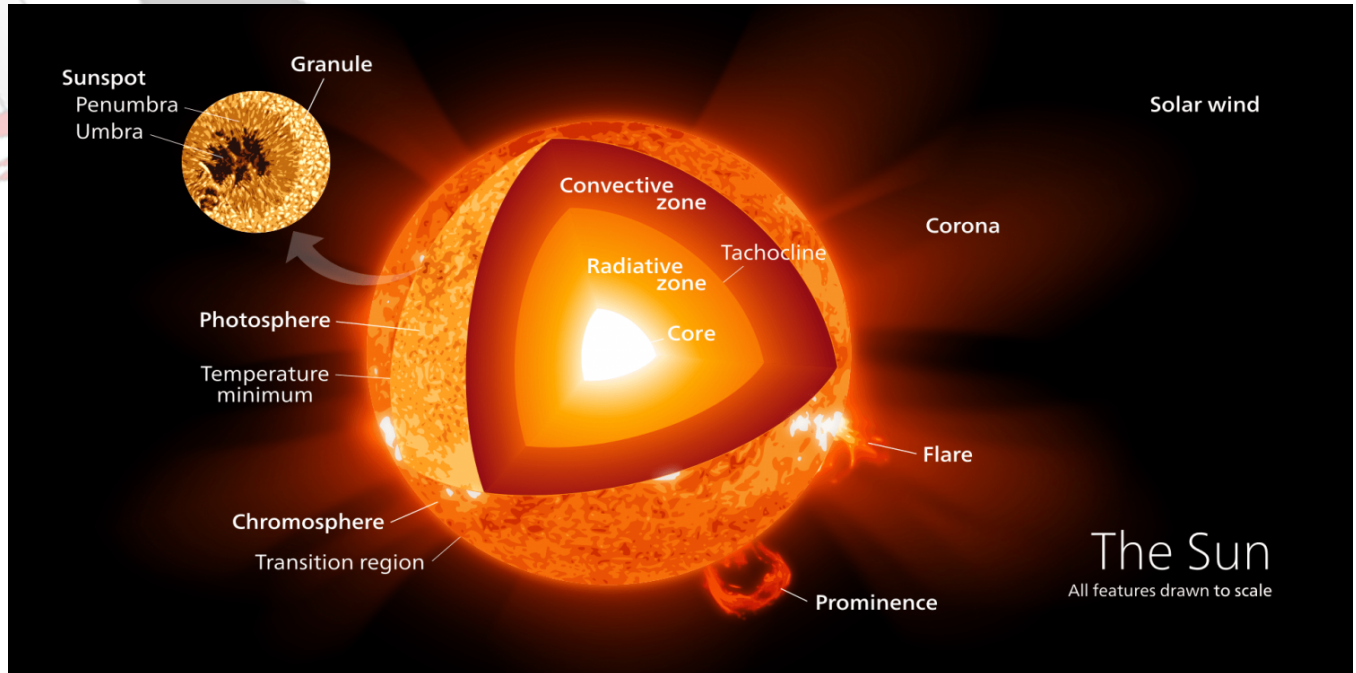


## B3. The Origin Of Energy

### The Origin of Energy for the Water Cycle

The water cycle is a fascinating process that keeps the Earth's water moving and changing all the time. Have you ever wondered where the energy comes from to power this incredible cycle? Well, it all starts with the Sun!



The Sun is like a giant star in the sky that shines brightly and gives us light and warmth. But it also plays a crucial role in the water cycle. The energy from the Sun is what drives the entire cycle, making water evaporate and move through the atmosphere.

