The Community at the Observatory Grades 5-8, Astronomy One Class Period

Engage students with a KWL discussion: what do I know, what do I want to know, and what have I learned. During this stage, gather prior knowledge (what do I know) and help students generate driving questions (what do I want to know). Help students plan their Observatory investigation. For instance, given “what do I want to know”, what information should students gather in their questions?

During your conference, keep and review the list of the driving questions that you and the students generated. After your conference, review the driving questions and focus on “what have I learned”. Challenge students to transfer their experience to the science they have learned in class.

Here are some questions to help students generate questions about what they want to know.

1. If you were in charge of picking out a site for a future observatory, what would be the most important characteristics to consider about the observatory's location?
2. Who would you expect to work at an observatory?
3. What do you think an astronomer's typical day at an observatory would be like?
4. What do you think astronomers are trying to learn at an observatory?
5. Who lives at an observatory? Is life at an observatory different than life in your community?

Background

1. Consider the environmental characteristics on Earth that would yield the best astronomical observing conditions. Some important characteristics are:
   a. Altitude
   b. Latitude
   c. Weather patterns
   d. Atmosphere clarity
   e. Access to the site (roadways, train, etc)

   Someone may simply suggest a space-based telescope like the Hubble Space Telescope, or perhaps a telescope located on the Moon!

2. Astronomers are not the only folks working at McDonald. In fact, if you have your videoconference during the day, they will probably be asleep! Some McDonald Observatory staff members staff members operate and maintain all the equipment, cook meals, or ensure the safety of everyone working and visiting the Observatory.
   a. Observatory superintendent
   b. Electrical engineer
   c. Mechanical engineer
   d. Systems analyst
   e. Chef
   f. Safety Officer
   g. EMS and Fire Team members

3. Usually, an astronomer will work at night and sleep during the morning and afternoon. Late in the evening, or early morning (still very dark outside) an astronomer might get hungry and eat a “night lunch”.
4. Astronomers specialize in gathering information from celestial objects like stars, nebulae, galaxies, and planets, then making physical sense out of their observations. Light is their only contact with these objects.

5. The people who live at the Observatory are the vital staff members who know how the Observatory works, and
how to fix equipment when it breaks or malfunctions. They are also people who are natural leaders during a crisis. Visitors to the Observatory may need emergency medical attention. Sometimes, nearby towns and ranchers need help if they are threatened by wildfire. And, sometimes McDonald Observatory EMS staff responds to emergencies away from the Observatory. Everyone has a memorable story to tell! Living at the Observatory is in many ways like living in a small town.

Astronomers visit the Observatory for days or sometimes weeks at a time during their "observing run". They stay in the Astronomers’ Lodge, which is set up like a mini-hotel located a short walking distance from the Harlan J. Smith and Struve telescope domes. Astronomers using the 2.1m and 2.7m telescopes visit the Observatory and then return home. Astronomers using the HET actually live at the Observatory and use the HET on behalf of other astronomers. HET collects data for many different astronomers using a schedule that allows the telescope to be efficient as the sky rotates above throughout the night.