Name: _____ Date: _____

Exploring Exoplanets Podcast Project

Right now there are over 4000 exoplanets (planets outside of the solar system) confirmed, and these are just the ones we know about! The number of confirmed exoplanets is growing every year. NASA continues to add planets to the list all the time as new exoplanets are discovered.

We have started to figure out where to look for characteristics of planets and moons that could support life in our solar system and this is happening beyond our solar system, too!

In 2019 and 2020, headlines in the news have included things like:
"Alien Life on Exoplanets May Be 'More Abundant and Active' Than on Earth, Say Scientists"
"Large Exoplanet Could Have the Right Conditions for Life"
'NASA Discovers New Earth-like Exoplanet"

What about planets beyond our solar system? What are they like? Do they have the potential to support life?

We are going to investigate exoplanets as a class. Choose ONE exoplanet and create **a podcast** to communicate what you figure out about that planet and whether or not you think that planet could support life.

You podcast needs to include:

- Exoplanet description: How do we know what the planet is like?
- System description: What is the structure of the universe nearby the planet? Where is the system compared to Earth and our solar system?
- Exoplanet detection: How was the planet discovered? Show the data and explain what they mean.
- An argument about whether or not this planet can support life.

Optional:

- Include an interview with someone else (family, friend, classmate) about if they think there is life on this planet and why.
- Include a handout with original art depicting what you think the planet might look like.

Project plan/timeline

Day 1: Identify and evaluate sources of evidence and begin to plan the podcast.
Day 2: Finish planning the podcast, write a script, and record the podcast.
Day 3: Podcast exhibitions - share your podcast with other groups in your class.

Possible exoplanets to explore

Each group in your class will investigate a different exoplanet. Choose one exoplanet from the list for your group to research. Make sure your exoplanet is not the same as one selected by another group.

https://en.wikipedia.org/wiki/List_of_exoplanets_discovered_using_the_Kepler_space_telescope

Exploring exoplanets podcast rubric			
	Meets expectations	**Approaching expectations**	**Does not meet expectations**
Obtaining and Evaluating Information			
Sources	Includes three sources cited and an explanation of why these three sources are appropriate and reliable (or if one source is not reliable, an explanation of why, and how this was dealt with).	Includes three reliable sources cited.	Does not include three sources, or all three of these sources are not reliable with no explanation of why they were included.
Communicating Information			
Exoplanet description	Includes detailed description of the characteristics of the planet including the type of planet, what the surface is like, and other important aspects of the planet.	Includes minimal description of the planet's characteristics.	Does not include a description of the exoplanet or includes information that is not relevant to the task.
System description	Includes a detailed description of what system the exoplanet is located in, the scale of the system compared to our solar system, and the distance of that system from our solar system.	Includes what system the exoplanet is located in but does not include specific information about that system.	Does not include information about the system that the exoplanet is located in.
Exoplanet detection	Includes a detailed description of how the exoplanet was detected, including what patterns scientists identified in the data to determine what the system looks like and what the planet might be like.	Includes the name of the technique used to detect the planet.	Does not include a description of the detection methods.
Argumentation	Includes a claim about the probability of life on the exoplanet in the past, now, or in the future, with a justification for this claim that draws on evidence from the sources.	Includes a claim about the probability of life on the exoplanet in the past, now, or in the future.	Does not include a claim about the probability of life on the exoplanet.

Obtaining/Evaluating/Communicating Information Checklists

In class, use the Obtaining, Evaluating, and Communicating Information checklists as a group to make sure your podcast sources are solid and reliable. Your group needs at least 3 different sources. As a group, follow the protocol below to guide you in identifying and working with your sources. See the guidance on *Obtaining Information from Scientific Texts Checklist* and *Evaluating Information Checklist* for determining and evaluating possible reliable sources.

Round	Job		
1	Student A fills out *Obtaining Information from Scientific Texts Checklist* for one source.	Student B fills out *Obtaining Information from Scientific Texts Checklist* for one source.	Student C fills out *Obtaining Information from Scientific Texts Checklist* for one source.
2	Student A fills out *Evaluating Information Checklist* for C's source.	Student B fills out *Evaluating Information Checklist* for A's source.	Student C fills out *Evaluating Information Checklist* for B's source.
3	All together: Fill out *Communicating Information Checklist*		

Podcast script

Use the space below to write out your podcast script.

Podcast recording notes

Use this space to keep track of any production notes you need for your podcast. For example, when will you play music and where will the music come from?

Exhibition: Sharing your podcast/listening with others

Use the table on *Exhibition: Sharing your podcast with/listening to others* to record information as other groups present their podcasts. Our goal as a class is to identify what characteristics the exoplanets have that mean the planets could potentially support life.