**Introduction to the Project:**

You are a member of the Ambassadors of La Huasteca Canyon committee specializing in developing and implementing parks tourism programs.  Current tourism attractions within Monterrey include La Cola del Caballo, Las Grutas del Garcia and Chipinque. ASFM hopes to put on display a permanent information center about the Huasteca by the entrance of the school to showcase the beauty and elegance of the Huasteca Canyon by highlighting the natural gems and geological attractions within the canyon.

You have been asked to apply your knowledge of the concepts below to design a product that *could* be used in the parks tourist center to illustrate & highlight rock formations in Huasteca Canyon. The product that you design will be on display for public viewing at *Celebrate Huasteca!* – A celebration of Huasteca hosted by ASFM during finals week.

|  |  |  |  |
| --- | --- | --- | --- |
| English | Math | Science | Socials |
| - Vocabulary  - Listening / speaking skills  - Paragraph Structure  - Grammar  - Constructing Support  - Presentation Skills  - Writing Conventions | - Fractions  - Decimals  - Percent  - Integers  - Scientific Notation | - Landform--Creation and Destruction  - Soil Types and Properties  - Rock Cycle  - Rock Types  - Molecules (chemical composition)  - Chemical and Physical Changes (Law of Conservation of Mass) | - Five themes of Geography     1. Human Environment Interactions—Depend on, Adapt to, Modify     2. Location—Absolute & Relative     3. Place-Physical Natural Aspects, Man made, Traditions & Celebrations     4. Movement-People, Ideas, Things     5. Region-Vegetation & Climate  - Baloney Detection Kit  - Research Methods  - Works Cited |

You will work together in teams and choose **one** of the following projects.

**1. Video and pamphlet**

* Between the two products, all content should be addressed for each subject
  1. Contains the science content
  2. Contains the socials content
* Pamphlet must include all English content: paragraph structure, vocabulary and identified grammar. It should be a take away, condensed version of what is in the video.
* A complete works cited must be included. Each student will also be responsible for turning in their research notes, source evaluation forms and a 5 themes connection sheet.

**2. Story board-paragraphs for each board**

* A minimum of 12 frames.
* In picture/image form must contain the science content and socials content.
* Each frame should be accompanied by an explanatory paragraph that includes all English content. The written portion must include paragraph structure, vocabulary and identified grammar.
* A complete works cited must be included. Each student will also be responsible for turning in their research notes, source evaluation forms and a 5 themes connection sheet.

**3. Children’s book**

* A minimum of 16 pages--each student will be responsible for at least 4 pages.
* Must contain all required socials and science content.
* Each student will write a 150 word minimum summary of their assigned pages (a minimum of 4) in which they include all English content: correct paragraph structure, vocabulary and identified grammar.
* A complete works cited must be included. Each student will also be responsible for turning in their research notes, source evaluation forms and a 5 themes connection sheet.

**4. Graphic Novel**

* A minimum of 24 pages (6 pages for each student) and each page has a minimum of 4 frames.
* Must contain the science content and socials content.
* Each student will write a summary of their assigned pages (a minimum of 6) in which they include all English content: correct paragraph structure, vocabulary and identified grammar.
* A complete works cited must be included. Each student will also be responsible for turning in their research notes, source evaluation forms and a 5 themes connection sheet.

**5. Magazine (ex. National Geographic) - printed or electronic magazine**

* Each student will write a 500 word article that contains at least 3 images (photos, maps, etc.) with captions.
* Must contain the science content and socials content.
* Each student will be assessed on paragraph structure, vocabulary and identified grammar.
* A complete works cited must be included. Each student will also be responsible for turning in their research notes, source evaluation forms and a 5 themes connection sheet.

**6. Interactive Visual Presentation (ex. Prezi, Ahead, Flash Video, Google Earth Virtual Tour or PowerPoint) accompanied by a pamphlet**

* Must include a minimum of 28 transitions (each student is responsible for at least 7 transitions).
* Must contain the science content and socials content.
* Pamphlet must include all English content: paragraph structure, vocabulary and identified grammar. It should be a take away, condensed version of what is in the presentation.
* A complete works cited must be included. Each student will also be responsible for turning in their research notes, source evaluation forms and a 5 themes connection sheet.

