theme This year's theme must be included on the poster.

2. Title card Title of poster: Based on 2007-2008 theme
Student's name, grade, age
Home address and telephone number
School's name
School coordinator's name
Date
(Place on a 4" x 6" index card on back of poster in lower-left corner.)

3. Poster The size of poster board is required to be 22"x 28"
All posters must be framed in a standard 22" x 28" black slide-on metal or plastic poster frame.
Framed posters are not to use glass.
**Any poster not properly framed will be disqualified.

The poster must be an original work using any medium:
 - Cut and paste
 - Hand drawn (paints, charcoal, markers, crayon,)
 - Computer (complete work cannot be generated by computer)
 - Or any combination of the above(Three-dimensional posters are not allowed)

Middle and High School Rules and Guidelines

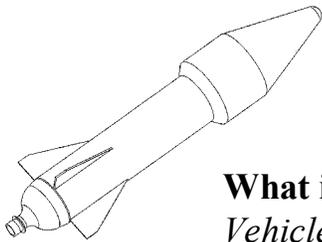


for SECME

Revised 07/07

The MISSION

The MISSION



What is the mission? *The mission is to design a Water Rocket Vehicle capable of reaching the highest altitude possible given specific launch criteria.*

While promoting Space Propulsion Awareness, the Water Bottle Rocket Competition serves to familiarize students with the basic principles of rocketry, design engineering, and manufacturing engineering. Students will design and manufacture a water rocket using a 2-Liter bottle as the pressure vessel. The rocket must be capable of launching from the SECME Water Rocket Launcher given specific launch criteria. Additionally, each team will develop a patch design, technical report, and technical drawing. The team's complete success will not solely be judged on rocket performance, but the combined effort of the team.

MISSION SUCCESS and Safe Flying !!

***** Remember you will never be a winner unless you try and if you try your best, you have already made it to the bullseye :-)** ***

(Refer to Rules & Guidelines and "How to Build Rockets" manual for detailed information.)

General Rules and Guidelines

1. Maximum number of 5 teams per school, each team consisting 3 students. *(Note: Only 2 teams are allowed to enter in the District Olympiad and 1 team is allowed to enter in the Regional Olympiad per school.)*

2. Each team is required to submit a completed entry form, technical paper, and patch design, no later than two weeks prior to competition date to qualify for the competition.

Have your school SECME coordinator mail all entries from your school (maximum of two team entries) to the district office.

3. On the day of competition, but, prior to launch an actual operating rocket with its corresponding technical drawing must be submitted in order to compete in the competition.

Note: At this time each entry must pass a visual inspection and height requirement in order to be eligible to compete. Entries that fail inspection will be given ONE opportunity to make modifications to pass inspection, prior to the beginning of the water rocket launching competition.

4. An overall winner will be judged upon the following criteria (based on 100%):

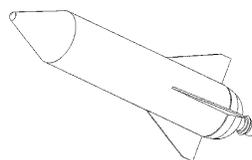
| | |
|---|------|
|  Hang Time of Rocket | 45 % |
|  Patch Design | 15 % |
|  Technical Paper | 25 % |
|  Technical Drawing | 15 % |

Con't

General Rules and Guidelines

5. The objective of the contest is for each team to launch a rocket propelled by water and air and reach a maximum height. The launch angle which can be adjusted from approximately **70 to 80 degrees**, will be kept the SAME for all rockets launching during a particular competition. Each rocket will be launched using specified volume of water not to exceed **70 psi** of air pressure. The “hang time” of the rocket will be measured using a stopwatch. **The “hang time” is defined as the time from when the rocket leaves the launch pad until the time it reaches the ground.** This measurement will be taken by at least three qualified judges; the average of the judges times will be used as the final “hang time”. The final score for hang time will be calculated based on the maximum hang time recorded during the competition, using the following formula:

$$\left(\frac{\textit{hangtime}}{\textit{max hangtime}} \right) \times 100$$

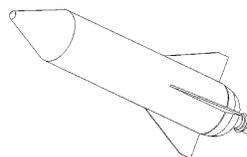


Con't

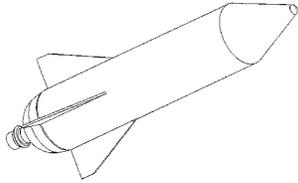
General Rules and Guidelines

5. The objective of the contest is for each team to launch a rocket propelled by water and air and reach a maximum height. The launch angle which can be adjusted from approximately **70 to 80 degrees**, will be kept the SAME for all rockets launching during a particular competition. Each rocket will be launched using specified volume of water not to exceed **70 psi** of air pressure. The “hang time” of the rocket will be measured using a stopwatch. **The “hang time” is defined as the time from when the rocket leaves the launch pad until the time it reaches the ground.** This measurement will be taken by at least three qualified judges; the average of the judges times will be used as the final “hang time”. The final score for hang time will be calculated based on the maximum hang time recorded during the competition, using the following formula:

$$\left(\frac{\textit{hangtime}}{\textit{max hangtime}} \right) \times 100$$



Construction and Operation Requirements



1. The pressure vessel must be ONE clear 2 liter bottle (i.e. NO green bottles allowed for use as pressure vessel), see Diagram 1.
2. Water and air pressure will be the sole source of propellant.
3. **Do not use metal, glass, or spikes to construct the rocket. *Use of these materials will automatically disqualify the team from the competition.***
4. On the bottom of the rocket, leave 7.5 cm from the throat of the exit plane clear of any coverings (paint, markings, drawings, etc.), see Diagram 1.
5. Maximum total height of rocket is 76.0 cm, see Diagram 1.
6. Nose-cone tip must have a minimum radius of 1.5 cm, see Diagram 2.
7. Fins must start 10.0 cm from throat exit plane, see Diagram 2.
Note: no forward swept type of fins are allowed to be used on the rocket.
8. The maximum fin width distance from the bottle is 10.0 cm (or 16.5 cm from center of bottle axis). See Diagram 3.
9. The use of parachutes is NOT allowed.

Diagram 1

Rocket Identification

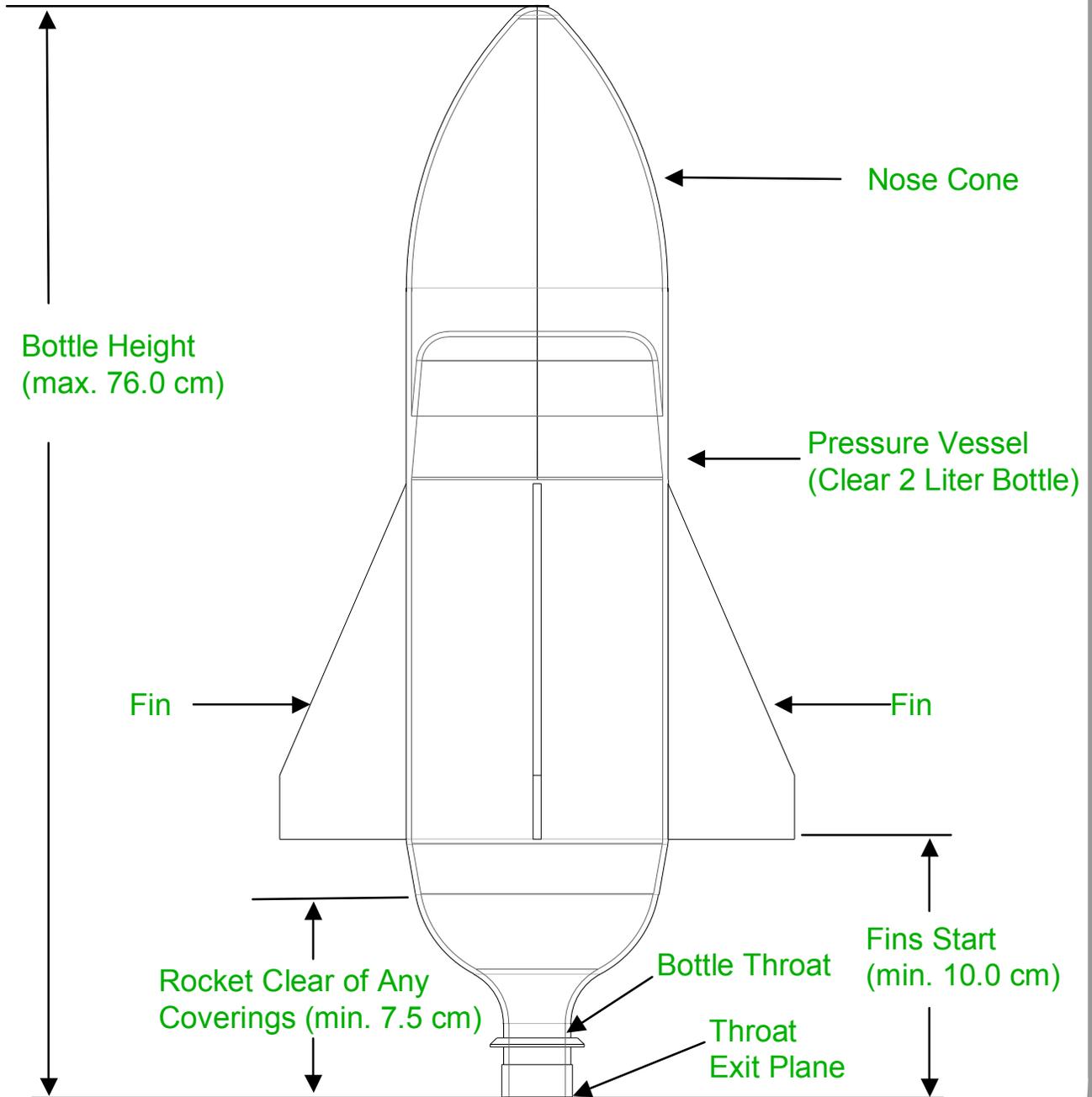


Diagram 2

Nose Cone Diagram

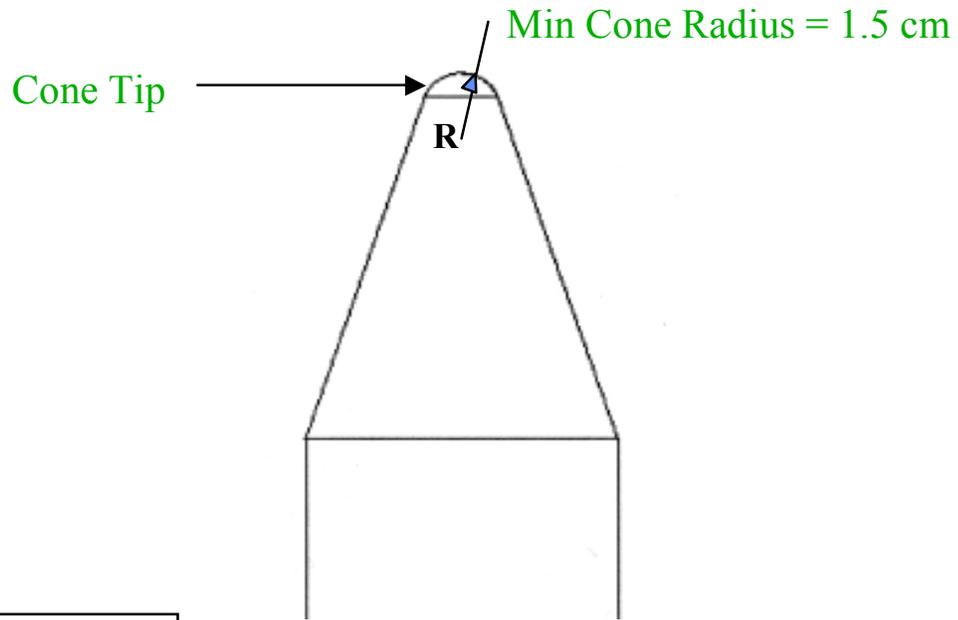
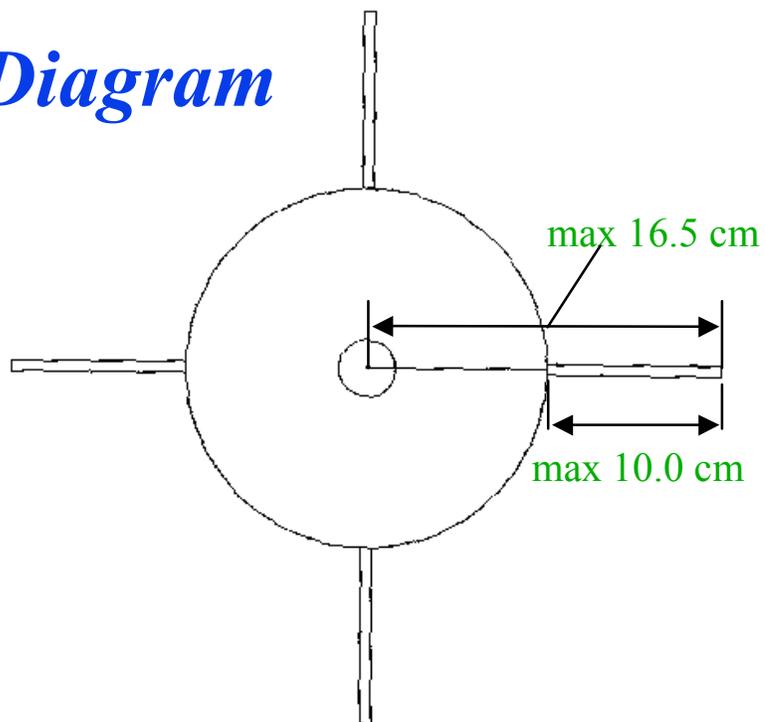


Diagram 3

Fin Diagram



Patch Design

Patch Design

What is a “Patch”?

It is a creative display that reflects the dedication and mission of the team. This symbolic picture must comply with the following rules:

-  Each entry is to be prepared and submitted by the SECME School Teams who will be participating in the Water Rocket Design Competition.
-  Patch designs must be submitted on 13” X 13” poster board.
-  All entries must contain the team name and follow the theme of this year’s SECME competition.
-  All teams participating in the Water Rocket Competition must be prepared to display their patch prior to the launch of their rocket.
-  Patches must be hand-made original work.
-  Ink pens, pencils, markers or paint may be used.

A short (less than 1-page) explanation of the symbols of the patch should be included on the back of the patch. See page 45.

AT THE COMPETITION, THE PATCH DESIGN WILL BE JUDGED ON:

| | |
|---|-----------|
| ORIGINALITY - Innovativeness of the design. | 30 |
| CREATIVITY - Uniqueness of the information depicted | 30 |
| APPEARANCE - The attractiveness and neatness of the presentation | 20 |
| CONTENT - Design representation of the Team’s name and SECME theme | <u>20</u> |
| | 100 |

“Here is an example...”

