Identify the NGSS performance expectation(s) that will be the focus of this instructional sequence.

PS2-4 **Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses (*and distances*) between interacting objects. [Clarification Statement: Examples of evidence for arguments could include data generated from simulations or digital tools, and charts displaying mass, strength of interaction, distance from the Sun, and orbital periods of objects within the solar system.] [*Assessment Boundary: Assessment does not include Newton's Law of Gravitation or Kepler's Laws.*]**

ESS 1-3 **Analyze and interpret data to determine scale properties of objects in the solar system. [Clarification Statement: Emphasis is on the analysis of data from Earth-based instruments, space-based telescopes, and spacecraft to determine similarities and differences among solar system objects. Examples of scale properties include the sizes of an object's layers (such as crust and atmosphere), surface features (such as volcanoes), and orbital radius. Examples of data include statistical information, drawings and photographs, and models.] [*Assessment Boundary: Assessment does not include recalling facts about properties of the planets and other solar system bodies.*]**

For the NGSS performance expectation(s) that you selected, identify the related Science Disciplinary Core Ideas (DCIs), Science and Engineering Practices (SEPs), and Crosscutting Concepts (CCCs). You can find this information on the standard page related to your performance expectation(s).

Science Disciplinary Core Ideas *This is the science content that students will understand. Refer to the standard you selected.*	**Science & Engineering Practices** *This is what students will DO to construct an understanding of science concepts.*	**Science Crosscutting Concepts** *These concepts cut across the different domains of science.* *Refer to the standard you selected*
PS2-4 **Disciplinary Core Idea:Types of Interactions** Gravitational forces are always attractive. There is a gravitational force between any two masses, but it is very small except when one or both of the objects have large mass—e.g., Earth and the sun. **ESS 1-3** **Disciplinary Core Idea: Earth and the Solar System** The solar system consists of the Sun and a collection of objects, including planets, their moons, and asteroids that are held in orbit around the Sun by its gravitational pull on them.	**PS2-4** **Practice: Engaging in Argument from Evidence** Construct and present oral and written arguments supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon or a solution to a problem. **Scientific Knowledge Is Based on Empirical Evidence** Science knowledge is based upon logical and conceptual connections between evidence and explanations. ESS1-3 **Practice: Analyzing and Interpreting Data** **Analyze and interpret data to determine similarities and differences in findings.**	**PS2-4** **Crosscutting Concepts: Systems and System Models** Models can be used to represent systems and their interactions—such as inputs, processes and outputs—and energy and matter flows within systems. **ESS1-3** **Crosscutting Concepts: Scale, Proportion, and Quantity** Time, space, and energy phenomena can be observed at various scales using models to study systems that are too large or too small. **Interdependence of Science, Engineering, and Technology** Engineering advances have led to important discoveries in virtually every field of science and scientific discoveries have led to the development of entire industries and engineered systems.