

# 30(+) Undeniable Truths of Science

1. Earth rotates at  $15^\circ$ /hour.
2. In the Northern Hemisphere, winds blow clockwise out of a HIGH, and counterclockwise into a LOW.
3. The altitude of Polaris (the North Star) above the horizon equals your latitude.
4. For the United States (including New York), latitude is always NORTH and longitude is always WEST.
5. We experience winter in New York when we are **closest** to the sun.
6. Earth's axis is tilted  $23.5^\circ$ , which is the main cause of our seasons.
7. The North Pole is tilted toward the sun during our summer and away during our winter.
8. In the Northern Hemisphere, the Coriolis Effect causes winds and ocean currents to veer off to the RIGHT.
9. HIGH pressure brings dry weather; LOW pressure brings stormy, wet weather.
10. The oldest rocks are on the bottom.
11. There are 29.5 days from one full moon to the next.
12. ROTATION means spinning on an axis; REVOLUTION means orbiting around something.
13. Earthquakes, volcanoes and mountains occur along tectonic plate boundaries of Earth's crust.
14. S-waves can NOT go through liquids like Earth's outer core.
15. Index fossils are found everywhere, but lived only a short period of time.
16. Everything in nature goes from High to Low.

17. The universe is about 14.6 billion years old; the solar system and Earth are about 4.6 billion years old.
18. The highest/lowest (Spring) tides occur during the full and new moon phases (when Earth, moon and sun are lined up); the weakest tides (Neap) occur during first and last quarter phases.
19. Solar eclipses occur during new moon; lunar eclipses occur at full moon.
20. The Coriolis Effect and Foucault's Pendulum prove that Earth rotates.
21. The universe is expanding as proven by the red-shift of celestial light sources.
22. Seeing some constellations in winter, but not summer is proof that Earth revolves around the sun.
23. All stars, including the sun, get their energy from nuclear fusion.
24. The steeper the sun angle, the hotter the weather.
25. The higher the dew point, the more humid the air.
26. The closer together the temperature and dew point, the more likely the chance for precipitation.
27. Being close to large water bodies keep summers cooler and winters warmer.
28. Planets move faster than when they are closer in their orbits to the Sun and faster than other planets further away.
29. Plants put water into the atmosphere through the process of transpiration.
30. Stream velocity is the greatest on the outside of curves; erosion occurs there.
31. U-shaped valleys come from glaciers.
32. Tight isobars indicate fast wind speeds.
33. When contour lines cross a stream, they point upstream.