A GUIDE FOR PARENTS & EDUCATORS

SCREENS IN SCHOOL.

Product Facts

Serving Size: 1 School Day	**Hardware, Software, Short Video, AI**
Evidence of Harm	**9 Documented Effects**

BRAIN DEVELOPMENT — ↓ white matter

The first MRI study of its kind found preschoolers exceeding AAP screen-time guidelines had lower structural integrity in brain pathways that support language and literacy, along with lower language/literacy scores. A follow-up study linked more screen use to thinner cortex in regions for attention, memory, and social cognition.

Hutton et al., JAMA Pediatrics (2020); Hutton et al., Scientific Reports (2022)

READING COMPREHENSION — ↓ understanding

A meta-analysis of 54 studies found paper reliably beats screens for comprehension of nonfiction/informational text — a gap that has widened, not shrunk, even among "digital native" students. Two other independent meta-analyses converge on the same conclusion.

Delgado et al., Educational Research Review (2018); Clinton (2019); Kong, Seo & Zhai (2018)

MEMORY & HANDWRITING — ↓ encoding

High-density EEG shows handwriting produces more widespread brain connectivity in memory-formation regions than typing, replicated in 12-year-olds, not just adults. Longhand note-takers also process material more deeply than students transcribing verbatim on laptops.

Van der Weel & Van der Meer, Frontiers in Psychology (2024); Ose Askvik et al. (2020); Mueller & Oppenheimer (2014)

ATTENTION & ADHD SYMPTOMS — ↑ focus risk

A 2-year study of ~2,600 teens with no baseline ADHD symptoms found high-frequency digital media use predicted higher odds of developing them. Separately, OECD data show ~2/3 of 15-year-olds report in-class device distraction, tied to a learning loss of roughly 3/4 of a school year.

JAMA (2018); OECD, PISA 2022 Vol. II & "Students, Digital Devices & Success"

ACADEMIC ACHIEVEMENT — ↓ test scores

A population-level study of Catalonia's 1:1 laptop program found it reduced performance across four subjects by 0.20–0.22 SD. U.S. data on ~1 million N.C. students found expanded home computer/broadband access led to persistent reading and math declines.

Mora, Escardíbul & Di Pietro (2018); Vigdor, Ladd & Martinez (2014); Lee (2022)

MENTAL HEALTH — 2× odds

In a study of 40,000+ U.S. children and teens, high screen users (7+ hours/day) were more than twice as likely to have been diagnosed with depression or anxiety. A separate 4-year longitudinal study found within-person increases in screen use predicted rising depressive symptoms in adolescents.

Twenge & Campbell, Preventive Medicine Reports (2018); Boers et al., JAMA Pediatrics (2019)

SLEEP & PHYSICAL HEALTH — 2× odds

A meta-analysis found children with bedtime access to a portable screen device had roughly double the odds of inadequate sleep. Even mere access, without active use, was harmful. Screen exposure is also linked to elevated childhood myopia and obesity risk.

Carter et al., JAMA Pediatrics (2016); Zong et al., BMC Public Health (2024); Fang et al. (2019)

DATA PRIVACY & SECURITY — 275M+ records

Apps used by preschoolers routinely transmit persistent identifiers to third parties, in tension with children's privacy law. In 2026, a ransomware breach of Canvas (Instructure) exposed data tied to roughly 275 million students, teachers and staff at nearly 9,000 schools.

Zhao et al., JAMA Pediatrics (2020); NPR on the 2026 Canvas breach

ADDICTIVE DESIGN & INEQUITY — 80% of apps

80% of apps used by kids aged 3–5 contain manipulative design (fabricated urgency, social pressure, variable rewards), concentrated in apps used by lower-income households. School device monitoring disproportionately disciplines Black, Hispanic and LGBTQ+ students, and the AI systems underneath these tools measurably misjudge Black students' speech and English learners' writing.

Radesky et al., JAMA Network Open (2022); CDT, "Hidden Harms" (2022); Koenecke et al., PNAS

What works

INGREDIENTS WITH EVIDENCE

✓ **REAL, PHYSICAL BOOKS**

Four independent meta-analyses of more than 170,000 students all converge on the same finding: paper reading produces reliably better comprehension than screens. Book reading is linked to increased brain connectivity in children, while screen time links to decreased connectivity in the same networks.

Delgado, Vargas, Ackerman & Salmerón (2018); Furenes, Kucirkova & Bus (2021); Kong, Seo & Zhai (2018); Clinton, V. (2019)

✓ **HANDWRITING**

Writing by hand produces broader memory-related brain connectivity than typing, in both children and adults (for notes, drafts, and learning new material). College students who take handwritten notes are 58% more likely to earn an A than students typing the same lecture.

Van der Weel & Van der Meer (2024); Flanagan, A.E., Wheeler, J., Colliot, T., Lu, J., & Kiewra, K.A. (2024) Ose Askvik et al. (2020)

✓ **TEACHER-LED INSTRUCTION**

UNESCO's global review concludes technology should never replace in-person, teacher-led instruction, and finds little robust evidence most classroom tech adds value beyond it.

UNESCO, Global Education Monitoring Report (2023); Reich, "Failure to Disrupt" (2020)

✓ **OUTDOOR TIME & MOVEMENT**

Just 5 screen-free days at an outdoor camp measurably improved preteens' ability to read nonverbal emotional cues versus peers with normal screen use. Outdoor time is also protective against childhood myopia.

Uhls et al., Computers in Human Behavior (2014); BMC Public Health dose-response study (2025)

✓ **POLICY-LEVEL REGULATION**

Citing "clear scientific evidence that digital tools impair rather than enhance student learning," Sweden reversed mandatory devices in preschool, ended digital learning under age 6, and funded a national return to printed textbooks.

Karolinska Institutet statement (2023); AP reporting on Sweden's rollback

ASK YOUR SCHOOLS AND CITY:

How can I support my teachers and community to ensure we have the correct school supplies and policies in place?

What ed-tech tools collect our kids' data, who can access it, how long is it kept, and how may we withdraw consent?

Schools Beyond Screens is a volunteer coalition of parents, caregivers, medical professionals, teachers, and experts who believe public education must put kids before private interests. We support a use of technology that is safe, legal, and evidence-based.