

# Learning by Doing

*This past river season 2019, from March to October, FOMR member Steve Rudolph took on a project to satisfy his own curiosity about what affects the water temperatures in Middle River. He crafted a plan, then visited the river daily, all season long with some help from his friend, Tom Howell. Steve crafted his own version of scientific inquiry, measuring what he could, hypothesizing and drawing tentative conclusions from his data. Like all scientists, his data led to even more questions. **READ MORE...***

Steve measured water temperatures, air temperatures, soil temperatures, humidity and he factored in the UV index which is a measurement of ultraviolet radiation. He also measured water depth. The following chart records some of his summer data:

Month	Ave. Low Water Temp	Ave. Low Air Temp	Ave. Soil Temp	Ave. High Water Temp	Ave. High Air Temp	Ave. UV Index	Ave. Relative Humidity
Mar	30 F	32 F	54 F	35 F	54 F	3	35%
Apr	33 F	42 F	69 F	53 F	63 F	5	50%
May	60 F	51 F	71 F	69 F	72 F	8	60%
Jun	73 F	59 F	77 F	77 F	80 F	10	60%
Jul	70 F	64 F	77 F	81 F	84 F	9	65%
Aug	67 F	61 F	76 F	76 F	82 F	8	60%
Sep	65 F	53 F	73 F	74 F	76 F	5	50 %
Oct	49 F	49 F	62 F	73 F	69 F	3.5	45%
Nov	47 F	33 F	50 F	55 F	57 F	3	30%

What has Steve concluded from his observations? "It appears that the UV index and overnight temperatures were the main factors that influenced the water temperature at this particular locale. Rainy days with clouds and low UV did not change the river high and low temperatures more than 3 degrees Fahrenheit."

And, Steve is aware that there could be many other factors he did not measure such as the length of day, sun's angle to the water or wind speeds.

What I (Kate Guenther) learned from Steve is how important it is to make the space in life to follow one's questions. Steve created and invested deeply in his personal experience of building a relationship with the River, teaching himself and also letting the River teach him how to read the clues to how all this works.

Would you like to contact Steve to see what more he discovers? Email Steve at [northjadejams@gmail.com](mailto:northjadejams@gmail.com).