



Challenger's Morning Science Segment:

November 30, 2015

Topic: Comets: Coma, Nucleus, and Tails

Build: Comet

Credit: <http://spaceplace.nasa.gov/comet-stick/en/>

Materials Needed:

Chopstick or popsicle stick / 3 colors of gift wrap ribbon [blue, white, silver recommended] / scissors / tin foil

Building a comet- Start with the three different colors of ribbon [silver, white and blue are recommended to help illustrate that comets are not "hot."] Cut a total of 5 ribbon lengths: two long of silver and white, two medium pieces with the silver and white, and 1 shorter piece out of the blue. Tie the five pieces of ribbon around the end of the stick, close together. Cut three pieces of tin foil into a rough square shape. While holding ribbons off to one side, wrap one tin foil sheet around the end of the chopstick, around the area where the ribbon is tied. Form tin foil into a ball while keeping the ribbon tail off to the side [90 degrees to the chopstick]. Repeat with two remaining sheets of tin foil. Use more tin foil if desired, for an even larger comet. Kids can then "fly" their comet through the air while seeing the different coma, dust tail and gas tail surrounding their tin foil comet nucleus.

The science [credit: <http://spaceplace.nasa.gov/comet-stick/en/>] "Comets have a **nucleus**, which is the main body of the comet. They have a **coma**, which is the glowing part around the nucleus. Then they have two tails: a **dust tail** and a **gas tail**. In our "comet on a stick," the tin foil is the **nucleus**. The blue ribbon is the **coma**. The silver ribbon is the **dust tail**, and the white ribbon is the **gas tail**. Comet tails are a result of **solar wind**. Energy and particles from the sun push on the comet. This force pushes dust and gas behind the comet. The ion dust and gas have different weights, so they separate, making two specular tails."

This activity ties into the Challenger Learning Center of Maine: Challenger Vacation camps cover all kinds of fun sciences topics such as rockets, engineering and space science! Our December Vacation camp registration is open for Dec 28-31, 2015, grades K-5. Sign up now to reserve your spot today for fun topics such as Soaring thru Space, Star Wars, LEGOs and more! FMI- www.astronaut.org