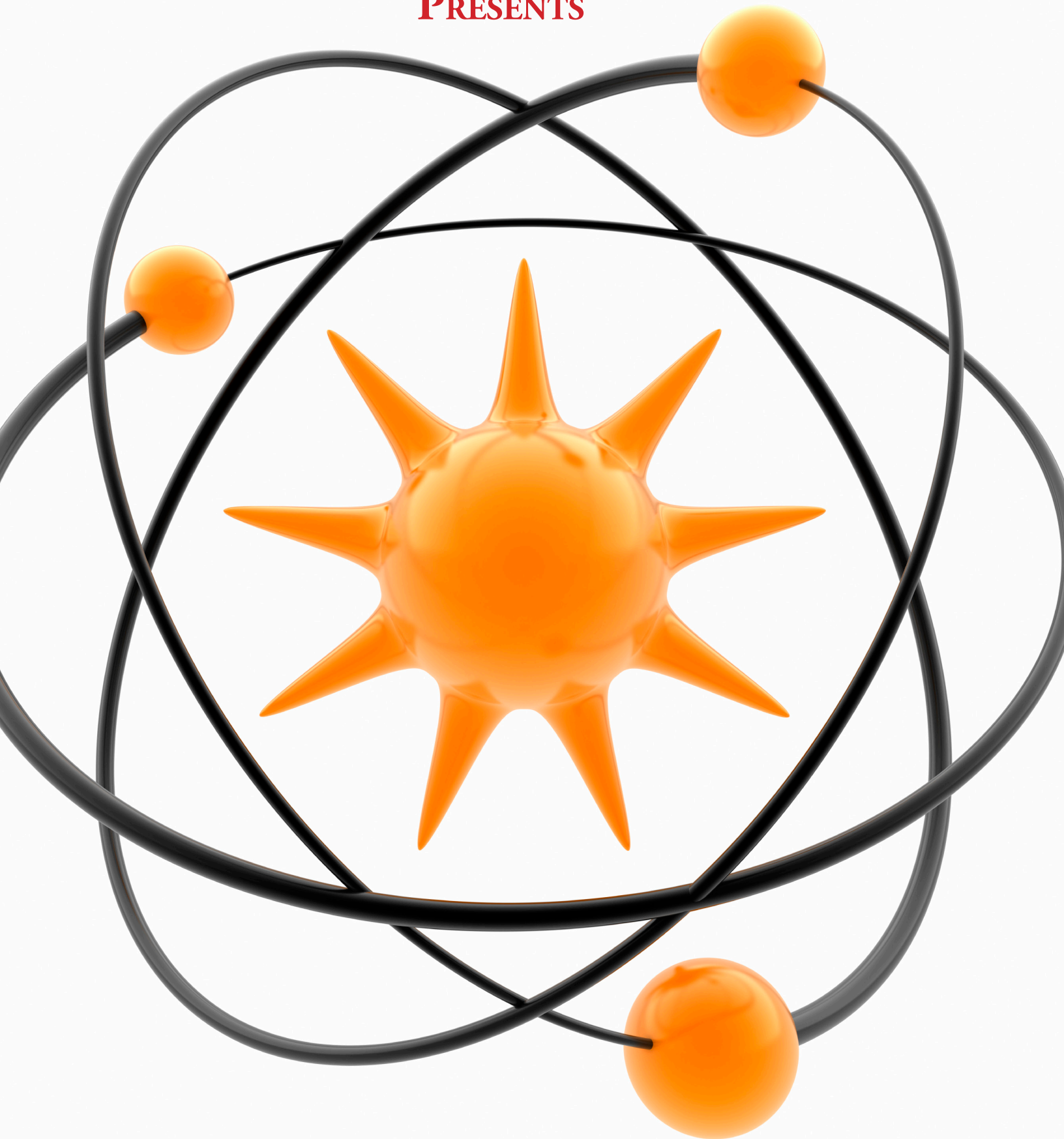


# THE WINSTON SCHOOL

## PRESENTS



# 2012 Winston Science

# WINSTON SCIENCE

## SPECIAL?

Winston Science combines the very best  
motivation factors, including challenging competitions  
which focus on creativity and team problem solving.

## THE WINSTON SCIENCE PHILOSOPHY

Our goal is to reach out to students throughout Texas and motivate them  
to create science projects. We want to encourage creative minds to think  
critically and choose competitions that excite them to learn.

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# THE WINSTON SCHOOL

PRESENTS

# 2012 WINSTON SCIENCE



For additional information contact: [winstonscience@winston-school.org](mailto:winstonscience@winston-school.org)  
The Winston School \* 5707 Royal Lane \* Dallas, Texas 75229 \* 214-691-6950  
Website: <http://www.winston-school.org>



**THE WINSTON SCHOOL**  
*bright students who learn differently®*

**WINSTON SCIENCE 2012****ALL EVENTS WILL BE HELD AT THE WINSTON SCHOOL****Registration Deadline is Friday, October 19 at 6pm for ALL the competitions****FRIDAY, OCTOBER 26****Photography Competition - Submission deadline, Friday, October 26, (Grades 1-12) - 6pm.** Photographs mailed or delivered to The Winston School – Individual

Award Ceremony on Thursday, November 8 at 7pm, Winston Trim Hall/Cafeteria

**Make a Video Game – Submission deadline, Friday, October 26, (Grades 6-12) - 6pm.** Video mailed or delivered to The Winston School – Team up to 4 students or Individual

Award Ceremony on Thursday, November 8 at 7pm, Winston Trim Hall/Cafeteria

**COMPETITIONS****SATURDAY, OCTOBER 27****ALL TEAM MEMBERS MUST BE PRESENT TO BE ADMITTED  
TO THE GYM TO COMPETE FOR THE DUCT TAPE COMPETITION**

|                        |                                                                                             |
|------------------------|---------------------------------------------------------------------------------------------|
| <b>9am – Noon</b>      | Adventures in Duct Tape Competition (Grades 1-12)<br>The Winston School Gymnasium           |
| <b>9:00am</b>          | Magic Marble Machine Competition (Grades 1-5)                                               |
| <b>10:00am</b>         | Magic Marble Machine Competition (Grades 6-8)                                               |
| <b>11:30am</b>         | Magic Marble Machine Competition (Grades 9-12)<br>Winston Trim Hall/Cafeteria               |
| <b>1:00pm – 3:00pm</b> | Angela Jamison Designer Duct Tape Competition (Grades 1-12)<br>The Winston School Gymnasium |
| <b>1:00pm – 3:00pm</b> | Elementary Catapult Competition (Grades 1-5)<br>Winston Trim Hall/Cafeteria                 |

**REGISTRATION DEADLINE IS FRIDAY, OCTOBER 19TH, 2012**

**MONDAY, OCTOBER 29**

- 6:15pm** Spaghetti Bridge Set up (Grades 1-12)
- 7:00pm** Spaghetti Bridge Competition  
The Winston School Gymnasium
- 7:00pm** Pan Style Flute Competition (Grades 1-6)  
Winston Trim Hall/Cafeteria
- 7:30pm** PVC Pipe Flute Competition (Grades 7-12)  
Winston Trim Hall/Cafeteria

**TUESDAY, OCTOBER 30**

- 6:00pm** Catapult Competition Set up (Grades 6-8)
- 6:30pm** Catapult Competition  
The Winston School Gymnasium
- 7:00pm** Catapult Competition Set up (Grades 9-12)
- 7:30pm** Catapult Competition  
The Winston School Gymnasium
- 6:00pm** Build a Dinosaur Set up (Grades 6-12)
- 6:30pm** Build a Dinosaur Competition  
Winston Trim Hall/Cafeteria

**WEDNESDAY, OCTOBER 31 HAPPY HALLOWEEN – NO COMPETITIONS****THURSDAY, NOVEMBER 1**

- 6:00pm** How in the World Does it Work Competition (Grades 1-12)  
The Winston School Seminar Room
- 6:00pm** Rube Goldberg Competition Set up (Grades 1-12)
- 6:30pm** Rube Goldberg Competition  
The Winston School Gymnasium



**FRIDAY, NOVEMBER 2**

- 6:15pm** Popsicle Stick Suspension Bridge Competition Set up (Grades 1-12)
- 7:00pm** Popsicle Stick Suspension Bridge Competition  
The Winston School Gymnasium
- 7:00pm** Paper Cut Out Competition (Grades 6-12)  
Winston Trim Hall/Cafeteria

**SATURDAY, NOVEMBER 3**

- 10:00am** Root Beer Brewing Competition (Grades 1-5)
- 11:00am** Root Beer Brewing Competition (Grades 6-8)
- 12:30pm** Root Beer Brewing Competition (Grades 9-12)  
Levy Learning Center, The Winston School
- 10:00am – 1:00pm** Egg Drop Competition Drop off (Grades 1-12)  
The Winston School Gymnasium

