Lesson: Scientific Notation	Name:
Teacher:	Date:

Space Distance Model Project Plan/Blueprint – Research & Design Sheet

Benchmark: MA.8.NSO.1.4 – Express numbers in scientific notation and use them to represent quantities in real-world problems.

Step 1 – Choose Your Celestial Pair

Circle your chosen pair of celestial bodies:
☐ Earth → Moon ☐ Earth → Sun ☐ Venus → Earth ☐ Earth → Mars ☐ Sun → Mercury

Why did your group choose this pair?

Step 2 – Research & Write (Science Connection)

Use reliable sources (NASA, space facts, etc.) to research your chosen celestial bodies.
Write a short paragraph for each celestial body describing its main features.

Celestial Body 1: _____

(Write a short research paragraph — include size, composition, orbit, and unique facts.)

Celestial Body 2: _____

(Write a short research paragraph — include size, composition, orbit, and unique facts.)

Step 3 – Research Data Table

Celestial Body Diameter (km) Distance from Earth or Sun (km) 3–5 Fun Facts
Body 1:
Body 2:

Sources Used:

Step 4 – Convert to Scientific Notation (Math Connection)

Now, take the large numbers you found and convert them into scientific notation.

Quantity	Standard Form	Scientific Notation
Distance between the two bodies	_____ km	_____
Diameter of Body 1	_____ km	_____
Diameter of Body 2	_____ km	_____

✅ Helpful Reminder:

- Move the decimal until there is 1 whole number before it.

- Left = positive exponent, Right = negative exponent.
- Example: 149,600,000 → 1.496×10^8

Step 5 – Model Design Sketch (Engineering Connection)

Use the blank space below to sketch your model layout.
Label each celestial body, show the connecting string (distance), and where your index cards with scientific notation and facts will go.

⬇️ Sketch your model here ⬇️

Step 6 – Summary of Display Facts (Communication Connection)

Write a short paragraph summarizing what information your group will include on the actual project display (the facts and features that viewers will see at first glance).

Example: "Our project shows the distance between Earth and the Moon. We included their diameters, surface descriptions, and the scientific notation of their distance."

Summary:

Step 7 – Group Roles

Role	Name	Responsibility
Designer/Engineer		Builds and assembles the model
Researcher		Gathers accurate facts and data
Recorder		Converts data into scientific notation and labels model
Presenter		Leads oral presentation and explanation

Step 8 – Reflection

1. What is the most interesting thing you discovered about your celestial bodies?

2. How does scientific notation help you understand these large distances better?