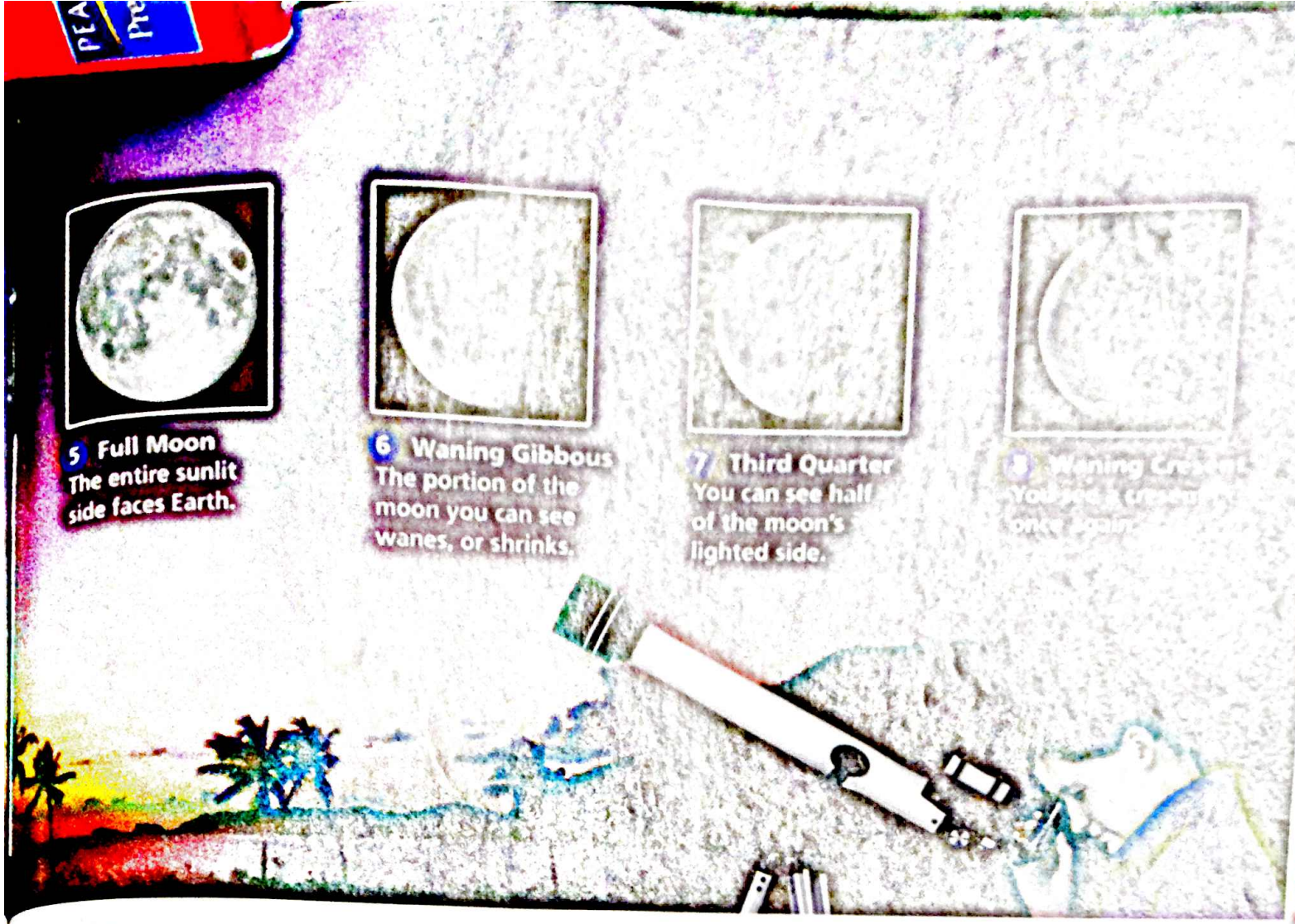

To understand the phases of the moon, study Figure 11. During the new moon, the side of the moon facing Earth is not lit because the sun is behind the moon. As the moon revolves around Earth, you see more and more of the lighted side of the moon every day, until the side of the moon you see is fully lit. As the moon continues in its orbit, you see less and less of the lighted side. About 29.5 days after the last new moon, the cycle is complete, and a new moon occurs again.

Reading Checkpoint **What is a new moon?**

Eclipses

As Figure 12 shows, the moon's orbit around Earth is slightly tilted with respect to Earth's orbit around the sun. As a result, in most months the moon revolves around Earth without moving into Earth's shadow or the moon's shadow hitting Earth.

When the moon's shadow hits Earth or Earth's shadow hits the moon, an eclipse occurs. When an object in space comes between the sun and a third object, it casts a shadow on that object, causing an **eclipse** (ih KLIPS) to take place. There are two types of eclipses: solar eclipses and lunar eclipses. (The words *solar* and *lunar* come from the Latin words for "sun" and "moon.")

FIGURE 12
The Moon's Orbit
The moon's orbit is tilted about 5 degrees relative to Earth's orbit around the sun.