**MONDAY, NOVEMBER 5**

- 6:00pm** Insect Project Competition (Grades 1-8)  
Winston Trim Hall/Cafeteria
- 6:30pm** Make A New Product Competition Set Up (Grades 1-12)
- 7:00pm** Make A New Product Competition  
The Winston School Gymnasium

**TUESDAY, NOVEMBER 6**

- 6:15pm** Eiffel Tower Competition Set Up (Grades 1-12)
- 7:00pm** Eiffel Tower Competition  
The Winston School Gymnasium
- 7:00pm** Rock Competition (Grades 1-12)  
Winston Trim Hall/Cafeteria

**WEDNESDAY, NOVEMBER 7**

- 6:00pm** Cardboard Armor Competition (Grades 1-5)
- 6:30pm** Cardboard Armor Competition (Grades 6-8)
- 7:00pm** Cardboard Armor Competition (Grades 9-12)  
The Winston School Gymnasium
- 6:30pm** Science Food Art and Art Object Competition Set Up (Grades 1-12)
- 7:15pm** Science Food Art and Art Object Competition  
Winston Trim Hall and Levy Learning Center

**THURSDAY, NOVEMBER 8**

- 6:00pm** Helium Balloon Competition (Grades 1-12)  
The Winston School Gymnasium
- 7:00pm** Awards for Photography Competition
- 7:00pm** Awards for Egg Drop Competition
- 7:00pm** Awards for Make A Video Game Competition
- 7:00pm** Awards for Rock Competition
- 7:00pm** Awards for Adventures in Duct Tape Competition  
Winston Trim Hall/Cafeteria

**FRIDAY, NOVEMBER 9**

- 6:00pm** Power Car Competition Registration (Grades 6-12)
- 6:30pm** Power Car Competition  
The Winston School Gymnasium
- 7:00pm** Car Jousting Competition (Grades 6-12)  
The Winston School Gymnasium

## CONTESTANT DEFINED

A contestant is defined as a person or team not to exceed four persons, except where specifically provided in certain competitions.

**GRADE GROUPS:** Elementary – Grades 1-5   Middle – Grades 6-8   High School – Grades 9-12

## REGISTRATION

1. All contestants must complete a registration form accompanied by \$5 for each student taking part in a contest. Contestants must file a separate form for each event entered and the fee of \$5 must be paid for each event entered.
2. If more than one student makes up a team, one student must be designated Captain. Only the Captain must file a registration, but the names of the other students must be listed on this single registration form. Each member of the team must pay the registration fee of \$5.
3. October 19th is the deadline for all events. The registration form, along with the proper registration fee, must accompany the entry and must be received at The Winston School, 5707 Royal Lane, Dallas, TX 75229 no later than 6:00 pm on Friday, October 19. Only registrations postmarked on or before October 19 will be accepted. No faxes will be accepted.

## AWARDS

1. Awards will be given at the end of each competition, except as noted below.
2. Awards for the Adventures in Duct Tape, Egg Drop, Make a Video Game, Photography and Rock Competitions will be held on Thursday, November 8 at 7:00 pm.
3. The winners of the above categories will be posted on the website prior to November 8th.

## GENERAL COMMENTS

1. Winston Science is founded on the principle that science should be fun, and that all students should have the opportunity for a great learning experience.
2. Contestants are generally assigned specific times to compete or to present their entry. A contestant who fails to appear at the proper time will be disqualified. For this reason, contestants are encouraged to arrive early for their events.
3. All entries must comply with good taste and the generally accepted community standards. Any entry that goes beyond this rule will be disqualified.
4. By participating, contestants agree to allow photos of themselves and their events to be used in Winston Science booklets or the website.
5. By participating, teachers and/or parents agree to accept responsibility for their students and to properly supervise them before, during and after the events.



# ADVENTURES IN DUCT TAPE COMPETITION

## COMPETITION:

- Saturday, October 27, 2012
- 9:00 am to 12 noon – all grade levels
- The Winston School Gymnasium
- Grade Groups Do Apply
- “Contestant” is defined as a team of two, three or four students
- No advance preparation is necessary for this competition
- Awards will be presented at the Awards Ceremony on Thursday, November 8, 7:00 pm, in The Winston School Trim Hall/Cafeteria

1. Teams will be provided with one large roll of duct Tape. It will NOT be classified as “heavy duty” such as Gorilla brand tape.
2. Teams will have 90 seconds to tape one of their team members to the wall. Special care must be used to not suspend the member in any way that would be detrimental to the health of the student.
3. Teams will be supplied with a small stool to help support the team member being taped on the wall. Students are prohibited from standing on the backs of other students during the competition.
4. Timing begins when a student pulls the first strip of tape from the duct tape roll.
5. The moment any part of your body touches the ground, the time will stop. If the judge thinks that anyone is in danger then the timing will stop.
6. The team whose team member remains suspended from the wall for the longest period of time will be declared the winner.
7. Interference by observers or anyone else may cause a team to be disqualified.
8. The winners will be announced on Monday, October 30th and will be listed on the Winston website at [www.winston-school.org](http://www.winston-school.org).
9. The awards will be presented on Thursday, November 8th at 7:00 pm.



# ANGELA JAMISON DESIGNER DUCT TAPE COMPETITION

## COMPETITION:

- Saturday, October 27<sup>th</sup>, 2012
- 1-3pm – Grades 1-12
- The Winston School Gymnasium
- Grade Groups Do Apply
- “Contestant” is defined as a single individual or a team of 2 students
- Advance preparation is required for this competition
- Grades 1-5 – Category – Accessories: Hair Bands, Brooches, Necklace, Ties, Belts, Rings
- Grades 6-8 – Category – A functional Back Pack
- Grades 9-12 – Category – Fashion – Hats, Shoes, Dress, Suit

## COMPETITION

1. Contestant will design and create an original product made from only Duct Tape. NO OTHER MATERIALS ALLOWED.
2. Contestant will come to the competition with design completed and ready to set up their display.
3. Contestant must be able to discuss their design and creation with the judges and demonstrate the function of their design and explain their workmanship.

## JUDGING

You will be judged on the following items:

1. Originality
2. Functionality – Does it do what you say
3. Creativity
4. Color
5. Workmanship
6. Student Description/Demonstration



**REGISTRATION DEADLINE IS FRIDAY, OCTOBER 19TH, 2012**



## BUILD A DINOSAUR COMPETITION

### COMPETITION:

- Tuesday, October 30<sup>th</sup>, 2012
- 6:00 pm Setup,
- 6:30pm Judging
- The Winston School Cafeteria/Trim Hall
- Grade Groups Do Apply - Grades 6-12
- “Contestant” is defined as a team of up to four students
- Advance preparation is necessary for this competition

### PURPOSE

The purpose of this competition is to provide the student an opportunity to better understand how paleontologists assemble and mechanically support a large dinosaur. The project focuses on teamwork, problem solving, concepts of scale, mechanical engineering, multiple tasking, commitment and endurance.

**The instructions are drafted in broad terms to facilitate the greatest amount of creativity on the part of each contestant.**

### COMPETITION

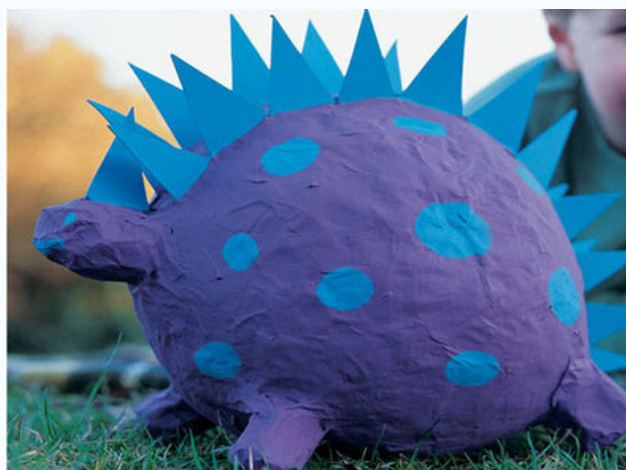
1. Contestant(s) will arrive at The Winston School with the dinosaur completed. (You will have 30 minutes set up time).
2. Contestant(s) will use only chicken wire to build the dinosaur frame.
3. Contestant(s) must cover the chicken wire frame with either paper mache, or cloth and plaster, or duct tape.
4. Contestant(s) must leave an opening so that the judges can see the internal structure of the dinosaur.
5. A ballast can be added in the tail to assist in balancing the dinosaur.
6. Contestant(s) may use props to enhance their display, i.e. nesting material, egg fragments.
7. Dinosaur must stand upright and be able to fit through a standard door of 80cm x 200cm.
8. Contestant(s) will bring a photograph of the dinosaur they are replicating.
9. Contestant(s) will discuss their dinosaur with judges and explain what it is doing.
10. Contestant(s) must have a theme. Students can choose their own theme. This theme must be clearly set out for the judges.
11. Examples of themes
  - a. A Dinosaur Eating
  - b. A Dinosaur Fighting
  - c. A Dinosaur Defending Itself
  - d. A Dinosaur Protecting Its Young

### JUDGING

The judges will use the following criteria to evaluate the project.

