

# CHAPTER 5

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*Vocabulary Words*

## SECTION 1

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- constellation – a group of stars that forms a pattern resembling a familiar object, character, or animal, and that changes position throughout the year because of Earth's movement
- absolute magnitude – is the measure of the amount of light that a star gives off
- apparent magnitude – measure of the amount of light received on Earth
- light year – distance that light travels in one year (Light travels at about 9.5 trillion km in one year)

## SECTION 2 – CHAPTER 5

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- photosphere – lowest layer of the Sun's atmosphere and the layer that gives off light
- chromosphere – layer of the Sun's atmosphere found above the photosphere and below the transition zone and corona
- corona – largest layer of the Sun's atmosphere from which charged particles continually escape into space.
- sunspot – an area of the Sun that is cooler and not as bright as surrounding areas and that is caused by the Sun's intense magnetic field.

## SECTION 3 – CHAPTER 5

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- **nebula** – a large cloud of dust and gas that can break apart into smaller pieces and form stars
- **giant** – late stage in a stars life
- **white dwarf** – stage in which a star has used up its helium and its outer layers escape into space, leaving behind a hot, dense core that contracts
- **supergiant** – life cycle stage of a massive star where the core reaches extremely high temperatures, heavy elements form by fusion, and the star expands
- **neutron star** – collapsed core of a supernova that shrinks to about 20 km in diameter and whose dense core has only neutrons
- **black hole** – remnant of a star that is so dense that nothing, not even light, can escape its gravity field

## SECTION 4 – CHAPTER 5

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- galaxy – a large group of stars, gas and dust held together by gravity and can be elliptical, spiral or irregular
- Big Bang Theory – the leading theory about the formation of the universe
- orbit – the gravitationally curved path of an object about a point in space. Orbits are typically elliptical, and the central mass being orbited is at a focal point of the ellipse. EXAMPLE: the orbit of a planet about a star

## SECTION 5 – CHAPTER 5 EXTRA VOCABULARY

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- **gravity** – a natural phenomenon by which all things with energy are brought toward one another, including stars, planets, galaxies, and even light and subatomic particles. Gravity is responsible for many of the structures in the Universe, by creating spheres of hydrogen – where hydrogen fuses under pressure to form stars – and grouping them into galaxies. On Earth, gravity gives weight to physical objects and causes tides. Gravity has an infinite range, although its effects become increasingly weaker on farther objects.
- **gravitational force** – the force that attracts any object with mass. Every object, including you, is pulling on every other object in the entire universe.

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## SECTION 6 – CHAPTER 5 EXTRA WORDS

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- **centripetal force** – a force that makes a body follow a curved path. Gravity provided the centripetal force responsible for astronomical orbits.
- **dark energy** – an unknown form of energy which is hypothesized to permeate all of space, tending to accelerate the expansion of the universe. Dark energy is the most accepted hypothesis to explain the observations since the 1990s indicating that the universe is expanding at an accelerating rate