

Modeling Celestial Phenomenon and Making Predictions

What would happen if an asteroid hit the Earth and changed its tilt? What if the Earth stopped spinning?

Which one of these scenarios would you like to have your classmates investigate and make predictions about? Using materials provided by your teacher and any other teacher approved materials you can gather at home, create a model that explains two of the celestial phenomena you studied in this unit. This model should also allow you and others to make predictions about one of the scenarios/questions above or any other interesting scenarios/questions you can come up with yourself.

Additionally, you will be evaluating your model's strengths and limitations in terms of...

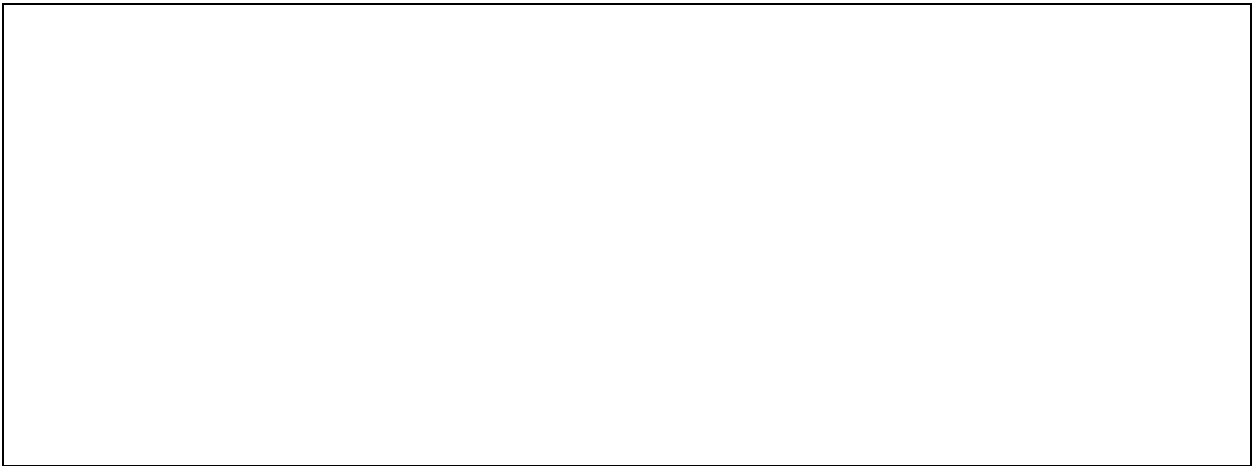
- explaining the celestial phenomena of focus
- depicting accurate scale
- making predictions about your question/scenario

Celestial Phenomena you studied this unit:

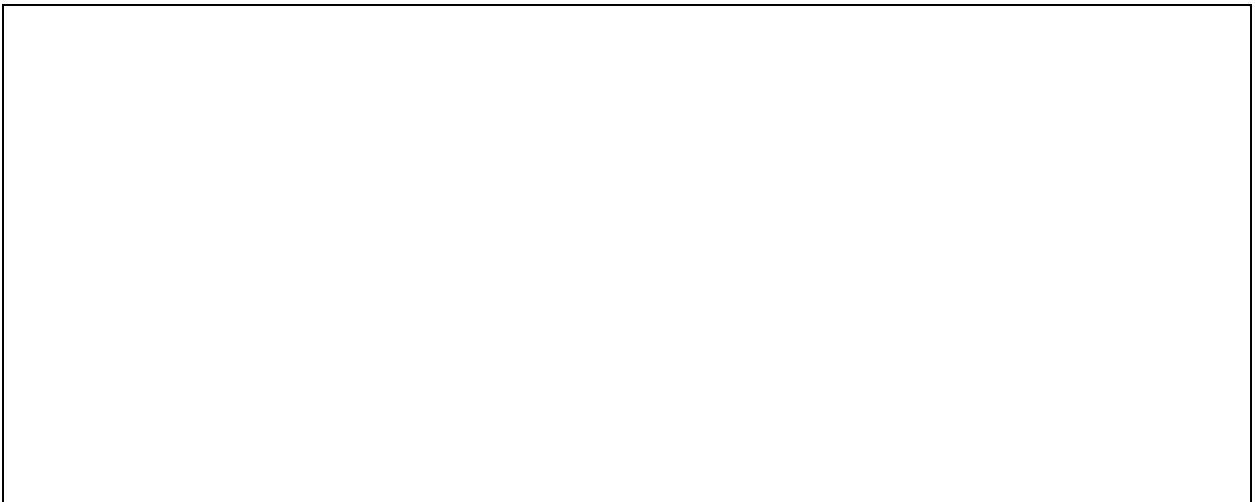
- Evidence for Earth's Rotation
- Evidence for Earth's Revolution Around the Sun
- Sun's Apparent Path
- Insolation and Seasons
- Moon Phases

1. Choose the two celestial phenomena you want to put into a model. Make three sketches of possible ways to model these phenomena below.

Sketch 1



Sketch 2



Sketch 3



2. Select your best model and evaluate its strengths and limitations by responding to the following prompts:

In what way does your model explain the celestial phenomena you chose effectively?

What concepts related to the celestial phenomena you chose are not explained effectively by your model?

How effective is your model in representing accurate scale of celestial objects and distance between them ?

Describe 1-2 decisions you made when creating your model that made it stronger in one way, but weaker in another way. Why did you make those decisions?

3. Consider the evaluation of your model and create a 3-D version.

4. Choose a question that can be answered with your 3-D model

Question:

5. Try answering your question with your model. How effective is your model in answering your question? Why?

6. If necessary, revise your model so that it is more effective in answering your question.

7. In your own words, describe how your model explains the celestial phenomena you are representing, and how it allows you to answer the question/scenario you are posing.