- Resemblance/accuracy to photo displayed next to the model?
- Contestants’ explanation of their display.
- Neatness
- Does the individual or team display have a clear, imaginative well prepared THEME?

The awards will be presented at the end of the competition.



# CAR JOUSTING COMPETITION

## COMPETITION:

- Friday, November 9, 2012
- 7:00 pm – Grades 6-12
- The Winston School Gymnasium
- Grade Groups Do Apply – Grades 6-12
- “Contestant” is defined as a single individual
- The car used in jousting must be built in advance of this competition
- The car kit can be purchased at The Winston School
- The car can only have 4 wheels and all wheels must be narrow

## CONSTRUCTION:

1. The contestant must build a joust car using the PITSCO Power Car Dragster Kit available through the Winston School for \$5. (PITSCO helped underwrite the cost of these kits.) The car must roll down a ramp while the opponent comes from the opposite direction on a track on their right side.
  - a. The car must fit onto the track, so due to clearance issues, the wider rear wheels cannot be used without recessing the wheels into the car body and shortening the axle.
  - b. Additional narrow wheels can be obtained at The Winston School.
  - c. No Other additional part may be added to the car, except for the use of small weights such as lead fishing weights. These weights would be for the sole purpose of increasing the weight of the car to the maximum 225 grams.
2. Each car will have affixed to them a “lance” extending forward and over, into their opponent’s lane so that when the two cars pass each other, one car will knock their opponent completely or partially off the track.
  - a. The “lance” will be a wooden skewer stick and will be attached in a manner that makes it easily replaceable (such as sliding the end into a hole drilled into the car’s body or one layer of duct tape).
  - b. It must point forward and to the right of the car into the path of the opponent’s car.
  - c. It cannot stick out more than 6 inches beyond the front of the car.
3. Skewers used will be supplied to contestants by The Winston School at the time of the competition. The wooden skewers are 10” x 11/64” with a pointed tip.
4. The car (with lance attached) cannot weigh more than 225 grams total. The car must fit onto the track.

## PROCEDURE FOR JOUSTING

1. Contestants will check-in with the judges 30 minutes in advance of the competition to have

their joust car weighed and evaluated to insure that it complies with the rules of construction.

2. If the joust car qualifies, the judge will place an identifying number and the weight of the vehicle on the car for reference.
3. The car will be launched by the student.

## JUDGING

1. The joust car that knocks its opponent most completely from the track will be winner of that round. This will be determined by judgment in this order:
  - a. The number of wheels still resting in the car’s original track. (This does not include being upside down.)
  - b. The amount of the car’s body still resting on the original track.
  - c. Once other things are considered, if there is a tie, the lighter car will be declared the winner.
2. Replacement of a broken “lance” between races is allowed, but no other repairs may be done.
3. A car that does not roll to the midpoint (where the cars meet) shall be disqualified.
4. If one car’s lance strikes its opponent, but the other car’s does not, the striker’s car wins. If both cars’ lances do not, the race may be re-run at the discretion of the judging team.
5. Grade Groups will apply in this event.
6. Awards will be presented at the close of the competition.

## JUDGE’S INTERPRETATION

1. The student-builder must launch the joust car. No stand-ins or assistants will be permitted.
2. Students may use one or two hands to launch their joust car, depending on its construction.

## TRACK SCHEMATCS

[http://www.derbymagic.com/files/track\\_dwg\\_3.pdf](http://www.derbymagic.com/files/track_dwg_3.pdf)



# CARDBOARD ARMOR COMPETITION

## COMPETITION:

- Wednesday, November 7<sup>th</sup>, 2012
- The Winston School Gymnasium
- 6pm – Grades 1-5 Competition
- 6:30pm – Grades 6-8 Competition
- 7pm – Grades 9-12 Competition
- Grade Groups Do Apply
- “Contestant” is defined as a team of two students
- The competition requires advance preparation by the contestants

## PURPOSE

The purpose of this competition is to simulate the engineering used by medieval craftsman to build suits of armor.

## CONSTRUCTION

1. Teams will build their suite of armor prior to arriving at the competition.
2. Teams are limited to the use of cardboard, string and duct tape to build their armor. The cardboard may be decorated or painted with designs to enhance the effect.
3. Teams should attempt to craft a full suit of armor that will allow the wearer to move as freely as possible.
4. Teams will not be allowed to make or bring a weapon of any kind.

## THE COMPETITION

1. On arrival at The Winston School, one member of the team will put on the cardboard suit of armor, assisted by the other team member. Both team members must be present.
2. The cardboard knight will be asked to perform certain tasks to test the flexibility and durability of the armor. Tasks will include:
3. Reaching down to the ground to pick up an object, such as a ball, cup or coin.
4. Twisting and turning at the waist to reach an object.
5. Raising arms over the head.
6. Kneeling to be “knighted”.

## EVALUATION

Teams will be evaluated based on the following criteria.

1. Quality of construction
2. Functionality of engineering
3. Freedom of movement
4. Ability to accomplish tasks
5. Creativity

Contestants will be asked to do the following:

- An “X” will be taped on the floor for students to stand on. The “X” will be next to a table. A ball will be placed on a table.
- The contestant, standing on the “X”, will have to twist to pick up the ball first with the right hand and then the left. This must be accomplished without moving the feet. Then the contestant will have to pass the ball over their head and then back again. Then the contestant will have to pick the ball up off the floor and finally kneel to be knighted.

The awards will be presented at the end of the competition.



**REGISTRATION DEADLINE IS FRIDAY, OCTOBER 19TH, 2012**

## CATAPULT COMPETITION

### COMPETITION:

- Tuesday, October 30th, 2012
- 6:00pm Set Up, 6:30pm Judging - Grades 6-8
- 7:00pm Set Up, 7:30pm Judging – Grades 9-12
- The Winston School Gymnasium
- Grade Groups Do Apply
- “Contestant” is defined as a single individual or a team of up to four students
- Advance preparation is required for this competition

### OVERVIEW OF THE COMPETITION

This year’s event will focus on **precision**. Contestants will have two launches. The distance from the bull’s eye from each launch will be added together. This sum will constitute the contestant’s score.

### CONSTRUCTION

1. The contestant must build a catapult that will propel a standard tennis ball 15 meters to a target. You must bring your own tennis ball.
2. The emphasis in this event is placed on the contestant’s construction of a device that can precisely aim and propel a tennis ball exactly 15 meters. Only simple tube sights and pin sights are allowed.
3. The target will be a bull’s eye placed flat on the floor. The center of the target will be exactly 15 meters from the launch line.
4. Contestants will be allowed to place their catapults precisely at the edge of the launch line, but not on top of the launch line.
5. Contestants will be allowed to make two launches. Misfires, as determined by the judges, will not constitute a “launch.”

### CATAPULT CONSTRUCTION REQUIREMENTS

1. The catapult when “cocked” and ready for launch, must fit within a cube one meter on each side.
2. The safety of the contestant and the audience is our primary concern. The judges prior to the competition will disqualify any catapult that appears unsafe or uncontrollable. No launch will be made from an unsafe device. Except for carrying the catapult into The Winston School, no non-competitors (child or adult) may be in the competition area.
3. Sling-shot-type devices are not defined as a “catapult” within the confines of this competition. For the purposes of this competition, a catapult is a device where a main arm throws the payload. Springs, elastic devices, pistons, counter-weights, or motors

can power the catapult arm. No rockets or explosives can be used.

4. The catapult should provide some leeway to accommodate the size of a standard tennis ball.
5. The catapult should be of sufficient mass to ensure that it remains behind the launch line after the projectile has been launched. The catapult will be disqualified if it crosses or moves into or across the launch line.
6. Trebuchets are considered catapults.

### PRACTICE SHOTS

1. Contestants will have a Practice Site that will be separate but relatively identical to the Contest Site. The Practice Site will be used for making adjustments to a contestant’s catapult. The Contest Site will only be used for the competition.
2. Contestants may make a reasonable number of launches at the Practice Site, based on the time available before the competition. Contestants will be supervised by a Winston Science Staff Member.

### JUDGING

1. The judges will measure the distance from the bull’s eye to the tennis ball’s first point of contact with the floor.
2. A contestant will make two launches. The sum of the distances from both launches will constitute the contestant’s score.
3. The winner will be the contestant with the lowest score, assuming that the contestant has met all the other competition requirements.
4. The awards will be presented at the end of the competition.

