



## SMP PELITA BANGSA

### WORKSHEET 1

Semester / Year	: 1 / 2024-2025	Name	: _____
Subject	: Physics	Class	: Sec 3 _____
Topic	: Space Physics	Day/date	: _____

#### 1. Day and Night

Day and night are caused by the Earth's \_\_\_\_\_ on its axis. It takes the Earth \_\_\_\_\_ hours to complete one full rotation. The half of the Earth facing the \_\_\_\_\_ experiences day, while the other half experiences \_\_\_\_\_.

#### 2. Rising and Setting of the Sun

The apparent rising and setting of the Sun is due to the Earth's \_\_\_\_\_. The Sun rises in the \_\_\_\_\_ and sets in the \_\_\_\_\_. It rises exactly in the east and sets exactly in the west only during the \_\_\_\_\_ (around March 20 and September 23).

#### 3. Seasons

Seasons are caused by two factors: the Earth's motion around the \_\_\_\_\_ and the tilt of the Earth's axis at \_\_\_\_\_ degrees. When the northern hemisphere is tilted toward the Sun, it experiences \_\_\_\_\_ and \_\_\_\_\_, while the southern hemisphere has \_\_\_\_\_ and \_\_\_\_\_.

#### 4. Phases of the Moon

The Moon orbits the Earth and is lit by the \_\_\_\_\_. It takes about \_\_\_\_\_ days for the Moon to complete one orbit around the Earth. The different appearances of the Moon from Earth are called \_\_\_\_\_ of the Moon. When the Moon is between the Sun and Earth, we see a \_\_\_\_\_ Moon.

#### 5. The Solar System

The Solar System consists of one star, the \_\_\_\_\_, and eight planets moving in \_\_\_\_\_ orbits around it. The four inner planets are \_\_\_\_\_, Venus, Earth, and \_\_\_\_\_. They are small, rocky, and have a \_\_\_\_\_ density. The four outer planets are Jupiter, Saturn, Uranus, and \_\_\_\_\_. These planets are much larger and consist mostly of \_\_\_\_\_.

#### 6. Comets

Comets are sometimes referred to as 'dirty snowballs' because they consist of \_\_\_\_\_ embedded in ice made from water and \_\_\_\_\_. Comets travel in highly \_\_\_\_\_ orbits around the Sun. One famous comet is \_\_\_\_\_ comet, which returns to the inner Solar System every 76 years.

#### 7. Motion of the Moon

The Moon is a \_\_\_\_\_ of the Earth and travels around it in a nearly \_\_\_\_\_ orbit. It always shows the same side to the Earth because it rotates on its axis in the same time it takes to orbit the Earth, which is about \_\_\_\_\_ days. We see the Moon because it reflects \_\_\_\_\_ from the Sun.

## 8. Gravitational Attraction

All objects with mass attract each other due to \_\_\_\_\_. The strength of this force depends on the \_\_\_\_\_ of the objects and the distance between them. Larger objects, like planets, exert a \_\_\_\_\_ gravitational pull. The Sun's gravity keeps the planets in their \_\_\_\_\_.

## 9. Daylight Hours

In the northern hemisphere, the longest day of the year occurs around \_\_\_\_\_ 21, while the shortest day occurs around \_\_\_\_\_ 21. The time when day and night are equal in length is called the \_\_\_\_\_, which happens around March 20 and \_\_\_\_\_ 23.

## 10. Dwarf Planets and Asteroids

Dwarf planets, such as \_\_\_\_\_, are smaller than regular planets but have enough mass to pull themselves into a \_\_\_\_\_ shape. Asteroids are pieces of \_\_\_\_\_ that mostly orbit the Sun between \_\_\_\_\_ and Jupiter.

## 11. Origin of the Solar System

The Solar System is thought to have formed about \_\_\_\_\_ million years ago from a swirling cloud of gas and dust called a \_\_\_\_\_. The planets formed from the leftover material after the \_\_\_\_\_ formed at the center.

## 12. Comet Behavior Near the Sun

As a comet approaches the Sun, the ice in the comet begins to \_\_\_\_\_, and radiation pressure from the Sun creates a bright \_\_\_\_\_ and a long \_\_\_\_\_ that points away from the Sun.

## 13. Elliptical Orbits

The planets move around the Sun in \_\_\_\_\_ orbits, which are slightly flattened circles. The outer planets have \_\_\_\_\_ orbits and take much longer to complete one trip around the \_\_\_\_\_ compared to the inner planets.

## 14. Phases of the Moon (Additional)

During the \_\_\_\_\_ Moon phase, the side of the Moon facing the Earth is completely illuminated. During the \_\_\_\_\_ Moon phase, we see only half of the Moon's surface. The \_\_\_\_\_ Moon occurs when the Moon is not visible from Earth.