Patch Design

Patch Design



Explanation of Patch

The propelled rocket represents the school system, supported by the educators and students, following a path towards excellence. The radiant five 4-point stars symbolize the enrichment of Science, Engineering, Communication, and Mathematics. Where as, the seven 8-point stars represent for the seven Universities that founded SECME. The three distinct contrails steaming behind the rocket, symbolize the support offered through SECME, Universities, and Industry partners. The ring before the rocket depicts the student’s path through the SECME program, returning full circle to support the efforts of the program. As we have entered the new millennium, the sun over the horizon symbolizes of the induction of the new Water Rocket Design Competition into the SECME Programs. Accuracy, the focus of the contest, is represented by the target created by the outer ring, deep space, and the earth. The border is supported on the left and right by symbols, respectively, for water and compressed air, which are the fluids used to propel the rockets.

Written Technical Report

As a part of the Water Rocket Competition, the team is required to write a Technical Report describing the design, construction and operation of the Water Rocket. Numbers **1,2,3,4,5,7, and 8** are required to be presented together within a maximum of 8 pages. Add Pages as appropriate for numbers **6,9,and 10**. Drawings, sketches, and table may be included in appendix.

1. COVER PAGE:

- Title of Technical Report
- Name and grade of team members
- The team's school name
- Teacher / Counselor
- Date

2. ABSTRACT:

- One half to one page summary of Technical Report

3. TABLE OF CONTENTS

4. INTRODUCTION

5. DESIGN BACKGROUND

6. CALCULATIONS:

- Table of equations and constants
- High Time Assumptions
- Mass flow rate calculations
- Drag calculations
- Final time aloft in seconds
- (Calculations will be scored on units, assumptions, accuracy, etc..)

7. CONCLUSIONS / RECOMMENDATIONS

8. ACKNOWLEDGMENT / REFERENCES

9. APPENDIX

Con't

Written Technical Report

The Technical Report will be judged on:

| | |
|------------------------------|------------|
| • ABSTRACT | 10 |
| • DESIGN BACKGROUND | 15 |
| • PAPER STRUCTURE | 5 |
| • CALCULATIONS | 40 |
| • CONCLUSION/RECOMMENDATIONS | 20 |
| • GRAMMAR | <u>10</u> |
| TOTAL | 100 |



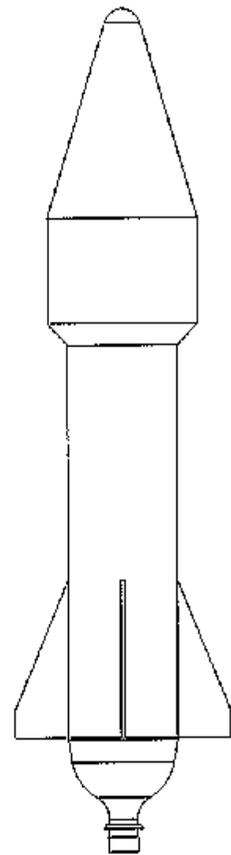
Overall Winners

 **1st**

 **2nd**

 **3rd**

 **Honorable Mention**



Addendum to the Water Rocket Competition:

The Water Rocket Middle and High School report shall have all references cited internally and externally using general format MLA or APA style. Points may be deducted in the Grammar grading portion of the report.

The drawing may be on either 22” x 34” or 24” x 36” size drawing paper. This is typically referred to as “D” size paper.

SECTION 5

ADDITIONAL SUGGESTED

SCHOOL-BASED
S.T.E.M. PROJECTS

SOLAR WATER HEATER CONTEST GUIDELINES

DESIGN AND CONTEST RULES:

1. Each apparatus will have a collecting area of not less than 100 square cm and no more than 3,000 square cm to be exposed to the sun. The surface area will be measured and calculated to at least three significant figures.
2. Each apparatus must be provided with:
 - a. Only a white border, in white poster board, extending at least 10 cm from the collecting area and preventing direct sunlight from falling on the sides or back of the apparatus, and
 - b. A cover of white poster board which will hook on and cover the entire collecting area. This will be removed to start the competition and replaced to end the competition.
3. No device will be allowed to provide any type of additional solar energy input, including solar voltaic cells. Absolutely no battery power is permitted.
4. Each entry will have a separate shaded water reservoir to accommodate water in the amount of one cubic cm per square cm of collector area, less the volume needed to fill the collector, plus a small reserve volume for water expansion. No dimension of the reservoir shall be less than one half of the longest dimension.

JUDGING:

1. Each entry will be placed indoors or in the shade for a period of at least one hour to allow the entire apparatus to come to room temperature.
2. Each water reservoir should be empty at the start of the competition and should provide a convenient opening for filling with a funnel. A port for the insertion of a standard mercury laboratory thermometer (provided by the judging team) into the main body of the water within the reservoir must be provided, and the extension of the thermometer outside of the reservoir must remain shaded.
3. The judges will fill each apparatus with exactly one cubic cm of water per square cm of collector area from a large volume of water stored at room temperature for at least 24 hours. All filling will be completed before the devices are removed from the shade.
3. Any device that leaks will be disqualified.
4. A standard mercury-in-glass thermometer will be kept in each device during testing.
5. One student from the solar water heater team must be present during the entire contest.
6. All devices will begin at approximately the same initial temperature, within 0.5 degrees Celsius, and at approximately the same time.
7. The maximum time allowed for exposure to the sun is three (3) hours.
8. Once the competition has been started, students are not permitted to physically manipulate the device in any way.

TOOTHPICK FERRIS WHEEL CONTEST GUIDELINES

GENERAL:

Design and construct a completely operational Ferris wheel that will permit eight standard-sized glass marbles (each housed in their own compartment) to rotate smoothly around the wheels' axis. The only materials that may be used in the construction of this project are standard wooden toothpicks and glue. While there are no specific maximum size limitations and no restrictions on the number of toothpicks that can be used, the entire apparatus must be at least 24 inches in height and should operate smoothly with the use of a battery-powered motor.

JUDGING:

1. Best of three trial runs of the marble
2. Craftsmanship and Originality

TOOTHPICK ROLLER COASTER CONTEST RULES

GENERAL:

Design and construct a complete roller coaster that will permit a standard-sized glass marble to roll through it from beginning to end. The only materials that may be used in the construction of this project are standard wood toothpicks and glue. There are no specific size limitations on the roller coaster and no restrictions on the number of toothpicks that can be used. However, the roller coaster **MUST HAVE AT LEAST ONE COMPLETE LOOP AND TWO HILLS**. Additionally, the end of the roller coaster must curve around to meet the base of its starting point. Once the marble is released from the starting point, it cannot be touched or assisted in any way until it reaches its target location.

JUDGING:

1. Best of three trial runs of the marble
2. Craftsmanship and Originality

MINORITY CONTRIBUTORS PROJECT

This project is designed to stimulate interest in the study of minority contributors to the fields of engineering, science, technology, and mathematics. All completed projects must contain the following elements:

1. Written Report (15 to 20 typed pages)
 - A. Cover Page
 - B. Table of Contents
 - C. Introduction
 - D. Reports on four minority contributors. These reports should reflect the student's understanding of the contribution, as well as its implication to society.
 - E. One interview with any minority person who is a professional in the fields of math, science, or engineering should be conducted. This interview should highlight the individual's contributions to society, preparation leading to their current occupational

status, future short-term and long-term goals, and the individual's opinion about the study of minority contributors.

- F. Conclusion
- G. Reference list

- 2. Presentation Backboard (standard size)
 - A. Pictures of all contributors highlighted in the written report
 - B. Diagrams, sketches, and/or pictures of the contributions made to society by the highlighted individuals
 - C. Any other supportive materials

TEAM EMBLEM CONTEST RULES

DESIGN AND CONTEST RULES:

- 1. Team emblems must be submitted on full standard-sized poster board.
- 2. All entries must include team name, team colors, team symbol, school name, current year, and the SECME emblem. Any entries not bearing these items will be automatically disqualified.
- 3. All entries must be in full color.
- 4. Team emblems must be a hand-made original work for the year it is submitted.
- 5. Team emblems will be scored in the following categories:
 - Content - Quality and organization of the information on the emblem.
 - Originality - Innovation of the design and how well it presents the ideas on the entry.
 - Creativity - The uniqueness of the information depicted.
 - Appearance - The attractiveness and neatness, scale and balance of the presentation.

SPACE STATION PROJECT GUIDELINES

GENERAL CONTEST RULES:

The purpose of this project is to design, construct and establish a management system for an orbiting space station living colony. The designed colony must provide all of the necessities for human inhabitants. The group must complete all of the activities listed below.

- 1. Draw a formal blueprint of the entire Space Station facility.
- 2. Build a model of the Space Station facility using materials such as: PVC pipe connectors, 2-liter soft drink bottles, cardboard, foil glue tape, paints and other materials.
- 3. Create a portfolio: three-inch binder
 - a) Identify all of the problems faced by the space station.
 - b) Offer viable solutions to the problems faced by the space station.
 - c) Develop a newspaper advertisement attracting tourists to your space station.
 - d) Invent a monetary system for the space station. Publish current exchange rates for at least three other monetary systems on Earth.
 - e) Adopt or develop a standard unit of measurement to be used on the space station. Provide a chart illustrating equivalency among the space station system and English system of measurement.

- f) Establish a formal system of government. Develop a chart illustrating the chain of command and listing all official titles of government personnel. Include means of public safety, as well as specific laws and ordinances by which your government will operate.
- g) Invent a new sport to be played in your space station. Detail specific rules and regulations, playing materials, and playing field.
- h) Design clothes for the inhabitants of your space station to wear at both work and play.
- i) Design a shuttle system that will transport people back and forth from the Earth to your space station.
- j) Design an official flag and choose a name for your space station.
- k) Write an essay explaining how wastes and pollution will be controlled in the space station.
- l) Write an essay explaining how electricity will be produced and utilized in the station.
- m) Write an essay explaining how running water will be produced and piped throughout the entire space station.
- n) Write an essay explaining how fresh fruits and vegetables, as well as other food items will be grown and/or produced in your space station.
- o) Write an essay explaining how oxygen will be produced, and how the climate will be controlled throughout the space station.

Points will be assigned for the successful completion of each activity contained in the above list.

ROLLING GLIDER CONTEST GUIDELINES

General:

The purpose of this project is to build an apparatus that will roll smoothly down a 1' x 3' wooden board, and then glide across a room for a total gliding distance of at least 50 feet. The runway board will be angled at 35 degrees above the horizon. The top of the runway will be at least 20 feet above the ground. During its roll, the apparatus must have at least three wheels in contact with the runway at all times. Further, the wheels of the apparatus must actually ROLL (not SLIDE) down the runway. The winning glider will be the glider with the longest net displacement from the lower edge of the ramp.

MARVELOUS MACHINES

The purpose of this project is to use as many simple machines as possible to build a device that can lift a steel or iron washer from a tabletop to a height of exactly 15 cm. Then, drop it from that height into a paper cup placed next to the washer. Any combination of the following six simple machines may be used: levers, inclined planes, pulleys, screws, wheel and axles, and wedges. Additionally, such items as magnets, string, empty plastic soda bottles, mousetraps, drinking straws, coat hangers, steel spheres, marbles, etc. may be used.

- a. No electrical or battery-powered devices may be used.
- b. Any combination of simple machines may be used.
- c. No two simple machines may touch in any way.
- d. Objects (such as marbles, ping pong balls, etc.) must be moved through your device.
- d. The washer and paper cup must be placed next to each other on the table top,

- separated by no more than 15 cm.
- f. Once the motion starts, you may not touch anything on your device. The washer must be lifted from the table top and dropped into the cup without human assistance.
 - g. Your device must have a theme.

Scoring:

| | |
|---|--|
| Simple machines on list used- | 3 points each |
| Object(s) climbs up inclined plane- | 2 points for each inclined plane & each object moved |
| Object transported across a 30 cm (+) gap by a moving part- | 5 points for each object |
| Object propelled across a 30 cm (+) gap- | 5 points for each object |
| Washer lifted to EXACTLY 10 cm in height- | 10 points |
| Theme is evident- | 5 points |
| Project works beginning to end without human assistance- | multiply total by 10. |

BOATS AND MOATS DESIGN CONTEST

The purpose of this project is to build a boat-like device that will travel the longest distance down a 305.5 cm rain gutter using only the power of a standard box fan (set on medium speed) placed at one end of the rain gutter. The boat that travels down the rain gutter in the shortest time will be declared the winner. The length of the boat cannot exceed 15.1 cm. The width of the boat cannot exceed 7.6 cm. There are no restrictions on the height of the boat. The student is free to use any TYPE of materials they choose. However, NO PRE-FORMED CONTAINERS can be used in the design of the device.

The dimensions of the rain gutter to be used to test this design project are as follows:

| | |
|---------------|---------|
| Length: | 3.5 cm |
| Depth: | 5.0 cm |
| Base Width | 7.0 cm |
| Opening Width | 10.0 cm |
| Water Level | 3.5 cm |

TECHNICAL PORTFOLIO

OPTION 1:

New clean one-inch 3-ring binder

Design a cover for the binder

Break portfolio into tabs or sections

Option 2:

Use a high density removable storage drives

I. Commendations

A. Student Information

1. General information sheet
2. Information about you (updated as needed)
3. Honors and awards (updated as needed).
4. Personal resume (updated yearly)

B. 3 letters of recommendation (updated yearly)

II. School Related Activities

A. Sports

B. Clubs and extra-curricular activities

C. School-related summer activities

III. Community Activities

A. Time-log of community service hours earned

B. Listing of other community service activities

IV. Goals for the Future

A. Short-term Goals

1. Goals that can be achieved within one calendar year
2. Updated yearly

B. Long-term Goals

1. Goals that can be achieved in 2 to 10 years
2. Updated yearly

C. Descriptive Paragraph(s)

1. Paragraph(s) detailing the steps that have been taken, or will be taken in an effort to reach your long-terms goals
2. Updated yearly

D. Four year educational plan

1. Listing of courses and other programs that will assist the student in their long-term goals.
2. Updated as the student matriculates from one school to another or from one program to another.
3. A guidance counselor and parent should sign the accepted four-year plan.

- V. Time Management Chart
 - A. General lists of time considerations
 - 1. school hours
 - 2. study time
 - 3. employment hours
 - 4. sports and recreation time
 - B. Time management charts for every week

Each section or tab of the portfolio should be accompanied by a set of supportive pictures.

SECTION 6

JUDGING GUIDELINES

QUICK GUIDE REFERENCE

| PROJECT NAME | GRADE LEVEL | CONTEST LEVEL | CONTEST TYPE | JUDGING PROCEDURES |
|---------------------|------------------------------|---|-------------------------|--|
| Banner | Elementary Middle High | District | School Team | Banners will be evaluated by a panel of judges based on criteria listed on evaluation form. |
| Brain Bowl | Elementary Middle High | District | Team of 3 or 4 students | The highest scoring team in each round will move on to the next round. The winner is based on the highest score achieved in the final round. |
| Bridge | Elementary Middle High | District | Team of 3 students | Winner determined by the bridge that holds the greatest amount of weight (maximum load-bearing capacity.) |
| Essay | Elementary Middle High | District National | Individual | Essays will be evaluated by a panel of judges based on criteria listed on evaluation form. |
| Mousetrap Car | Elementary Middle High | District National (middle and high only) | Team of 3 students | Winner based on the car that travels the greatest distance through the target zone. Score of design run will be added to scores from the technical report and drawing for middle and high schools. |
| Poem | Elementary | District | Individual | Poems will be evaluated by a panel of judges based on criteria listed on evaluation form. |
| Poster | Elementary Middle High | District National | Individual | Posters will be evaluated by a panel of judges based on criteria listed on evaluation form. |
| Water Rocket | Elementary Middle High | District | Team of 3 students | Winner based on the rocket that has the best hang time. The launch score is added to the score from the patch for elementary schools. The launch score is added to the scores from the technical report, technical drawing, and patch for middle and high schools. |

Grievance Procedures 2007-2008

The Broward and Palm Beach SECME Industry Partners strive to ensure that every student participating in the District Olympiad has the best possible learning experience. In an effort to achieve this goal, every effort will be made to make sure that each project submitted for judging and/or competition is evaluated fairly according to the rules and regulations established in this manual. However, there may be an occasion when it appears that the rules were not adequately considered during the evaluation process. If this unfortunate event should occur, a **SECME Coordinator** may file a formal Grievance with the Olympiad Grievance Committee.