# EGG DROP COMPETITION

## COMPETITION:

- Saturday, November 3, 2012
- Entries may be submitted from 10:00 am to 1:00 pm
- The Winston School Gymnasium
- Grade Groups Do Apply
- “Contestant” is defined as an individual or a team of up to four students
- Egg packages must be prepared in advance of this competition
- Egg will be provided by Winston Science and given to you after the package is weighed and measured
- Awards will be presented at the Awards Ceremony on Thursday, November 8, 7:00 pm, in The Winston School Trim Hall/Cafeteria

## PURPOSE

Build a container of any design that will protect an uncooked egg from breaking when it is dropped. The egg package must be the sole work of the contestant.

## CONSTRUCTION OF THE PACKAGE

1. The container must be built only of toothpicks and glue. “Glue” means a bonding agent such as Elmer’s white glue, Super Glue, or hot glue. It does not mean tape.
2. All glue must be dry when submitted for qualification.
3. The total egg package can weigh no more than 40 grams, excluding the weight of the egg.
4. The egg package cannot exceed a diameter of 50 cm.
5. The egg must be easily visible to the judges.
6. Eggs cannot be completely encased in glue.

## EGG DROP PROCEDURE

1. Students entering the Egg Drop Competition may submit their egg package to the judges at the Egg Drop site in The Winston School Gymnasium any time between 10:00 am and 1:00 pm on Saturday, November 3<sup>rd</sup>. ***No entries will be accepted after 1:00 pm.***
2. Contestants must submit their own entry. Other students, family, or teachers are not allowed to submit the egg package.
3. Judges will first evaluate the weight of the entry. Any package that weighs more than 40 grams will be disqualified. Students may resubmit their entry if the package is modified to meet the weight requirement.
4. Judges will next evaluate the diameter of the egg package. Any package that exceeds the 50 cm limit will be disqualified. Students may resubmit their entry if the package is modified to meet the diameter requirement.

5. After evaluation, students will be required to place an egg (supplied by Winston Science) in the package and seal it. Students must supply their own sealant.
6. Contestants will then fill out a tag and attach that tag to the egg package. The tag will identify the student, their school, home telephone number, and grade group.
7. Judges will hold the tag when dropping the egg package.
8. Judges, at their discretion, will test each egg package that qualifies.
9. Judging will begin at 10:00 am on Saturday, November 3<sup>rd</sup>, and continue until all the entries are evaluated/dropped.
10. The winner will be the contestant who designs a package that will safely protect the egg during the fall, and arrives on the ground in the shortest period of time.
11. Students and parents may watch the “Drops”, but you will probably not watch your own. Once the package has met all qualifications, it is added to all other entries and then there is no particular order the packages are dropped.
12. Awards will be presented at the Awards Ceremony on Thursday, November 8, at 7:00 pm in the Winston School Trim Hall/Cafeteria.

## DROPPING HEIGHT

- Grades 9-12 8 meters
- Grades 6-8 6 meters
- Grades 1-5 4 meters





# EIFFEL TOWER COMPETITION

## COMPETITION:

- Tuesday, November 6, 2012
- 6:15 pm – setup of Towers
- 7:00 pm – Towers evaluated
- The Winston School Gymnasium
- Grade Groups Do Apply
- “Contestant” is defined as an individual or a team of up to four students
- Advance preparation is required for this competition

## THE COMPETITION

1. Using wooden popsicle sticks and any type of glue, build a model of the Eiffel Tower. Tongue depressors are not popsicle sticks. No other materials can be used.
  - Popsicle stick is defined as a wooden stick no longer than 11.5 cm, no wider than 1.0 cm, no thicker than 0.3 cm.
2. The tower may be painted at the discretion of the contestant.
3. The contestant that builds a tower that is in proportion and most resembles the Eiffel Tower will be declared the winner.

## CONSTRUCTION

1. The tower can be constructed in parts and reassembled inside The Winston School.
2. The tower must be able to stand on its own four legs without the assistance of its builder(s) or other exterior supports.

## EVALUATION

Judges will use the following criteria to evaluate the tower:

- Does the tower resemble the Eiffel Tower?
- Is the tower proportional?
- Beauty
- Use of correct materials
- Neatness





# ELEMENTARY CATAPULT COMPETITION

## COMPETITION:

- Saturday, October 27<sup>th</sup>, 2012
- 1-3pm - Grades 1-5
- The Winston School Trim Hall/Cafeteria
- “Contestant” is defined as a single individual or a team of up to four students
- Advance preparation is required for this competition

## OVERVIEW OF THE COMPETITION

This year's event will focus on **precision**. Contestants will have two launches. The distance from the bull's eye from each launch will be added together. This sum will constitute the contestant's score.

## CATAPULT CONSTRUCTION

1. The contestant must build a catapult that will propel a Hershey's Chocolate Kiss 3 meters to a target. The Hershey's Chocolate Kiss will be supplied by the judges.
2. The emphasis in this event is placed on the contestant's construction of a device that can precisely aim and propel a Hershey's Chocolate Kiss **3 meters** using popsicle sticks, glue and rubber bands.
3. Popsicle stick is defined as a wooden stick (no longer than 11.5cm, no wider than 1.0cm, no thicker than 0.3cm).
4. Any glue will be allowed
5. Any office supply store rubber band can be used
6. The entire catapult, when prepared and cocked for launch, must fit into a cube no larger than one-half meter per side.
7. The target will be a bull's eye placed flat on the floor. The center of the target will be exactly 3 meters from the launch line.
8. Contestants will be allowed to place their catapults precisely at the edge of the launch line but not on top of the launch line.
9. Contestants will be allowed to make two launches. Misfires, as determined by the judges, will not constitute a “launch”.
10. Sling-shot type devices are not defined as a “catapult” within the confines of his competition. For the purposes of this competition, a catapult is a device where a main arm throws the payload. Springs, elastic devices, pistons, counterweights or motors can power the catapult arm. No rockets or explosives can be used.
11. No laser or electronic sighting can be used.

## PRACTICE SHOTS

1. Contestants will have a Practice Site that will be separate but relatively identical to the Contest Site.
2. The Practice Site will be used for making adjustments to a contestant's catapult. The Contest site will only be used for the competition.
3. Contestants may make a reasonable number of launches at the Practice Site, based on the time available before the competition.
4. Contestants must supply their own Hershey's Chocolate Kisses for the practice shots. Contestants will be supervised by a Winston Science Staff Member.

## JUDGING

1. The judges will measure the distance from the bull's eye to the Hershey's Chocolate Kiss's first point of contact with the floor.
2. A contestant will make two launches. The sum of the distance from both launches will constitute the contestant's score.
3. The winner will be the contestant with the lowest score, assuming that the contestant has met all the other competition requirements.

## AWARDS

1. The awards will be presented at the end of the competition.



## HELIUM BALLOON COMPETITION

### COMPETITION:

- Thursday, November 8<sup>th</sup>, 2012
- 6:00pm - Grades 1-12
- The Winston School Gymnasium
- Grade Groups Do Apply
- “Contestant” is defined as a team of three or four students. Teams of less than 3 students will not be allowed to participate
- All members of the team must be present before they start the competition
- Contestants will build their actual entry at the competition from supplies provided by Winston Science

### PURPOSE

Contestants will build a lighter than air vehicle using only the materials supplied by the event organizers. The lighter than air vehicle that travels the length of the course in the shortest amount of time will be declared the winner.

### COMPETITION

1. Contestant teams will be equipped with the following items.
  - 3 Helium Filled Balloons
  - String
  - Scotch Tape
  - Ballast Materials
2. Contestants will have 30 minutes to build and test their lighter than air vehicles.
3. On completion of the vehicle, teams will take their lighter than air vehicles to the race course.
4. The race course is 10 meters (long) x 3 meters (wide) x 4 meters (high).
5. A large electric fan will provide the driving force that pushes the lighter than air vehicle through the course. Teams will have two chances to traverse the course.
6. Team members can follow along the outside of the boundaries as the vehicle progresses through the course, however team members cannot touch the lighter than air vehicle once it starts an official run.
7. The vehicle completing the course in the shortest amount of time without crossing the course boundaries will be declared the winner. Contacting the boundary line will be ruled as “crossing” the boundary line.

8. A team’s “run” will be disqualified if the vehicle crosses any of the boundaries before reaching the end of the course.
9. A team’s vehicle can bounce off the floor, but will be disqualified if their vehicle drags or comes to a rest on the floor during the course of their “run”.
10. Teams losing balloons prior to the event will not be issued new supplies. They will be able to compete, but must make the appropriate adjustments to their ballast materials.
11. Awards will be presented at the end of the competition.



# HOW IN THE WORLD DOES IT WORK COMPETITION

## COMPETITION:

- Thursday, November 1, 2012
- 6:00 pm Grades 1-12
- Seminar Room, The Winston School
- Grade Groups Do Apply
- “Contestant” is defined as a team of three or four students
- No advance preparation is necessary for this competition

## PURPOSE

The purpose of this competition is to test a student’s knowledge of *How Things Work*.

