

Learning About The Hubble Space Telescope

Purpose

The purpose of these activities is to learn about the Hubble Space Telescope, in terms of its physical components, orbit, and uses.

Students will be able to

1. Note the parts of the Hubble Space Telescope.
2. Describe how the Hubble Space Telescope functions.
3. Describe the orbit of the Hubble Space Telescope.
4. Highlight some missions of the Hubble Space Telescope.

Important Vocabulary

Hubble Space Telescope (HST)	Edwin Hubble	telescope
reflecting telescope	refracting telescope	mirror
radiation	wavelength	spectrum
camera	sensors	satellite
cosmology	universe	nebula

History of Telescopes

<http://amazing-space.stsci.edu/eds/overviews/explorations/galileo.php.p=Teaching+tools%40%2Ceds%2Ctools%2C%3EHubble+Space+Telescope%40%2Ceds%2Ctools%2Ctopic%2Chst.php>

Students are introduced to the history of telescopes, from the time of the first telescope used by Galileo to the time of the Hubble Space Telescope, via this slideshow. *Extension #1:* Students write research papers on different telescopes from the past and present, noting especially their impact on society at the time of their usage. *Extension #2:* Students create timelines (for display), noting significant events in the history of telescopes. This activity can be completed individually, in small groups, or as a whole class. Further, students can complete a timeline of events in the history of the Hubble Space Telescope and its development. (An outline for this portion of the extension that might be useful to lower-level students or simply for saving time can be found at the Gander Academy's website: http://www.cdli.ca/CITE/solar_activity.htm#Hubble.)

Diagram of a Space Telescope

Students label a basic diagram of the Hubble Space Telescope, using the activity sheet provided by the Gander Academy's website: http://www.cdli.ca/CITE/solar_activity.htm#Hubble.)

Who's Hubble?

Students conduct research to find out more about Edwin Hubble, for whom the Hubble Space Telescope is named. Students use their research to write a brief (one to three pages) report.

Myths vs. Realities: Hubble Space Telescope and Space Technology

<http://amazing-space.stsci.edu/eds/overviews/myths/tech.php.p=Teaching+tools%40%2Ceds%2Ctools%2C%3EHubble+Space+Telescope%40%2Ceds%2Ctools%2Ctopic%2Chst.php>

Students engage in a discussion regarding what they believe to be true about the Hubble Space Telescope and general space technology. They identify misconceptions and uncover actual truths.

Helpful Resources

The following resources might be helpful in conjunction with the activities presented above.

1. <http://school.discovery.com/lessonplans/programs/hubble/> (An introduction to “The Great Hubble” from discovery.com.)
2. <http://passporttoknowledge.com/hst/> (A website that offers an “electronic field trip” to the Hubble Space Telescope via television and the internet, as well as providing other helpful resources.)
3. <http://www.stsci.edu/hst/> (A detailed, but relatively brief introduction to the Hubble Space Telescope, along with information about scientific instruments/tools on the telescope, and some of its missions.)
4. <http://amazing-space.stsci.edu/eds/overviews/explorations/mission.php.p=Teaching+tools%40%2Ceds%2Ctools%2C%3EHubble+Space+Telescope%40%2Ceds%2Ctools%2Ctopic%2Chst.php> (A fun reading activity involving the Hubble Space Telescope and a mission to service it.)
5. <http://amazing-space.stsci.edu/eds/overviews/qa/hst.php.p=Teaching+tools%40%2Ceds%2Ctools%2C%3EHubble+Space+Telescope%40%2Ceds%2Ctools%2Ctopic%2Chst.php> (Questions and Answers about the Hubble Space Telescope; also provides other helpful links relating to the Telescope.)