

## CONIC SECTIONS ACTIVITY

MATERIALS: Play-doh, dental floss, markers, glue sticks, colored paper, magazines

Directions:

1. Assign a role to each team member: recorder, communicator, facilitator, material manager, controller (only in groups of 5 - manages time and noise level).
2. Send the materials manager to get needed materials.
3. Each student in the group is to form a cone using the Play-doh. Each student is to slice his individual cone by drawing the dental floss through the cone PARALLEL to the base and PERPENDICULAR to an imaginary line or axis passing through the center of the cone. The recorder should draw the results on the colored paper provided to the group and the group should choose a real world object that looks like the shape they just formed and glue it to the paper. What is the name of this conic section?
4. Students should reshape their cones and proceed to create their second conic. Team members should slice the cone at an ANGLE to the imaginary axis, but NOT through the base of the cone. The recorder should draw the resulting shape on the colored paper and the group should choose a real world object that looks like the shape they just formed and glue it to the paper. What is the name of this conic section?
5. Students should reshape their cones and proceed to create their third conic. Team members should slice the cone PARALLEL to the imaginary axis and through the BASE of the cone. The recorder should draw the resulting shape on the colored paper and the group should choose a real world object that looks like the shape they just formed and glue it to the paper. What is the name of this conic section?
6. Students should reshape their cones and proceed to create their fourth conic. Team members should pair up and use two cones vertex to vertex. And then slice the cone from the base of one cone parallel to the imaginary axis all the way through the base of the second cone. The recorder should draw the resulting shape on the colored paper and the group should choose a real world object that looks like the shape they just formed and glue it to the paper. What is the name of this conic section?

7. After all cuts have been made and drawings recorded, each team should provide a written description as to how a cone should be sliced to produce a circle, ellipse, hyperbola, or parabola.
  
8. Finally, from magazines or internet resources teams should find TEN real world pictures of the conic sections, label them by name, and identify which cut of the cone was used to form that particular conic. Logos are often made up of conic sections . Teams should also include FIVE trademarked logos (at least one for each conic) in their conic collection. Mount pictures and logos on colored paper and be prepared to share results of this activity with the class.