## THE COMPETITION

1. Schools will assemble a team of three or four students to compete. No teams smaller than three or greater than four students will be allowed to compete.
2. Teams will be invited to answer a series of 8 questions involving how “things” in science or modern technology work. For example, how does a battery work, how does a lever work, how does a Xerox machine work, or how does a microchip work?
3. Questions for each grade group will be appropriate to the subject matter covered during those grades.
4. Each team in a grade group will be asked the same series of questions. Teams will be sequestered during the competition.
5. The team will be allowed 30 seconds to discuss the question. During this time period, the team must decide two things:
  - a. How they will answer the question
  - b. Which member of the team will present the answer? The first answer presented will be considered the “team’s answer”.

6. The team’s answer will be evaluated by a panel of judges.
7. Teams will be awarded 10 points for each correct answer and 5 points for each partially correct answer. Teams will lose 2 points for each incorrect answer.
8. Teams are not required to answer all questions. They may “pass” and move on to the next question.
9. The team with the highest points at the end of each grade group competition will be announced the winner.

## PROTESTS

1. It is well understood that any competition based on such a subjective evaluation might produce disputes where reasonable minds might differ. In the event that a team feels that its explanation has been improperly evaluated, it must file a protest immediately following their competition.
2. The panel of judges may disregard frivolous or overly argumentative protests. Teams may be disqualified based on lack of appropriate decorum or poor sportsmanship.

## STUDY RESOURCES

<http://www.howstuffworks.com/>



# INSECT PROJECT COMPETITION

## COMPETITION

- Monday, November 5, 2012
- 6:00 pm
- Trim Hall/Cafeteria, The Winston School
- Grade Groups Do Apply – Grades 1-5 & 6-8
- “Contestant” is defined as an individual student
- Advanced preparation is required for this competition

## PURPOSE

The purpose of this competition is to:

- Encourage students to observe insects that inhabit our parks and gardens
- Learn how to collect, preserve, and identify insects

## THE PROJECT

1. Collect one insect from any Insect Order.
2. Identify the insect showing:
  - a. Common Name
  - b. Insect Order Name
3. Make a detailed drawing of the insect.
  - a. Size: No small than 5” x 8” / No larger than 8” x 10”
  - b. Drawing medium: pencil, pen, colored pencils, or water color
4. Display the insect, the drawing, and the identification in a creative way to focus attention on the insect.
5. Research the insect and find out as much as you can about the insect. Be ready to share your display and your research with the judges.
6. This is an individual project. Students will not be allowed to seek assistance from another student.
7. Please remember that you must collect an insect which can be identified with six legs and three body segments.

## HOW TO COLLECT

1. The quickest, most effortless method of collecting various species is to leave a pan of slightly soapy water very near a light overnight (preferably black light).
2. Of course insect nets are invaluable to collecting, but great things can be caught passively with a coffee can buried up to the rim flush with the ground. Try putting various baits in the can.
3. A third easy way is to investigate a pond. Most bugs are tied to a body of water somehow in their life, and a bucket of pond goo dumped into an examination tray will usually result in a bunch of species.

## EVALUATION

1. Judges will use the following criteria to evaluate the project:
  - a. Was the insect properly identified?
  - b. Did the insect display contain all three parts?
  - c. Insect
  - d. Drawing
  - e. Identification
  - f. Was the insect arranged in a life-like position with legs and/or wings extended?
  - g. Accuracy of drawing as compared to the insect
  - h. Creativity in setting up the overall display
  - i. Knowledge of the insect based on the student’s research
  - j. Quality of oral presentation
2. Examples of questions that might be asked by the judges are:
  - a. Geographically, where would you find this kind of insect?
  - b. Does the insect have a distinctive life cycle?
  - c. How does the insect interact with its environment?
  - d. Give specific information about the insect’s feeding and social habits.



# MAGIC MARBLE MACHINE COMPETITION

## COMPETITION:

- Saturday, October 27, 2012
- 9:00am - Grades 1-5 Competition
- 10:00am - Grades 6-8 Competition
- 11:30am - Grades 9-12 Competition
- Trim Hall/Cafeteria, The Winston School
- Grade Groups Do Apply
- “Contestant” is defined as a team of up to four students
- Advance preparation is required for this competition

## COMPETITION AND RULES

1. Build a machine that will allow a marble to roll freely and continuously for **2 minutes** in translational motion.
2. The entire machine must be attached to a plywood base no larger than 80 cm x 80 cm.
3. The machine and base must fit within the following dimensions:
  - a. Length – 80 cm; Width – 80 cm; Height – 100 cm
  - b. No part of the machine can be larger than the above dimensions
  - c. No part of the machine can extend beyond the boundary of this right angled parallelepiped.
  - d. Contestants must be prepared to transport their marble machine from Winston’s parking lot, into the building for judging. Due to the number of contestants, Winston Science does not have staff to assist you.
4. The Captain’s name and school must be prominently displayed on the plywood base.
5. The marble machine must be powered solely by the force of gravity; however, the builder may incorporate other machines into the overall work product to either speed-up or slow down the motion of the ball.
6. The marble must roll in a prepared track that has a definite beginning and a definite ending point. The end of the track must stop the forward motion of the marble.
7. The marble must be visible to the judges at all times.
8. **Contestants must supply their own marble.**
9. The track may wind freely within the area defined by Rule 3.
10. No machine or device (positioned along or at the end of the track) may be used to re-start the motion of the marble. No device can pick up or reposition the marble once it is in motion.

11. Each contestant will have two chances to demonstrate their machine. The best time will be recorded. The contestant should verify that the recorded time is properly set down on the record sheet.
12. Contestants must be positioned at the marble machine at the time of the judging. The contestant, not the judge, is responsible for starting the marble’s motion. Once the marble is set in motion, the marble machine cannot be touched until the marble stops.
13. No oils, sand, or other viscous solutions may be used in this competition.
14. Contestants are encouraged to develop a theme. In the event of a tie, the contestant with the most creative theme will be declared the winner.

## WINNER OF THE EVENT

1. The winner of the event will be the contestant that builds a machine that will allow a marble to roll freely and continuously for two minutes in a translational motion.
2. Two minutes is interpreted to mean closest to the two minute time frame, either above the two minute mark or below the two minute mark. For example, 2 min and .001 sec is closer to the “2 minute mark” than 1 min and 59 sec.
3. Time will be measured to the hundredths of a second.

# MAKE A NEW PRODUCT COMPETITION

## COMPETITION:

- Monday, November 5, 2012
- 6:30pm Set Up Grades 1-12
- 7:00 pm
- The Winston School Gymnasium
- Grade Groups Do Apply
- “Contestant” is defined as an individual or a team of up to four students
- Advance preparation is required for this competition

## PURPOSE

The purpose of this competition is to encourage young minds to expand their thinking and develop their problem solving skills. Students are asked to develop a new product in one of the following categories:

- New Cosmetic
  - New Food
  - New Household Product
1. Contestants must invent a new product that could be used and marketed in today's economy. This product must also be *environmentally friendly*.
    - a. **Marketable** means that it should be cost-effective and capable of rendering the producer a profit. It also means that you must be able to effectively package your product to enhance its attraction to the public.
    - b. **Environmentally friendly** means that the product developed inflicts little harm on the environment.
    - c. **New cosmetic** contestants need to be able to provide a statement explaining the science and safety behind what they have created. A copy of the pH testing and a Material Safety Data Sheet (MSDS) is mandatory on all items used to create the new product.
    - d. **New Household Product** contestants need to be able to provide a statement explaining the science and safety behind what they have created. A copy of the pH testing and a Material Safety Data Sheet (MSDS) is mandatory on all items used to create the new product.
  2. The cost of your product cannot exceed \$25. This does not include expenditures for display or photographs.
  3. Students are allowed to use free or donated materials within their project. The value of these materials should not be considered within the \$25 cost limit.

4. The following is required to complete your project:
  - a. Set out which category you are planning to enter:
    - New Cosmetic
    - New Food
    - New Household Product
  - b. List the expenditures with final costs.
  - c. Provide a statement explaining the use and function of the new product.
  - d. Include photographs showing development and use of the new product.
  - e. Provide a statement explaining how your product is environmentally friendly.
5. Contestants are required to set up their display prior to the beginning of the competition.
6. Students must be on hand to demonstrate and explain their product to the judges during the competition.
7. Criteria for judging includes all of the following:
  - a. Does the product accomplish the desired function?
  - b. Did the student stay within the budget limitations?
  - c. Did the student have all the required items?
  - d. Marketability
  - e. Neatness and Creativity
  - f. Packaging for the new product
  - g. The student's oral presentation to the judges
  - h. Explanation of safety of the product
8. The winner of the competition will be the contestant that most closely accomplishes the purpose of this competition.
9. The competition judging and awards will be divided into the following categories:
  - New Cosmetic Category
  - New Food Category
  - New Household Product Category
10. The contestant is responsible to see that the judge properly records their score within the accurate category.
11. The “product” submitted at this competition must be original. It cannot have been entered into any other competition prior to Monday, November 5, 2012.