The Olympiad Grievance Committee will consist of 3 to 5 individuals (*if applicable*, at least one non-school based administrator from each county participating in the Olympiad, one individual who served on Survival Guide Writing Team, one representative from Florida Atlantic University, and one representative from industry). This committee will be responsible for thoroughly investigating the filed grievance and making an official ruling based on the guidelines and regulations established in this guide. **The decision of the Grievance Committee is FINAL.**

Filing a Grievance

1. Fill out a Formal Grievance Initiation Form COMPLETELY.
2. Submit the completed form to one of the Industry Partners.
3. *At an appropriate time, the* Grievance Committee will convene to investigate the concern.
4. The Grievance Committee chairperson will write a formal statement/ruling considering the matter based on the committee's findings.
5. The statement/ruling will be delivered to the SECME Coordinator who filed the grievance.

FORMAL GRIEVANCE INITIATION FORM

Name and title of person filing the grievance

SECME school name _____

Location (county) _____

Date _____

Time _____

Describe in detail the nature of the concern, citing the specific issue being grieved and the rule/guideline (listing page numbers and exact item from the Survival Guide) it relates to:

Signature _____

(attach any additional sheets if needed)

Grievance committee response:

Signature of Grievance Committee Chairperson/designee:

Date _____

Time _____

SECTION 7

**COMPETITION
AWARDS**

COMPETITION AWARDS

GUIDELINES

First, second, and third place awards plus Honorable Mention will be presented in each of the following competition categories:

| | |
|------------------------------|--------------------------|
| Banner Contest | Elementary, Middle, High |
| Brain Bowl Contest | Elementary, Middle, High |
| Bridge Design | Elementary, Middle, High |
| Essay Contest* | Elementary, Middle, High |
| Mousetrap Car Design* | Elementary, Middle, High |
| Poem Contest | Elementary |
| Poster Contest* | Elementary, Middle, High |
| Water Rocket Design | Elementary, Middle, High |
| Overall | Elementary, Middle, High |

The Overall School Winners

The Overall School Winners at each level will be determined in the following manner:

Each first place award will be worth 3 points, each second place award will be worth 2 points, and each third place award will be worth 1 point.

A panel of three scorekeepers will maintain a running total of all awards won at the District Olympiad in the individual contests. The school (at each level) with the highest overall point total at the conclusion of all of the contests will be recognized as the Overall School Winner.

In the event of a tie score, the banner, then essay score will be used as tiebreakers.

***Projects Advancing to the SECME National Student Competition:**

Essay: First place elementary school, middle school, and high school

Mousetrap Car: First place middle school and high school team

Poster: First place elementary school, middle school, and high school

The individual essay and poster winners will go to the SECME National Student Competition if the essay and poster win first place **at the SECME National Student Competition.**

SECTION 8

RESOURCES

SECME Industry Partners Advisory Council

| <u>Name</u> | <u>Company</u> | <u>Work #</u> | <u>Fax #</u> |
|------------------------|---------------------------|----------------|----------------|
| Carlton Ivery | CH2M Hill | (954) 426-6112 | (954) 698-6010 |
| Chris Garrett | Pratt & Whitney | (561) 796-7294 | (561) 796-7810 |
| Claudia Echelberger | JF Kennedy Middle School | (561) 845-4533 | (561) 845-4537 |
| Delroy Cole | IBM | (561) 443-6769 | (561) 443-6824 |
| Dr. Sharon Schlossberg | FAU | (561) 297-2680 | (561) 297-2781 |
| Glenn Cunningham | Hazen & Sawyer | (954) 974-2230 | (954) 974-2410 |
| Kisha Jarrett | Northboro Elem School | | |
| Mark Eyerman | Broward County Schools | (754)-322-0950 | |
| Steve Morris | Suncoast Marine | (561) 389-8332 | (561) 881-5478 |
| Tamsyn Carey | FAU | | |
| Theo Harris | Palm Beach County CTA | (561) 683-4623 | (561) 478-8332 |
| Trevor Roberts | Palm Beach County Schools | (561) 434-8253 | (561) 434-8091 |
| Willie Johnson | Consultant | (954) 445-8965 | (954) 958-6970 |

SECME UNIVERSITY & SCHOOL DISTRICT SUPPORT PERSONNEL

University Sponsor

Tamsyn Carey
Director
Engineering Student Services
Florida Atlantic University

(561) 297-2680 Phone
(561) 297-2781 Fax

Broward County

Mark Eyerman
SECME Program Director

(754) 322-0950 Blanche Ely
(561) 447-4496 Home #

Palm Beach County

Trevor Roberts
District SECME Director

(561) 434-8253 Phone
(561) 434-7515 Fax

SECME National Headquarters Central Office Personnel

| | | |
|------------------------------|---|--|
| TBA | Executive Director | |
| Sandra (Sandi) King) | Executive Assistant | sandi.king@coe.gatech.edu |
| Jeffery Murfree | Program Manager | jeffery.murfree@coe.gatech.edu |
| Brandon Davis | Director of Operations and Finance | brandon.davis@coe.gatech.edu |
| Ramona Bryant | Program Assistant | ramona.bryant@coe.gatech.edu |
| Michele Williams (Intm Dir.) | Early College High School Engagement Coordinator | michele.williams@coe.gatech.edu |
| Ed Aebischer | Program Manager | ed.aebischer@coe.gatech.edu |
| Michelle McKee | Program Coordinator For Student Programs and Partnerships | michelle.mckee@coe.gatech.edu |

SECME, Inc.
Georgia Institute of Technology
c/o Georgia Tech
151 6th Street NW
Atlanta, GA 30332-0270

(404) 894 – 3314
(888) 262 – 8307
(404) 894 – 6553 (Fax)

SECME Member Universities 2008

1. Auburn University; Auburn, Alabama
2. The University of Alabama; Tuscaloosa, Alabama
3. The University of Alabama; Huntsville, Alabama
4. Tuskegee University; Tuskegee, Alabama
5. The University of Alabama; Birmingham, Alabama
6. The University of South Alabama; Mobile, Alabama
7. Howard University; Washington, DC
8. The University of the District of Columbia; Washington, DC
9. Florida A&M University and Florida State University; Tallahassee, Florida
10. Florida Atlantic University; Boca Raton, Florida
11. Florida Institute of Technology; Melbourne, Florida
12. Florida International University; Miami, Florida
13. University of Central Florida; Orlando, Florida
14. University of Florida; Gainesville, Florida
15. University of Miami; Miami, Florida
16. University of South Florida; Tampa, Florida
17. Georgia Institute of Technology; Atlanta, Georgia
18. Southern Polytechnic State University; Marietta, Georgia
19. The University of Georgia; Athens, Georgia
20. The University of Louisville; Louisville, Kentucky
21. Southern University; Baton Rouge, Louisiana
22. The University of Mississippi; University, Mississippi
23. Mississippi State University; Mississippi State, Mississippi
24. North Carolina A&T State University; Greensboro, North Carolina
25. North Carolina State University; Raleigh, North Carolina
26. Syracuse University; Syracuse, New York
27. Clemson University; Clemson, South Carolina
28. The University of South Carolina; Columbia, South Carolina
29. Christian Brothers College; Memphis, Tennessee
30. The University of Memphis; Memphis Tennessee
31. Tennessee State University; Nashville, Tennessee
32. The University of Tennessee-Chattanooga; Chattanooga, Tennessee
33. The University of Houston; Houston, Texas
34. Hampton University; Hampton, Virginia
35. Old Dominion University; Norfolk, Virginia
36. The University of Virginia, Charlottesville, Virginia
37. Virginia Polytechnic Institute and State University; Blacksburg, Virginia

Some Suggested Merchants **for Materials and Supplies 2008**

(Not an exhaustive list)

The SECME program in listing the following businesses is not indicating support for, the availability of, or sponsorship of their products.

Craft House Hobby Shop
1079 North Military Trail
West Palm Beach, FL
561-683-0764

RC Hobbies, Inc. (Boca Raton call 561-483-2540)
6800 North University Drive
Tamarac, FL
954-721-5720

Felix Hobby
13394 West Dixie Highway
Miami, FL
305-895-5362

Pitsco Innovative Education
1-800-835-0686

Pitsco Lego Dacta-Partners in Innovative Education
1-800-362-4308

Sargent Welch
1-800-727-4368

Macroenter (paper resources)
<http://www.macroenter.com/>

Graytex
<http://www.graytex.com/d-size-paper.htm>
1-800-813-5828

Ward's
7-800-962-2660

Fischer Science Education
1-800-955-1177

Paxton/Patterson
1-800-336-5998

Rag Shops
4258 Okeechobee Blvd, West Palm Beach, FL 33409
561-478-2208 (Boca Raton call 561-750-1196)

Easel Art (Lake Park)

Michaels Stores
521 N State Road 7, Royal Palm Beach, FL
561- 784-8574

JoAnn Fabrics
10265 Southern Blvd, Royal Palm Beach
561-795-9565

Radio Controlled Revolution
2275 Palm Beach Lakes Blvd, West Palm Beach, FL
561-684-2772

Easel Art Center
810 Park Ave, Lake Park, FL
561-844-3111

Boca Bargoons Incorporated
910 Us Highway 1, Lake Park, FL
561-842-7444

Fastframe
8927 Hypoluxo Rd, Lake Worth, FL
561-433-9550

Wal-Mart

Joyna's Art Framing & Gallery
6346 Lantana Rd Ste 62, Lake Worth, FL
561-967-5955

My Frame Shop & Gallery Incorporated
4047 Okeechobee Blvd Ste 119, West Palm Beach, FL
561-478-8281

Alligator Art Custom Framing
13873 Wellington Trace Ste B8, Wellington, FL
561-792-9020

Action RC Hobbies
769 Northlake Blvd, N. Palm Beach
561-842-7747

Alf's Hobbies
20911 Johnson St, Ste 107, Pembroke Pines, FL
954-704-2266

Allen's Custom Framing Incorporated
6600 W Rogers Cir Ste 7, Boca Raton, FL
561-241-5040

MDI Racing
10351 Southern Blvd, Royal Palm Beach, FL
561-798-2433

My Rose Hobbies Crafts & Gifts
1695 W. Indiantown Rd, Jupiter, FL
561-744-3800

Beginning Tool List

1. Tool box
2. Hammer
3. Glue and glue remover
4. Small hand saws
5. Rulers
6. Scissors
7. Exacto knives (utility knives)
8. Screwdrivers (flathead and Phillips)
9. Drill and drill bits
10. Dremmels
11. Pliers (needle nose and standard)
12. Adhesives (Insta-cure, glues, and glue sticks)
13. Tape measure

Section 9

IMPORTANT

Forms & Evaluation Sheets

2008 SECME BANNER COMPETITION EVALUATION SHEET

Please check: _____ Elementary School
 _____ Middle School
 _____ High School

Team name _____

School name _____

City and state _____

School colors _____

School mascot _____

The banner is disqualified if any of the following requirements are not met:

Requirements check: _____ 70" long by 34" wide (plus or minus two inches)
 _____ School name, school mascot, and school colors
 _____ City and state
 _____ Current year (2007-2008)
 _____ The SECME emblem is on the banner

EVALUATION CATEGORIES

POINTS

| | |
|---|--------------|
| <p>I. CONTENT The information depicted on the banner is of high quality and is well organized. (1-25 points)</p> | <p>_____</p> |
| <p>II. ORIGINALITY The banner design is innovative and the ideas are well presented. (1-25 points)</p> | <p>_____</p> |
| <p>III. CREATIVITY The information depicted on the banner is unique. (1-25 points)</p> | <p>_____</p> |
| <p>IV. APPEARANCE The banner is attractive and neat, and the scale and balance of the presentation are in proportion. (1-25 points)</p> | <p>_____</p> |
| <p>TOTAL (The highest possible score is 100.)</p> | <p>_____</p> |

2008 SECME DESIGN COMPETITION BRIDGE CONSTRUCTION

Elementary Evaluation Sheet

Name of school: _____

Team name: _____

Student name: _____ Grade _____

Student name: _____ Grade _____

Student name: _____ Grade _____

BRIDGE INSPECTION

Weight: _____ Pass _____ Fail _____

Height: _____ Pass _____ Fail _____

Length: _____ Pass _____ Fail _____

Base clearance: _____ Pass _____ Fail _____

Road surface: _____ Pass _____ Fail _____

_____ x 7.06 = _____
PSI Total load

Rank: _____

2008 SECME DESIGN COMPETITION BRIDGE DRAWING

EVALUATION SHEET

Please check: _____ Middle School _____ High School

Team name: _____

School name: _____

Student name: _____ Grade _____

Student name: _____ Grade _____

Student name: _____ Grade _____

Points will be deducted if all requirements are not completed.

- Requirements check: _____ 22" x 34" or 24" x 36" size paper
_____ Accurate dimensioning – must show a minimum of 6 dimensions
Note: A dimension will be considered if it is within +/- 1 mm of its stated length.
_____ Accurate scale and units
_____ Views and labeling shown correctly
_____ Title block (includes Team name, Team members' names and grades, School name, School coordinator's name, Date)

EVALUATION CATEGORIES

POINTS

RESEMBLANCE(1-70 points)

- The dimensional accuracy of the drawing (1 – 30 points).
5 points will be deducted for each incorrect dimension. _____
- The visual accuracy between bridge and drawing. (1 – 40 points) _____

APPEARANCE/NEATNESS (1-30 points)

- The visual presentation of the drawing including: _____
 - Correct paper size
 - Neatly drawn lines and text
 - Clean drawing – no smudges
 - Labeling of the bridge's structure
 - Title block information3 to 5 points deducted for each

TOTAL (The highest possible score is 100.) _____

(ATTACH DRAWING TO EVALUATION SHEET.)

2008 SECME BRIDGE WRITTEN TECHNICAL REPORT EVALUATION SHEET

Please check: _____ Middle School _____ High School

Team name: _____ School name: _____

Student name _____ Grade _____

Student name _____ Grade _____

Student name _____ Grade _____

Points will be deducted if all requirements are not completed.

