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Carrie's Plan

Lesson Plan Title: Astronomy

Short description of learning audience: Fourth Grade Students (S) with a high interest level in Astronomy - live within minutes (some, even walking distance) to Goddard Space Flight Center where many family members are employed. S are well acquainted with Wikispaces but have not built their own.

Language Content/Topic to Teach:

Rationale:

- 1) S are encouraged to work together to complete a common purpose. They will take the skills that they already have and apply them to new learning: navigating through easy wiki construction and researching - to using the research.
- 2) A WebQuest (Dodge, 2007) using Wikispaces to guide S through a simple Astronomy lesson has been designed. I have designed many Webquests for classes but I've never actually assigned one for my students. I am a proponent of a Constructivism Model of teaching and a WebQuests is a great way to apply this model. Constructing a good WebQuest that meets the objectives I need to meet takes a great deal of time. When I have searched for Webquests (there is a boatload of them on the internet), I have found many that lack relevant sites for students; many have poor objectives or objectives that don't fit my objectives well; many are not age appropriate (too simple or hard); and many times, they just aren't the right fit. When designing one for EDTC610, using Dreamweaver, it took days to set up the site for the lesson. I loved site development but using a wiki was so much faster. I think that my lesson is a great lesson to assign as our first collaborative learning utilizing a WebQuest Model and Wiki technology.
- 3) The Ss already know a great deal about the Solar System. Instead of following the cookie cutter approach within the curriculum guide, they will create a Wiki using the information that they acquire via a WebQuest.

Standards Addressed:

Maryland State Curriculum Standards - Science - Grade 4

2.0.D. Astronomy 1. Identify and describe the variety of objects in the universe through first-hand observations using the unaided eye, binoculars or telescopes or videos and/or pictures from reliable sources. a. Observe and describe the stars and the planets as seen through a telescope, graphically in pictures or in video clips from reliable sources.

Maryland Technology Literacy Standards for Students - Grade 4

3.0. A. Learning. 1. Use and explain how technology tools enhance learning. a) Use technology tools, including software and hardware, from a range of teacher-selected options to learn new content or reinforce skills.

General Goal(s): The S will build information through a WebQuest to set up a field trip through the Solar System. They will locate vocabulary (terms), complete a KWL chart, research selected sites and write an itinerary for the trip.

Specific Objectives:

The S, working in small groups, will observe the sun and the planets as seen through a telescope, graphically in pictures or in video clips from reliable web sources as well as their text in order to complete an itinerary, complete with details of the sun and planets, of a class field trip with 80% accuracy.

The S, working in small groups, will complete an Astronomy Webquest with 80% accuracy.

The S, working in small groups, will build a Wiki (through the Webquest) with 80% accuracy.

Required Materials and Tasks:

Computers with internet connections

Computer lab with internet connections

Class wiki set up with links to WebQuest and Group Wikis

WebQuest - <http://astronomywebquest.wikispaces.com/>

5 Group Wikis

S divided into 5 ability groups

Bear and Three Hunters

Two Dog

Three Legged Rabbit

Spider and Sun

Fox and Moon

Emails sent to the groups with their other group member's names and their group name

Step-By-Step Procedures:

1. In the computer lab, S log onto the class wiki where they find their plan of the day (POD). They will read the POD and proceed.

POD - Dear Gators, We recently completed the unit on Earth. Today we will begin our adventure into space. We will be working in small groups to do a task using wikis. Get ready to find out who is in your group and what your task is. Check your email to find out what your group name is and who else is in your group. Do that now.

The email will have their group names (named after Native American Star Stories) and the members of the group. The email will also send the S back to the POD.

Click on the link to find out more about your group name:

<http://www.wvu.edu/depts/skywise/legends.html> *You have 5 minutes to read about your group, then return back to this page. Listen for the timer.*

The S will be given time to read about the legend of their name. They will be reminded that they can return later to read more stories.

2. The S will continue reading the POD.

Gators, the next unit of Science is Astronomy.

You will work with your group to complete an Astronomy task. Click here to find out what we will be doing for the next few days.

<http://astronomyawebquest.wikispaces.com/>

3. The S will be given a few minutes to read through the Astronomy wiki and ask questions. The S (are already sitting next to their group peers through the magic of assigned seating) will begin their WebQuest.

