

Cosmic Nursery Rhymes

Astronomy And Nursery Rhymes · Answer Key · 12 Questions

1. In the rhyme 'Twinkle, Twinkle, Little Star', the star is likened to a diamond.

What is the approximate surface temperature in Kelvin of a typical white dwarf star that might technically contain crystallized carbon, similar to a diamond?

- A) 1,000 K
- B) 5,000 K
- C) 10,000 K**
- D) 50,000 K

2. 'Hey Diddle Diddle' features a cow jumping over the moon. What is the approximate escape velocity of the Moon, required for an object to leave its surface completely?

- A) 1.38 km/s
- B) 2.38 km/s**
- C) 11.18 km/s
- D) 42.1 km/s

3. In 'I See the Moon', the moon is observed. Which astronomical phenomenon explains why the Moon appears to move across the sky at the same speed as an observer walking, known as the 'Moon illusion'?

- A) Parallax
- B) Atmospheric refraction
- C) Relative motion**
- D) Lunar librations

4. The rhyme 'Star Light, Star Bright' refers to a star. Which star is the brightest in the night sky as viewed from Earth, often mistaken for a common 'wishing' star?

- A) Polaris
- B) Sirius**
- C) Vega
- D) Betelgeuse

5. The rhyme 'Oranges and Lemons' mentions St. Clement's. While not a space rhyme, if we consider the Sun, what is the primary element that makes up approximately 73% of the Sun's mass?

- A) Helium
- B) Oxygen
- C) Hydrogen**
- D) Carbon

6. 'Ring a Ring o' Roses' is often debated in origin. If the 'ring' represented the orbit of a planet, which planet has an orbital inclination closest to the ecliptic plane, the flattest orbit in our system?

- A) Mercury
- B) Venus
- C) Mars
- D) Neptune**

7. 'Jack and Jill' went up the hill. If that hill were on Mars, specifically Olympus Mons, what is the approximate height of that volcano in kilometers?

- A) 8.8 km
- B) 15.6 km
- C) 21.9 km**
- D) 32.4 km

8. 'Humpty Dumpty' sat on a wall. If Humpty fell in a vacuum-like space environment, what would be the acceleration due to gravity on the Moon's surface in m/s^2 ?

- A) 1.62 m/s^2**
- B) 3.71 m/s^2
- C) 8.87 m/s^2
- D) 9.81 m/s^2

9. 'The Man in the Moon' is a classic folklore figure. What is the scientific term for the dark, basaltic plains on the Moon that create this 'face' pattern?

- A) Craters
- B) Maria**
- C) Rilles
- D) Highlands

10. 'Little Boy Blue' comes to blow his horn. If sound were to travel through the vacuum of space, what would be the velocity of sound in meters per second?

- A) 343 m/s
- B) 1,480 m/s
- C) 0 m/s**
- D) 3,000,000 m/s

11. The rhyme 'Thirty Days Hath September' relates to time. How many days does it take for the Earth to complete one full sidereal rotation relative to the stars, approximately?

A) 23 hours 56 minutes

B) 24 hours

C) 24 hours 4 minutes

D) 25 hours

12. 'The North Wind Doth Blow' refers to weather. Which star, known as the North Star, sits near the north celestial pole, effectively acting as a fixed point in the night sky?

A) Deneb

B) Thuban

C) Polaris

D) Rigel