Requirements checklist:

Cover page includes:

- _____ Title of the technical report
- _____ Name of school
- _____ Name and grades of team members
- _____ Team's school name
- _____ SECME school coordinator's name
- _____ Date of competition

Additional sections of Technical Report:

- | | |
|--|---|
| _____ Table of Contents | _____ 1" borders on each side |
| _____ Introduction | _____ 12-point font size |
| _____ Times New Roman Font | _____ Double-spaced |
| _____ Design | _____ White paper |
| _____ Construction procedure | _____ Conclusion/Recommendations |
| _____ Acknowledgments (Optional) | _____ Appendix (sketches, tables, charts) |
| _____ <u>(Bibliography or work cited page)</u> | |

Evaluation Categories (2007-2008) Proposed

Cover page, Table of Content (1-10 points)

Contains all the required information for full credit

Introduction (1-25 points)

Section contains information on the history and sections of a constructed bridge. Information is cited and documented properly using MLA or APA style.

Design Philosophy and Construction Procedure (1-20 points)

These sections detail why the bridge was constructed the way it was utilizing the research from the Introduction, and from trial and error. Specific details, precision and accuracy should be included in the report. Information is cited and documented properly using MLA or APA style.

Conclusion (1-20 points)

This section will document the anticipated success or failure of the team's bridge. What was learned with regard to force, stress and the energy required to break the bridge.

Communication Mechanics (1-25 points)

Sentences are complete; correct punctuation is utilized and all referenced information is cited using proper MLA or APA style.

TOTAL (The highest possible score is 100.) _____

(ATTACH TECHNICAL REPORT TO EVALUATION SHEET.)

2008 SECME DESIGN COMPETITION

BRIDGE CONSTRUCTION

Middle School Evaluation Sheet

Name of school _____

Team name _____

Student name _____ Grade _____

Student name _____ Grade _____

Student name _____ Grade _____

BRIDGE INSPECTION

Weight: _____ Pass _____ Fail _____

Height: _____ Pass _____ Fail _____

Length: _____ Pass _____ Fail _____

Base clearance: _____ Pass _____ Fail _____

Road surface: _____ Pass _____ Fail _____

Score from Technical Drawing: _____

Score from Technical Report: _____

Total score: _____

$$\frac{\text{Gauge PSI}}{\text{Total load}} \times 7.06 = \frac{\text{Total score}}{\text{Total score}} = \frac{\text{Final score}}{\text{Final score}}$$

Rank: _____

2008 SECME DESIGN COMPETITION

BRIDGE CONSTRUCTION

High School Evaluation Sheet

Name of school _____

Team name _____

Student name _____ Grade _____

Student name _____ Grade _____

Student name _____ Grade _____

BRIDGE INSPECTION

Weight: _____ Pass _____ Fail _____

Height: _____ Pass _____ Fail _____

Length: _____ Pass _____ Fail _____

Base clearance: _____ Pass _____ Fail _____

Road surface: _____ Pass _____ Fail _____

Score from Technical Drawing: _____

Score from Technical Report: _____

Total score: _____

_____ x 7.06 = _____ ÷ _____ = _____
Gauge PSI Total load Bridge weight Efficiency value

_____ x _____ = _____
Efficiency value Total score Final score:

Rank: _____

2008 SECME STUDENT ESSAY COMPETITION

Evaluation Sheet

Please check: Elementary School Middle School High School

Student name _____ Grade _____

School name _____

City/state _____

Essay title _____

The essay is disqualified if any of the following requirements are not met:

- Requirements check:
- Title page includes:
 - Essay's title (Same as 2007-2008 theme)
 - Student's name, grade, age
 - Name of school
 - SECME school coordinator's name
 - Date
 - Times New Roman Font Double-spaced
 - 1" borders on each side White paper
 - Proper # of pages (3-4 for elementary and middle school; 4-6 for high school
- **excluding Title Page and Bibliography**)
 - 12-point font size Bibliography

EVALUATION CATEGORIES

| | <u>POINTS</u> |
|--|----------------------|
| ESSAY ORGANIZATION (1 - 50 points) | |
| 1. The title is the same as the 2006-2007 theme. (1-5 points) | _____ |
| 2. There is a clear and precise thesis statement or central idea. (1-5 points) | _____ |
| 3. There is an effective introduction arousing reader interest and indicating the subject. (1-5 points) | _____ |
| 4. The body of the essay contains supporting details related to the thesis statement or central idea. (1-10 points) | _____ |
| 5. There are clear transitions between the paragraphs. (1-5 points) | _____ |
| 6. The essay is logical and coherent as a whole. (1-10 points) | _____ |
| 7. Each paragraph is adequately developed. (1-5 points) | _____ |
| 8. There is a satisfying closing. (1-5 points) | _____ |
| GRAMMAR AND SENTENCE STRUCTURE (1 - 15 points) | |
| 1. There is effective use of subordination and coordination to relate ideas. (1-5 points) | _____ |
| 2. There are complete sentences without misplaced sentence parts, sentence fragments, comma splices, or run-on sentences. (1-5 points) | _____ |
| 3. There is proper subject/verb agreement and pronoun/antecedent usage. (1-5 points) | _____ |
| MECHANICS/PUNCTUATION/SPELLING (1 - 20 points) | |
| 1. Punctuation is used correctly. (1-10 points) | _____ |
| 2. The spelling is correct. (1-5 points) | _____ |
| 3. Capitals, underlining and abbreviations are correctly used. (1-5 points) | _____ |
| CREATIVITY AND STYLE (1 - 10 points) | _____ |
| DEMONSTRATES RELATIONSHIP TO COMPETITION THEME (1 - 5 points) | _____ |
| TOTAL (The highest possible score is 100.) | _____ |

(ATTACH ESSAY TO EVALUATION SHEET.)

**2008 SECME DESIGN COMPETITION
MOUSETRAP CAR CONSTRUCTION AND OPERATION
(Elementary School Evaluation Sheet)**

Team name: _____ School name: _____

Student name: _____ Grade _____

Student name: _____ Grade _____

Student name: _____ Grade _____

Distance:

First run _____ Second run _____

Rank _____

**2008 SECME DESIGN COMPETITION
MOUSETRAP CAR CONSTRUCTION AND OPERATION
(Middle and High School Evaluation Sheet)**

Please check: _____ Middle School _____ High School

Team name: _____ School name: _____

Student name: _____ Grade _____

Student name: _____ Grade _____

Student name: _____ Grade _____

Distance:

First run _____ Second run _____

$$N = (w/W) \times (D/L)^2 \quad F = (N/NL) \times 100$$

W = 25 grams

W = _____ (the total mass of the completed car in grams)

L = _____ (the longest dimension of the car in centimeters with the bail extended or retracted, whichever is greater) Judges will make this measurement prior to the performance runs.

D = _____ (maximum D=2,500 if measured distance is more than 2,500 cm)

N = _____ (N=0, if D is LESS than 300 centimeters for middle school teams;
if D is LESS than 600 centimeters for high school teams)

High School Only

R** = the range.

R = 1.25 if the car comes to a complete stop with the front wheel crossing within the 4.0 meter target zone

R = 1.0 if the car does not come to a complete stop within the 4.0 meter target zone

****SPECIAL NOTE: The car is considered to have come to a complete stop within the target zone ONLY if a portion of at least one of the car's wheels is actually in contact with the floor inside the target zone.**

NL _____ = the highest score at the site

Mousetrap Car performance point score: F* = _____

***(Note: F is combined with scores for Design Drawing, Technical Report, and Team Interview to arrive at Overall Team Score in competition.)**

**2008 SECME DESIGN COMPETITION
MOUSETRAP CAR DRAWING
(Evaluation Sheet)**

Please check: _____ Middle School _____ High School

Team name: _____ School name: _____

Student name: _____ Grade _____

Student name: _____ Grade _____

Student name: _____ Grade _____

The drawing is disqualified if any of the following requirements are not met:

- Requirements check:
- _____ 18" X 24" Engineering **paper folded per specifications**
 - _____ 1" Margin
 - _____ Dimensions
 - _____ Scale and units
 - _____ 4" x 6" Title card (includes Team name, Team members' names and grades, School name, School coordinator's name, Date)

EVALUATION CATEGORIES

POINTS

- | | |
|---|-------|
| I. RESEMBLANCE (1-15 points) | |
| The mousetrap car drawing accurately illustrates the actual mousetrap car designed and built by the team. | _____ |
| II. SCALE (1-15 points) | |
| The proportions in the drawing correctly relate to and represent the team's actual mousetrap car. | _____ |
| III. NAMING/LABELING (1-10 points) | |
| The names and labels of all of the parts in the drawing of the mousetrap car are correct. | _____ |
| IV. APPEARANCE/NEATNESS (1-10 points) | |
| The visual presentation of the mousetrap car drawing is neat and of high quality. | _____ |
| TOTAL (The highest possible score is 50.) | _____ |

(ATTACH DRAWING TO EVALUATION SHEET.)

2008 SECME MOUSETRAP CAR WRITTEN TECHNICAL REPORT Evaluation Sheet

Please check: _____ Middle School _____ High School

Team name: _____

School name: _____

Student name _____ Grade _____ Age _____

Student name _____ Grade _____ Age _____

Student name _____ Grade _____ Age _____

The report is disqualified if any of the following requirements are not met:

- Requirements check: _____ Cover page includes:
- _____ Title of the technical report
 - _____ Name of school
 - _____ Name and grades of team members
 - _____ Team's school name
 - _____ SECME school coordinator's name
 - _____ Date
- _____ Additional sections of Technical Report:
- _____ Abstract
 - _____ Table of Contents
 - _____ Introduction
 - _____ Design
 - _____ Construction procedure
 - _____ Operation of the Mousetrap Car
 - _____ Conclusion/Recommendations
 - _____ Acknowledgments (**Optional**)
 - _____ Appendix (may contain sketches, tables, charts)
 - _____ Times New Roman Font
- _____ 12-point font size
 - _____ 1" borders on each side
 - _____ Double-spaced
 - _____ White paper

| <u>EVALUATION CATEGORIES</u> | <u>POINTS</u> |
|-------------------------------------|----------------------|
|-------------------------------------|----------------------|

| | |
|---|-------|
| OUTLINE (1 - 10 points) The structure of the technical report is complete, correct, and consistent with guidelines. | _____ |
|---|-------|

| | |
|---|-------|
| ORGANIZATION (1 - 10 points) The technical report follows a logical written description from design to final product. | _____ |
|---|-------|

| | |
|---|-------|
| PRECISION (1 - 10 points) The procedures and steps followed are explained with clarity and exactness. | _____ |
|---|-------|

| | |
|--|-------|
| SENTENCE FORMATION (1 - 10 points) The sentences are complete with appropriate coordination and subordination. <i>It is highly recommended that the <u>middle and high school teams</u> cite their references in <u>MLA or APA</u> format for both internal and external citations in their formal report.</i> | _____ |
|--|-------|

| | |
|---|-------|
| MECHANICS (1 - 10 points) Correct punctuation, capitalization, and spelling are evident throughout the report | _____ |
|---|-------|

| | |
|--|-------|
| TOTAL (The highest possible score is 50.) | _____ |
|--|-------|

(ATTACH TECHNICAL REPORT TO EVALUATION SHEET.)

2008 SECME STUDENT POEM COMPETITION

Elementary School Evaluation Sheet

Title of poem: _____

School: _____

The poem is disqualified if any of the following requirements are not met:

- Requirements check:
- _____ 25-line poem based on 2007-2008 theme
 - _____ typed on 8.5" x 11" white paper, double-spaced
 - _____ Times New Roman font, size 12 pt.
 - _____ Title page is present and includes:
 - _____ Poem's title (same as 2007-2008 theme)
 - _____ Student's name, grade, age
 - _____ Name of school
 - _____ SECME school coordinator's name
 - _____ Date

Maximum number of points is 100. Score each item below from 1 to 20 points.

Poem focuses on theme and carries message clearly throughout poem. _____

Correct Rules of mechanics must be consistent throughout the poem. _____

Spelling is accurate and vocabulary age appropriate. _____

Poem shows evidence of strong elements of literary figurative language, ie., vocabulary, imagery, use of similes and metaphors, contrasts and comparisons, and there is correct subject/verb agreement. _____

Poem is creative. _____

TOTAL _____

(ATTACH POEM TO EVALUATION SHEET)

2008 SECME POSTER COMPETITION EVALUATION SHEET

Please check: _____ Elementary School
 _____ Middle School
 _____ High School

Student's name _____ Grade _____
 School name _____
 Poster title _____

The poster is disqualified if any of the following requirements are not met:

Requirements check: _____ 4" x 6" Title card affixed to the back of the poster includes:
 _____ Title of poster based on 2007-2008 theme
 _____ Student's name, grade, age
 _____ School's name, coordinator's name, date
 _____ Poster size is 22" x 28"
 _____ Framed (black metal or plastic slide-on poster frame)
 _____ 2007-2008 theme included on poster

| <u>EVALUATION CATEGORIES</u> | <u>POINTS</u> |
|---|--|
| <p>I. DESCRIPTION (Physical Facts)</p> <p>1. The theme is visible and integral to the poster design. (1-10 points)</p> <p>2. The poster is attractive, well-crafted, and the spelling is correct. (1-10 points)</p> | <p>_____</p> <p>_____</p> |
| <p>II. ANALYSIS (Visual Principles and Unity of Design)</p> <p>1. The words and images support each other visually. (1-10 points)</p> <p>2. The elements (lines, shape, color, value, texture) are used intentionally and effectively. (1-10 points)</p> <p>3. The visual principles (form, layout, pattern, emphasis, rhythm, contrast, balance, proportion, variety) combine elements in a pleasing, appropriate, and effective way. (1-10 points)</p> | <p>_____</p> <p>_____</p> <p>_____</p> |
| <p>III. INTERPRETATION (Meaning and Intention)</p> <p>1. The verbal theme is translated by effective metaphor into visual terms. (1-10 points)</p> <p>2. All points of the theme's concept are illustrated effectively. (1-10 points)</p> <p>3. Stylistic use of medium supports the overall work of art. (1-10 points)</p> | <p>_____</p> <p>_____</p> <p>_____</p> |
| <p>IV. JUDGMENT (Comparison and Response)</p> <p>1. This work is more effective than those in its category in visually carrying out the theme. (1-10 points)</p> <p>2. This work appeals to me personally as an isolated work of art. (1-10 points)</p> | <p>_____</p> <p>_____</p> |
| <p>TOTAL</p> | <p>_____</p> |

2008 SECME WATER ROCKET COMPETITION

Elementary School Evaluation Sheet

School name: _____

Team name: _____

Coordinator's name: _____

Student's names: _____

EVALUATION CATEGORIES:

Hang Time of Rocket (70%) _____

Patch Design (30%) _____

Rank _____

2008 SECME WATER ROCKET COMPETITION

Evaluation Sheet

Please check: _____ Middle School _____ High School

School name: _____

Team name: _____

Coordinator's name: _____

Student name: _____

Student name: _____

Student name: _____

EVALUATION CATEGORIES:

Hang Time of Rocket (45%) _____

Patch Design (15%) _____

Technical Report (25%) _____

Technical Drawing (15%) _____

Total Score _____

Rank _____

2008 SECME WATER ROCKET TECHNICAL REPORT

Evaluation Sheet

Please check: _____ Middle School _____ High School

School name: _____

Team name: _____

Coordinator's name: _____

The maximum points for the Water Rocket Technical Report are 100.

| EVALUATION CATEGORIES: | POINTS: |
|--|----------------|
| Abstract (1-10 points) | _____ |
| Design Background (1-15 points) | _____ |
| Paper Structure (1-5 points) | _____ |
| Calculations (1-40 points) | _____ |
| Conclusion/Recommandations (1-20 points) | _____ |
| <u>Grammar and Internal and External Citations for all references.</u> <u>All middle and high schools should use a standard MLA or APA style for all references</u> (1-10 points) | _____ |
| TOTAL | _____ |

(ATTACH TECHNICAL REPORT TO EVALUATION SHEET)

2008 SECME WATER ROCKET TECHNICAL DRAWING

Evaluation Sheet

Please check: _____ Middle School _____ High School

School name: _____

Team name: _____

Coordinator's name: _____

NOTE: Drawing requirements are 22" x 34" or 34" x 36" size paper.

