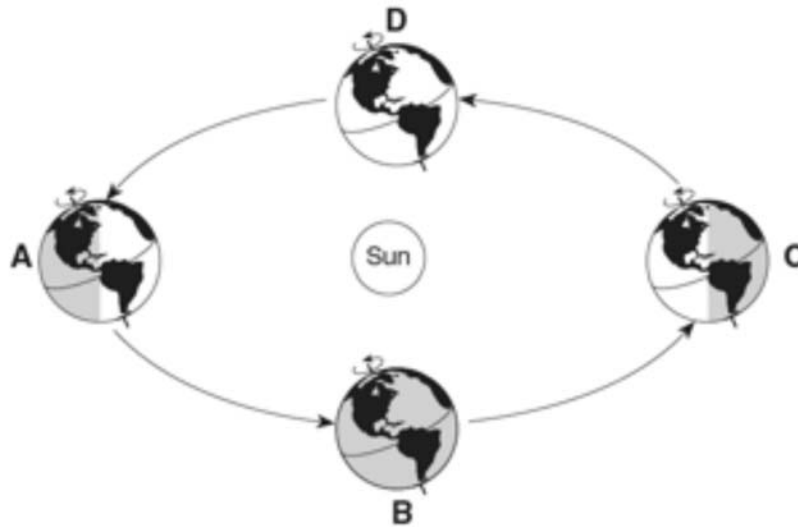
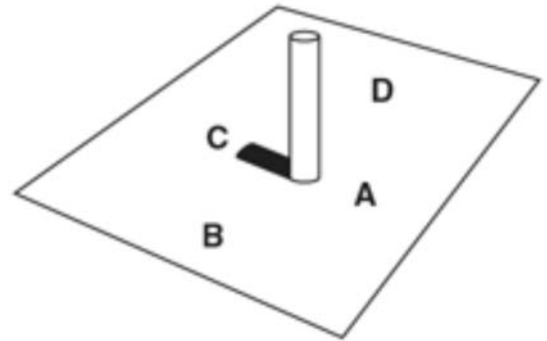
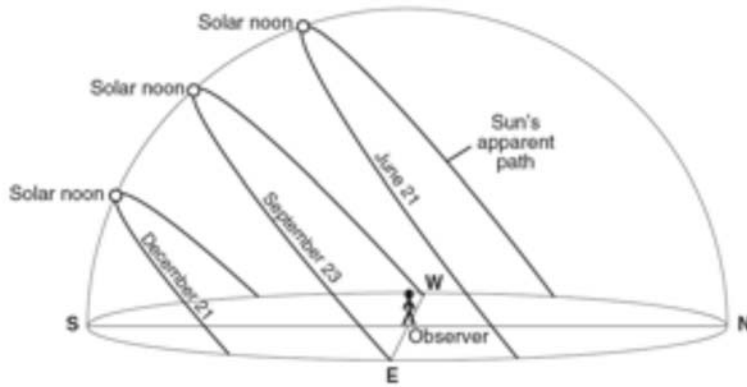


The Seasons



Description	Position	Description	Position
March 21st		South Pole-24 Hrs of Dark	
June 21st		High Kinetic Energy	
December 21st		Low Kinetic Energy	
September 23rd		Earth Close to Sun	
Northern Hemisphere Winter		Earth Far from Sun	
Northern Hemisphere Spring		Southern Hemisphere Spring	
North Hemisphere Summer		Southern Hemisphere Fall	
Northern Hemisphere Fall		Southern Hemisphere Winter	
Greatest Orbital Velocity		South Hemisphere Summer	
Least Orbital Velocity		9 Hrs of Day in NYS	
23 1/2 N-Zenith		12 Hrs of Day in NYS	
0 (Equator)-Zenith		15 Hrs of Day in NYS	
23 1/2 S-Zenith		Winter Solstice	
North Pole-24 Hrs Day		Vernal Equinox	
South Pole-24 Hrs Day		Autumnal Equinox	
North Pole-24 Hrs Dark		Summer Solstice	

Sun's Path in NYS



1. What direction does the sun rise in summer? _____
2. What direction does the sun rise in winter? _____
3. What direction does the sun rise in fall/spring? _____
4. How long is the sun out in fall/spring? _____
5. How long is the sun out in winter? _____
6. How long is the sun out in summer? _____
7. What direction do you look to see the noon time sun? _____
8. What direction do you look to see polaris? _____
9. From sunrise to noon, what happens to the length of a shadow? _____
10. From noon to sunset, what happens to the length of a shadow? _____
11. From sunrise to noon, what happens to the angle of insolation and intensity of insolation? _____
12. From noon to sunset, what happens to the angle of insolation and intensity of insolation? _____
13. What season does the sun have the greatest insolation? _____
14. What season does the sun have the least insolation? _____
15. Does the sun ever reach the zenith in NYS? _____
16. What direction does the sun set during winter? _____
17. What direction does the sun set during fall/spring? _____
18. What direction does the sun set during summer? _____
19. Does the sun physically move across the sky? _____ Explain!

20. From season to season, how many degrees does the noon time sun shift in the sky? _____
21. Why is it so cold in NY during winter? _____
22. Why is it so hot in NY during summer? _____
23. Why does the sun shift its position along the horizon with the changing seasons?

24. On the shadow diagram, what letter represents South? _____