**7. Model/diorama with written essay**

* Must create a model or diorama.
* Each student will write a 500 word essay to explain how the content is displayed in the model.
* Must contain the science content and socials content.
* Each student will be assessed on paragraph structure, vocabulary and identified grammar. All English content should be included in essay.
* A complete works cited must be included. Each student will also be responsible for turning in their research notes, source evaluation forms and a 5  themes connection sheet.

**8. Board Game and Advertisement Pamphlet**

* Must include an instruction manual/directions and answer key for all questions.
* Must include a pamphlet advertising your product. Each student must contribute at least one paragraph to the written portion of the project. In this pamphlet will include all English content.
* Must contain the science content and socials content.
* Each student will be assessed on paragraph structure, vocabulary and identified grammar.
* A complete works cited must be included. Each student will also be responsible for turning in their research notes, source evaluation forms and a 5 themes connection sheet.

**9. Own Option that must be approved by your TEACHERS.**

* Socials, Science AND English teacher must approve idea.
* Must contain the science content and socials content.
* Each student will be assessed on paragraph structure, vocab. and identified grammar.
* Complete works cited must be included. Each student will also be responsible for turning in their research notes, source evaluation forms & 5 themes connection sheet.

**TIMELINE OF PROGRESS**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***WEEK: Dec. 3 - Dec. 7*** | ***Day 1*** | ***Day 2*** | ***Day 3: Thursday*** | ***Day 4*** |
| **Daily Agenda** | -Huasteca Project begins: Intro to Project | -Brainstorm  -Choose your idea  - Unit Test | -Go through packet and clarify instructions for the project  **-Field Trip to Huasteca Canyon (BRING YOUR CAMERAS!)** | -Interviews with Huasteca expert (primary source) |
| **Daily Goal** |  | **-Idea for project must be final!** | *Prepare questions for presenters* |  |
| ***WEEK: Dec. 10-14*** | ***Day 1*** | ***Day 2*** | ***Day 3*** | ***Day 4*** |
| **Daily Agenda** | -Work day in all classes | -Work day in all classes | -Work day in all classes | -Work day in all classes |
| **Daily Goal** |  | *Observations by English Teachers (listening, speaking and dispositions)* | *Observations by English Teachers (listening, speaking and dispositions)* | *Bring all materials together from each group member to see what is missing.* |

|  |  |  |  |
| --- | --- | --- | --- |
| ***Dec. 17-19*** | ***Mon, Dec 17*** | ***Tue, Dec 18*** | ***Wed, Dec 19*** |
| **Daily Agenda** | *FINAL Open Classroom Work Day*  *ENLACE Testing*  *(10:45-11:45)* | *Celebrate Huasteca! (in class practice)*  *ENLACE Testing*  *(10:45-1:45)* | *Celebrate Huasteca! Expo in the Cafeteria* |
| **Daily Goal** | *Proofread and double check partners’ work.*  ***Finish Project*** | *Be Ready to Present!!!*  *Critiquing one another’s presentation techniques* | *Outstanding Public Presentations!* |

**HUASTECA PROJECT GROUP RESPONSIBILITY PLAN**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  | | --- | | **Your Name:** |   Geography Questions:  1.  2.  **SCIENCE**   |  |  | | --- | --- | | **Content** | **Vocab** | | 1. | 1. | |  | 2. | |  | 3. | | 2. | 4. | |  | 5. | |  | 6. | |  | 7. | | |  | | --- | | **Name of Group Member:** |   Geography Questions:  1.  2.  **SCIENCE**   |  |  | | --- | --- | | **Content** | **Vocab** | | 1. | 1. | |  | 2. | |  | 3. | | 2. | 4. | |  | 5. | |  | 6. | |  | 7. | |
| |  | | --- | | **Name of Group Member:** |   Geography Questions:  1.  2.  **SCIENCE**   |  |  | | --- | --- | | **Content** | **Vocab** | | 1. | 1. | |  | 2. | |  | 3. | | 2. | 4. | |  | 5. | |  | 6. | |  | 7. | | |  | | --- | | **Name of Group Member:** |   Geography Questions:  1.  2.  **SCIENCE**   |  |  | | --- | --- | | **Content** | **Vocab** | | 1. | 1. | |  | 2. | |  | 3. | | 2. | 4. | |  | 5. | |  | 6. | |  | 7. | |