Here's how it works:

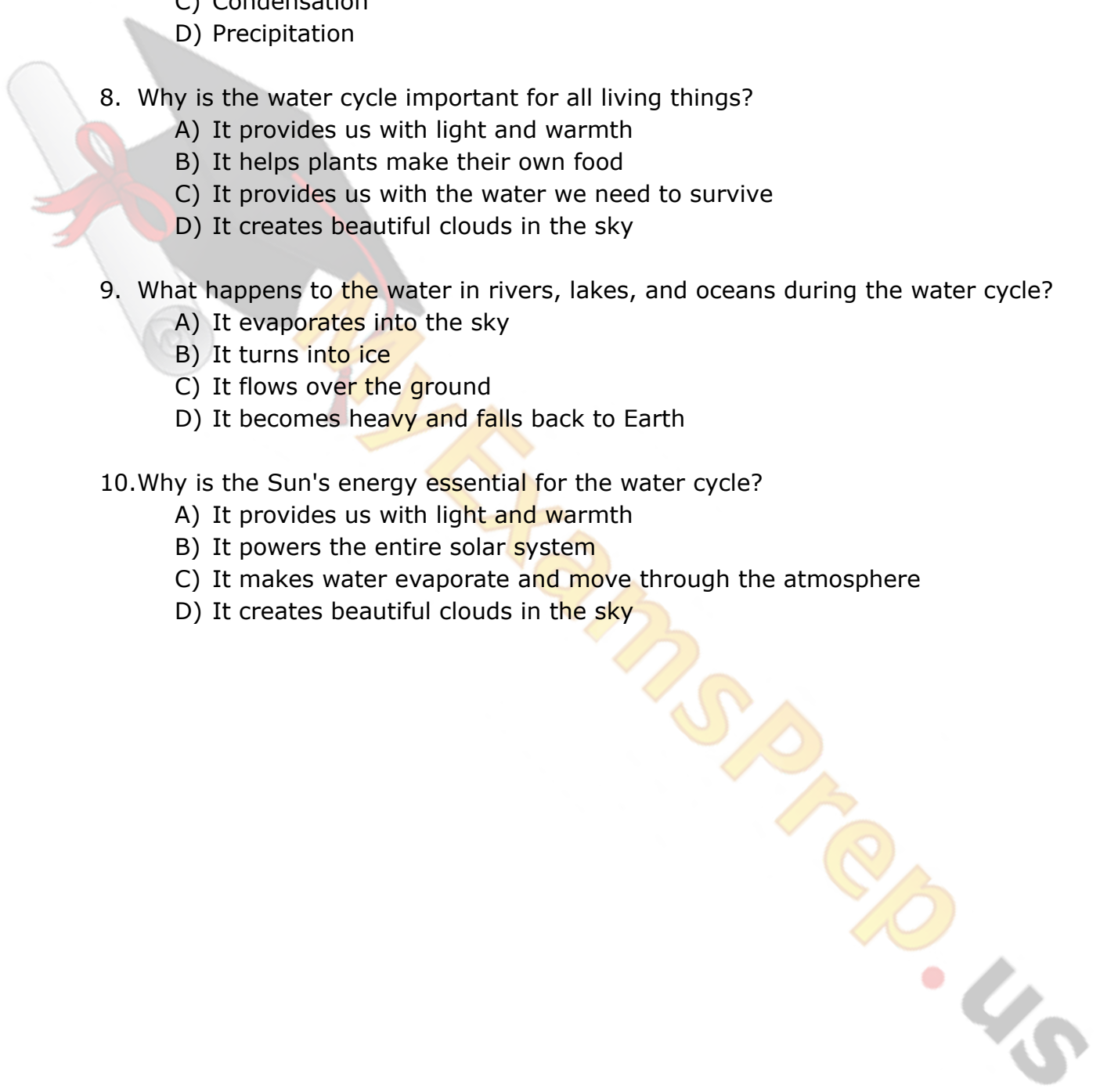
1. When the Sun's rays shine down on the Earth's surface, they heat up the water in oceans, lakes, and rivers. As the water gets warmer, it begins to turn into an invisible gas called water vapor. This process is called **evaporation**.
2. Once the water vapor rises into the sky, it starts to cool down and condense back into tiny water droplets, forming clouds. This process is called **condensation**. As more and more water droplets come together, they eventually become heavy and fall back to Earth as precipitation. Precipitation can take the form of rain, snow, sleet, or hail, depending on the temperature.
3. When the precipitation falls on the ground, it can do different things. Some of it will soak into the soil and become part of groundwater, which is water that is stored underground. Some of it will flow over the ground and into rivers, lakes, and streams. Some of it will be taken up by plants and used for photosynthesis, the process by which plants make their own food using the energy from the Sun.

