

# S U M M A R I E S

## **INVESTIGATION 1: The Eight Planets**

In Investigation One, you explored the movement of the eight planets. During this Investigation, you:

1. used your body to model rotation and revolution.
2. modeled night and day using a globe and a flashlight.
3. used a model to compare the temperature of five planets to find out how the Sun affects temperature.

Through these experiments, you found that:

1. planets rotate as they revolve around the Sun.
2. when one side of the Earth has night, the other has day.
3. the Sun makes the planets closest to it warmer than the planets far from it.

## **INVESTIGATION 2: The Sun and the Earth**

In Investigation Two, you continued to explore the Sun and the Earth. During this Investigation, you:

1. used a model to observe shadows at different times of day.
2. explored how the Earth's atmosphere affects the light that reaches the Earth.
3. used a model to explore light energy from the Sun.
4. tested whether or not shade or a shelter can affect the amount of heat energy from the Sun that reaches an object.
5. explored the effect of an object's size on its shadow's size.

Through these experiments, you found that:

1. shadows are shortest at noon and longest in the morning and evening.
2. when more clouds are present, less light reaches the Earth.
3. light energy can be converted to another form of energy.
4. light energy from the Sun decreases as the distance from the Sun increases.
5. an object in the shade receives less heat energy than one in the Sun.
6. the larger an object, the larger its shadow.

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### **INVESTIGATION 3: The Earth and Its Seasons**

In Investigation Three, you explored the seasons on Earth. During this Investigation, you:

1. modeled the position of the Earth and the Sun during Winter, Spring, Summer, and Autumn.
2. observed where the most direct light shone on the Earth during the four seasons.
3. explored the temperature of two places when the Earth and the Sun were in one position.

Through these experiments, you found that:

1. the tilt of the Earth affects which of the Earth's hemispheres receives direct light from the Sun.
2. the hemisphere that receives direct light from the Sun has Summer.
3. the hemisphere that does not receive direct light has Winter.
4. direct light from the Sun makes temperatures increase.

### **INVESTIGATION 4: The Phases of the Moon**

In Investigation Four, you explored the phases of the Moon. During this Investigation, you:

1. explored how the Earth's rotation related to the Moon's revolution.
2. modeled the position of the Moon, Earth, and Sun during New Moon, 1<sup>st</sup> Quarter, Full Moon, and 3<sup>rd</sup> Quarter.

Through these experiments, you found that:

1. the Moon completes one revolution in about 28 days.
2. the same side of the Moon (the near side) always faces the Earth.
3. the position of the Moon, Earth, and Sun causes the phases of the Moon.

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## **INVESTIGATION 5: Movement of the Planets**

In Investigation Five, you explored the movement of the planets. During this Investigation, you:

1. explored gravity and forward motion and their effect on a ball.
2. modeled how gravity and forward motion affected a planet's orbit.
3. modeled how a planet would move without gravity.

Through these experiments, you found that:

1. the Sun's gravity and a planet's forward motion cause the planet to orbit the Sun.
2. without gravity, a planet would move in a straight line past the Sun.