Planet Intro Project

Project 2: teams of 1 or 2 people create a class activity focusing on one planet* in our Solar System
Time: 2 class periods - one to prepare and one to share
* planet in this document refers to planets, minor planets and large moons

Groups of 1-2 will explore the mysteries of our planetary neighbors – so close and yet, so far away. We will use this activity as a stepping stone to a larger planet project.

Briefly investigate all items 1-5 below, with each person in your group focusing on one or two in depth.

1. The geology/atmosphere of your chosen planet: what is the core made of, what are the main components of the atmosphere if it even has one, do we think there is water there, etc.
2. The missions sent to your planet: when did we go, what did we learn, did we get to the surface, are there more planned, etc.
3. What are the possibilities of alien life on your planet surrounding your planet?
4. What is the habitability of your planet? Could humans live there someday, could they live in orbit around it, what would that look like?
5. What are some of the many ways humans living on your planet could run into trouble? Share the many ways of dying on your planet.

Assessment Options:

Play
Game
News Broadcast
Podcast
Pitch

Each assessment should be between 4 and 7 minutes long.

With your group, each of you should do an equitable amount of work on this project and it should be obvious you all know something about your chosen planet.

Each assessment should focus on **one** main learning goal for your audience: do you want them to learn something about:

a. Understanding the geology or atmosphere
b. Sending a mission
c. The types of aliens that might exist there
d. How humans could live there
e. How humans could die there

You may also use Generative AI to help but you must also make the work better than AI alone. Remember that AI is often too wordy and hides inaccuracies in text that sounds correct - you'll be counted off for any scientific inaccuracies.

Play:

Set up a scene on your planet and use the play to give an overview of your chosen learning goal. You can include fiction as long as there are plenty of **accurate** facts relating to your learning goal. You can set the scene in the present or the future, make sure your main learning goal is achieved. Incorporate some sort of audience participation to encourage everyone to listen and make sure they have an opportunity to give answers.

Game:

Plan for a series of puzzles to solve at each table for an Escape Room type game, have each table share with each other at the end. Or have a board game type experience - remember that they need to complete the activity within your 7 minutes! Share who won the game, possibly have mini prizes like candy or stickers. In order to win the game they need to know some facts.

News Broadcast:

Set up you and your partner as co-anchors or one person anchors and one is reporting from the planet itself, etc. Through the format of a news broadcast, share information with the class so that they understand your learning goal. This can be set in the future and/or include fictional characters, as long as students are learning facts from your broadcast. Have "callers" from the audience who are a part of the broadcast and have to answer questions.

Podcast:

The class is invited to the recording of your Planet Podcast! Include interviews with guests, real or imaginary, and incorporate your main learning goal throughout so the class learns about your main focus. Incorporate the class audience as guests and help them get the right answers.

Pitch:

Assume the class audience is a group of wealthy investors and you are pitching them on some aspect of your planet. If it's the geology, assume the heavy salts of Mars will work wonders on their skin, etc. Students give the pitch a thumbs up or a thumbs down.

Use of AI:

Think through your goals before using AI.
Answer the following questions before going to AI:

1. What planet do you want to focus on?
2. What question to you want to focus on?
3. What assessment do you want to do?

Do you need inspiration?

There are many ways - one is to ask for specific ideas focused on your specific planet and the specific assessment you choose. Ex) please help me come up with a goofy melodrama in the style of Kdramas that can be completed in 5 to 7 minutes and focuses on two geologists on Saturn's moon Iapetus who happen to be siblings with a difficult history but they end up getting along. The geologists will have dialogue that advances their troubled relationship while also explaining details on the geology of Iapetus. Make the stark contrast between each side of the moon a metaphor for the different approaches to life of the geologists. Use this draft of the play as a starting point and ensure all scientific information is accurate - (draft attached).
After this type of prompt, you will need to review the facts it gives you for accuracy and it's likely you'll have to read it carefully and do some editing as it doesn't sound great after the first pass or two.

How can you use AI to understand the information on the planet better?

One possibility is to ask specific questions once you've done preliminary research. Ex) please help me understand the different layers of Jupiter's atmosphere. I know that there are horizontal bands as well as different layers as you go deeper into the planet. What makes the bands different? How did they form? How much do we know about the layers below the surface and how did we learn that? Pull 3 or 4 of the most interesting facts about Jupiter's atmosphere together and explore each of them with an additional fact or two that would be interesting to a high school audience.
Prompts like this one are often not as useful as going to a quality educational website like NASA's, so don't feel you must always use AI.

Are you improving your draft?

One idea is to drop a draft into the prompt and ask for specific feedback. Ex) please revise this draft of a pitch that I wrote tempting investors to imagine a future living on the Moon. I want to inform my audience about the ways I learned to stay alive on the moon and to avoid radiation, cold, vacuum and the sharp moon dust as if it was a grand adventure that they will love to embark on. I also want them to feel that they can have a journey of self discovery if they build a new life in this inhospitable location. Please help me with the language to keep it engaging and fun but also appropriate for a high school level class project.
Remember that this helps only because we are not grading you on your writing, so it's ok to ask AI for specific writing help. I don't recommend prompts like this for English classes.

Improve your presentation skills.

You can pull information in and ask the AI to reformulate it in your own words. Give an example of how you'd explain something you know a lot about, like your favorite sport or food or vacation spot, and ask it to give you a version of the facts you find about your planet in a conversational tone that fits your personal voice.

Final Check:

Double check all responses you get and remember that **accuracy counts in this class**. AI tends to give more words than necessary, you may need to review your response for efficiency, or reply with another prompt and ask for a briefer answer.

General Notes:

Think about what planet you may want, what type of assessment, what information to share, etc. and take notes below:

Sign up with the names of team members below - remember you can have one or two people total per planet:

Planets:

Mercury -

Venus -

Mars -

Jupiter -

Saturn -

Uranus -

Neptune -

Minor planets:

Pluto -

Ceres -

Haumea -

Eris -

Moons:

Our Moon -

Jupiter's moon Europa -

Jupiter's moon Ganymede -

Saturn's moon Titan -

Neptune's moon Triton -

Pluto's moon Charon -

A good place to start looking for information is NASA's Solar System start page: https://solarsystem.nasa.gov/

NASA also has many areas online where you can find classroom activities. Most of them Solar System Exploration - NASA Scienceare tailored to younger students, you can use these as a starting off point and make them your own.
Example for planet geology https://www.jpl.nasa.gov/edu/teach/activity/art-the-cosmic-connection/
Create your own spacecraft to Saturn
https://www.jpl.nasa.gov/edu/teach/activity/jewel-of-the-solar-system-part-5-my-spacecraft-to-saturn
Building a permanent human settlement on Venus
https://www.cnet.com/science/nasa-wants-to-build-a-floating-city-above-the-clouds-of-venus/

Graded on: timeliness, completeness, group dynamics, creativity, classroom engagement and overall quality

How each category is graded

On Time

if they are ready to share when they are called on or by the agreed upon due date

Group Dynamics (if applicable)

does everyone participate equitably? Do they all work together seamlessly to avoid wasting time?
if not applicable, a solo presenter gets this point automatically

Presentation to the class

each type of assessment is graded slightly differently, looking for: an obvious learning goal, engagement with the class, ensuring that the students all learn the stated goal, effort and organization that went into making the podcast/play/pitch/game run smoothly

Accuracy

Is the information shared accurate?

Quality

based on what could be done with this topic, how well did they do? Just the bare minimum? (1pt) a pretty good job (2pts) or excellent work (3pts)

15 total points