4. As the water collects in rivers, lakes, and oceans, it will eventually be heated up again by the Sun's rays, and the cycle will begin all over again.

The Sun's energy is what makes the water cycle possible, and without it, there would be no water cycle, and life on Earth would not be possible. The water cycle is essential for all living things because it provides us with the water we need to survive. It helps to water our crops, fill our drinking glasses, and keep our planet lush and green.

So the next time you see the Sun shining in the sky, remember that it's not just giving us light and warmth, it's also powering the amazing water cycle that keeps our world alive.

1. What is the role of the Sun in the water cycle?
  - A) To provide light and warmth
  - B) To make water evaporate and move through the atmosphere
  - C) To create clouds
  - D) To power the entire solar system
2. What happens during evaporation in the water cycle?
  - A) Water vapor turns into tiny water droplets
  - B) Water vapor rises into the sky
  - C) Water becomes heavy and falls back to Earth
  - D) Water is soaked into the soil
3. What is condensation in the water cycle?
  - A) The process of water turning into an invisible gas
  - B) The process of water rising into the sky
  - C) The process of water vapor cooling down and turning back into tiny water droplets
  - D) The process of water falling back to Earth as precipitation
4. What is precipitation in the water cycle?
  - A) Water vapor rising into the sky
  - B) Water changing back into tiny droplets
  - C) Water falling back to Earth from clouds
  - D) Water collecting in rivers and lakes
5. What happens to the water that falls on the ground during the water cycle?
  - A) It turns into ice
  - B) It flows into the ocean
  - C) It soaks into the soil and becomes groundwater
  - D) It becomes part of the clouds
6. What is groundwater?
  - A) Water that flows over the ground
  - B) Water that is stored underground
  - C) Water that falls from the sky
  - D) Water that is taken up by plants

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7. What is the process by which plants make their own food using the Sun's energy?
- A) Photosynthesis
  - B) Evaporation
  - C) Condensation
  - D) Precipitation
8. Why is the water cycle important for all living things?
- A) It provides us with light and warmth
  - B) It helps plants make their own food
  - C) It provides us with the water we need to survive
  - D) It creates beautiful clouds in the sky
9. What happens to the water in rivers, lakes, and oceans during the water cycle?
- A) It evaporates into the sky
  - B) It turns into ice
  - C) It flows over the ground
  - D) It becomes heavy and falls back to Earth
10. Why is the Sun's energy essential for the water cycle?
- A) It provides us with light and warmth
  - B) It powers the entire solar system
  - C) It makes water evaporate and move through the atmosphere
  - D) It creates beautiful clouds in the sky

## ANSWERS & EXPLANATIONS

1. B) To make water evaporate and move through the atmosphere.
  - The Sun's energy makes water evaporate and move through the atmosphere in the water cycle.
2. B) Water vapor rises into the sky.
  - Evaporation is when water turns into an invisible gas called water vapor and rises into the sky.
3. C) The process of water vapor cooling down and turning back into tiny water droplets.
  - Condensation is the process of water vapor cooling down and turning back into tiny water droplets, forming clouds.
4. C) Water falling back to Earth from clouds.
  - Precipitation is the water that falls back to Earth from clouds as rain, snow, sleet, or hail.
5. C) It soaks into the soil and becomes groundwater.
  - Some of the water that falls on the ground during the water cycle soaks into the soil and becomes groundwater.
6. B) Water that is stored underground.
  - Groundwater is water that is stored underground in the soil and rocks.
7. A) Photosynthesis.
  - Photosynthesis is the process by which plants make their own food using the energy from the Sun.
8. C) It provides us with the water we need to survive.
  - The water cycle is essential for all living things because it provides us with the water we need to survive.
9. A) It evaporates into the sky.
  - During the water cycle, water in rivers, lakes, and oceans evaporates into the sky as water vapor.
10. C) It makes water evaporate and move through the atmosphere.
  - The Sun's energy is essential for the water cycle because it makes water evaporate and move through the atmosphere, powering the entire cycle.