The maximum points for the Water Rocket Technical Drawing are 100.

EVALUATION CATEGORIES:

POINTS:

Paper size (1-5 points) _____

Resemblance (between the actual drawing and rocket)
(1-45 points) _____

Scale (1-20 points) _____

Naming/labeling of all parts used (1-10 points) _____

Appearance/Neatness (1-20 points) _____

TOTAL _____

(ATTACH TECHNICAL DRAWING TO EVALUATION SHEET)

2008 SECME WATER ROCKET PATCH

Evaluation Sheet

Please check: _____ Elementary School

_____ Middle School

_____ High School

School name: _____

Team name: _____

Coordinator's name: _____

The maximum points for the Water Rocket Patch Design are 100.

EVALUATION CATEGORIES:

POINTS:

Originality - Innovativeness of the design (1-30 points) _____

Creativity - Uniqueness of the information depicted (1-30 points) _____

Appearance - Attractiveness/neatness of the presentation (1-20 points) _____

Content - Representation of the team's name and SECME theme (1-20 points) _____

TOTAL _____

(ATTACH PATCH DESIGN TO EVALUATION SHEET)

**2008 Broward County DISTRICT OLYMPIAD
February 16, 2008**

REGISTRATION FORM

School: _____

Coordinator(s): _____

Please place a check mark (✓) in the chart below to indicate the events in which your students will be participating. If the event is listed in **bold**, this is a required event in which your students must participate.

| | |
|---|---|
| ✓ | EVENT |
| | Banner |
| | Brain Bowl |
| | Bridge Please circle # of teams: 1 2 |
| | Essay |
| | Poem |
| | Mousetrap Car Please circle # of teams: 1 2 |
| | Rocket Please circle # of teams: 1 2 |
| | Poster |

Total number of students: _____

Total number of adults: _____

**PLEASE RETURN THIS FORM
To Mark Eyerman
Blanche Ely High School
NO LATER THAN 4:15 PM, Wednesday, January 30, 2008.**

**Palm Beach County
2008 SECME ELEMENTARY DISTRICT OLYMPIAD
March 22, 2008**

REGISTRATION FORM

School: _____

Coordinator(s): _____

Please place a check mark (✓) in the chart below to indicate the events in which your students will be participating. If the event is listed in **bold**, this is a required event in which your students must participate.

| ✓ | PARTICIPATING OLYMPIAD EVENTS |
|---|---|
| | Banner |
| | Brain Bowl |
| | Bridge Please circle # of teams: 1 2 Team Name 1: _____ Team Name 2: _____ |
| | Poem <i>AND or Essay</i> |
| | Mousetrap Car Please circle # of teams: 1 2 Team Name 1: _____ Team Name 2: _____ |
| | Rocket Please circle # of teams: 1 2 Team Name 1: _____ Team Name 2: _____ |
| | Poster |

*Team participation is required for second semester stipend.

Total number of students: _____ Total number of teachers/chaperones: _____

**PLEASE RETURN THIS FORM
To: Trevor Roberts
Division of Curriculum & Learning Support, FHESC, C-206
Fax: 561-434-7515
NO LATER THAN 4:30 PM. FEBRUARY 8, 2008**

**Palm Beach County
2008 SECME MIDDLE SCHOOL OLYMPIAD
March 29, 2008**

REGISTRATION FORM

School: _____

Coordinator(s): _____

Please place a check mark (✓) in the chart below to indicate the events in which your students will be participating. If the event is listed in **bold**, this is a required event in which your students must participate.

| ✓ | PARTICIPATING OLYMPIAD EVENTS |
|---|---|
| | Banner |
| | Brain Bowl |
| | Bridge Please circle # of teams: 1 2 Team Name 1: _____ Team Name 2: _____ |
| | Essay |
| | Mousetrap Car Please circle # of teams: 1 2 Team Name 1: _____ Team Name 2: _____ |
| | Rocket Please circle # of teams: 1 2 Team Name 1: _____ Team Name 2: _____ |
| | Poster |

***Team participation is required for second semester stipend.**

Total number of students: _____ **Total number of teachers/chaperones:** _____

**PLEASE RETURN THIS FORM
To: Trevor Roberts
Division of Curriculum & Learning Support, FHESC, C-206
Fax: 561-434-8091
NO LATER THAN 4:30 PM, FEBRUARY 8, 2008.**

**Palm Beach County
2008 SECME HIGH SCHOOL DISTRICT OLYMPIAD
March 29, 2008**

REGISTRATION FORM

School: _____

Coordinator(s): _____

Please place a check mark (✓) in the chart below to indicate the events in which your students will be participating. If the event is listed in **bold**, this is a required event in which your students must participate.

| ✓ | PARTICIPATING OLYMPIAD EVENTS |
|---|---|
| | Banner |
| | Brain Bowl |
| | Bridge Please circle # of teams: 1 2 Team Name 1: _____ Team Name 2: _____ |
| | Essay |
| | Mousetrap Car Please circle # of teams: 1 2 Team Name 1: _____ Team Name 2: _____ |
| | Rocket Please circle # of teams: 1 2 Team Name 1: _____ Team Name 2: _____ |
| | Poster |

*Team participation is required for second semester stipend.

Total number of students: _____ **Total number of teachers/chaperones:** _____

**PLEASE RETURN THIS FORM
To: Trevor Roberts
Division of Curriculum & Learning Support, FHESC, C-206
Fax: 561-434-8091
NO LATER THAN 4:30 PM, FEBRUARY 8, 2008.**

Section 10

SECME Banquet

8051 Congress Ave
Boca Raton, Florida 33487

FOURTEENTH ANNUAL SECME CELEBRATION OF ACHIEVEMENT BANQUET (TBA)

Dear SECME Coordinators,

The SECME Foundation requests the honor of the attendance of representatives from the Palm Beach County School District, at the Twelfth Annual SECME Celebration of Achievement Banquet, to honor this year's Achievement Award recipients and celebrate the past year's accomplishments. This gala event includes student and coordinator awards, SECME Scholarship Awards, and a very dynamic guest speaker.

As members of the school system, you are undoubtedly aware of the tremendous role SECME plays in building solid mathematical and scientific skills in students at the elementary, middle and high school levels. This will assure them of bright futures in engineering and related scientific fields.

Space is limited to allow attendance for 350 people. The banquet committee has allocated 20 tables for Palm Beach County representatives. A table will seat 10 people and the cost is \$30.00 per person. A school will be limited to 1 table and can invite up to 10 people. Tables will be assigned on a first come basis until all are filled. The committee will need early confirmation from the schools attending, with the number of people each school will bring. Your response will assist our planning and allow this event to be a great SECME celebration.

School confirmation of attendance is required no later than Friday TBA. Please include your check made payable to the **SECME Foundation** and mail it to **IBM, 8051 Congress Avenue, Boca Raton, FL 33487**.

The nominations for County Administrator of the Year, County Coordinator of the year, SECME Student of the Year, Outstanding Student of the Year and Outstanding Angel of the Year must be submitted to Trevor Roberts (Palm Beach County SECME Director). Please check your SECME 2007 Survival Guide for the required criteria and forms for all nominations.

Last year 25 scholarships were awarded to graduating SECME seniors in Broward and Palm Beach Counties. SECME Scholarships will assist in increasing opportunities for minority prospects to attend college, and pursue engineering and scientific degrees.

If you have any questions and/or comments, please contact me at (561) 862-2737 or (561) 310-1834. Thank you for your continued support of SECME.

Sincerely,

Delroy Cole.
SECME Banquet Chair

FOURTEENTH ANNUAL SECME CELEBRATION OF ACHIEVEMENT BANQUET (TBA)

My school will participate in the SECME Banquet. Enclosed is my check for the number of participants indicated below (\$30.00 x each participant).

_____ Number of Participants

_____ Number of vegetarian meals required

Name of School: _____

Name of Coordinator: _____

Telephone Number: _____

Questions may be directed to Glen Cunningham at (954) 974-2230 or (954) 987-0066.

PLEASE RETURN TO
to
Glenn Cunningham
Hazen and Sawyer
Seventh Floor, North Tower
4000 Hollywood Boulevard
Hollywood, FL 33021

ANNUAL SECME BANQUET COMMITTEE

TO: SECME School Coordinators

FROM: Willie Johnson
SECME Banquet Awards Committee

SUBJECT: Award Nominations

The primary mission of the SECME Banquet Committee is to honor students and teachers. The committee would appreciate your help in nominating outstanding individuals for the following awards. The categories are listed below:

- 1. County Administrator of the Year** – This award is nominated by the school's SECME Coordinator. **Please see enclosed form.**
- 2. County Coordinator of the Year** – This award is a self-nominating award. There will be three awards per county (one elementary, one middle, and one high school.) **Please see enclosed form.**
- 3. Outstanding Angel Award** – The person receiving this award will be nominated by his/her SECME School Coordinator. There will be a total of three awards per county (one elementary, one middle, and one high school.) Criteria for this award should include contributions to and support of the school's SECME program. **Please see enclosed form.**
- 4. SECME Student of the Year** – The student receiving this award will be nominated by his/her SECME School Coordinator. There will be a total of three awards per county (one elementary, one middle, and one high school.) Nominees must be graduating seniors, eighth graders or fifth graders. **Please see enclosed form.**
- 5. Outstanding Student of the Year** – The student receiving this award will be chosen by the individual SECME School Coordinators. Criteria for this award are broad and could include such things as: most team spirit, best attendance, hardest worker, or most improved SECME student. The purpose of this award is to recognize an unsung hero, a student who otherwise might not receive an award. One award per school will be given. **Please see enclosed form.**

If you have any questions regarding these awards, please contact your District SECME Program Director.

Enclosures

SECME

2008 COUNTY COORDINATOR OF THE YEAR

(Three Awards Per County - One Elementary, Middle and High School)

Name: _____

School: _____

Principal: _____

SECME Participation: _____

Community Service: _____

Why the Coordinator is deserving of this award: _____

**Return
to**

District SECME Program Director

SECME

2008 STUDENT OF THE YEAR

(Three Awards Per County - One Elementary, Middle and High School)

Name: _____ Grade: _____

School: _____

Coordinator: _____

Grade Point Average: _____

SECME Participation: _____

Community Service: _____

Why the student is deserving of this award: _____

**Return
to:**

District SECME Program Director

**7-Habits of Highly Effective People & Journal entries
SECME Research Reading plan and schedule**

Inside-Out

- Day 1 Read pgs 15-21 If I plan to learn, I must learn to plan
- Day 2 Read pgs 21-29 Which of the two woman did you see, and why do you think you saw that particular portion of the drawing/ painting?
- Day 3 Read pgs 29-35 Do you agree/ disagree with the quote by Thoreau on page 31. Why or why not?
- Day 4 Read pgs 35-44 Do you agree with the analysis the author details on page 38 at his daughter's birthday party? Why or why not?

7-Habits –An Overview

- Day 1 Read pgs. 46-52 Provide your own definition for knowledge, skill and desire
- Day 2 Read pgs 52-57 Define in your own words personality and character
- Day 3 Read pgs 57-59 Contrast character with competence
- Day 4 Read pgs 59-62 Describe a personal paradigm shift you have experienced

Habit 1-Be Proactive

- Day 1 Read pgs 66-70 What are some reactive things you do?
- Day 2 Read pgs 70-76 What are some proactive things you do?
- Day 3 Read pgs 76-80 Fill in the blank. When someone insults you what do you do? Why?
- Day 4 Read pgs 81-88 How can you increase your circle of influence?
- Day 5 Read pgs 89-94 Whether I succeed or fail shall be no man's doing but my own- Elaine Maxwell
Agree/ disagree? Why?

Habit 2-Begin with the End in Mind

- Day 1 Read pgs 98-100 List 5 things you REALLY want to do with your life
- Day 2 Read pgs 101-109 Carpe diem- Seize the day.. Make your lives extraordinary-Do you agree/ disagree? Why? How will you?
- Day 3 Read pgs 109-118 Control your own destiny or someone else will- Jack Welch Agree/ Disagree? Why?
- Day 4 Read pgs 118-128 Can you create results mentally before beginning any activity-Agree/ disagree? Why?
- Day 5 Read pgs 128-135 What am I about?
- Day 6 Read pgs 135-139 create your own mission statement
- Day 7 Read pgs 139-144 Identify some areas in your life, which you could benefit from reading
Habit 2

Habit 3-Put First Things First

Day 1 Read pgs 146-149 things which matter most must never be at the mercy of things which matter least- Goethe Agree/ disagree? Why?

Day 2 Read pgs 149-156 What matters most to you? Why?

Day 3 Read pgs 156-165 What matters least to you? Why?

Day 4 Read pgs 165-172 Develop the matrix (4 Quadrant) for time management on page 151-see diagram on the board.

Day 5 Read pgs 173-182 The Key is not to prioritize your schedule, but to schedule your priorities.-Covey Agree/ disagree? Why?

End of Private Victories, begin public victories.

Intro to Public Victories-Paradigms of Interdependence

- Day 1 Read pgs 185-190 describe someone you trust without question. Why? Be specific
- Day 2 Read pgs 190-197 What is the status of your emotional bank account? Be specific.
- Day 3 Read pgs 197-203 Do you agree/ disagree with the quote that “it is more noble to give yourself completely to one individual than to labor diligently for the salvation of the masses.” Explain your answer and provide an example to support your answer.

Habit 4 Think Win-Win

- Day 1 Read pgs 205-213 Do you need to win? Be honest? If you lose do you Go crazy? Be honest
- Day 2 Read pgs 213-221 What are the consequences of win-lose thinking and acting? Be specific. Apply examples to your life and be specific.
- Day 3 Read pgs 221-229 Explain what win-win is? And what win-win is not? Feel free to use statements, and do not worry if they are in sentence form.
- Day 4 Read pgs.229-234 Provide a win-win agreement between you and your teammates. Provide a win-win agreement between you and your parents/ guardian.

