How much time does a child spend in school?

7 hours a day
180 official school days per year in PA
12 years
15,120 hours for a high school graduate
What makes a school safe?

What does a school need in order to foster a secure and conductive learning environment?
Evolution of Schools in the US
Early Schools in the US

- Children were taught in one-room schoolhouses
- Limited windows, light, air
- End of the 19th Century, focus of educators and planners turned more towards the ventilation, sanitation, etc. of schools
Modern US Schools

- 12 years of mandatory school for all children
- Typical 7-8 hour school day
- No national curriculum, instead are mandated by state and local governments. There is no one national exam
- Focus instead lays on completing a diploma
- 85-90% of students attend public schools
Evolution of Schools in India
Early Indian Schools

- In ancient times, schooling took place at the house of a teacher, or Guru, and students requested to be taught. The student would then live in the Guru’s home.

- During British colonization, system was redesigned:
  - Resembled the western/British model
  - Subjects confined to science and mathematics
Modern Indian Schools

- Reforms made school mandatory for all children until the age of 14
- Although only 50% of children actually go to school because there are no attendance checks
- Ten + Two + Three system: Primary school and middle school for ten years culminating in a standardized test (mandatory), two year higher secondary school, three year vocational college
Modern Indian Schools

- Primary school starts at 7 or 8 am and runs for 6 or 8 hours
- Classroom taught by one teacher and maybe an assisting teacher, instructing all subjects
- Rows of benches with a teacher’s desk at the front of the classroom
Evolution of Schools in South Korea
Reform in South Korean Schools

- In the 1950s just after the Korean War, 78% of the South Korean population was illiterate.
- Government believed that the key to developing South Korea economically was through education.
- The South Korean government led an education overhaul based on an equal-opportunity system so all students would have access to a proper education.
Modern South Korean Schools

- For high schoolers, school runs from 8am to 4 or 5pm, with a second shift at private tutoring school “hagwon” from 6pm to 9pm

- 75% of students attend a private school and/or hagwon

- System highly focused on examination results

- Social status, marriage prospects, jobs all depend heavily on where one goes to college
Limitations & Consequences

What prevents schools from being able to meet these standards, and what are the consequences?
Poor Ventilation

- Build up of air byproducts like CO, usually from wood-burning stoves, space heaters, etc.
- High humidity and moisture levels attract bacteria and mold, as well as pests
- These lead to health hazards such as asthma, lead poisoning and other medical conditions
Poor Sanitation

- Poor sewer systems, or a lack thereof, causes lasting groundwater contamination
- High humidity and moisture levels attract bacteria and mold, as well as pests
- These lead to health hazards such as asthma, lead poisoning and other medical conditions
Sanitation Case Study: Indonesia

- 43% of the population does not have access to sanitary toilets
- only 2% of urban sewage connections are treated
  - leakage into populated areas
  - 6 million tons of human feces are released into inland bodies of water every year
Sanitation Case Study: Consequences

What does this mean for those schools?

- Hours per day wasted making lengthy trips to and from local water source
- Health risks of not washing hands
  - Higher chance of contracting and spreading infectious disease
  - Germs go from hands into face, eyes, mouth, food, and drink
- 2.2 million children under 5 die per year of diarrheal diseases and pneumonia
Sanitation Case Study: Nicaragua

- 529 out of 1229 targeted schools in Northern and Southern Atlantic regions
- 57% lacked water infrastructure
- 30% required water to be carried from a distance
- 81% had no sinks for hand washing
- 74% had no soap for hand washing
Sanitation Case Study: Consequences

What does this mean for those schools?

- Lack of sanitation infrastructure causes millions of girls to stay home during menstruation
  - No provisions for access to sanitary napkins, etc., in schools
  - Average schoolgirl misses more than a month of school per year
- UNICEF: In countries where menstrual hygiene is a taboo, girls in puberty are typically absent for 20% of the school year
Greater Impact