我们自己吹出来的彩虹

那个下午没什么特别，就是风停了，太阳正好斜过来，照在小区楼下的空地上。我们端着一盆自己兑的泡泡水站在空地边上：半盆清水，挤进洗衣液，加了一勺白糖。书上说糖能让泡泡结实一些，我们打算验证。

先用一根吸管试。吹出来的第一个泡泡只有指甲盖大，晃晃悠悠离了吸管，往上走。它走到半空，我们全都看见了：泡泡的肚子上转着一圈颜色，粉、绿、蓝，一小片一小片地流动，像谁把彩虹剪了一角贴在上面。

那不是我们画上去的，也不是地上什么反光。太阳从那个方向来，光穿过比头发丝还薄几十倍的肥皂膜，一部分光被膜留下，一部分光被膜弹走，两股光撞在一起，有的颜色被加强，有的被抵消，颜色就转出来了。物理课上刚学过薄膜干涉，笔记里它只是一段干巴巴的字。可此刻它悬在半空，圆滚滚，慢悠悠，谁抬头都能看见。

一个三四岁的小男孩从滑梯那边冲过来，伸着手去抓泡泡。他没抓到，泡泡在他指尖前破了，水点落在他手背上。他愣了一下，然后仰着脸大喊：彩虹！彩虹在我手上碎了！他妈妈从长椅上站起来笑。接着第二个孩子跑过来，第三个，第四个。他们不关心薄膜和光，他们只关心下一个泡泡什么时候破，破之前能不能摸到。

我们把那盆泡泡水吹见了底。白糖到底有没有让泡泡更结实，我们没数清，只记得有个大泡泡落地没破，被一个小女孩小心翼翼地踩破了，她为此懊恼了很久。这个没做完的验证不要紧，往后有的是下午。

回家的路上我在想，彩虹原来不用等雨。一层比头发丝薄几十倍的膜，一个有太阳的下午，就够了。科学最动人的地方，也许就是它把美讲得明明白白，又把美留得完完整整。

The Rainbow We Blew Ourselves

That afternoon was nothing special. The wind dropped, the sun slanted in just right, and lit up the open ground below our building. We stood at the edge of that ground holding a basin of homemade bubble solution: half a basin of clean water, a squeeze of laundry detergent, one spoon of sugar. The book said sugar makes bubbles tougher, and we meant to test it.

We tried a straw first. The first bubble came out no bigger than a fingernail, wobbled off the straw, and rose. Halfway up, every one of us saw it: a ring of color turning on the bubble's belly, pink, green, blue, flowing in small patches, as if someone had cut a corner off a rainbow and pasted it there.

We had not painted it on, and it was no reflection from the ground. Sunlight comes from that direction, passes through a soap film tens of times thinner than a hair; part of the light is held back by the film, part is bounced away, the two meet, some colors get strengthened and some cancel out, and the colors come out. We had

just learned thin-film interference in physics class, where it was a dry paragraph in our notes. But now it hung in midair, round and slow, visible to anyone who looked up.

A boy of three or four came running from the slide, reaching for a bubble. He missed; the bubble burst just before his fingertips, and droplets landed on the back of his hand. He froze for a second, then shouted with his face tilted up: A rainbow! The rainbow broke on my hand! His mother stood up from the bench, laughing. Then a second child came, a third, a fourth. They did not care about films and light. They cared only about when the next bubble would pop, and whether they could touch it before it did.

We blew the basin empty. Whether the sugar really made the bubbles tougher, we never counted properly; we only remember one big bubble that landed without popping, which a little girl carefully stepped on, and regretted for a long time. That unfinished test does not matter. There will be plenty of afternoons.

On the way home I thought: a rainbow does not have to wait for rain. A film tens of times thinner than a hair, one afternoon with sun, that is enough. Perhaps the most moving thing about science is that it explains beauty clearly and still leaves beauty whole.