窗台上的冰，每天矮一点点

寒假前科学小实验自选，别人做泡腾片，我选了最不起眼的东西：冰。那几天正好降温，我接了三杯冰块，杯口一样大，冰是从同一条冰格里掰下来的。一杯放在窗台上，一杯放在书桌中间，一杯塞进棉手套挂在暖气片旁边。我给自己定的规矩是每天放学前量一次，记一行，记十天。

头两天，记录本上全是让我失望的数字。窗台那杯，冰从两厘米高变成一点九厘米；桌上那杯，一点九变成一点八；手套那杯最慢，纹丝不动。我写：变化很小，几乎看不出。说实话，量到第三天我有点想放弃，一根冰棍似的冰，每天矮一毫米，这有什么好看的。是记录本拽住了我——前两天的格子已经画好了，空着难受，我硬着头皮继续量。

转折在第五天。那天早上我伸手去摸窗台那杯，发现杯底的冰比昨天小了一圈，可杯里的水并没有变多。按我的想法，冰要么化成水流进杯底，要么就还是那块冰，哪有第三种？我翻前几天的记录，一格一格对：冰的高度在降，水位却没升。桌上那杯正常，冰变小，水变多；手套那杯冰小得慢，水也多一点。只有窗台这杯，冰像偷偷溜走的。

我把这个问题写进记录本，留了一行空。第六天我做了个补充实验：又接了一小杯冰，用保鲜膜把杯口封得严严实实，放回窗台。这一天它的冰也变小了，可保鲜膜内侧挂了一层小水珠。我把两杯并排放着记：没封膜的杯，冰变小、水不涨；封膜的杯，冰变小、膜上有珠。答案自己从格子里跳出来了——窗台那杯的冰，化成水汽跑掉了，跑得太快，杯底留不住它。

后来我去查了书，书上说冰不化成水直接变成汽，这叫升华。书上的这个词我一眼就记住了，因为它不是我背下来的，是我自己从十天的格子里撞出来的。记录本上那行留空，第六天我填上了：冰会直接变成汽，窗台冷、风大，化得快，留不住水。

十天记录结束，三杯冰都见了底。我把记录本交上去，科学老师翻到第五天那一页，问我这行留空是什么意思。我说，是我不知道的地方，空着等我自己填。老师在我的本子末尾画了一个圈，里面写：会观察。其实我心里清楚，我不是天生会观察，是那个画好的格子逼我天天量，是水位不涨的不对劲拽着我往下查。变化不一定都热热闹闹，有的变化一天只有一毫米，只肯给天天记录的人看。这个冬天，窗台上的冰每天矮一点点，我的观察力每天长一点点。这就是这次实验留给我最实在的心得。

The Ice on the Windowsill Shrinks a Little Each Day

Before winter break, our science class picked our own mini-experiments. Everyone else chose effervescent tablets; I chose the plainest thing there is: ice. A cold snap was coming, so I filled three cups with ice cubes, all the same cup size, all snapped from the same ice tray. One went on the windowsill, one in the middle of my desk, one stuffed into a cotton glove hanging beside the radiator. My rule: measure once before school each day, write one line, for ten days.

The first two days, my notebook was full of disappointing numbers. The windowsill cup: the ice dropped from two centimeters tall to 1.9. The desk cup: 1.9 to 1.8. The

glove cup was slowest, not budging at all. I wrote: change is tiny, barely visible. Honestly, by day three of measuring I wanted to quit — a popsicle of ice shrinking one millimeter a day, what is there to watch? The notebook held me back. The boxes for the first days were already drawn, and leaving them blank felt wrong, so I kept measuring through sheer stubbornness.

The turn came on day five. That morning I reached for the windowsill cup and found the ice at the bottom a ring smaller than yesterday — yet the water inside had not risen. In my mind, ice either melts into water at the bottom of the cup or it stays ice. What third option exists? I flipped back through my entries and compared box by box: the ice height kept falling, the water level never rose. The desk cup behaved normally — ice shrinking, water rising. The glove cup shrank slowly, water rising a little. Only the windowsill cup lost its ice as if it were sneaking away.

I wrote the question into my notebook and left one line blank. On day six I ran a follow-up test: another small cup of ice, its mouth sealed tight with plastic wrap, back onto the windowsill. Its ice shrank that day too, but the inside of the wrap hung with a layer of tiny droplets. I recorded the two cups side by side: unwrapped cup — ice shrinks, water does not rise; wrapped cup — ice shrinks, droplets on the film. The answer jumped out of the boxes by itself. The windowsill ice was turning straight into vapor and escaping, too fast for the cup bottom to catch it.

Later I looked it up in a book: when ice turns directly into vapor without melting, it is called sublimation. I memorized that word at first sight, because I had not recited it — I had bumped into it myself through ten days of boxes. The blank line in my notebook I filled in on day six: ice can become vapor directly; the windowsill is cold and windy, so it goes fast and leaves no water behind.

When the ten days ended, all three cups were down to bare bottoms. I handed in my notebook, and my science teacher turned to the page for day five and asked what that blank line meant. I said it was the place I did not know, left empty for me to fill myself. She drew a circle at the end of my notebook and wrote inside it: knows how to observe. Deep down I knew I was not born observing. The drawn boxes forced me to measure daily, and the wrongness of the water level not rising dragged me onward to investigate. Change is not always noisy. Some change comes one millimeter a day and shows itself only to those who record it daily. This winter, the ice on the windowsill shrank a little each day, and my power of observation grew a little each day. That is the most solid lesson this experiment left me.

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