Awards will be presented at the end of the competition.

# MAKE A VIDEO GAME COMPETITION

## SUBMISSION DEADLINE:

- Friday, October 26, 2012, 6:00 pm The Winston School

## AWARDS:

- Thursday, November 8<sup>th</sup>, 7:00 pm
- The Winston School, Trim Hall/Cafeteria
- Grade Groups Do Apply – Grades 6-12
- Contestant is defined as a team of up to 4 students
- Advance preparation is necessary for this competition

## PREDATOR/PREY GAME THEORY

1. Video game script must be original.
2. Must be based upon current predator/prey relationships.
3. Games may be written in the programming language of students' choice, but all games must be cross-platform (Windows or Mac OSX) operating systems.
4. Must have directions that any user can understand and use to play the game.
5. Must mail or hand-deliver game to The Winston School on or before Friday, October 26<sup>th</sup>.
6. Games will be judged by rubric criteria (see judging below).
7. Winners will be announced by their grade level on Thursday, November 8<sup>th</sup> at 7pm.

## JUDGING

The judges will use the following criteria to evaluate the video game.

1. Originality of the game.
2. Following predator/prey theme.
3. Rules of the game are easily understood.
4. Fun Factor!
5. Animation





# PAN STYLE FLUTE COMPETITION

## COMPETITION:

- Monday, October 29<sup>th</sup>, 2012
- 7:00pm - Grades 1-6
- The Winston School Cafeteria/Trim Hall
- Grade Groups Do Apply
- “Contestant” is defined as a single individual
- Advance preparation is necessary for this competition

## CONSTRUCTION:

1. Pan Flute must be constructed from PVC piping or Bamboo.
2. Contestant must include photos and a written explanation of how their flute was constructed.
3. Contestant will be asked to explain their process for making the pan flute.
4. Contestant must play a simple tune or scale for the judges.
5. Contestant must decorate their flute, i.e. stickers, electrical tape, duct tape, markers etc.
6. For detailed instructions how to make a PVC or Bamboo flute please check the following web sites.

[http://www.ehow.com/how\\_5553127\\_make-pan-pipe-out-pvc.html](http://www.ehow.com/how_5553127_make-pan-pipe-out-pvc.html)

[http://www.ehow.com/how\\_5625709\\_make-bamboo-pan-flutes.html?ref=Track2&utm\\_source=ask](http://www.ehow.com/how_5625709_make-bamboo-pan-flutes.html?ref=Track2&utm_source=ask)

<http://www.panflutejedi.com/jean-paul-tutorial.html>



## JUDGING

1. Material used must be PVC piping or Bamboo.
2. Other materials may be used to hold the flute together.
3. Ability to explain the process of making the flute and what tools were used.
4. Must play a short tune or scale.
5. Decoration and design.
6. Awards will be presented at the end of the competition

# PAPER CUTOUTS COMPETITION

## COMPETITION:

- Friday, November 2, 2012
- 7:00 pm, Grades 6-12
- Trim Hall/Cafeteria, The Winston School
- Grade Groups Do Apply
- “Contestant” is defined as a single person
- No advance construction is necessary for this competition, but prior thought and practice is beneficial

## PURPOSE

The purpose of this competition is to bring art to science.

Students will have the opportunity to create a three-dimensional object from a single piece of paper using only a pair of scissors.

The judges may request that you flatten your cutout back into the original one sheet of 8 ½ x 11 paper to show that there are no missing pieces of paper.

## CONSTRUCTION

1. Students must arrive at the competition already possessing a knowledge of how to make a three-dimensional object from a single piece of paper.
2. Students arriving for the competition will receive a single piece of white copy paper and a pair of scissors.
3. Students will have 30 minutes to cut the paper in such a way to create a three-dimensional object.
4. Your cutout must be able to flatten back out to one complete sheet of paper measuring 8 ½ x 11.
5. Judges will evaluate each student and ask them to explain their work.



## JUDGING

1. Contestants must be present with their three-dimensional paper object to explain their work.
2. The students will be evaluated based on:
  - a. The quality of their cutout
  - b. The completeness of their explanation
  - c. Originality
3. Prizes will be awarded at the end of the competition.

# PHOTOGRAPHY COMPETITION

## SUBMISSION DEADLINE:

- Friday, October 26, 2012 by 6:00pm at The Winston School

## AWARDS:

- Thursday, November 8th, 7:00pm
- The Winston School, Trim Hall/Cafeteria
- Grades 1-12, Grade Groups Do Apply
- Advance Preparation is required for this competition

## GENERAL REQUIREMENTS (FOR EACH ENTRY):

1. Categories for judging:
  - **ROCKS**
  - **FLOWER**
  - **LIFE CYCLE**
2. Submittal requirements:
  - 8 x 10 photograph, mounted on matte board for display
3. The back **MUST HAVE** (clearly printed!):
  - Name of contestant
  - Home phone number of contestant
  - Full Name of School contestant attends
  - Category of entry (*MUST be one listed in Rule 1, above*)
  - Identify subject/object photographed
  - Indicate when and where photograph was taken.
  - Signed declaration (see #4 below)
4. Each photo must have the following declaration written on the back:
  - *I have taken this picture between January 2012 and October 2012.*
  - *Student Signature*
5. Photographs submitted without all of the "Submittal requirements", or improperly mounted, *will be disqualified before the judging begins.*
6. Each photograph requires a \$5.00 entry fee AND registration form.
7. Photographs must be received at The Winston School no later than 6:00pm, Friday, October 26, 2012.
8. After the photographs are judged, the finalists will be posted on The Winston School web



site and the awards will be given on Thursday, November 8<sup>th</sup>, 2012.

9. Contestants may reclaim their photos no later than December 3, 2012. Photos not reclaimed will be donated to schools or hospitals.
10. Note: Entries will be disqualified if any of the above General Requirements (1-8) are not met.

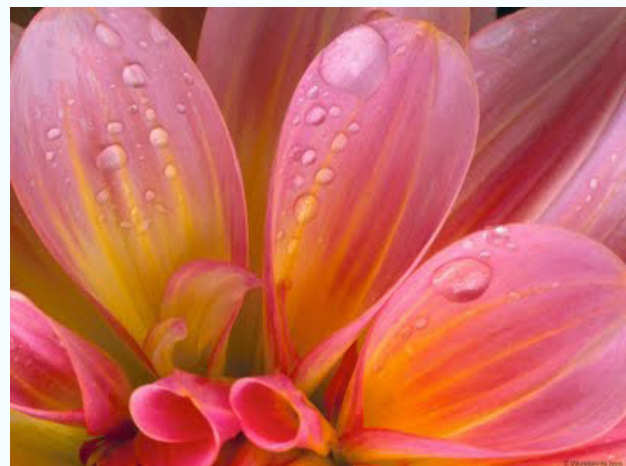
## JUDGING CRITERIA:

The judges will use the following criteria to evaluate the photographs:

1. Is the photograph in focus?
2. Does the photograph capture the essence of the category?
3. Composition (background, angle, color use or not).
4. Creativity
5. Overall Quality

## AWARDING OF PRIZES:

Judges may award more than one first place, second place, third place, and honorable mention.



**REGISTRATION DEADLINE IS FRIDAY, OCTOBER 19TH, 2012**

# POPSICLE STICK SUSPENSION BRIDGE COMPETITION

## COMPETITION:

- Friday, November 2, 2012
- Set up – 6:15
- Judging – 7:00 pm, Grades 1-12
- The Winston School Gymnasium
- Grade Groups Do Apply
- “Contestant” is defined as a single individual, or a team of up to four students
- The suspension bridge must be prepared in advance of the competition

## PURPOSE

The purpose of this competition is to give students a Civil Engineering experience through the construction of a popsicle stick suspension bridge.

## CONSTRUCTION

1. Teams will construct a suspension bridge using only the following materials:
  - Popsicle sticks
  - Popsicle stick is defined as a wooden stick no longer than 11.5 cm, no wider than 1.0 cm and no thicker than 0.3 cm
  - Any type of glue
  - String
  - String is defined as cotton thread or twine. No hemp or man-made fibers can be used.
2. Cement blocks used as weights
3. No tongue depressors can be used.
4. To qualify for evaluation, the central span of the bridge must be at least 100 cm wide (measured from the inside of each support pier) and the road bed of this span must be actually supported by the string.
5. A “suspension bridge” is defined (for this competition) as a San Francisco Golden Gate-type bridge. The suspension bridge can have only two supporting piers (like the Golden Gate Bridge).
6. The suspension bridge must have a level, seamlessly constructed roadway that will allow a small test car to easily roll from one end of the bridge to the other. The width of the roadbed will be the length of a “regular” popsicle stick.
7. Please build your bridge in a way that will facilitate transportation, although we understand that the bridge will have to be adjusted at the site.