Introduction: This is the year 2053. You are fourth graders who are ready to begin the next Science Unit in your class. You have learned all about the Earth and now it is time to learn about the other planets in your solar system. If you are ready, click below to start your lesson. (as printed in the WebQuest)

4. S will click on link to the task page.

You will: Prepare a KWL chart, Research Earths Solar System, Design a list of Astronomy terms, Type up an itinerary (schedule of places to visit and what you will see and experience)

5. S will click on the link to the Process page.

Step One: Wiki set-up

1. Decorate your space. You may use the Manage Wiki link to change the look of your wiki. You may select an approved image to represent your group. (Feel free to email me for image approval)

2. Add Pages:

Terms, KWL, Itinerary, Pack

3. Term Page - You will use this page to write the terms you find about Astronomy as you do the project. Type the Alphabet in a vertical line. You will need to select the letter, space, -, space, enter for each letter. Use capital letters. Example:

A - Astronomy, astronaut,

B -

C -

D - etc.

4. KWL page: This is where you will begin. Write the word **Know**. Make it bold and underline it if you'd like. List everything you know about Astronomy. Next, write the word **What**. Make it bold and underline it too. Decide what you will need to know in order to complete this task. You will need to revisit this page many times to update your questions. Write the word **Learned**. When you have an answer to the questions, write it here. This is your note taking page. You will need to refer to this page along the journey.

Step 2: Research:

Click on the following links to learn about the Earth's Solar System.

Read the information found in your text about Astronomy.

Watch Magic School Bus Gets Lost in Space (whole class activity)

Remember to write notes in your KWL chart.

Remember to update the Terms page.

<http://hubblesite.org/gallery/>

<http://www.nasa.gov/audience/forkids/kidsclub/flash/index.html>

<http://nasascience.nasa.gov/kids>

http://hea-www.harvard.edu/ECT/the_book/index.html

<http://antwrp.gsfc.nasa.gov/apod/astropix.html>

<http://www.seds.org/billa/tnp/>

<http://starchild.gsfc.nasa.gov/docs/StarChild/>

<http://www.nationalgeographic.com/features/97/stars/>

<http://www.spaceday.com/>

<http://www2.scholastic.com/browse/collection.jsp?id=227>

<http://pgcounty.scottforesman.com>

Step 3: Itinerary

Make a plan for the trip. Write the Itinerary for the trip. Develop schedule for the class. Make sure you include information about the places to visit. Tell your class what they will see when they get there. Make it sound like fun!

Use the Pack page to make a list of things to bring or pack for the trip.

6. Students will click the link to the Evaluation page

Evaluation: Click the link below to fill out the form to assess your own WebQuest. Share your wiki with your classmates. Use the Rubric Form listed below to score

the wikis. Provide additional comments about what you think is great about their wiki and what your think they need to do to improve the wiki. Each student will score each wiki. Read the responses from your classmates. In your small group, consider making any last minute changes to your wiki. Submit your wiki for grading by email.

(Rubric is included below)

The students rate each other's Wikis as well as their own using a GoogleDocs form. I can collect all the results and post them for each group to view.

Link to the GoogleDoc:

<http://spreadsheets.google.com/embeddedform?formkey=dHpyZHZnYUdNbI9oQ1oydHIteXRvS0E6MA>

7. I will grade the Wikis and provide the results and constructive feedback to each group, to determine whether or not the students meet the objectives.

Assessment Rubric

Category	4	3	2	1	0
Cooperative Work - How well did the group work together to develop the Wiki?	Partners show respect for one another's ideas, divide the work fairly, and show a commitment to quality work and support for each other.	Partners show respect for one another's ideas and divide the work fairly. There is commitment by some members toward quality work and support of one another.	Partners show respect for one another's ideas and divide the work fairly. There is little evidence of a commitment toward quality work in the group.	Partners argue or are disrespectful of other's ideas and input. Criticism is not constructive nor is support offered. The work is mostly done by one or two people.	Didn't complete.
Content - the information in the itinerary.	The site has a well-stated clear purpose and theme that is carried out throughout the Wiki.	The Wiki has a clearly stated purpose and theme, but may have one or two elements that do not seem to be related to it.	The purpose and theme of the Wiki is somewhat muddy or vague.	The Wiki lacks a purpose and theme.	Didn't complete.
Graphics - any pictures added to the itinerary to help explain the purpose.	Graphics are related to the theme/purpose of the Wiki, are thoughtfully cropped, are of high quality and enhance reader interest or understanding.	Graphics are related to the theme/purpose of the Wiki, are of good quality and enhance reader interest or understanding.	Graphics are related to the theme/purpose of the Wiki, and are of good quality.	Graphics seem randomly chosen, are of low quality, OR distract the reader.	Didn't complete.
KWL	The KWL	The KWL	The KWL	The	Didn't

