

Name _____

The Shadow Knows Answers

1. What do you see happening to the shadow of the stick for each “all-day angle” each time the flashlight is moved from the morning position to the evening position?
As the sun goes higher in the sky from morning to noon the shadow gets shorter. As the sun goes lower in the sky from noon to evening, the shadows get shorter.
2. What do you see happening to the shadow of the stick just at noon of each of the different “all-day angles”?
The shadow of the stick gets longer at noon each time the “all-day angle” gets lower or in other words the sun that seems to go across the sky is lower in the sky. The opposite is also true as the angle of the sun is get higher.
3. What are your conclusions about the data of the shadows on your chart as the sun moves from morning to evening and as the sun is lower on the horizon each day?
 - a. **The lower the sun is in the sky, the longer the shadow will be.**
 - b. **The higher the sun is in the sky, the shorter the shadow will be.**
4. The same thing happens to tall objects outside as we go from summer to winter. How do the conclusions above help you understand more about the earth as it is going around the sun?
 - a. **As the earth goes around the sun, the earth is spinning on its axis causing the sun to come up in the east and go down in the west causing the shadows to get smaller and larger**
 - b. **As the earth is orbiting the sun, its different positions around the sun must cause the sun to be lower and higher in the sky making the shadows be bigger and smaller.**
5. What is causing the sun to seem like it is getting lower in the sky from summer to winter and getting higher in the sky from winter to summer?
The orbit of the earth around the sun.