

Water in, Water Out!



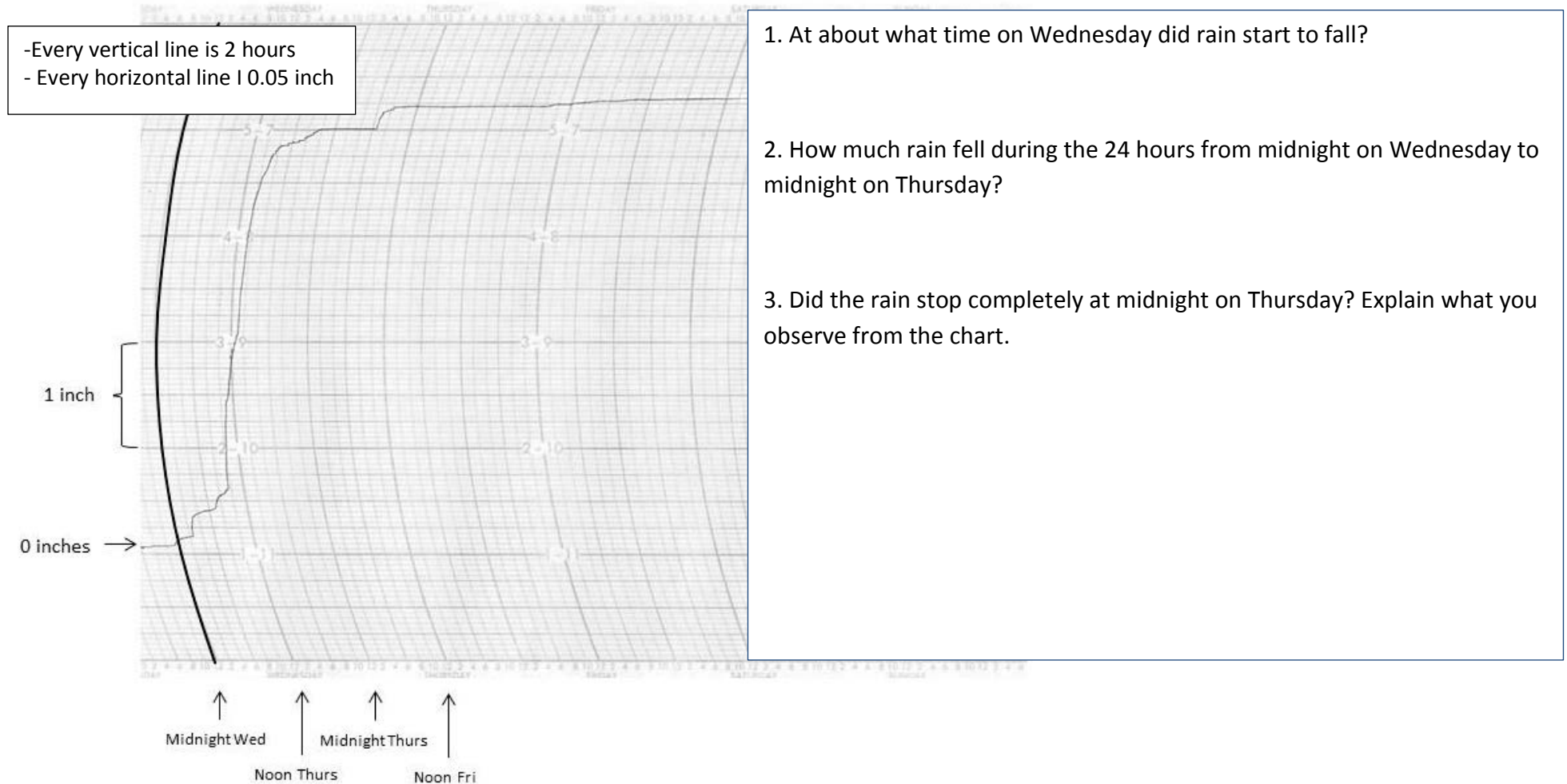
“Every week I come out here to measure temperature, rainfall and stream water in the forest,” says Nick, a forest technician, in *Seeking the Wolf Tree*. “The temperature and water affects all the plants and animals in the forest.”

