Vesta in 3-D

Developer: Whitney Cobb, McREL
Audience: Teachers, Students Grades 5-8
Format: Website PDF Documents

Final Recommendation: *Minor Revisions.*

This well-written product will be very useful in the classroom, but revisions are needed before it is recommended:

- Vocabulary words like albedo and topography need to be defined.
- Minor edit: instead of "Mt. Everest...," just use a semicolon "Mt. Everest;."
- One reviewer offered the following corrections:
    - Dawn is not spiraling around the Sun. It is in an orbit that takes it into the asteroid to an encounter with Vesta.
    - The term *accretions* is not used in the context of asteroids (even though they accreted long ago).
    - The term solar debris is not used commonly either. Suggest saying that the Asteroid Belt is made up of small, mainly rocky, objects.
    - Vesta rotates, so it does not have a front or back. Suggest changing wording to: as Vesta rotated on its axis, HST could view all sides of Vesta.
    - In the Explorer Guide: be consistent with Asteroid Belt (upper or lower case). The terms solar debris and accretions appear here too.
    - Top of page 2 of Explorer Guide: line two, use “into outer space.”
    - In the statement about the Hubble Space Telescope and lenses: the instruments mounted on HST may have lens as needed, but the primary optics of HST are mirrors. This could confuse students.
    - Page 1 of Your Mission: an asteroid does not have a front and back.
    - Item 3. There is a typo/missing word in: "you which way is up.”

This product may be resubmitted at any time. It does not need to wait until the next scheduled review. Please include a list of the revisions completed and those not incorporated with a brief explanation accompanying those not used.

Vesta in 3-D

Following is the summary of the individual reviews that was distributed to the reviewers prior to the panel discussion by telecon. This information was used to guide the panel discussion; it is included here to provide a complete report of the review process.

Reviewer	Overall Rating	Recommendation
Education Reviewer	Outstanding	Recommended
Education Reviewer	Very Good	Recommended
Education Reviewer	Outstanding	Recommended
Science Reviewer	Very Good	Medium Revisions
Science Reviewer		

Strengths

- The product is relevant to NASA unique SMD content via its link to the Dawn mission.
- The graphics and text are effectively presented. The writing style is comfortable to read.
- Content is accurate.
- There are links to effective animations and a link to JPL's Dawn for kids Website.
- Provides suggestions for extension activities.
- There are assessments built into the activities.
- One reviewer commented "the excitement the authors feel for the field clearly spills over into the writing and activities for the students."

Weaknesses

- Vocabulary words like albedo and topography need to be defined.
- Minor edit: instead of "Mt. Everest...," just use a semicolon "Mt. Everest;."
- One reviewer offered the following corrections:
    - Dawn is not spiraling around the Sun. It is in an orbit that takes it into the asteroid to an encounter with Vesta.
    - The term accretions is not used in the context of asteroids (even though they accreted long ago).
    - The term solar debris is not used commonly either. Suggest saying that the Asteroid Belt is made up of small, mainly rocky, objects.
    - Vesta rotates, so it does not have a front or back. Suggest changing wording to: as Vesta rotated on its axis, HST could view all sides of Vesta.
    - In the Explorer Guide: be consistent with Asteroid Belt (upper or lower case). The terms solar debris and accretions appear here too.
    - Top of page 2 of Explorer Guide: line two, use "into outer space."
    - In the statement about the Hubble Space Telescope and lenses: the instruments mounted on HST may have lens as needed, but the primary optics of HST are mirrors. This could confuse students.
    - Page 1 of Your Mission: an asteroid does not have a front and back.
    - Item 3. There is a typo/missing word in: "you which way is up."

