

Long Reading – Answer Key Analysis		
	Answer	Location of Answer
1	something that moves	P2 S1: "The name 'planet' comes from the Greek word that meant 'wanderer' and described an object that would wander or move in the sky."
2	The sun moved around the Earth.	P2 S3: "For the longest time, Earth was believed to be the centre of the universe-a geocentric system ('geo' meaning Earth)."
3	for over 60 years	P3 S11: "As you may know, Pluto was considered to be a planet from 1930 until the 1990s."
4	the presence of Planet X	P4 S2: "In the 1840s, French mathematician Urbain Le Verrier was observing Uranus and stated that there should be another planet in the solar system that exhibited its gravitation and affected the orbit of Uranus."
5	the discovery of multiple bodies in the sun's orbit	P6 S1: "Since 1992, many objects similar to Pluto have been found in the solar system." S3-4: "This finding suggested on of two options: (1) there are more planets in the solar system than we believed or (2) Pluto is not a planet. As there was no established definition of 'planet' . . ." S6: "In 2006, the International Astronomical Union (IAU) created an official definition of the term planet . . ."
6	They excluded Pluto.	P6 S5: "In 2000, New York's Hayden Planetarium made headlines when it reopened with a model of eight planets, excluding Pluto."
7	mass of nearby objects	P7 S1-2: "Pluto has not met the third criterion as its mass makes up less than 1% of the mass of the other objects in its orbit. In comparison, Earth's mass is 1.7 million times the remaining mass in its own orbit."
8	Illinois	P7 S5: "Despite the decision, New Mexico and Illinois still recognize Pluto as a planet . . ."
9	possible existence of tails	P8 S5: "When comets get closer to the sun, they often release melting ice, which can be seen in the sky as the comet's tail." S8: "It is not common for asteroids to have 'tails,' though a few such cases have been observed."
10	They emit water.	P8 S5: "When comets get closer to the sun, they often release melting ice . . ."
11	Asteroids <ul style="list-style-type: none"> - Made up of metals and rocky materials - Have shorter orbits - Have round orbits Comets <ul style="list-style-type: none"> - Composed of ice, dust, and rock - Release melting ice - Have elliptical orbits 	P8 S3: "Asteroids are mostly made up of metals and rocky materials, while comets are composed of ice, dust, and rock." S4: "When comets get closer to the sun, they often release melting ice . . ." S5: "Most comets have highly elliptical orbits . . ." S6: "Asteroids usually have shorter and rounder orbits."

Lesson 5	Resource 5L	Answer Key Analysis (page 2)
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Long Listening – Answer Key Analysis		
	Answer	Location of Answer in Transcript
1	abundant research resources	P1 S4: "42% of the world's telescopes are there . . ."
2	They share an interest in lives on other planets.	P2 S1 and S4: "Have you ever imagined living on a different planet? . . . Probably half of all the science fiction books ever written have stories that take place on a different planet."
3	Exceedingly high atmospheric pressure - Venus Drastic changes in temperature - Mercury Lack of solid surface - Saturn - Jupiter	P3 S9–10: "Venus, on the other hand, has too much atmosphere; it is filled with acidic gases. Atmospheric pressure can be 90 times that of Earth's surface." S6–7: "The first planet from the sun is Mercury. Temperatures vary from +430 degrees Celsius during the day to -100 degrees at night." S12–13: "Saturn or Jupiter? As you will remember, they are gas giants, with no solid surfaces."
4	2/3	P4 S3–4: "Since 1960 over 70 astronomical missions have attempted to reach Mars. Approximately one-third of these attempts succeeded, which means twice as many failed."
5	It sent back photos of Mars.	P4 S5–6: "The first successful mission was <i>Mariner 4</i> . On July 14, 1965, it flew by Mars and sent 21 photographs back to Earth."
6	"1975," "nineteen seventy-five," or "nineteen seventy five"	P5 S1: "The first successful probes to land on the surface of Mars were <i>Viking 1</i> and <i>Viking 2</i> in 1975."
7	They were jointly sponsored by multiple countries.	P5 S2: "Both machines worked for years transmitting images and other information back to Earth." S3: "Apart from taking pictures and collecting geological data, the landers conducted experiments to look for signs of life on Mars."
8	- length of travel - mental health of travelers - high cost of travel	P6 S2: "First of all it would take 6–7 months to reach Mars with the best technology we have now, with costs going over 500 billion dollars." S3: "The psychological wellbeing of the people aboard is a big concern . . ."
9	changing the atmosphere configuration	P6 S6: "For those of you who do not read science fiction, terraforming is a process of changing the environment of a planet to make it suitable for human life."
10	having a space garden for vegetables	P7 S3: "As we speak, some astronauts have spent over a year in space, and have started growing their own lettuce."
11	rich in natural resources	P9 S8–9: "Asteroids are another alternative. They are generally not large enough to have an atmosphere or enough gravity, but can provide natural resources in the future."