This activity allows students to look at some of these measurements. They first analyze rainfall data and then stream water data from a rain storm that occurred in October 2014, to investigate the effect that the rain had on the stream water. This was a significant rain event: just under 4 inches of rain fell in a 24-hour period. This is the amount usually received in one month!

As an extension, teachers may wish to connect the idea of amount of rain received to some simple activity so students have some basis for thinking about what ‘inches of rain’ look like and how it might affect the soil (and thus plants) in the forest. One idea is to use a simple rain gage to measure and collect rain, and then pour that rain onto a potted plant where the soil has been kept moist. Can the soil absorb all of the water, or does some run out of the drainage holes?

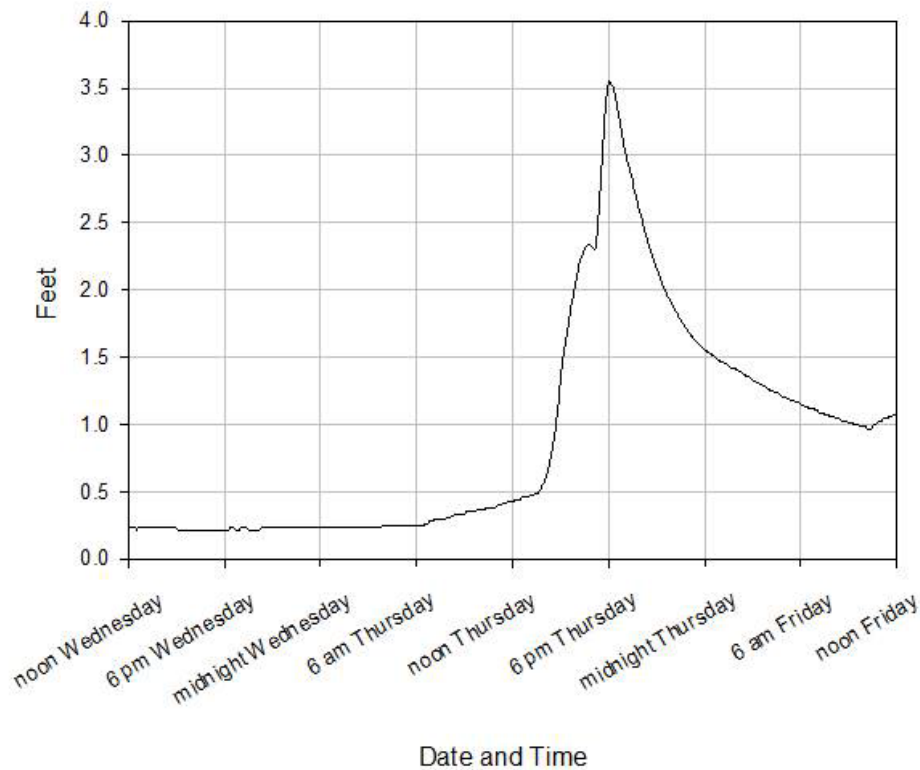
Name _____

This is a hydrograph that recorded the rainfall received during a rain storm in October 2014. It shows the cumulative rainfall over the entire period, which means that when the line levels off, rain has stopped falling. Observe the hydrograph, and answer the questions in the box.



This hydrograph recorded the *stage* of the stream in the watershed during the October 2014 rainstorm. It shows the height of the stream water above the V notch of the weir as illustrated in *Seeking the Wolf Tree*.

Streamflow Weir 9 Hubbard Brook



1. What was the stage height of the stream before the rain storm?
2. At what time did the stage height of the stream start to rise?
3. At what time was the stream at its highest?
4. What was the approximate stage height at this time?
5. The stage height started to decrease as soon as the bulk of the rain stopped falling. But notice how long it took for the stream to start to rise, in comparison to when it started to rain. Also notice that even by noon on Friday, it had not returned to the same height as before the storm. How might you explain these differences between the timing of rainfall and stream height?