

Title of Unit	Unit 5 – The Solar System	Grade Level	11 & 12
Curriculum Area	Astronomy	Time Frame	2 weeks
Developed By	Shelly Gould Burgess		

Identify Desired Results (Stage 1)

Content Standards

By the end of the unit, students will be able to...

1. Refer to astronomical distances in terms of Astronomical Units.
2. Explain the motions of the inferior planets.
3. Explain the motions of the superior planets.
4. Describe the basic features and characteristics of the eight planets of our solar system.
5. Describe the basic features, characteristics, and motions of asteroids, comets, and meteoroids/meteors/meteorites.

Understandings	Essential Questions	
Overarching Understanding	Overarching	Topical
Students will understand the structure and movements of the major objects in our solar system.	<ul style="list-style-type: none"> • How do we measure distances within the solar system? • What are inferior planets, and how do they appear to us to move? 	<ul style="list-style-type: none"> • What are Astronomical Units? • Which planets are inferior? When do inferior planets appear their brightest? Their dimmest? Why?
Related Misconceptions	<ul style="list-style-type: none"> • What are superior planets, and how do they appear to us to move? • What are the features and characteristics of the eight planets of our solar system? • What are the other major features of our solar system? 	<ul style="list-style-type: none"> • Which planets are inferior? When do inferior planets appear their brightest? Their dimmest? Why? • What are the geological features of the planets? • How do the planets orbit? • What are asteroids? What are their structures? Where are they located? How do they move? • What are comets? What are their structures? Where are they located? How do they move? • What are meteors? What are their structures? Where are they located? How do they move? • What are the differences between meteors, meteoroids, and meteorites?
<ul style="list-style-type: none"> • Many common misconceptions about our solar system will be cleared up as a result of mastering this unit. 		

From: Wiggins, Grant and J. Mc Tighe. (1998). *Understanding by Design*, Association for Supervision and Curriculum Development ISBN # 0-87120-313-8 (ppk)

Lesson 1

I. Objectives: Students will be able to...

- Refer to astronomical distances in terms of Astronomical Units.
- Explain the motions of the inferior planets.
- Explain the motions of the superior planets.

II. Materials: Flashlights

III. Procedure: Notes and activities pages 1-16 with frequent ABC group checks AND Stellarium "sky watching" to follow the paths of the planets

IV. Evaluation: Quiz, test

Lesson 2

I. Objectives: Students will be able to...

- Describe the basic features and characteristics of the eight planets of our solar system.

II. Materials: Classroom with ActivBoard

III. Procedure: Jigsaw:

- A. Research on the planets
- B. Presentation of research
- C. Jigsaw quiz (open notes)

IV. Evaluation: Quiz, test

Lesson 3

I. Objectives: Students will be able to...

- Describe the basic features, characteristics, and motions of asteroids, comets, and meteoroids/meteors/meteorites.

II. Materials: Classroom with ActivBoard

III. Procedure:

- A. Notes: page 17 – end 16 with frequent ABC group checks AND Stellarium "sky watching"

IV. Evaluation: Quiz, test