

Planetary Orbits – Syllabus

By Louise Lopes

Year 7

Predictable phenomena on Earth, including seasons and eclipses, are caused by the relative positions of the sun, Earth and the moon

- comparing times for the rotation of Earth, the sun and moon, and comparing the times for the orbits of Earth and the moon

Change to an object's motion is caused by unbalanced forces, including Earth's gravitational attraction, acting on the object

- considering how gravity keeps planets in orbit around the sun

Scientific knowledge has changed peoples' understanding of the world and is refined as new evidence becomes available

- researching developments in the understanding of astronomy, such as the predictions of eclipses and the calculation of the length of the solar year by Al'Battani in the tenth century

Year 8

Energy appears in different forms, including movement (kinetic energy), heat and potential energy, and energy transformations and transfers cause change within systems

Year 10

The universe contains features including galaxies, stars and solar systems, and the Big Bang theory can be used to explain the origin of the universe

Energy conservation in a system can be explained by describing energy transfers and transformations

- using models to describe how energy is transferred and transformed within systems

The motion of objects can be described and predicted using the laws of physics

- recognising that a stationary object, or a moving object with constant motion, has balanced forces acting on it
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	Demonstrated inquiry	Prescribed inquiry	Structured inquiry	Guided inquiry	Open inquiry
Questions	No question	Teacher provides question	Learner sharpens question	Learner selects question	Learner poses questions
Plans	No planning	Teacher provides procedure	Teacher discusses possible plans	Learner guided while planning	Learner determines plans
Conducts	Teacher conducts	Learner told how to conduct and record	Learner sharpens plan and conducts	Learner guided while conducting and recording	Learner conducts and records
Analyse	Teacher analyses	Learner told how to analyse data	Teacher discusses possible analyses	Learner guided in analysis	Learner analyses data identifying trends
Problem Solve	No problem solving	Teacher provides reasoning and links	Teacher discusses reasoning and conclusion	Learner guided in reasoning and formulate conclusion	Learner reasons to formulate conclusions
Communicate	No conclusion	Teacher writes conclusion	Learner writes conclusion	Learner guided on justifying findings and communicating	Learner justifies findings and conclusions