

Finding the Goldilocks Zone: Where Else Does Life Exist in the Solar System?

Geology 1P

Mr. Traeger

Names: _____

Period: _____

Subject: _____

Purpose

One of the biggest questions that humanity has is "Are we alone?" The purpose of this investigation is to gain a more intimate understanding of the ingredients and conditions necessary for life on a solar system body (planet, moon, or asteroid) to exist. It will also model the steps necessary to propose, find funding for, design, and implement a solar system mission like JPL up the street from us does so well.

Assignment

- Complete the [Internet Investigation ESU701](#) titled "Could Mars Support Life?" Everyone must complete this.
- Get with a partner to do the rest of this assignment, or do this by yourself. No more than 2 people in a group!
- Use the results of your Internet investigation and Internet based research on current solar system missions to make a PowerPoint presentation. Videos are also acceptable if you want to make one. Your presentation should be at least 12-15 slides to be considered **A** material. Pictures should accompany text at all times. DO NOT fill your presentation with pictures only! Make sure to **hyperlink** your pictures to the website you got them from. Otherwise, it will be considered PLAGIARISM and I WILL NOT GRADE your project! See me if you do not know how to hyperlink a website to a picture. Build a list of your source websites in Noodle Tools as you go.
- Use the sources listed on the Internet Investigations page and other sources that you may find.
- Pick a solar system body that might have the possibility of past, present, or future life to research in more detail. Examples of solar system bodies that may have or have had life are Mars, Europa and Io (moons of Jupiter), Titan and Enceladus (moons of Saturn). Remember that life can exist in all forms and in various stages of evolution. Highlight space missions of the past, present, and future that have gone to your solar system body.
- You will make an argument either for or against the idea that your solar system body had life in the past, currently has life now, and/or could have life in the future. Make sure you understand the definition of life. Life is not considered just humans. Life is considered to be as simple as single-celled bacteria.
- You must base your information on scientific data and research. DO NOT even think about taking ideas from sources that talk about little green Martians! Also be careful of crackpot websites that talk about flying saucers!
- Your presentation will include maps of areas of your solar system body that show where the possibility of life may exist. These are places where we either have investigated in the past or should investigate in the future. I have included a link to past, present, and future planetary missions on the Internet Investigations links page.
- The last slide of your project should have a slide for the works cited. It is okay to use all websites on this project, as most sources are from JPL and NASA. Your works cited should be in MLA format. Use the [Noodle Tools](#) website for this. If you do not have a Noodle Tools account, please see Mrs. Bozzani in the IRC to obtain one.
- Things to consider in doing your research and making your PowerPoint are as follows:
 1. What are the basic requirements for life on Earth? You should describe these using text and illustrations.
 2. What does it mean when life is said to live in extreme environments? How could this relate to the possibility of life on your solar system body?
 3. What are the similarities and differences between Earth and your solar system body that determine their ability to support life? Examples are size, gravity, availability of liquid water, distance from the sun, eccentricity of orbit, tilt on axis, length of day, atmosphere with appropriate thickness/chemistry, magnetic field, rock types/soils, etc.
 4. Keep in mind that you should be finding sites on your solar system body that show evidence of water. Our current definition of life includes the presence of water.
 5. Be creative with your presentations! Reading 60 of the same type of presentations will get boring for me.
 6. Remember. The main question you want to answer is: Could your chosen solar system body support life? Why?
 7. Prepare a short proposal for a mission investigating your solar system body for life. What would be your mission objectives and how would you get there?

Project Timeline

- Internet Investigation ESU701 due by **March 28/29, 2012 block day**.
- Final project due **Friday, April 13, 2012**. I recommend that you work hard to get most, if not all, of your project done in class with the MacBooks. **This project will go into the TEST category, so it is really important that you do a good job!**

Turning Your Project In

- You will first save your project to your student directory on the school server. Ex) %a:\LCHSNV2\VOL1\USERS\STUDENTS\year graduating\your ID #+ You will name your file with the last name of each partner in your group. Ex) %aeger_bozzani_mars_project.ppt+
- You will copy this file to the main project folder on the server by doing the following. 1) Right click %copy+on your project filename. Do not do this while the file is opened in PowerPoint! You must do this from My Computer/Windows Explorer 2) Select drive %a:\LCHSNV2\VOL1\STUDENTW+3) Double click %Traeger+folder. 4) Double click %Solar System Life Project 2012+folder. 5) Double click on your period\$ folder. 6) Right click

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paste to save your project. I will then be able to pick up your project and read it. Once you submit your project, you CANNOT change it or modify it. If you mess up and want to resubmit, you must rename the file.

Grading: See the rubric on the last page. This is your formula for an A. Use it!

Basics of PowerPoint

PowerPoint Menus

To add another slide:

- INSERT
- New Slide

To add a text box:

- INSERT
- Text Box
- Use tool to draw a rectangle from upper left corner to lower right corner

To insert clip art:

- INSERT
- Picture ---from Clip Art

To insert a Digital Photo:

- INSERT
- Picture---from File
- Navigate to the A: drive (or wherever your photos are saved)
- Click on the right one, re-size using the handles on one of the 4 corners

To Import a photo from the Internet:

From Google images (or any internet site with photos), right click on the desired photo and slide mouse down to COPY

Go back to your PowerPoint presentation and the appropriate slide, right click to PASTE the photo.