## EVALUATION

1. A bridge must comply with all of the construction guidelines to qualify for evaluation in this competition.
2. Prior to evaluating the bridge, the student builder must demonstrate that the road bed (between the two bridge piers) is actually supported by the cables. The student will be asked to raise and lower the cables demonstrating that the road bed will actually rise and fall.
3. Teams will be evaluated based on the following criteria:
  - a. Length of the central span measured from the inside of each supporting pier
  - b. Quality of construction
4. The winner of the event will be the contestant that builds the longest central span, and complies with all other requirements.
5. Participants must remove their bridges from The Winston School. This implies that the bridges will either be taken home or disposed of properly.

## LINK TO HOW BRIDGES WORK:

<http://science.howstuffworks.com/bridge7.htm>





# POWER CAR COMPETITION

## COMPETITION:

- Friday, November 9, 2012
- Registration of Power Cars – 6:00 pm
- Power Car Competition – 6:30 pm
- The Winston School Gymnasium
- Grades 6-12, Grade Groups Do Apply
- “Contestant” is defined as a single individual
- Advance preparation is required for this competition

## PURPOSE

The purpose of this competition is to give the student an opportunity to build a model car using a standardized kit of materials. Emphasis will be placed on engineering, imagination, and safety.

1. The cost of the kit is \$5 and may be purchased from The Winston School.
2. Kits must be picked up no later than 6:00 pm, Friday, October 19, 2012.
3. Build your model car paying special attention to aerodynamics and rolling resistance.
4. Specifications:
  - a. Weight: 60g minimum; no maximum
  - b. Length: 150mm minimum; 305mm maximum
  - c. Cartridge Hole Depth: 50mm minimum; 52mm maximum
  - d. Cartridge Hole diameter: 19mm minimum; 20mm maximum
  - e. Cartridge Housing Circumference Thickness – 3mm minimum
  - f. Cartridge Height (from floor to cartridge centerline): 33mm minimum; 43mm maximum
  - g. Thickness of body material around axle hole: 2mm minimum

5. The cartridge hole cannot be exposed, and the integrity of the cartridge housing area cannot be compromised.
6. All cars will race on the track one time and then each car will be evaluated for rule compliance and safety. Only the cars in compliance will move to the next round.
7. **3mm Rule:** There must be a minimum of 3mm of body material around the entire circumference of the cartridge, throughout the entire length of the cartridge. The forward-facing, dome-shaped end of the cartridge must also be protected by a minimum of 3mm of body material.
8. Cars must have sufficient body material attaching the cartridge house to the rest of the car body.
9. Cars must have at least 3 wheels.
10. No profanity, or alcohol and tobacco product advertisements may be displayed on the car.
11. Axle holes must be drilled through the car body. External axle tubes cannot be attached to the outer surface of the car body. Minimum requirement for thickness of body material around the axle hole is 2mm.
12. Winston Science will provide cartridges at the event. Contestants may not provide their own cartridge.

## CHECK-IN AND EVALUATION

1. Students must check in vehicles at the competition site at 6:00 pm on Friday, November 9 at The Winston School. Judges will issue claim checks and inform the contestants where to pick up their cars after the competition. **No cars will be accepted after 6:30 pm.**
2. All vehicles will be evaluated for rule compliance and safety.
3. Cars must be ready to race (with screw eyes installed) when submitted for impound. Students cannot modify or repair their car after it is impounded.
4. External parts that are attached to the power car (including aerodynamics, aesthetics, and weight-enhancing parts) must be securely fastened. If the race official determines that there is a likelihood of the parts detaching from the car during the race, the car may not be allowed to race. Cars may not carry any loose cargo.

## COMPETITION AND SAFETY

1. If any car is judged to be “unsafe” by the race officials, the official may refuse to let the car race. Any car that breaks or is damaged during a race will advance only if the race official determines that the car is safe.
2. All vehicles meeting the stated requirement will be allowed to complete a qualifying run on the 85-foot track. Rules are subject to interpretation by the presiding race official.
3. The sixteen fastest cars meeting the stated requirements will enter a single series of playoff finals. The winner of the event will be the fastest car in each grade group.

## REFERENCE WEBSITE

<http://catalog.pitsco.com/content/items.aspx?CategoryID=85&art=461>

**REGISTRATION DEADLINE IS FRIDAY, OCTOBER 19TH, 2012**

# PVC PIPE FLUTE COMPETITION

## COMPETITION:

- Monday, October 29<sup>th</sup>, 2012
- 7:30pm - Grades 7-12
- The Winston School Cafeteria/Trim Hall
- Grade Groups Do Apply
- “Contestant” is defined as a single individual
- Advance preparation is necessary for this competition

## CONSTRUCTION:

1. Flute must be constructed from PVC piping.
2. Contestant must include photos and a written explanation of how their flute was constructed.
3. Contestant will be asked to explain their process for making the flute.
4. Contestant must play a simple tune or scale for the judges.
5. Contestant must decorate their flute, i.e. stickers, electrical tape, duct tape, markers etc.
6. For detailed instructions how to make a PVC flute please check the following web sites.

<http://www.instructables.com/id/How-to-make-an-Awesometastical-PVC-Flute/?ALLSTEPS>

[http://www.ehow.com/how\\_4827963\\_flute-out-pvc-pipe.html](http://www.ehow.com/how_4827963_flute-out-pvc-pipe.html)

<http://www.makingmusicmag.com/forte/pvc-flute.html>



## JUDGING

1. Material used must be PVC piping.
2. Ability to explain the process of making the flute and what tools were used.
3. Must play a short tune or scale.
4. Decoration and design.
5. Awards will be presented at the end of the competition.

## ROCK COMPETITION

### COMPETITION:

- Tuesday, November 6<sup>th</sup>, 2012
- 7pm - Grades 1-12
- Grade Groups Do Apply
- The Winston School Trim Hall/Cafeteria
- “Contestant” is defined as a single individual
- Students should arrive at this competition with knowledge of rocks & minerals

### PURPOSE

The purpose of this competition is to get students involved in geology and paleontology.

### THE COMPETITION

1. Students will be invited to identify **30** rocks, minerals and fossils. The student with the largest number of correct answers will be declared the winner.
2. Identification procedures:
  - a. Students will rotate through **30** stations.
  - b. Students will have 30 seconds to observe the sample and identify the rock or fossil by writing the answer on the answer sheet. A bell will sound to indicate that it is time to move to the next station.
  - c. Students will be allowed to rotate twice through the **30** rock sample station.
3. The student's writing must be legible. If the judge cannot read (or understand) the answer, it will be evaluated as incorrect.



### EVALUATION

1. The answer sheets will be evaluated by the judges and the winners will be announced on Thursday, November 8<sup>th</sup> at 7pm in The Winston School Trim Hall/Cafeteria.

# ROOT BEER BREWING COMPETITION

## COMPETITION:

- Saturday, November 3, 2012
- 10:00 am – Grades 1-5
- 11:00 am – Grades 6-8
- 12:30 pm – Grades 9-12
- Levy Learning Center, The Winston School
- Grade Groups Do Apply
- “Contestant” is defined as a team of up to four students
- The Root Beer product must be prepared in advance of this competition

## PURPOSE

The objective of this competition is to allow the students to learn the chemical process of fermentation, as well as to learn the value of taste and odor in customer approval.

## COMPETITION

1. Contestants must learn how to brew root beer. There are numerous techniques and recipes available on the Internet.
2. Root beer must be made from scratch, **all natural**
3. There are no limitations on the root beer except as set out below:
  - a. The product must be safe to drink.
  - b. The product must be pre-tested by the team for taste and aroma.
  - c. Contestants cannot artificially carbonate their root beer. All carbonation must come from the natural fermentation process.
4. The following is required to complete your project:
  - a. Provide a list of ingredients used in your root beer.
  - b. Provide a statement explaining how the root beer was prepared. Completeness is important.
  - c. Include photographs showing all the steps used in brewing the root beer. Teams will be disqualified if it is obvious that brewing steps were not photographed.
  - d. Provide a statement declaring that the root beer is the product of the team, and contains no professionally brewed root beer.
  - e. Team members must be on hand to discuss their root beer process.
5. The team that produces the most tasty, visually pleasing root beer will be deemed the winner of this competition.