Habit 5 Seek First to Understand, then to be Understood

- Day 1 Read pgs.236-245 Agree/ disagree with the statement Listen, or your tongue will make you deaf.
- Day 2 Read pgs 245-255 Who would you like to REALLY listen to you? Why?
- Day 3 Read pgs 255-259 When do you most often fail to listen to others? Why?

Habit 6 Synergize

- Day 1 Read pgs. 262-269 We are all unique. What makes you different from anyone else.
- Day 2 Read pgs. 269-277 Define the term synergize in your own words.
- Day 3 Read pgs.277-284 Agree/ disagree I do not see the world as it is, I see the world as I am. Explain your answer.

Habit 7 Sharpen the Saw

- Day 1 Read pgs 287-294 Agree/ disagree with the quote “The time to repair the roof is when the sun is shining.” Explain your answer.
- Day 2 Read pgs. 294-299 What one thing do you need to do in order to sharpen your personal saw? Be specific and explain why

Day 3 Read pgs. 299-303 Identify a key relationship that challenges you. Explain your answer and be specific.

Day 4 Read pgs. 303-307 Explain how you can “Sharpen the saw” in all four parts of you **Physical, Mental, Emotional and Spiritual**. Be specific.

Inside-Out Again

Day 1 Read pgs. 309-318 Explain the power in the gap between stimulus and response in your life as an adult.

End of book-Reflections on lessons learned and Rigor and Relevance to student’s lives

June 2003
Eyerman-science

TOPIC: _____

Team Name: _____

You are now a member of your selected team. Your team will be graded as a whole. This means that you will be as strong as your weakest link. Be sure that you work together so that all members of your team have an adequate background on the position and arguments that you will be proposing. Know your opponent's argument better than they do.

1. There will be an opening statement argument made by your team. This statement should be 3 minutes long and should state your team's position and the arguments/solutions that you will be proposing. It should include an Inspiration presentation defining your team's analysis of the topic. It should be brief and to the point!

2. You should have at least 15 questions that can be asked of each of your 3 opponents (the other team). These should be on separate sheets of paper or on index cards for easy reference. The questions should be specifically directed to your opponents and should be clear and concise. Do not attack the person, attack the position or argument.

3. You should have answers prepared /anticipated to which will be used to respond to your opponents questions /statements. Imagine that you are on the other team and determine what questions may be asked of your team.

4. You should have a final conclusive argument/statement (closing statement) drawn up which will be written at the end of your debate. This should be no longer than 3 minutes. You should take notes during the entire debate so that you may refer to these in your final presentation of your team's views. A power point presentation will be made to help defend and present your project.

When you have determined who will be responsible for each portion of your team's debate, it is up to you to prepare yourself for the challenge that lies ahead. Only one team will win this debate. The winning team will have demonstrated the following;

- Have a solid background regarding all material
- Have plenty of evidence to back up claims
- Use a teamwork approach to teach all in the debate, the important concepts behind the specific position
- Use a firm tone, do not scream or yell at the other team or at the judges.
- Be patient, respective your time to respond will come.
- Be creative/psyche out opponents
- **Outclass, outwit, outlast** opponents/never give an answer of "uh..", or I do not know.

Good luck! This assignment is worth **One-hundred (100)** points and will be judged based upon your ability to debate this issue and convince the judges that you are indeed deserved of your grade.

Debate Topics

- 1st Round:
- Should students be forced to wear Identification Cards during the school day.
 - Should students be forced to conduct volunteer activities to graduate high school?
 - Should passing the FCAT be a graduation requirement for high school?
 - Does class size impact student achievement.
 - The FCAT is unfair and discriminatory
 - Students should not prepare for only one career
 - Use of the Internet has led to a deterioration of student research skills
 - Elementary and secondary schools should require school uniforms.
- 2nd Round
- Should the Tower of Pisa be saved!
 - Was Shackelton's mission to transverse the Antarctic a success?
 - Is the private victory section in 7-Habits more important than the Public Victory sections
 - Is Leonardo da Vinci the greatest thinker who ever lived?
 - Are the engineers/ architects of the World Trade Tower Responsible for the 9-11 collapse?
 - Mathematics is an art form.
 - Calculators should not be allowed in the mathematics classroom.
 - There has been too much reliance on the scientific method.
 - Scientific advances create as many losers as winners.
 - Television is more significant than computers.
- 3rd Round
- The power of science is dangerous
 - Being a teacher is an unwise career choice
 - Cloning of humans should not be allowed.
 - The Internet has decreased the quality of life
 - Scientists have a moral responsibility for their discoveries.

Rubric for Electronic Portfolio
Due _____
Two-hundred (200) Point Assignment

Team Name _____ Team Members _____

Date turned in to instructor ____ / ____ / ____

Evaluations

| Objectives: Students learn and demonstrate technology skills and the meaning of teamwork. | Team √ | Teacher Points |
|---|-----------|-------------------|
| Format: 1. Html style so that all computers can read CD. 2. All text=Size 12 and Times New Roman Font. | | |
| College Budget Demonstration. 15 Points 1. Students will demonstrate the cost of a college education as a full-time student at two universities/ colleges. 2. Document the names of the college/ university 3. On-Campus Housing, Off-campus housing and living at home (parents) are all to be examined 4. Demonstration is in a table format. 5. Tuition, Books and supplies, Room and board (including meals), transportation, and personal expenses are to be noted. 6. Resident or Non-resident fees are to be considered. 7. Student will list cost per credit hour, lab fees, application fee and parking decals. 8. Student will document the Forgiveness policy , and the Dropping/ Addition of classes' policy after registration. | | |
| Resume Demonstration: 15 Points 1. Limited to one page 2. Use template in Microsoft Word/ or other approved text 3. Document shall include work, or volunteer experiences. 4. Name, address and phone number are noted. | | |
| Student Choice of featured piece Demonstration: 20 Points 1. Student chooses a project to display or highlight on the CD. 2. Project can be Roller coaster/ Ferris wheel, Science Fair Project, a self-created Art piece, etc. 3. See instructor for approval of project prior to selection. 4. Student judged on presentation of project. 5. Justify the choice of this project 6. Evaluate the value of this project beyond the classroom. 7. Project is documented in the folder on the server (scanned, or at an attachment) | | |
| College Essay Demonstration: 15 Points 1. Expository / persuasive essay from an actual college application. 2. Or student can choose to do the FAU/ SECME scholarship essay 3. Document the choice of essay (from which college/ university) 4. Essay completed with the guidance of the student's parent/ guardian or teacher. 5. The name of the person (parent/ guardian or teacher) who proofed the essay shall be documented. 6. The name of the college/ university essay is noted. | | |
| TechXplore Project Web Page Design.Demo: 100 Points. The Web page's theme is to coincide with the rules and regulations for the TechXplore project from the National Science and Technology Education Partnership (NSTEP). For further information regarding this project see the TechXplore handout. TechXplore is found at www.nationalstep.org Due _____. | | |

| | | |
|---|--|--|
| <ol style="list-style-type: none"> 1. A minimum of five (5) slides and a maximum of twenty four (24) pages. 2. Power Point used to document team’s progress and history of project conception and completion 3. Team collaboration 4. The Webpage shall have it’s own web address 5. The Webpage will be divided into 3 parts (The Problem, The Solution, and Career Development). 6. Headers shall be created for the Web page for the three parts. 7. The Webpage shall have links to references Web sites serving as a resource for the research. 8. Screen 1 shall have the project title and a 75 work (abstract) description of the project 9. Screen 2 shall have pertinent information to the team, school, city, state and the first name and initial only of the last name of the team members (for example Mark E.) and the name of the team’s project facilitator (Mr. Mark Eyerman) 10. Screen 2 shall also include a summary of the team’s experience in TechXplore, and should include how the project gain or enhanced their skills and learn about career in technology. | | |
| <p><u>Inspiration Demonstration: 10 Points</u></p> <ol style="list-style-type: none"> 1. Completed by team to outline the Web page design. 2. Program used to keep the Web page cohesive. 3. A minimum of six circles or webs is required. | | |
| <p><u>Collaborative Demonstration: 15 Points</u></p> <ol style="list-style-type: none"> 1. Power Point used for demonstration 2. Use of SECME journal to document progress by the team during the toothpick project. 3. Team collaboration. <p>A minimum of eight (8) slides and a maximum of fifteen (15) slides</p> | | |
| <p><u>Leadership Demonstration: 10 Points</u></p> <ol style="list-style-type: none"> 1. A table format. 2. Use table to evaluate the leadership skills displayed during the various team project completed throughout the Spring semester. 3. A minimum of five characteristics is required. 4. An example would be able to delegate, organized. 5. Be specific for each characteristic, and provide an example or definition to help explain the grading. 6. This is a team project; only one leadership table is required. | | |
| <p><u>Project Total Points Two hundred (200) Points</u></p> | | |

Date _____

Block _____

Student Names _____

Team Name _____

Rubric for SECME/ Biomedical Engineering
Toothpick project (The Rollercoaster)

Due _____
100 Point Project

Each team will design and construct a complete rollercoaster that will permit a standard sized glass marble to roll through the rollercoaster from the beginning to the end **lasting ten (10) seconds of movement of the marble**. The only materials that may be used in the construction of this project are standard wood toothpicks and glue. No skewers may be used, and there is no restriction to the number of toothpicks that can be used. However, the rollercoaster must have at least **one complete loop and two hills**. The loop is a **vertical loop**. A horizontal loop will not be accepted as the single loop for the project. The entire track must be completed totally with toothpicks. That is the track is one hundred (100%) percent constructed with toothpicks, **no glue**. The area of the base of the rollercoaster cannot exceed 4500 centimeters squared.

Once the marble is released from the starting point, it cannot be touched or assisted in any way until it reaches the target location (the end of the ride). Accompanying the toothpick rollercoaster project will be a brief (one typed page) description of the rollercoaster, and an artist's rendition of the proposed final project drawn to scale. The written description and drawing is due _____. If the drawing and/ or report is late a **five (5) penalty** for each school day late!

Judging of the rollercoaster is as follows:

Note: The project is a team effort, and the students within the team will receive the same grade as his/ her team members, with the exception of the peer group grade.

Best of three trial runs: The team will have 3 attempts to complete the course of the rollercoaster, and the marble will travel along the course for a minimum of ten (10) seconds. **Forty points**

40 Points _____

If the marble travels for at least eight (8) seconds then **30 points** will be awarded;

If the marble travels for at least six (6) seconds then **20 points** will be awarded. If anything less than six (6) seconds **zero points** will be awarded to the team.

Completion of project on time, the due date is _____. **Ten points**

10 Points _____

Peer grade is the average of all the students' evaluation forms. The minimum grade for this section is five (5) points.

Ten points

10 Points _____

Team grade is determined by the average of each team members peer team members. Each team member will evaluate their team members, and it is based on the contribution to the team by the team member. **Ten points**

10 Points _____

Overall assessment is determined by the instructor. Point are awarded or deducted based on the soundness of the structure, creativity, and originality and meeting established due dates. **There is a five (5) point penalty for each school day late!** Each project must meet the guidelines as mentioned in this rubric, and addendum's possibly added to this project. Mr. Eyerman's guidelines for this section are; **Fifteen points**

Fully painted, theme of the design apparent, sign with the name of the ride, and smoothness of design (excess toothpick ends removed). **Fifteen points**

Fully painted, theme of design apparent, sign with the name of the ride, many rough edges on structures. **Ten points**

Theme not apparent or missing sign. **Five points**

Not fully painted but with a sign and theme. **Five points**

15 Points _____

Written description of rollercoaster with drawing of anticipated model of team's rollercoaster. **Fifteen Points**

15 Points _____

Total project points _____/100 pts

Team Name _____

SECME Research Debate Rubric

Fifty (50) Point Assignment

Due _____

| CATEGORY | Excellent (10/5) points | Good (7/4) points | Satisfactory (5/3) points | Needs Improvement 1 point |
|---|---|--|--|---|
| Understanding of Topic s-five points Pts _____ | The team clearly understood the topic in-depth and presented their information forcefully and convincingly. | The team clearly understood the topic in-depth and presented their information with ease. | The team seemed to understand the main points of the topic and presented those with ease. | The team did not show an adequate understanding of the topic. |
| Organization-five points. Pts _____ | All arguments were clearly tied to an idea (premise) and organized in a tight, logical fashion. | Most arguments were clearly tied to an idea (premise) and organized in a tight, logical fashion. | All arguments were clearly tied to an idea (premise) but the organization was sometimes not clear or logical. | Arguments were not clearly tied to an idea (premise). |
| Presentation Style- five points. Pts _____ | Team consistently used gestures, eye contact, tone of voice and a level of enthusiasm in a way that kept the attention of the audience. | Team usually used gestures, eye contact, tone of voice and a level of enthusiasm in a way that kept the attention of the audience. | Team sometimes used gestures, eye contact, tone of voice and a level of enthusiasm in a way that kept the attention of the audience. | One or more members of the team had a presentation style that did not keep the attention of the audience. |
| Use of Facts/ Statistics- five points Pts _____ | Every major point was well supported with several relevant facts, statistics and/or examples. | Every major point was adequately supported with relevant facts, statistics and/or examples. | Every major point was supported with facts, statistics and/or examples, but the relevance of some was questionable. | Every point was not supported. |
| Rebuttal- five points Pts _____ | All counter-arguments were accurate, relevant and strong. | Most counter-arguments were accurate, relevant, and strong. | Most counter-arguments were accurate and relevant, but several were weak. | Counter-arguments were not accurate and/or relevant |
| Information-five points Pts _____ | All information presented in the debate was clear, accurate and thorough. | Most information presented in the debate was clear, accurate and thorough. | Most information presented in the debate was clear and accurate, but was not usually thorough. | Information had several inaccuracies OR was usually not clear. |
| Inspiration Presentation-ten points Pts _____ | Inspiration demonstrated all key concepts or points of the team's opening argument | Inspiration demonstrated most of the key concepts or points of the team's opening argument | Inspiration demonstrated few of the key concepts or points of the team's opening argument | Inspiration demonstrated none of the key concepts or points of the team's opening argument |
| PowerPoint Presentation-ten points Pts _____ | PowerPoint demonstrated all of the key concepts or points of the team's final summation or argument | PowerPoint demonstrated most of the key concepts or points of the team's final summation or argument | PowerPoint demonstrated few of the key concepts or points of the team's final summation or argument | PowerPoint demonstrated none of the key concepts or points of the team's final summation or argument |

Total Points Scored _____

Comments: -----

Judges Signaturesx-----

Rubric for TechXplore Project

Team Name _____
 Members: _____

 Block _____

Evaluation Key

1 2 3 4

Due Date for this Project _____

Evaluations

| Objectives: Teams of students will research problems facing our society, and develop solutions to these problems utilizing current and future technology. | Student/ Team | Teacher |
|---|------------------|---------|
| All teams must follow the criteria mentioned in the TechXplore Guidelines for Research, Web site format and the Website Format Guidelines as mentioned in the TechXplore 2005 Packet. This packet was provided to each team at the beginning of this project. | | |
| Scientific Thought and Application of Technology in the Solution. Forty Points (40 pts.) 1. The problem is clearly stated. 2. The team demonstrated the use of technology in the solution. 3. Project demonstrates knowledge gained in the team’s research in the field of technology and is applied in the development of the solution. 4. Is the solution realistic, provides a real potential solution and can be utilized in the “real world.” | | |
| Creative Ability and Originality. Twenty Points (20 pts.) 1. The project shows originality of thinking and offers a creative approach to solving the designated problem. 2. Elements of originality in the solution. 3. Creative approach to the problem solving process through in-depth research. | | |
| Clarity. Twenty Points (20 pts.) 1. Does the project explain the problem, research and solution with clarity and demonstrate understanding. 2. Project demonstrates understanding of concepts used in the solution. | | |
| Thoroughness. Twenty Points (20 pts.) 1. Good scientific thought is demonstrated in the proposed solution to the problem. 2. The team used appropriate references in their search for solutions. 3. Team answered the tasks as outlined in the Guidelines for Student Research. | | |
| Penalty: A ten-point penalty for not meeting the deadline will be assessed to the team. | | |
| TOTAL POINTS- One hundred Points (100) | | |

2007 SECME Balsa Wood Bridge Rubric

150 Points

The following is required for your Balsa Wood Bridge to receive full or partial credit. Any exception to the following will prevent your bridge from being graded and a loss of fifty (50) points from your team's total points being awarded.

