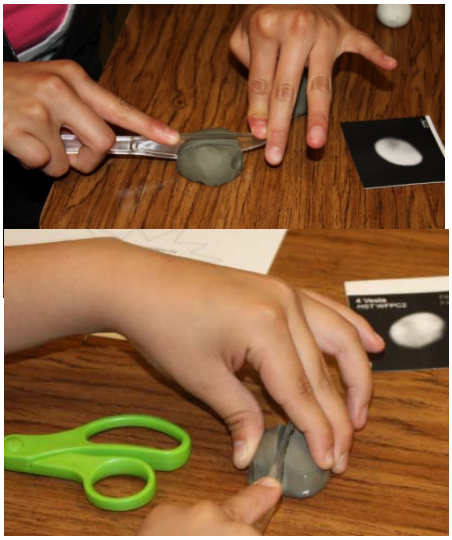
Your Mission: Modeling asteroid Vesta in 3-D

1. You have a strip of four images of the asteroid Vesta on the next page. Cut into four separate images.
   - They represent Vesta: front, side, back, and other side.
   - Looking at your four views of Vesta as a team…,
     - **Roll** the larger ball of clay into the general shape of Vesta.
     - If you are using foil rather than a big BB or ball bearing, **squish** into a tight ball; put aside.

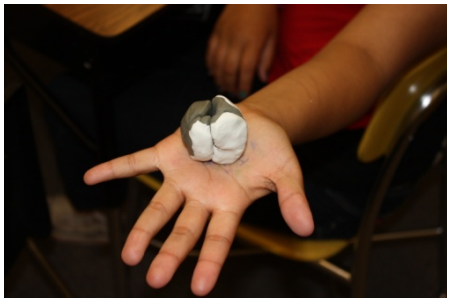
2. **Cut** the asteroid in half along Vesta's axis **carefully** with a plastic knife.
   - Where is the axis?
     - Hmmm! What is an axis? Think of a spinning top…
     - Don't worry if you do not all agree – for now just choose.



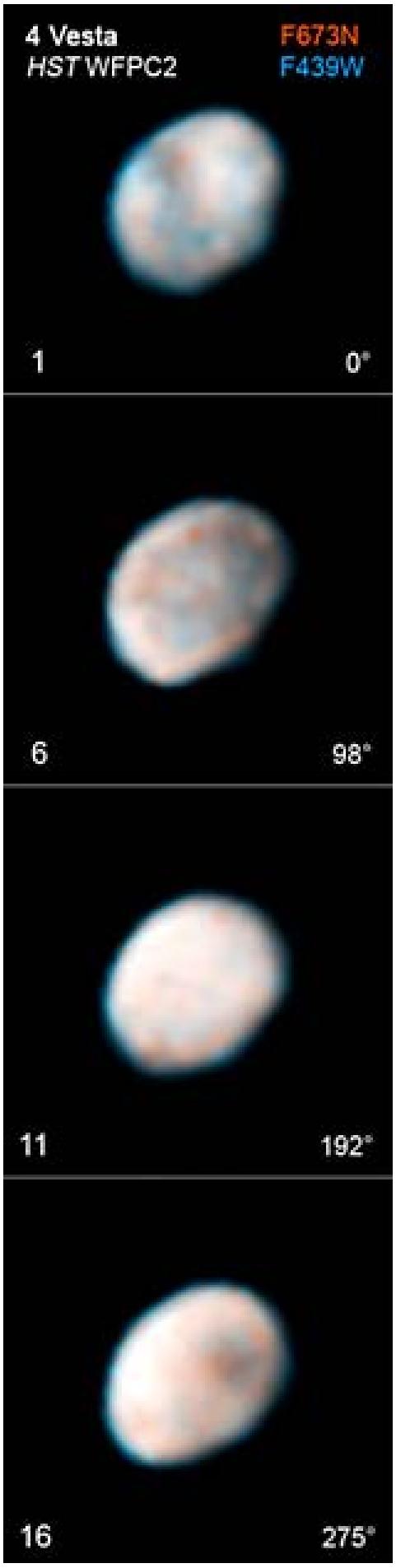
3. Now cut each half in half, so you have 4 wedges.
   - **Reshape** your Vesta wedges after every cut – you will put them back together!
   - Put a tiny ball of white clay on each wedge at the same end so you each have a consistent orientation – you KNOW which way is up!
     - Why do you think that might be important?

4. Each person takes one wedge of clay and a Vesta image. **Shape**.
   Add white to make your wedge look like your image of Vesta.
   - Keep it wedge-shaped!
   - Use white clay as you wish
   - **Questions:**
     - *What do you think could be causing the light and dark patches on Vesta's images?*
     - *Place the ball bearing or tinfoil ball at the center of Vesta – what do you think it represents? Think Earth!*
     - *Discuss your thoughts as a team.*

5. **Rejoin** your wedges, placing your ball bearing, big BB, or tight ball of tin foil at the center. Smooth the edges and reshape.
   - *Your bit of metal represents the metal core we know Vesta has. We don't know just how large it is though – YET!*



6. From your model so far, what questions do you hope will be **Answered** by Dawn's mission?
   - Causes of variations in light and dark?
     (albedo [how much light a surface reflects…] vs. different minerals
     vs. topography on the surface…?)



Four images of Vesta!

EXTENSION: Investigate the instruments the Dawn spacecraft is carrying.

Which instrument might be helpful in answering your specific questions about Vesta and Ceres?

On to more Vesta Investigations…

Do try the Flipbook to get the real spin on Vesta!!