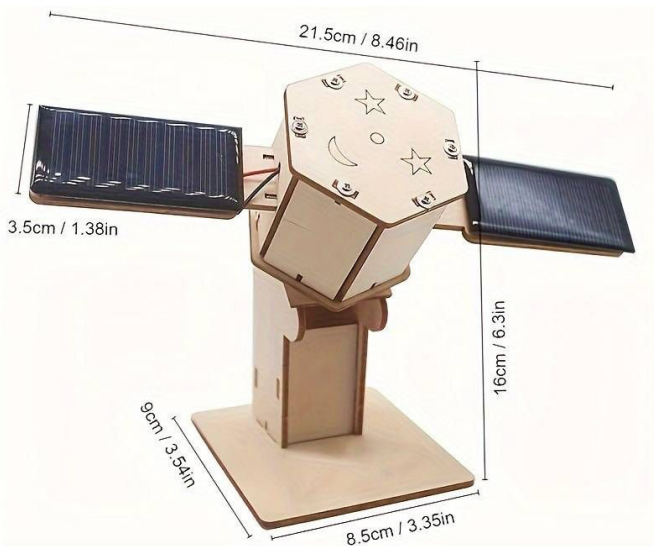


SOLAR SATELLITE

CAT# 80-50-W246



The Solar Satellite Kit provides an excellent opportunity to promote STEM education in the classroom while exploring the fascinating world of space technology. Artificial Earth Satellites are unmanned spacecraft that orbit the Earth, performing various functions such as communication, navigation, weather monitoring, and scientific research.

This kit allows students to build their own miniature satellite model using materials such as motors, gears, wooden boards, solar panels, and screws. The project includes solar panels that generate electricity when exposed to strong sunlight. The generated current powers the motor, causing it to rotate, simulating the movement of a satellite in orbit.

JUNIOR DIVISION: GRADES 4-6

Overall Expectation: Matter and Energy Focus

Investigate the principles of forces, energy, and control in simple machines and structures.

Specific Expectation

Explore the relationships between the components of simple machines and the forces acting on them.

Activity

Students explore the concept of solar power and its application in space technology. They discuss the role of gears and motors in controlling the movement of the satellite.

INTERMEDIATE DIVISION: GRADES 7-8

Overall Expectation: Matter and Energy Focus

Investigate how technological problem-solving meets human needs and leads to innovation.

Specific Expectation

Analyze the impact of friction and lubrication on the efficiency of mechanisms.

Activity

Students analyze the design of the satellite model and discuss how friction affects its movement. They experiment with different gear configurations to optimize performance.

SECONDARY DIVISION: GRADES 9-12

Overall Expectation: Matter and Energy Focus

Apply principles of physics to understand waves, electricity, and magnetism.

Specific Expectation

Analyze mechanical advantage and efficiency in simple and compound machines.

Activity

Students delve into the physics of satellite motion, including orbital mechanics and solar power generation. They discuss the challenges of designing satellites for various space missions.

CROSS-CURRICULAR CONNECTIONS

Mathematics

Students can calculate the speed and trajectory of the satellite based on its motor's RPM and gear ratio.

Science

They learn about solar energy conversion, electromagnetism, and the principles of satellite communication and navigation.

Technology

Students explore the technology behind satellite construction and operation.

Geography

Discuss the applications of satellites in mapping and monitoring Earth's surface.

Summary

By engaging with the Solar Satellite Kit, students not only learn about space technology but also develop critical thinking, problem-solving, and teamwork skills essential for STEM fields.