The bridge must be free standing, and **only** made out of Balsa wood and any type of glue. The maximum height, or the highest point of the bridge above its free standing level surface cannot exceed 20 cm, and cannot be less than 10 cm. The bridge must provide an approximately level surface, which is called a roadway for a small metal (Matchbox) car. The car must be able to roll with only a slight push, across the roadway. The roadway must be between 4.3 cm and 5.2 cm in width and have a minimum length of 30 cm. The maximum length of the roadway is 50 cm. The total width of the bridge shall not exceed 10 cm in width. The roadway shall be a minimum of 10 cm **above** the points of support for the bridge. A slight arc in the roadway will be permitted provided the center of the arc is no **higher than 2.54 centimeters** above the beginning or ending point of the arc. **Basswood may not be used.** Teams are expected to follow the rules outlined in the district competition guidelines. Please note in the Survival guide.

The bridge should be constructed to allow a 40 cm long by 2 cm barge like object pass underneath it without any portion of the barge hitting or making contact with the bridge. The total mass of the bridge must not exceed **110 grams**. The bridge must also contain no element or pieces greater than 1/4 inch (0.635cm) wide by 1/4 inch (0.635 cm) high. The bridge will be tested by using weights in pounds or metric to test the strength and integrity of the bridge in district competition. The strength-testing device will be used at the Blanche Ely Olympiad.

To obtain a grade of "C" or 35 points the bridge will be able to support **150** pounds or its metric equivalent. To obtain a "B" or 40 points the bridge will be able to support **200** pounds or its metric equivalent. To obtain a grade of "A" or 50 points the bridge must be able to support **250** pounds or its metric equivalent. A team can receive 60 points if it can support **300** pounds or more or its metric equivalent. The representative of the B.E.H.S. Olympiad will be the bridge that best represents the efficiency between weight carried and the weight of the bridge.

To enter your bridge in the BEHS SECME Olympiad, you must also have a **Technical Drawing**, and a **Technical Report**. Each is worth fifty (50) points. The bridge drawing will be graded upon the following; Paper Size, a Resemblance to the actual bridge and the drawing, Scale, Name/ Labeling of all parts used, Appearance/ Neatness and Title Block information. **Photographs or computer-generated drawings are not permitted.** The drawing should be on 18 X 24 architectural paper. No margin. Is required to allow for the bridge to be drawn to full scale. The drawing units will be in centimeters and the preferred scale will be 1:1. Half scale .5:1 will also be accepted. The drawing is required to show three (3) views as indicated on the bridge illustration drawing. These three views are side, end and top views. All parts of the bridge are required to be labeled. Roadway and supports may use as many descriptions as needed to clearly explain the bridge design. Ink pens, pencils or markers may be used. The bottom right corner of the drawing will have a title block, 1.5 x 6 in size containing the school name, School's coordinators name, team name, team members Names and grades, date of competition and the scale. See bridge technical drawing in the survival guide for illustration.

| | | |
|--|-------------|-------|
| Resemblance between the actual balsa wood bridges and the drawing | (10 points) | _____ |
| 10 – 0 points | | |
| Scale (a correct and accurate scale) | (10 points) | _____ |
| 10 – 0 points | | |
| Name/ labeling of all parts | 10 points) | _____ |
| 10 – 0 points | | |
| Appearance/Neatness | (10 points) | _____ |
| 10– 0 points | | |
| Correct paper size/ information | (10 points) | _____ |
| 10– 0 points | | |

The technical report is to be typed with one-inch borders at the top, bottom and on each side. Font size is 12 and type is Times New Roman. It is a maximum of five (5) pages. The report shall include the following; a Cover Page. The cover page will have the title of the Technical Report and is required to contain the Names, Addresses and Grades of Team members, Team’s Name , School’s Name, Schools Coordinator’s Name and the date of the competition.

The report will also have a one page Table of contents, an introduction (history of bridge building), design (philosophy and how research influenced your design, construction procedure, and a description of possible failure areas on the bridge. An appendix (optional) which can contain sketches tables and charts. The appendix is not included in the five-page maximum. The report will be graded upon the following categories; Outline, Organization, Precision, Sentence formation and Mechanics. A rough draft will be due **October**

| | | |
|---|-------------|-------|
| Abstract/ cover page/ table of contents | (10 points) | _____ |
| 10 – 0 points | | |
| Introduction | (10 points) | _____ |
| 10 – 0 points | | |
| Precision/ design philosophy | (10 points) | _____ |
| 10– 0 points | | |
| Sentence formation/ grammar / cite references | (10 points) | _____ |
| 10 – 0 points | | |
| Mechanics/ design failure/ appendix | (10 points) | _____ |
| 10 – 0 points | | |

2004 SECME Mousetrap Car Rubric

One Hundred and Fifty (150) Points

The following is required for your Mousetrap Car to receive full or partial credit. Any exception to the following will prevent your mousetrap from being graded and a loss of one hundred and fifty (150) points from your team’s total points being awarded. Each team must complete **all** three components to enter a car in the BEHS SECME Olympiad.

Use a standard Victor mousetrap car. The goal is to build the smallest, lightest car that will travel the greatest distance. The mousetrap is the **sole** source of power. The spring on the mousetrap can be bent but **cannot** be altered with heat treatment. The car must have a minimum of three wheels, and can be as long or as short as the team desires. **In design and construction of the car, the original mousetrap spring and wood base must remain intact.** These two components man **not** be cut or altered in any way, physically, chemically or thermally. Only the locking lever and bait holder may be removed from the base, if desired. The bail may be modified but must remain as a component. Cars should be packed in a rigid container to protect them during transport.

The cars will be graded according to how they place against the other teams involved in the Olympiad. The top score using the formula mentioned in the SECME handout will be awarded the fifty (50) points (see the 2004-2005 SECME Survival Guide). Points will be awarded according to where each team places. **Fifty points** will be awarded the winning team, and **46** points and **44** points for second and third respectively. **Forty** points will be awarded to the 4th place team, **38** points to the 5th place team, and so on for each team who is entered and qualifies for the competition. A target zone will be included in the competition. There will be two runs for each car, and the single best performance will be used in the final scoring. The competition portion is worth a total of fifty (50) points. In case of a tie, both teams will receive the appropriate amount of points (example two teams tied for third place both will receive forty four points). The formula for the competition is: $N=(w/W) \times D/L^2$. **The formula used will give the best score for the shortest, lightest and farthest traveling car.**

At the Regional Level Competition, a team interview is conducted, and all team members are required to know and understand all aspects of the team’s mousetrap car.

A **Technical Drawing** is also included as part of the Mousetrap Car grade. This section is also worth fifty (50) points. Points will be awarded based on the following; The size of the engineering paper is 18 x 24 (allowing for a one-inch margin). The drawing is required to show the frontal or rear, side and top view of the mousetrap car. All parts on the mousetrap car drawing must be labeled. The title card is to be on a 4 x 6 index card with the following information; Team Name, School Name and address, Team members name and grades, School Coordinator’s Name

| | | |
|--|-------------|--|
| Resemblance between the actual mousetrap cars and the drawing. | (10 points) | |
| 10 – 0 points | | |
| Scale/ Paper size | (15 points) | |
| 15 – 0 points | | |
| Name/ labeling of all parts | (15 points) | |
| 15 – 0 points | | |
| Appearance/Neatness/ title card | (10 points) | |
| 10 – 0 points | | |

Use the guidelines listed in the District, Regional and National competition for the Mousetrap Car Design Technical Drawing section located in the 2004-2005 SECME survival guide.

The final fifty- (50) points for this project are included in the **Technical Report** for the Mousetrap Car. This is a maximum of five pages long. See the Rules and Regulations portion for your guidelines to this section. Use the District, Regional and National Competition section. The grading will be the following; A rough draft will be due **October**

| | | |
|--|---------------|-------|
| The Cover, Abstract and Table of Contents (10 points) | 10 – 0 points | _____ |
| Introduction (10 points) | 10– 0 points | _____ |
| Design (10 points) | 10 – 0 points | _____ |
| Construction Procedure, Operation of the Mousetrap (10 points) | 10 – 0 points | _____ |
| Conclusion and Recommendations (5 points) | 5 – 0 points | _____ |
| Acknowledgements (necessary but no points are awarded) | | |
| Appendix to include sketches, tables or charts (this is not included in the maximum of five pages). This section is worth five points. | 5 – 0 points | _____ |

2005 Water Rocket Scoring Rubric
200 Points

The following is required for the Water Rocket Project to receive full or partial credit. Any exception to the following will prevent your team from receiving a satisfactory grade for this project and perhaps for the semester. This project is worth a total of two hundred (200) points.

The Water Rocket project is composed of four sub-projects; the Technical Report, the Technical Drawing, the Patch, and the Highest Altitude. Each component has rules and points attached to its successful completion. They are described in the 2004-2005 SECME Survival Guide and in the following rubric. A rough draft will be due **October**

Water Rocket Technical Report

60 Points

Due: November 5, 2004

Please use the 2004-2005 Survival Guide for further explanation of these requirements.

Abstract/ cover page/ table of contents) 10 points

10 – 0 points

Design background/ Introduction (history of rocketry) 10 points

10 – 0 points

Paper structure (format of report) 5 points

5 –0 points

The Calculations 25 points

25 –0 points

Conclusion/ Recommendations/ acknowledgements/ references) 5 pts

5 – 0 points

Grammar 5 points

5 – 0 points

SECME Water Rocket Technical Drawing

60 points

Due: November 5, 2004

Please use the 2004-2005 Survival Guide for further explanation of these requirements.

Paper Size (the actual drawing to cover an exposed area of 16" x 22" of paper) 10 points

10 – 0 points _____

Resemblance (of a real blue print layout) 20 points

20 – 0 points _____

Scale 15 points

15 – 0 points _____

Naming/ labeling (of all the parts used) 10 points

10 – 0 points _____

Appearance/ Neatness 5 points

5 – 0 points _____

SECME Water Rocket Patch Design

30 Points

Please use the 2004-2005 Survival Guide for further explanation of these requirements.

Originality (innovativeness of the design) 10 points

10 - 0 points _____

Creativity (uniqueness of information depicted) 5 points

5 – 0 points _____

Appearance (the attractiveness and neatness of the presentation) 5 points

5 – 0 points _____

Content (representation of the teams name and SECME theme) 10 points.

10 – 0 points _____

**2004 SECME Water Rocket
Highest Altitude / Hang Time
50 points**

The following is the requirements for your team's Water Rocket to be entered in the Highest Altitude competition. To compete in the Water Rocket Competition, a team must enter all four (4) parts of the competition: the Technical Report, the Technical Drawing, the Patch Design and the Construction and Operation (the rocket launch). Should a team fail to enter all four parts of the Water Rocket competition, the team may not compete in any area of the Water Rocket Design Competition. Please use the 2004-2005 Survival Guide for further explanation of these requirements.

The Highest Altitude is worth fifty (50) points. The pressure vessel must be one clear 2-liter bottle (no green bottles are allowed for the pressure vessel). Water and air pressures are the sole source for the propellant. The launch angle is to be between **70 to 80 degrees**, and will be kept the same for all rockets launched during the competition. Each rocket will be launched with **250ml** and a pressure not to exceed **70 psi**. The *hang time* will be measured by stopwatch by three competition personnel. **Hang time** is defined as the time from when the rocket leaves the launch pad until the time it hits or reaches the ground. The average of the three times will be used as the final *hang time* score. Do not use metal, glass or spikes to construct the rocket (disqualified). The bottom of the rocket will have 7.5 cm clear of any paint or design from the throat of the exit plane. The maximum total height is to be 76.0 cm, and the nose cone tip must have minimum radius of 1.5 cm. **Fins may start at the throat exit plane** (no forward swept type fins are allowed. The maximum fin width distance from the bottle is 10.0 cm or 16.5 cm from the center of bottle axis. **The uses of parachutes are permitted.**

Fifty points will be awarded the winning team, and **46** points and **44** points for second and third respectively. **Forty** points will be awarded to the 4th place team, **38** points to the 5th place team, and so on for each team who is entered and qualifies for the competition. The overall winner will be the team that has the most points or grade for the entire four (4)-part competition. The winner is determined by the following formula: $\text{hang time} / \text{max. hang time} \times 100$.

PALM BEACH COUNTY SECME

Suggestions and Additional Activities 2007-2008

Make learning interesting and engaging for students of varied skills and development levels by engaging in some of the following activities/practices.

1. Invite students to visit classroom and experience first-hand how they might best prepare (and be prepared) for various careers.
2. Implement inquiry-based teaching strategies and “hands-on” problem solving.
3. Generate ideas and implementation strategies for interdisciplinary units and innovative instructional approaches.
4. Advocate and model authentic assessment
5. Encourage students to test their ideas through independent research and to share results with peers and communicate new understandings.
6. Connect the “world of work” to the school curriculum via internet research, field trips, internships, work experience, and visiting scientists/engineers in the classroom.
7. Involve parents and community curricular/extracurricular learning and instruction.

Additional Activities (feel free to expand/modify any activity to meet the needs of your students):

1. Make a paper helicopter for a strand (stick) of spaghetti that will fall more slowly than a paper clip if both are dropped from the same height
2. Design and construct a paper parachute. It carries a payload of a plastic film container that has 20ml of water.
3. Build a paper glider that will fly carrying five paper clips.
4. Design and construct a kite that will fly at least a 45-degree angle to the ground
5. Construct a hot air balloon made of tissue paper that will fly.
6. Design, construct and learn to fly a cylinder aircraft well enough to hit a ditto paper target at a distance of 2m.
7. Build a rubber band-powered Popsicle sack and soda straw speedboat that can go at least 1m and hit a 20cm target.
8. Who can build the sailboat that goes the fastest?
9. Make a clay boat capable of floating 20 paper clips.
10. Design and construct a cantilever that can reach a distance of 35cm from its base. A cantilever is a beam supported at only one end. One example is a diving board. The arm of the cantilever may not touch the table that the base rests on.

