



## Division 1 Work-at-Home Activity: 3D Poster

Saturday, March 31 2012 | 9:00am - 1:00pm | H.R. MacMillan Space Centre

### Instructions:

Show off your creativity with this activity and create a 3D poster as a group which displays what you like about science!

The posters need to be prepared in advance of the event and will be displayed and judged at the Science Games. Each team can enter one poster no larger than 22in x 28in.

3D figures can extend out in front of the poster but shouldn't extend beyond the side dimensions. All posters entered will become the property of the APEGBC Science Games and may be used in advertisements of future events.

Remember your team's 3D poster will have to hang on a wall with masking tape so use lightweight materials, such as paper or aluminum foil.

Judges will be administering points based on appropriateness of theme, originality and creativity, visual appeal and skill.

### Contact Information

**Please direct any questions about this activity to:**

Chelsea Smith, Communications Coordinator

APEGBC

Direct: 604-412-4892 | Toll Free: 1-888-430-8035 ext. 4892

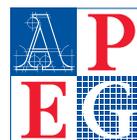
Email: [csmith@apeg.bc.ca](mailto:csmith@apeg.bc.ca)

### Rules

1. Each team can enter one poster.
2. Poster size will be no larger than 22 inches x 28 inches
3. Three-dimensional figures may be made of paper, tin foil, or any other lightweight material.
4. 3D figures can extend out in front of the poster but not beyond the side dimensions.
5. Teams must bring their poster to the Science Games to compete!

### Coach Tip:

Encourage students to think about engineering and geoscience themes in regards to what they love about science.



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# APEGBC Science Games

## Division 1 Mystery Activity: Foil Boat

Saturday, March 31 2012 | 9:00am - 1:00pm | H.R. MacMillan Space Centre

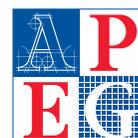
### Instructions:

The object of this competition is to build a boat from one piece of aluminum foil that can withstand the weight of the most pennies before sinking. Teams will be provided with three 20 cm squares of aluminum foil for three boat trials. Only one of these boats will compete against the other team's.



### Rules

1. Use only the materials provided to create a boat.
2. Only one square of aluminum foil can be used per boat.
3. Teams can build multiple boats and test which holds the most pennies.
4. If the team makes multiple boats only the one which holds the most pennies will be judged.



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# APEGBC 2012 Science Games

## Division 1 Mystery Activity: Marshmallow House

Saturday, March 31 2012 | 9:00am - 1:00pm | H.R. MacMillan Space Centre

### Instructions:

The object of this competition is to design and build the tallest house possible out of marshmallows and toothpicks. Teams will be provided with kits containing all of the toothpicks and mini marshmallows that they are allowed to use for building.

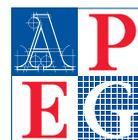


### Rules

1. Use only the materials provided to create a large free standing structure.
2. Try to create the tallest free standing structure possible.

### Building Tip:

Encourage students to think about which shapes create strong building structures.



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## Division 2 Work-at-Home Activity: Elastic Car Race

Saturday, March 31 2012 | 9:00am - 1:00pm | H.R. MacMillan Space Centre

### Instructions

Students will make a car powered by an elastic engine. Teams will be provided with a materials kit in the beginning of March.

Using these materials students will work together to build a car powered by an elastic engine. On the day of the Science Games, students will race their cars along a flat and straight race track to see which car can go the furthest distance.

Judges will be administering points based on the distance a car travels, not on speed.

### Materials Provided

Rectangular piece of corrugated cardboard (13x15 cm), 2 Bamboo skewers, 4 CDs, 4 plates, 1 package of sticky tack, 2 straws and a variety of Elastic bands.

### Contact Information

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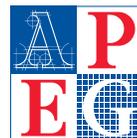
Email: [csmith@apeg.bc.ca](mailto:csmith@apeg.bc.ca)

### Rules

1. One car per team.
2. Cars can only use the material sent out in the APEGBC Elastic Car Kit  
**Exception:** Masking tape, duct tape or electrical tape may also be used. This will not be included in your kit and can be used.
3. Teams do not have to use all of the items in the kit.
4. Teams must bring their car to the Science Games to compete!

### Coach Tip

Encourage students to test out different variations of cars using the materials provided to make their car able to go the furthest distance possible.



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## Basic Electric Car Instructions

Saturday, March 31 2012 | 9:00am - 1:00pm | H.R. MacMillan Space Centre

Start by preparing the car body for the axle. Ensure that the long sides of the cardboard are exposed so you can slide the axle across the width of the body. In the centre of the short side, cut out a notch about 5 cm wide and 3.5 cm deep.

Insert the axle so that the centre of it is exposed in the cut-out notch. Make sure the axle will rotate in place. Create a tag by wrapping a piece of strong tape in the centre of the axle, leaving a tag strong enough to support the elastic band.

Prepare the wheels by attaching a washer to the centre of one CD. Slide the wheel onto one side of the axle, leaving room between the wheel and body of your car. Use plastiscine to stick the wheel to the axle, so they move together. Repeat with the other wheel and ensure the axle and wheels rotate as a unit. Attach your elastic band 'motor' to the top of the car body, and wrap the other end around the tag, winding it several times.

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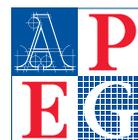
### Concepts to consider

**Materials choice:** A body, axle and wheels are all key parts of a car. What materials will you use for these parts?

**Friction:** There are two regions where friction will take place: between the axle and the cardboard and between the edge of the wheel and the track. What can be done to reduce friction in these areas?

**Mass:** The amount of mass and its placement will impact your car's performance in the race.

*\*\*\*Please note: these instructions do not have to be followed. They are provided only to serve as a starting point for teams to branch off of. Teams are encouraged to test their cars and make modifications using the materials provided to make their car go the furthest distance possible.\*\*\**



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# APEGBC 2012 Science Games

## Division 2 Mystery Activity: Flinker

Saturday, March 31 2012 | 9:00am - 1:00pm | H.R. MacMillan Space Centre

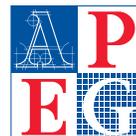
### Instructions:

A flinker is a flinker because it doesn't float and it doesn't sink, it flinks!

Teams will make a 'flinker' - something that you put in a pitcher of water that doesn't float on the top of the water or sink to the bottom, but just flinks in the middle of the water. The goal is to create a flinker out of the materials provided that will 'flink' for the longest amount of time possible.

### Rules

1. Flinkers must be able to fit within the water container
2. To qualify as flinking no part of the object should be touching the surface of the water or bottom of the bottle.
3. Teams will be given time to build and test their flinker before the timing section begins.
4. Teams will be timed twice. The best time out of those scores will count.



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# APEGBC 2012 Science Games

## Division 2 Mystery Activity: Straw Towers

Saturday, March 31 2012 | 9:00am - 1:00pm | H.R. MacMillan Space Centre

### Instructions:

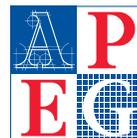
Build the tallest tower possible using the straws and tape provided. No other items can be used. This includes tools such as scissors or staplers.

The finished tower must be able to support the weight of a juice box. The final height will be measured from the lowest point of the juice box.



### Rules

1. Use only the materials provided: straws and masking tape.
2. Spend 10 minutes creating a design.
3. Groups have 20 minutes to assemble their tower or until their materials run out.
4. The skyscraper height will be based off of the lowest point of the juice box.



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