

Strange New Planet

NAME: _____ DATE: _____



STUDENT GUIDE

Solar System Exploration

1. Explain in 2-3 sentences how you think we know about the planets and moons in our solar system.

Part A: Telescope Observation (Earth Surface & Orbiting Satellite)

3. Using your Earth Based Telescope, view the Strange New World that was recently discovered.
- a) Rubber band a piece of cellophane over the end of your telescope.
 - b) Looking through the telescope, view the new planet for 30 seconds.
 - c) Record your observations in the data table below.
4. Using your Space Based Telescope, view the Strange New World that was recently discovered.
- d) Remove the Cellophane wrap from your telescope and take one step closer to the Strange New World.
 - e) View for 30 more seconds and record any additional observations.

Diagram the Strange New World	Describe the Strange New World

5. What did the cellophane represent and how different were the observations between the Earth based and Space based telescopes?

6. Based on your observations, record your questions for future exploration.

Question 1	
Question 2	
Question 3	
Question 4	
Question 5	

Part B: Fly By Mission Observation

1. Conduct a Fly By Mission of the Strange New World

- a) Walk parallel to the planet (5 Feet) and when told to, turn and view the planet through your telescope until you are told to return to mission control. At that point, turn away and return to your table.
- b) Record your observations in the data table below.

Diagram the Strange New World	Describe the Strange New World

2. Which of your questions (based on your “telescope observations) did the fly-by mission answer? What are the answers?

Question ____	
Question ____	
Question ____	
Question ____	
Question ____	

3. What new or remaining questions do you have for a future spacecraft that can orbit the Planet?

Question 6	
Question 7	
Question 8	

Part C: Orbiter Mission Observation

1. Orbiting the Strange New World

- a) You will complete 2 orbits of the Strange New Planet at a distance of 2-feet and looking through the telescope. Return to mission control when done.
- b) Record your observations in the data table below.

Diagram the Strange New World	Describe the Strange New World

Part C: Orbiter Mission Observation cont...

2. Which of your questions (based on your “telescope observations) did the Orbiting mission answer? What are the answers?

Question ____	
Question ____	
Question ____	
Question ____	
Question ____	

3. What new or remaining questions do you have for a future spacecraft that can Land on the Planet?

Question 9	
Question 10	
Question 11	

Part D: Landing on the Planet

1. Landing on the Strange New World

a) Develop a mission plan for landing on the Strange New World. Missions should include the landing spot and features to be examined based upon their interest and science questions from prior observations. Teams will need to agree on one place to land and examine.

How did your team decide on a Landing Site?	Questions to Answer?

b) One mission control team member will use a pushpin or sticker to mark the team’s landing spot.
 c) The mission team will have 1-minute to view their landing site through the telescope place over the team designated spot. This is done by lining up your pushpin or marker in the center of the viewer. and standing 1-foot from the Strange New Planet.

Diagram Landing Site	Describe the Strange New World

Part E: Mission Type Comparison

1. In the table below, list the kinds of information you can collect from each type of mission, as well as the advantages and disadvantages of using each type.

Mission Type	Type of Information	Advantages	Disadvantages
Surface and Space Telescope Observations			
Fly-by Missions			
Orbiter Missions			
Lander Missions			

2. In addition to engineering and technology, teamwork among people with different perspectives is important in answering science questions. Reflect on the following:

Question	My Thoughts
What were the advantages of working on a team to study the “Strange New World”?	
What were the disadvantages of working on a team to study the “Strange New World”?	
What could you do to encourage good teamwork in the future?	
Why is it important for many people with different perspectives and backgrounds to work together?	
How do you think scientists and engineers benefit from working together?	