Suggestions/Comments

- This is an excellent example of how to use low-tech materials to get high-tech results in the classroom. Given the limited finding available to schools at present, we need more activities like this one.
- One reviewer strongly recommends adding the paragraphs on the vocabulary concepts before release. However, the reviewer recommends “if the teacher is familiar with the concepts already, he or she could provide that background for the time being.”
- Suggest removing the "eek!" after each use of the word "naked." Suggest not encouraging immaturity in an educational activity. There's nothing wrong with the word "naked" in any context, and in this context it does not mean "nude.”
- Similarly, a reviewer recommended not referring to another students' work as "bad" or "ugly." Students probably won’t get the reference to "the good, the bad, and the ugly."
- "Accrete" isn't a big word where it is introduced, it's a new word.
- It could be confusing to use the term 3-D for the clay model. Replace with ‘three dimensional model’ as 3-D usually is interpreted (especially with all of the recent movies) as something you see with special glasses.
- The sentence about the flipbook on the first page introduction is confusing. Many people, including adults, are confused about rotate, revolve, and orbit. Suggest using: "picture the asteroid spinning on its axis it orbits around the Sun."

Dawn's VIR Interactive

Developer: Whitney Cobb, McREL
Audience: Students, Teachers Grades 10-14
Format: Multimedia exhibit

Final Recommendation: *Minor Revisions.*

This well-written product will be very useful in the classroom, but revisions are needed before it is recommended:

- There is some audio in the videos that is of poor quality and difficult to hear (though there are subtitles provided). The bottom half of the third line of the subtitles is cut in half by some monitors.
- The location of some of the material can be difficult to determine. Web links in the Dawn Classroom are not active and they cannot be copied. A site map or outline would make navigation much easier.
- The materials are too high level in places for students and teachers. For example, terms such as a Shafer telescope and an Offner spectrometer are not explained or included in the dictionary. These technical terms need to be defined.
- Explain and list what targets will be observed by the mission, what minerals are being searched for and what questions will be asked during this mission.

This product may be resubmitted at any time. It does not need to wait until the next scheduled review. Please include a list of the revisions completed and those not incorporated with a brief explanation accompanying those not used.

Dawn's VIR Interactive

Following is the summary of the individual reviews that was distributed to the reviewers prior to the panel discussion by telecon. This information was used to guide the panel discussion; it is included here to provide a complete report of the review process.

Reviewer	Overall Rating	Recommendation
Education Reviewer	Very Good	Recommended
Education Reviewer	Outstanding	Recommended
Education Reviewer		
Science Reviewer	Very Good	Minor Revisions
Science Reviewer	Good	Minor Revisions

Strengths

- The product's *Mission Data* is linked to current NASA data and is updated on a regular basis (in the *Where Is Dawn?* exercise).
- The description of the mission contains a very thorough overview.
- The content and simulations are accurate.
- The images and artwork are from NASA and are high quality.
- The Web site ties together a plethora of resource material for the Dawn Mission, as well as the background science and engineering. References for further information are actively linked to Web sites. Most websites are current (only the link to Spaceguard Science Pages was unavailable.)
- The product contains an excellent dictionary and relevant biographies.

Weaknesses

- There is some audio in the videos that is of poor quality and difficult to hear (though there are subtitles provided). The bottom half of the third line of the subtitles is cut in half by some monitors.
- The location of some of the material can be difficult to determine. Web links in the Dawn Classroom are not active and they cannot be copied. A site map or outline would make navigation much easier.
- The materials are too high level in places for students and teachers. For example, terms such as a Shafer telescope and an Offner spectrometer are not explained or included in the dictionary. These technical terms need to be defined.

Suggestions/Comments

- The product presents an excellent, but simple, description of a VIR Spectrometer. The interactive simulations of the ion engine and charge field are exceptional. The charge field quality is near that of a similar commercial product.
- Suggest explaining what is expected to be learned from studying Ceres and Vesta. Suggest also explaining how this research ties to previous missions.
- Suggest using this opportunity to teach students about spectral analysis.
- The program is intended for grades 9 through 14. Many activities for middle school students were included though. The intended audience could possibly be expanded to include middle school students.
- One reviewer commented that it is "An excellent collection of space science, physics, and chemistry resources which will enhance any class discussion about the application of theory."