

**Activity 3.2.1 Orbital Mechanics Historical Figures**

Introduction

The study of orbiting bodies dates back at least to ancient Greece. Early efforts to explain how orbits worked centered on observations of the planets in our solar system. The pioneers of this work developed our understanding of how planetary motion works. They also laid the groundwork for developing our understanding of how we might exploit the orbit phenomenon to our advantage with manufactured satellites orbiting our own planet.

The purposes of this activity are to gain an appreciation for these early orbital mechanics pioneers and to enhance your writing and presentation skills.

Equipment

* Computer with access to presentation software

Procedure

1. In this activity, you will be organized into eight (8) research teams. Each team will select or be assigned one of the historical figures below.
2. Aristotle
3. Nicolaus Copernicus
4. Tycho Brahe
5. Johannes Kepler
6. Galileo Galilei
7. Robert Hooke
8. Sir Isaac Newton
9. Albert Einstein
10. Your team will organize into roles. One student will become the historical figure, another a critic, another a narrator and another the moderator.
11. As a group research the contribution of each to orbital motion theory as well as reasonable criticism of the theory at the time. Your group will also research basic facts about the life and times of each contributor.
12. After completing your research, your group will prepare a poster of the major points of the theory as well as criticism. Your references, historical figure name, team member names and date need to be at the bottom of your poster.
13. Your group will prepare to present a mock discussion between the historical figure and the critic. The narrator will introduce the historical figure and the critic. The narrator will also present the date, political and historical climate at the time. The moderator will maintain a professional discourse and interject additional information to maintain the presentation flow and audience understanding. Be sure each member of your team is well versed in each contributor and can respond well to questions posed about the historical figure.

Conclusion

1. Explain why is the study of orbital mechanics so controversial?
2. What factors contribute to a theory gaining mass acceptance?