## BREWING

- Use only glass containers and bottles and wrap the fermenting bottle with multiple layers of newspaper. Do not use plastic of any sort.
- Make sure all of the equipment has been sterilized.
- Cap your bottles for a tight seal and better carbonation.
- Make sure that the yeast has been activated (72 degrees) and not killed (90 degrees). Use a brewers yeast rather than a baking yeast.
- Avoid over exposure to direct sunlight.
- Use only clear cups for the root beer. Please provide the cups, as the judges will not supply them.

## JUDGING PROCESS

A panel of judges will assemble to taste each team's product. After full consideration of the root beer entries, the winners will be announced. Criteria for judging includes all of the following:

- *Presentation* (1-5): Display your brewing process and statement on a poster board
- *Color* (1-5): Does the color match the type of style of brew?
- *Clarity* (1-5): Cloudy root beer is a result of a brewing problem
- *Aroma* (1-5): Offensive odors, such as sour, are a result of contamination
- *Carbonation* (1-5): Light and active, with a good thick creamy head
- *Taste* (1-5): Flavor of all ingredients, balance and finish
- *Marketing* (1-5): Visual appeal of packaging and display; quality of oral presentation
- *Met Requirements* (1-5): Completeness of required items



# RUBE GOLDBERG COMPETITION

## COMPETITION:

- Thursday, November 1, 2012
- 6:00 pm, Set Up
- 6:30pm Competition
- Grades 1-12
- The Winston School Gymnasium
- Grade Groups Do Apply
- “Contestant” is defined as a team of up to four students
- Advance preparation is required for this competition

## PURPOSE

The purpose of this competition is to allow the contestants the opportunity to let their creativity and imagination go wild. Contestants are challenged to build an innovative, multi-sensory machine that does absolutely nothing.

## COMPETITION

1. Construct a machine using any materials desired. The machine can move, give off light, make noise, produce odors, or vibrate, but must not have any recognizable function.
2. The machine should be mounted on a plywood base no larger than 80cm x 80cm.
3. The dimensions of the machine can be no larger than 80cm x 80cm x 200cm (height). No part of the machine can extend beyond the boundary of this right-angled parallelepiped.

## JUDGING

1. Contestants must be present with their machine to provide a demonstration for the judges.
2. Grade groups do apply in this competition.
3. The winner of the event will construct the most creative machine. The judges will consider:
  - Sight (color/sparkle)
  - Sound
  - Smell
  - Steps or Processes
  - Unique features
  - Overall viewer impact
  - Complies with the size limit



# SCIENCE-FOOD ART OR OBJECT ART COMPETITION

## COMPETITION:

- Wednesday, November 7, 2012
- Setup: 6:30 pm
- Judging: 7:15 pm
- Trim Hall/Cafeteria and Levy Learning Center The Winston School
- Grade Groups Do Apply
- “Contestant” is defined as a single individual
- Contestants must build their Science-Art entries in advance of the competition

## PURPOSE

The purpose of this competition is to encourage students to combine Science and Art within the same completion.

**CATEGORIES:** There are two categories for entry.

### Category A – FOOD ART

1. Make a display using edible materials that represents some aspect of science. Reference: <http://www.eatmedaily.com/2009/06/photographs-by-kevin-van-aelst-food-art/>
2. Due to the nature of the entries, food products will be disposed of at the close of the evening display.
3. Criteria for Evaluation
  - Innovative use of food products
  - Does the display accurately represent the principle of Science
  - Color scheme, compatible textures, and observer appeal
  - Overall creativity and neatness

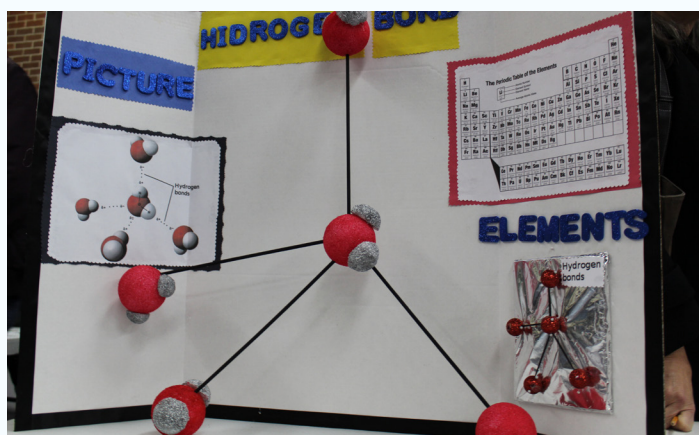
### Criteria for Evaluation:

- Accuracy of the food or art object depicting a real science object
- Originality of object selection
- Neatness of construction
- 1. Overall visual appeal



### Category B – ART OBJECT

1. Make a three-dimensional object that depicts an actual object of science, such as Galileo's original telescope, Leonardo da Vinci's armored tank, Watson & Crick's model of DNA, etc.
2. The Science-Art Object must be accompanied by a picture of the original science object. For example, if you were to make a model of Leonardo da Vinci's armored tank, you would have to attach a photo of the object. Judges will use this photograph to help evaluate your Science-Art object.
3. Science-Art Objects must be taken home after the competition.



# SPAGHETTI BRIDGE COMPETITION

## COMPETITION:

- Tuesday, October 29, 2012
- Setup: 6:15 pm
- Judging: 7:00 pm
- The Winston School Gymnasium
- Grade Groups Do Apply
- “Contestant” is defined as one or two participants
- Contestants must build their spaghetti bridge prior to arriving at the competition

## PURPOSE

The purpose of this competition is to construct a spaghetti/glue bridge that will carry the heaviest load while still meeting specifications. Bridges will be loaded until they fail.

## COMPETITION RULES

1. The bridge is to be built from spaghetti (cylindrical forms of pasta) and any form of glue.
2. The bridge shall be free-standing and must span two level surfaces which are a half-meter apart.
3. The support for the bridge shall be from the top of the level surfaces. The edges of the level surfaces cannot be used in any way for support.
4. The bridge must include a decking of spaghetti to provide a suitable road surface at least 6cm wide across the full span of the bridge. Three conditions must be met:
  - a. Gaps in the bridge deck are not to exceed 2cm
  - b. A block of wood (5cm x 5cm x 10cm) representing a car must be able to move along the length of the decking unobstructed from end to end
  - c. The deck of the bridge must not be more than 5cm above or below the ends of the bridge at any point along its length
5. You must incorporate a “loading platform” consisting of an eye-bolt secured to a piece of plywood (0.7 cm x 5 cm x 10 cm).
6. This platform is to be attached at the center of the bridge such that the bottom of the eye-bolt is no more than 5cm from the top of the bridge decking.
7. All loads will be suspended from this eye-bolt, and there must be a clear space directly below it to allow loads to be attached.
8. Loads will be attached using an S-hook, and, if necessary, a 10mm diameter metal rod extension.
9. If during the loading, the bridge twists in such a way as to cause the bridge to touch the rod at any point other than the eye-bolt, thus lending additional support, the bridge will be disqualified.

10. The maximum vertical depth of the bridge, from the highest point in its structure to the lowest cannot exceed 25cm.
11. The maximum weight of the bridge including the loading platform must not exceed 250 grams.

## EVALUATION

The contestant’s bridge that holds the greatest amount of weight without violating the specifications set out above will be declared the winner.



**THE WINSTON SCHOOL**  
Presents  
**2012 WINSTON SCIENCE**  
**2012 REGISTRATION FORM**  
(Please Print)

\* Competition: \_\_\_\_\_

\* Name: \_\_\_\_\_

\*Circle Group Level:      Elementary (1-5)      Middle (6-8)      High School (9-12)

Email: \_\_\_\_\_ Home or Cell Phone # \_\_\_\_\_

If a team, Names of Team Members:      \$5 Payment Included?

|       |                       |
|-------|-----------------------|
| _____ | _____ Yes    _____ No |
| _____ | _____ Yes    _____ No |
| _____ | _____ Yes    _____ No |
| _____ | _____ Yes    _____ No |
| _____ | _____ Yes    _____ No |

\* School: \_\_\_\_\_

\* Science Teacher: \_\_\_\_\_

\* Teacher's Email Address: \_\_\_\_\_

*\*Required Fields*

**DID YOU:**

1. Fill out all required fields?
2. Include \$5 Registration fee (per person)?
3. Fill out a separate registration form for each competition and include \$5 registration fee for each competition?

Payment may be made by check, cash or Money Order.

Make checks payable to THE WINSTON SCHOOL

Deliver, or mail registration form and payment to:

The Winston School,

5707 Royal Lane, Dallas, TX 75229.

Registration for a Winston Science event obligates teachers and/or parents to properly supervise their students before, during and after their event.

For Winston Use Only:

Date Received \_\_\_\_\_

Amount Received \_\_\_\_\_

Check \_\_\_\_\_ Cash \_\_\_\_\_ MO \_\_\_\_\_

**REGISTRATION DEADLINE IS FRIDAY, OCTOBER 19TH, 2012**



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