Go back to the original internet site, highlight the URL and copy it.

Select the photo by clicking on it once.

Click on the globe icon which has a chain link icon over it. Click in the box called:Type the file or web page name: and paste the URL. Click on OK.

When the presentation is being viewed, the web site will appear as the mouse is being rolled over the image.

To change one slide to another:

- SLIDE SHOW
- Slide Transition
- Random (or which ever you choose)
- Select the button for the speed you wish

To create timing from one slide to the next:

- SLIDE SHOW
- Slide Transition
- Advance Click on box next to: Automatically after
- Type in # of seconds

To add sound to the slide transition:

- SLIDE SHOW
- Slide Transition
- Pull down Menu of Sounds Choose one and
- Preview
- Click on Apply for 1 slide or
- Click on Apply To ALL to have same slide for all slide transitions

To create movement of text or graphics on each slide:

- SLIDE SHOW
- Custom animation
- Click on Timing Tab. Choose one object (It will jump to upper box on left)-Click on Effects Tab-Choose one or RANDOM Use PREVIEW-Sound-Choose one
- Try preview

REPEAT THIS PROCESS FOR EACH OBJECT ON EACH SLIDE

To add a Background photo to a slide:

- Format menu
- Background
- Go to pull down triangle at bottom of box
- Click on Fill Effects
- Click on Picture Tab
- Select Picture button
- Insert Button
- OK

(This will apply to ALL the slides unless you choose %Apply)

Adding Buttons to navigate to a different slide. not just the NEXT slide:

- Slide Show menu
- Action Buttons, slide mouse over one box to choose the type of button
- Click the mouse where you want the button and drag to draw the button

In MOUSE CLICK tab:

Hyperlink to:
Slide (and choose the title of the slide you wish to move to with a mouse click)

Add a sound to that button navigation as well if you wish

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[Internet Investigation ESU701](#) goes here.

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Names: _____

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Topic: _____

| 0 = F | 1 = D | 2 = C | 3 = B | 4 = A |
|---|--|--|---|--|
| Content: Worth 40 points total | | | | |
| <ul style="list-style-type: none"> ▪ Project not done ▪ Content plagiarized | <ul style="list-style-type: none"> ▪ Project late 3 days ▪ Poorly written ▪ Insufficient amount of content. Way less than 15 slides ▪ Missing sufficient amount of content ▪ No maps of your study area | <ul style="list-style-type: none"> ▪ Project late 2 days ▪ Average writing ▪ Missing a fair amount of content ▪ One Map | <ul style="list-style-type: none"> ▪ Project late 1 day ▪ Good, standard level of writing ▪ Missing some content ▪ One map with proposed landing sites and geology depicted | <ul style="list-style-type: none"> ▪ Project on time ▪ Excellent, creative level of writing ▪ Addresses all interest areas that relate to the topic. ▪ 2 maps with landing sites and geology depicted |
| Aesthetics (Looks and Layout): Worth 10 points total | | | | |
| <ul style="list-style-type: none"> ▪ Project not done | <ul style="list-style-type: none"> ▪ Standard presentation with no pictures ▪ No method to layout | <ul style="list-style-type: none"> ▪ Standard presentation with minimal use of pictures/visual aids ▪ No animation ▪ Minimal thought to layout | <ul style="list-style-type: none"> ▪ Creative presentation with pictures used sparingly. ▪ Minimal animation ▪ Layout is okay | <ul style="list-style-type: none"> ▪ Uses full range of color and employs a layout that is pleasing to the eye ▪ Pictures are integrated with the text. ▪ Extremely Creative ▪ Uses animations and slide transitions |
| Bibliography/Works Cited: Worth 10 points total | | | | |
| <ul style="list-style-type: none"> ▪ Project not done ▪ No hyperlinks used in pictures and animations | <ul style="list-style-type: none"> ▪ No citation used ▪ No parenthetical documentation ▪ No hyperlinks used in pictures and animations | <ul style="list-style-type: none"> ▪ Incorrect MLA citation format ▪ No parenthetical documentation used ▪ Hyperlinks used in pictures and animations | <ul style="list-style-type: none"> ▪ Incorrect MLA citation format ▪ Parenthetical documentation used ▪ Hyperlinks used and referenced in the works cited | <ul style="list-style-type: none"> ▪ Correct MLA citation format ▪ Parenthetical documentation used ▪ Hyperlinks used and referenced correctly in the works cited. |
| Final Grades | Content | Aesthetics (Looks) | Works Cited | Totals |
| Project should be submitted to the Studentw server by 3:00 PM on Friday, April 13, 2012 | | | | |
| Grand Total out of 60 points possible: | | | | |

Comments: There should be evidence that BOTH partners contributed to this project. Slackers will lose points! Make sure to tell me if your partner isn't pulling his/her weight!