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Media Rich Lesson Plan

	page was set up as directed. There are many questions asked and answered. It is clear that the chart was maintained throughout the course of the work.	page was set up as directed. There are some questions asked and answered. It is marginally clear that the page was maintained throughout the course of the work.	page was not set up as directed. There are a few questions asked and answered. It is not clear that the page was maintained throughout the course of the work.	KWL page was not set up as directed. There are no questions asked and answered. It is clear that the page was not maintained throughout the course of the work.	complete.
Terms	The Terms page was set up as directed. There are many terms listed per letter. (Average of 4 or more)	The Terms page was set up as directed. There are terms listed per letter. (Average of 3)	The Terms page was not set up as directed. There are few terms listed per letter. (Average of 2)	The Terms page was not set up as directed. There are few terms listed per letter. (Average of 2)	Didn't complete.

Defense of Media Rich Project

I have designed a WebQuest (Dodge, 2007) to utilize Media-Rich instruction. The WebQuest permitted me to develop a lesson that met the Science curriculum standards as well as technology standards. My students enjoy working online and enjoy working together on our classroom wiki. Designing their own wiki, while meeting the objectives, is a fun way to learn.

Using Technology Integration Planning (TIP) (Roblyer, 2006) is one way to guide teachers to develop worthy lessons of instruction. I used Roblyer's (2006) flow chart to help me with the beginning stages of design.

Phase 1: Determine relative advantage

Phase 2: Decide on objectives and assessments

Phase 3: Design integration strategies

Phase 4: Prepare the instructional environment

Phase 5: Evaluate and revise integration strategies

} Phases 2, 3, 4 are interconnected

Once I came up with my idea, I ran it through the chart. I saw that it fit and started designing.

My basic objective is simple Astronomy. The students need to be able to identify the bodies within our Solar System. I know that they already know enough about our Solar System to do the typical projects associated with the lesson: brochure, model, diorama, mobile or poster. I wanted something different, engaging and thought provoking. There are many great sites out there for the students to learn about space; I needed a way for them to safely "surf" the sites and a way to show what they have learned. Using a WebQuest is a great way to meet all of those needs. I had completed Phase 1. The advantage was I could develop a Media-Rich lesson that would provide opportunities for learning through super websites designed for kids.

The main objective is set up for me through my district as well as the Maryland School Curriculum (Teaching and learning: science, 2010). I have also included a technology standard (Maryland Technology Literacy Standards for Students, 2007).

My objectives:

The Students (S), working in small groups, will observe the sun and the planets as seen through a telescope, graphically in pictures or in video clips from reliable sources in order to complete an itinerary of a class field trip, complete with details about the sun and planets, with 80% accuracy.

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My assessment is a simple table that displays the itinerary: Day, Location, and Important Facts. This meets the criteria for Phase 2.

Phase 3 was attainable through Bernie Dodge's WebQuest (2007) model. The Webquest model is broken down into the *Introduction, Task, Procedure, Evaluation, Conclusion* and a *Teacher's Page*. The formula for design makes lesson planning manageable.

Phase 4 is attainable through my classroom environment as well as our computer lab. I have one hour/week to access the lab but I am able to sign up for extra time or use it when another class isn't using their time. The students, through collaboration via the wiki, are able to work at home as well.

I continually ran through Phases 2-4 while writing the lesson. I needed to continually make sure that I was keeping to the objectives. At one point I started thinking about the link to the Native American Tales about the creation of the world and wanted to include this in the quest but when I went through the phases I realized that I could use that information differently. The students could do a side reading about their group names but the actual tested lesson wouldn't address the lore. I could link that to the reading teacher's lessons later.

Phase 5 - If all goes well, the objectives will be met.

Future Improvements

I am so glad that I ran this through a test class before my students. There are always complications to new lessons but there were 2 big glitches that need to be fixed before I give this assignment to the fourth graders.

The first problem is that the only one who can change the way a Wikispace wiki appears is the creator. The kids can't do it so I need to change that part of the lesson. I will have some images that they can use to design their home page.

The second problem was the table used for the itinerary. It doesn't embed very well and downloading, saving and reposting is difficult. The students may need to write on a piece of paper and then post their final copy on-line. I read, since designing the lesson, that Wikispaces doesn't "do" tables well. We just may muddle through it and hope that Wikispaces makes better table applications as time moves forward.

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