11. Build a paper column at least 8 centimeters (cm) tall that will support a coffee can full of water.
12. Build a ½-meter high paper tower that will support a plastic film container that is full of water.
13. Design and construct a landing pad from ditto paper and masking tape. The landing pad must prevent a RAW chicken egg from breaking after it has accelerated under the force of gravity for a distance of one meter (1m) or more.
14. Design and construct "armor" for a boiled egg that will keep it from cracking after a ten-decimeter (10dm) fall.
15. Build a model badge entirely out of toothpicks that can support 500 milliliters (ml) of water in a coffee can.
16. Starting from a germinated seed, grow a healthy sunflower plant.
17. How many different kinds of bread mold can you grow in one week?
18. Design and construct a cage in which to raise a caterpillar to adulthood.
19. Find and collect several different kinds of beetles. Find out which beetle is the fastest.
20. Design and construct a cylinder racer that can travel forward for at least 1 meter. Can you make a cylinder racer that will go up or down a 1-meter hill, or complete a 26-meter marathon?
21. Build an electromagnet that will pick up 15 paper clips.
22. Design and construct an apparatus (something! that will generate (make) and collect ½ liter (L) of a gas under water.
23. Design and construct a five-link paper chain that is capable of lifting a coffee can half-full of water.
24. Design and construct a solar energy collector out of empty coffee cans that will keep an internal temperature at least 20 degrees greater than the ambient (outside) temperature.
25. Find a solid fuel that will raise the temperature of 50 milliliters (ml) of water 10 degrees Celsius when a 2-gram (gm) sample is burned. The fuel must be a natural substance.
26. Design and construct a wind turbine powering a drive shaft that will wind up 1 meter of thread.

SECME

& the Sunshine State Standards (Literacy, Math and Science)

ELEMENTARY STANDARDS

(includes new Literacy and Math SSS)

| Project | Benchmarks | | |
|------------------------------------|--|-------------|-----------|
| | Literacy | Mathematics | Science |
| Water Bottle Rocket | | MA.5.1.1.1 | SCA.1.2.1 |
| | | MA.5.1.1.2 | SCA.1.2.3 |
| | | MA.5.1.1.3 | SCA.1.2.4 |
| | | MA.5.1.1.4 | |
| | | MA.5.1.2.1 | SCB.1.2.4 |
| | | MA.5.1.2.2 | SCB.2.2.2 |
| | | MA.5.1.2.3 | SCB.2.2.3 |
| | | MA.5.5.3.1 | |
| | | MA.5.5.3.2 | SCC.1.2.1 |
| | | MA.5.5.3.3 | SCC.1.2.2 |
| | | MA.5.5.5.2 | SCC.2.2.2 |
| | | MA.5.5.5.3 | SCC.2.2.3 |
| | | MA.5.7.7.1 | SCC.2.2.4 |
| | | MA.5.7.7.2 | |
| | | | SCD.1.2.4 |
| | | | SCD.2.2.4 |
| | | | SCH.1.2.1 |
| | | | SCH.1.2.2 |
| | | | SCH.1.2.3 |
| | | | SCH.1.2.4 |
| | | SCH.1.2.5 | |
| | | SCH.2.2.1 | |
| | | SCH.3.2.1 | |
| | | SCH.3.2.2 | |
| | | SCH.3.2.4 | |
| Reports, Essay and Poem | LA.4.1.4.1 | | |
| | LA.4.1.4.2 | | |
| | LA.4.1.4.3 | | |
| | LA.4.1.6... | | |
| | LA.4.1.7... | | |
| | LA.4.2.1.7 | | |
| | LA.4.2.2... | | |
| | LA.4.3.1... | | |
| | LA.4.3.2... | | |
| | LA.4.3.3... | | |
| | LA.4.3.4.. | | |
| | All LA.4.4... | | |
| | Information & Media Literacy benchmarks | | |

| | | | |
|----------------------------|--|-------------|-----------|
| BRIDGE BUILDING | | | |
| | | MA.5.1.1.1 | SCA.1.2.1 |
| | | MA.5.1.1.2 | SCA.1.2.3 |
| | | MA.5.1.1.3 | SCA.1.2.4 |
| | | MA.5.1.1.4 | SCB.1.2.5 |
| | | MA.5.1.2.1 | SCC.2.2.1 |
| | | MA.5.1.2.2 | SCD.2.2.1 |
| | | MA.5.1.2.3 | SCD.1.2.4 |
| | | MA.5.5.3.1 | SCH.1.2.1 |
| | | MA.5.5.3.3. | SCH.1.2.2 |
| | | MA.5.5.4.1 | SCH.1.2.3 |
| | | MA.5.5.5.2 | SCH.1.2.4 |
| | | MA.5.5.5.3 | SCH.1.2.5 |
| | | MA.5.1.6.5 | SCH.2.2.1 |
| | | | SCH.3.2.1 |
| | | SCH.3.2.2 | |
| | | SCH.3.2.3 | |
| | | SCH.3.2.4 | |
| Mousetrap Car | | | |
| | | MA.5.1.1.1 | SCA.1.2.1 |
| | | MA.5.1.1.2 | SCA.1.2.4 |
| | | MA.5.1.1.3 | SCB.1.2.4 |
| | | MA.5.1.2.1 | SCB.1.2.5 |
| | | MA.5.1.2.2 | SCB.2.2.2 |
| | | MA.5.5.3.1 | SCB.2.2.3 |
| | | MA.5.1.4.1 | SCC.1.2.1 |
| | | MA.5.5.5.2 | SCC.2.2.1 |
| | | MA.5.5.5.3 | SCC.2.2.2 |
| | | MA.5.1.6.5 | SCD.2.2.1 |
| | | | SCH.1.2.1 |
| | | | SCH.1.2.2 |
| | | | SCH.1.2.3 |
| | | | SCH.1.2.4 |
| | | SCH.1.2.5 | |
| | | SCH.3.2.1 | |
| | | SCH.3.2.2 | |
| | | SCH.3.2.3 | |
| | | SCH.3.2.4 | |

SECME

& the Sunshine State Standards (Literacy, Math and Science)

MIDDLE GRADE STANDARDS (6-8)

(includes new Literacy and Math SSS)

| Project | Benchmarks | | |
|----------------------------|----------------------------------|-------------|-----------|
| | Literacy | Mathematics | Science |
| Water Bottle Rocket | | MA.6.1.1.1 | SCA.1.3.1 |
| | | MA.6.1.1.2 | SCA.1.3.2 |
| | | MA.6.1.3.1 | SCA.1.3.3 |
| | | MA.6.1.3.2 | SCA.1.3.4 |
| | | MA.6.1.3.4 | SCA.1.3.5 |
| | | MA.6.5.5.1 | SCA.1.3.6 |
| | | MA.6.5.5.2 | SCA.2.3.1 |
| | | MA.6.1.6.3 | SCB.1.3.6 |
| | | MA.6.7.7.2 | SCB.2.3.2 |
| | | | SCC.1.3.1 |
| | | MA.7.1.1.3 | SCC.1.3.2 |
| | | MA.7.1.1.4 | SCC.2.3.1 |
| | | MA.7.1.1.5 | SCC.2.3.2 |
| | | MA.7.1.1.6 | SCC.2.3.3 |
| | | MA.7.5.2.1 | SCC.2.3.4 |
| | | MA.7.5.2.2 | SCC.2.3.5 |
| | | MA.7.1.3.2 | SCC.2.3.6 |
| | | MA.7.1.3.3 | SCC.2.3.7 |
| | | MA.7.5.5.1 | |
| | | MA.7.5.5.4 | SCG.2.3.1 |
| | | MA.7.7.7.1 | SCH.1.3.1 |
| | | MA.7.6.8.1 | SCH.1.3.2 |
| | | MA.7.6.8.2 | SCH.1.3.3 |
| | | | SCH.1.3.4 |
| | | MA.8.1.6.4 | SCH.1.3.5 |
| | | MA.8.1.1.6 | SCH.1.3.6 |
| | | MA.8.5.5.1 | SCH.1.3.7 |
| | | MA.8.7.3.1 | SCH.2.3.1 |
| | | MA.8.7.3.2 | SCH.3.3.1 |
| | Reports and Essay | LA.8.1.6.1 | |
| LA.8.1.7.1 | | | |
| LA.8.2.1.1 | | | |
| LA.8.3.1.1 | | | |
| LA.8.4.1.1 | | | |
| LA.8.5.2.1 | | | |
| LA.8.6.1.1 | | | |
| LA.8.1.6.8 | | | |

| | | | |
|------------------------|---|------------|-----------|
| | | | |
| | All LA.8... Information & Media Literacy benchmarks | | |
| | | | |
| BRIDGE BUILDING | | MA.6.1.1.3 | SCA.1.3.1 |
| | | MA.6.1.6.1 | SCA.1.3.2 |
| | | MA.6.1.6.3 | SCA.1.3.3 |
| | | MA.6.5.5.2 | SCA.1.3.4 |
| | | MA.6.7.7.2 | SCA.1.3.5 |
| | | MA.7.1.1.4 | SCA.1.3.6 |
| | | MA.7.1.1.6 | SCB.1.3.2 |
| | | MA.7.1.1.5 | SCC.2.3.2 |
| | | MA.7.1.3.2 | SCC.2.3.3 |
| | | MA.7.5.5.2 | SCC.2.3.4 |
| | | MA.7.5.5.4 | SCC.2.3.7 |
| | | MA.7.7.7.1 | SCG.2.3.1 |
| | | MA.8.1.1.1 | SCH.1.3.1 |
| | | MA.8.1.1.6 | SCH.1.3.2 |
| | | MA.8.5.2.1 | SCH.2.3.1 |
| | | MA.8.5.5.2 | SCH.3.3.1 |
| | | MA.8.5.2.3 | SCH.1.3.3 |
| | | MA.8.7.3.1 | SCH.1.3.4 |
| | | MA.8.7.3.2 | SCH.1.3.5 |
| | | MA.8.1.6.4 | SCH.1.3.6 |
| Mousetrap Car | | | |
| | | MA.6.1.1.2 | SCA.1.3.1 |
| | | MA.6.1.1.3 | SCA.1.3.2 |
| | | MA.6.1.3.1 | SCA.1.3.3 |
| | | MA.6.5.5.1 | SCA.1.3.5 |
| | | MA.6.1.3.4 | SCB.1.3.1 |
| | | MA.6.5.5.2 | SCB.1.3.2 |
| | | MA.6.7.7.2 | SCB.1.3.4 |
| | | MA.7.1.1.3 | SCB.2.3.1 |
| | | MA.7.1.1.4 | SCC.1.3.1 |
| | | MA.7.5.5.4 | SCC.2.3.1 |
| | | MA.7.7.7.1 | SCC.2.3.2 |
| | | MA.7.6.8.1 | SCC.2.3.2 |
| | | MA.7.6.8.2 | SCC.2.3.4 |
| | | MA.8.1.1.1 | SCC.2.3.7 |
| | | MA.8.1.1.3 | SCG.2.3.1 |
| | | MA.8.1.1.5 | SCH.1.3.1 |
| | | MA.8.5.2.2 | SCH.1.3.2 |
| | | MA.8.5.2.3 | SCH.1.3.4 |
| | | MA.8.7.3.1 | SCH.1.3.5 |
| | MA.8.7.3.2 | SCH.2.3.1 | |
| | MA.8.5.5.1 | SCH.3.3.3 | |

SECME

& the Sunshine State Standards (Literacy, Math and Science)

HIGH SCHOOL STANDARDS

| Project | Benchmarks | | |
|----------------------------|-------------|-------------------|-----------|
| | Literacy | Mathematics | Science |
| Water Bottle Rocket | | Under development | SCA.1.4.3 |
| | | | SCA.1.4.4 |
| | | | SCA.2.4.6 |
| | | | SCB.1.4.1 |
| | | | SCB.1.4.3 |
| | | | SCB.1.4.4 |
| | | | SCB.1.4.5 |
| | | | SCB.2.4.1 |
| | | | SCC.1.4.1 |
| | | | SCC.1.4.2 |
| | | | SCC.2.4.1 |
| | | | SCC.2.4.2 |
| | | | SCC.2.4.5 |
| | | | SCC.2.4.6 |
| | | | SCE.2.4.3 |
| | | | SCH.1.4.1 |
| | | | SCH.1.4.3 |
| | | | SCH.1.4.5 |
| | | | SCH.1.4.6 |
| | | | SCH.2.4.1 |
| | | | SCH.2.4.2 |
| | | | SCH.3.4.1 |
| | | | SCH.3.4.2 |
| | | | SCH.3.4.3 |
| | | | SCH.3.4.4 |
| | | | SCH.3.4.5 |
| | | | SCH.3.4.6 |
| | | | |
| | | | |
| Reports and Essay | LA.910.1.6 | | |
| | LA.910.2.1 | | |
| | LA.910.3.1 | | |
| | LA.910.4.1 | | |
| | LA.910.5.1 | | |
| | LA.1112.1.6 | | |
| | LA.1112.2.2 | | |
| | LA.1112.3.3 | | |
| | LA.1112.4.1 | | |
| | LA1112.5.1 | | |

| | | | |
|------------------------|--|-------------------|-----------|
| | All LA.910/LA.1112 Information & Media Literacy benchmarks | | |
| BRIDGE BUILDING | | Under development | SCA.1.4.1 |
| | | | SCA.1.4.2 |
| | | | SCA.1.4.3 |
| | | | SCA.1.4.4 |
| | | | SCA.1.4.5 |
| | | | SCA.2.4.6 |
| | | | SCB.1.4.1 |
| | | | SCB.1.4.3 |
| | | | SCB.1.4.6 |
| | | | SCB.1.4.7 |
| | | | SCD.1.4.2 |
| | | | SCB.1.4.5 |
| | | | SCH.1.4.1 |
| | | | SCH.1.4.3 |
| | | | SCH.1.4.4 |
| | | | SCH.3.4.1 |
| | | | SCH.2.4.1 |
| | | | SCH.3.4.2 |
| | | | SCH.3.4.4 |
| | | | SCH.3.4.6 |
| Mousetrap Car | | Under development | |
| | | | SCA.1.4.1 |
| | | | SCA.1.4.2 |
| | | | SCA.1.4.3 |
| | | | SCA.1.4.5 |
| | | | SCA.2.4.6 |
| | | | SCB.1.4.1 |
| | | | SCB.1.4.2 |
| | | | SCB.2.4.1 |
| | | | SCC.1.4.1 |
| | | | SCC.2.4.1 |
| | | | SCC.2.4.2 |
| | | | SCC.2.4.2 |
| | | | SCC.2.4.4 |
| | | | SCC.2.4.5 |
| | | | SCH.1.4.1 |
| | | | SCH.1.4.3 |
| | | | SCH.1.4.6 |
| | | | SCH.2.4.1 |
| | | | SCH.3.4.1 |
| | SCH.3.4.5 | | |
| | SCH.3.4.6 | | |