Name Date Class

Note-taking Worksheet

The Solar System and Beyond

Section 1 Earth's Place in Space

A. Earth _____, even though it appears that the Sun does.

1. **Rotation**—spinning of Earth on its _____, which occurs once every 24 hours
2. Earth moves around the Sun in a regular, curved _____ called an **orbit.**
3. It takes one year for Earth's _____ around the Sun.
4. _____ occur due to Earth's tilted axis and its revolution around the Sun.

B. The Moon _____ around Earth every 27.3 days.

1. The Moon's changing shapes are known as _____ of the Moon.
2. The Moon's phases are caused by the _____ of Earth, the Moon, and the _____.
   - **a.** When the Moon changes from new to full, it is called _____.
   - **b.** When the Moon changes from full to new, it is called _____.
3. A solar _____ occurs when the Moon is between the Sun and Earth and the Moon's shadow falls on Earth
4. A _____ eclipse occurs when Earth is between the Moon and the Sun and Earth's shadow falls on the Moon.

Section 2 The Solar System

A. _____—the Sun, its nine planets, and other objects that orbit the Sun

1. _____ in space are so vast they require different units of measurement than are used to measure things on Earth.
2. An _____ is about 150 million km, the mean distance from Earth to the Sun.

Meeting Individual Needs

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B. Inner planets are _____, with minerals similar to those on Earth.

1. _____—second-smallest planet and closest to the Sun

a. Little atmosphere, resulting in extremes of temperature

b. Heavily cratered surface

2. _____—second-closest to the Sun

a. Heavy cloud layer

b. Clouds trap solar energy, making the planet extremely hot—about 470° Celsius.

3. _____—third planet from the Sun

a. Atmosphere allows life to flourish

b. Water exists as a solid, liquid, and gas.

4. _____—fourth planet from the Sun

a. Has seasons and polar ice caps

b. May have water shaping its surface

5. The _____ separates the inner and outer planets.

C. Outer planets—most are huge balls of _____

1. _____—fifth planet from the Sun and largest

a. Has 16 moons

b. Great Red Spot is a giant storm on the planet's surface.

2. _____—sixth planet from the Sun

a. Has 18 moons

b. Several broad rings of ice and dust

3. _____—seventh planet from the Sun

a. Axis makes the planet spin nearly sideways

b. Has rings and at least 18 moons

4. _____—eighth planet from the Sun

a. A gas planet with rings and 8 moons

b. Methane and helium in its atmosphere give planet a blue color.

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Note-taking Worksheet (continued)

5. _____—smallest planet and farthest from the Sun

a. Rocky and frozen crust

b. One moon

6. _____—large body of frozen ice and rock that travels toward the center of the solar system

7. _____—fragments of space material that land on Earth's surface

a. Pieces may be iron, rock, or both

b. Age (4.5 billion years) provides a clue to the Solar System's age

Section 3 Stars and Galaxies

A. _____—groups of stars that form a pattern in the sky

B. A star has a _____ that depends on its size.

1. Stars begin as huge clouds of dust and gas that contract and heat up to the point of _____.

2. Small stars shine _____ than larger stars.

3. A medium-sized star ends up as a black dwarf, while a larger star explodes as a _____ that could eventually become a black hole.

C. _____—group of stars, gas, and dust held together by gravity

1. _____-shaped galaxies are most common.

2. _____ galaxies look something like a pinwheel.

3. _____ galaxies are smaller and less common than other galaxies.

4. Earth is located in the _____ Galaxy.

5. A _____ is the distance light travels in a year, approximately 9.5 trillion km.

6. The _____, containing billions of galaxies, seems to be expanding.

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