**CHECKLIST FOR ALL CLASSES**

|  |  |  |
| --- | --- | --- |
| **TASK** | ✔ | **WHERE CAN YOUR TEACHER FIND IT?** |
| ***English*** |  |  |
| ·  Integrated 5 vocabulary words in italics |  |  |
| ·  Identified all noun, adjective, and verb types in its correct color code |  |  |
| ·  Practiced and prepared all presentation skills (eye contact/gestures, voice, delivery) |  |  |
| ·  Written a paragraph using proper format |  |  |
| ·  Prepared reasoning for visiting Huasteca Canyon (constructed support) |  |  |
| ·  Edited written work for writing conventions (spelling/grammar) |  |  |
| Print out extra copy for English Teacher |  |  |
|  |  |  |
| ***Science*** |  |  |
| **·  All Required Science Content Included** |  |  |
| **·  All Required Science Vocab Included** |  |  |
| **·  Organized** |  |  |
| **·  Visually appealing** |  |  |
| **·  Creative** |  |  |
|  |  |  |
| ***Socials*** |  |  |
| ·  Included a “Works Cited” |  |  |
| ·  Included research notes |  |  |
| ·  Included “Source Evaluation Forms” |  |  |
| ·  Included all five themes of geography |  |  |

**SCIENCE INSTRUCTIONS**

**Canyon Field Trip Picture Notes**

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Group Members:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Period:\_\_\_

|  |
| --- |
| You will be taking pictures of the following terms during your excursion to the Huasteca Canyon. It is important that you write down the number of the picture you took while you take it and a short description to avoid having trouble identifying which picture is which when you get back to school. |

|  |  |  |
| --- | --- | --- |
| **Term** | **Pic(s) #** | **Description** |
| Weathering |  |  |
| Gravity |  |  |
| Limestone |  |  |
| Landslide |  |  |
| Erosion |  |  |
| Water Abrasion |  |  |
| Topsoil |  |  |
| Stratification |  |  |
| Root Pry |  |  |
| Conglomerate |  |  |
| Transported Rock |  |  |
| Plant Acids |  |  |
| Humus |  |  |
| Parent Rock |  |  |
| Acid Rain |  |  |

**Chemical Weathering**

Chemical reactions break down the bonds holding rocks together, causing them to fall apart, forming smaller pieces. Chemical weathering is more common in locations where there is a lot of water because water is important to many of the chemical reactions that can take place. Warmer temperatures are also more friendly to chemical weathering. The most common types of chemical weathering are listed below.

* **Oxidation** takes place when oxygen combines with other elements in rocks to form new types of rock. These new substances are usually much softer, and thus easier for other forces to break apart.
* **Hydrolysis** occurs when water combines with the substances in rocks to form new types of substances, which are softer than the original rock types. These allows other forces such as mechanical weathering to more easily break them apart.

**Carbonation** takes place when carbon dioxide reacts with certain types of rocks forming a solution, that can easily be carried away by water

1. How do you think chemical weathering has affected the rocks in the Huasteca canyon? Why? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Acid Rain**

* Acid rain describes any form of precipitation with high levels of nitric and sulfuric acids. It can also occur in the form of snow, fog, and tiny bits of dry material that settle to Earth.
* Rotting vegetation and erupting volcanoes release some chemicals that can cause acid rain, but most acid rain falls because of human activities. The biggest culprit is the burning of fossil fuels by coal-burning power plants, factories, and automobiles.
* When humans burn fossil fuels, sulfur dioxide (SO2) and nitrogen oxides (NOx) are released into the atmosphere. These chemical gases react with water, oxygen, and other substances to form mild solutions of sulfuric and nitric acid.

2. Do you think Monterrey has acid rain? Explain why or why not.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Plant Acids**

Plants can also cause chemical weathering. Plants produce weak acids that dissolve certain minerals in rocks. Lichens are a type of living thing that produce weak acids capable of dissolving the minerals in rocks.

3. Do you think that a single plant is capable of turning parent rock into topsoil by means of mechanical and chemical weathering during its lifetime? Explain why or why not.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Demonstration**: Limestone in Acid

4. Describe what happens when the limestone is placed in acid.

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5. How do acids contribute to weathering and erosion in the Huasteca Canyon? What are two sources the acids that chemically weather the rock can come from?

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**SCIENCE RUBRICS**





