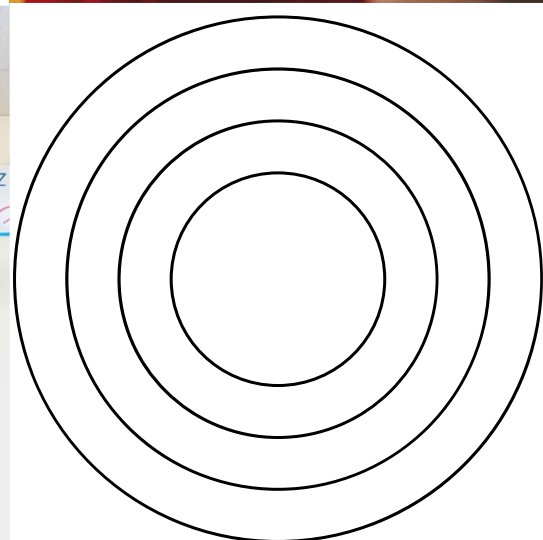




Retrofit Lighting & Design

BENEFITS BEYOND SAVINGS

LED Lighting in Schools



enhance your educational environment with LED lighting technology

ESSENTIAL ADVANTAGES FOR EDUCATIONAL FACILITIES



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Lighting Services



RETROFIT
LIGHTING & DESIGN

- lighting retrofits
- lighting design
- lighting audits
- interior/exterior
- rebates
- lighting controls
- LED supply
- multi-location rollout
- interior/exterior
- CLMC, CLEP, LC

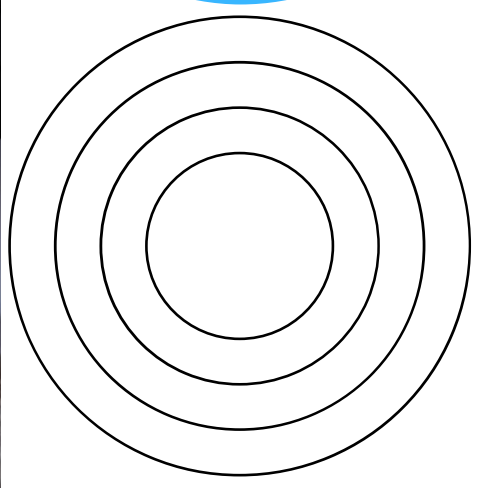
\$8 billion a year spent on electricity for schools

representing the 2nd largest expense in education
next to paying teachers & staff

U.S. Environmental Protection Agency (EPA)



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Save \$2 billion

invest in hiring nearly
36,000 teachers or
increasing teachers' wages

HOW?

Reducing Energy costs by **only 25%**
saves approx. \$2 billion

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School lighting was recently rated the most unsatisfactory part of the average facility

Average age of public schools in the United States is 44 years



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5 ways schools benefit from LED

SAFETY



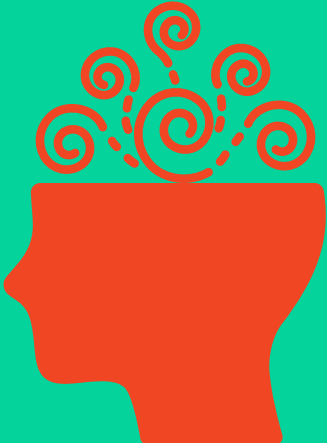
SECURITY



PRODUCTIVITY



**MENTAL
HEALTH**



**BOTTOM
LINE**



Safety

Bullying & harassment are less likely to occur in properly lit spaces

Well lit areas are safer in winter months for seeing ice - reducing slip & fall hazards



Security

Crime is 39% less likely to occur in properly lit spaces

"Major Study Finds Outdoor Lighting Cut Crime by 39%" [study]

Employees & students can comfortably arrive & leave in the dark while maintaining secure environment



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Productivity

LED lighting can help with student behavior and classroom management. Better student behavior increases teacher retention.

HOW?

Because lighting profoundly affects numerous levels of human functioning such as vision, circadian rhythms, mood, and cognition, its implicit effects on learning and classroom achievement cannot be dismissed.



Productivity

Tunable lighting supports academic performance while utilizing technologies such as tablets, videos and smartboards.

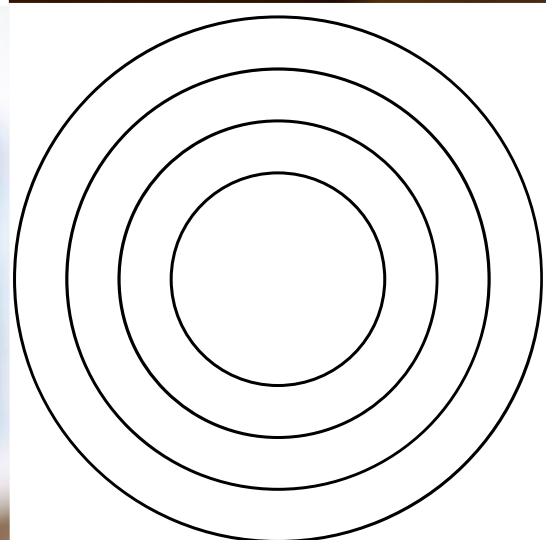
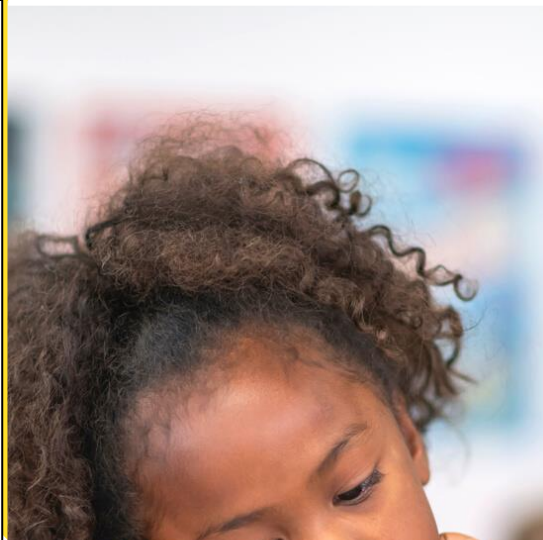
- Controlling reflections on video monitors, tablets & computer screens
- Producing even vertical illumination on whiteboard & smartboard surfaces
- Enhancing visibility from anywhere in the room
- Control light levels to enable viewing and note-taking during AV presentations



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Productivity



Students exposed to tunable light scored, on average, 18% higher in concentration tests, were more motivated in the longer term & were more appreciative of their learning environment.

"How LED Lighting is Changing The Classroom" [study]

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Productivity

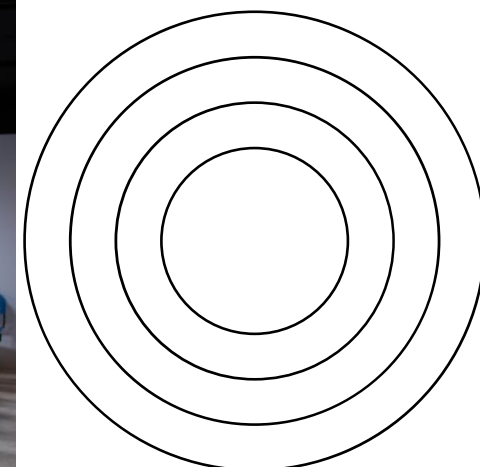
Visual impairments can induce behavioral problems in students, reduce the level of concentration & motivation in the classroom.

Did You Know?

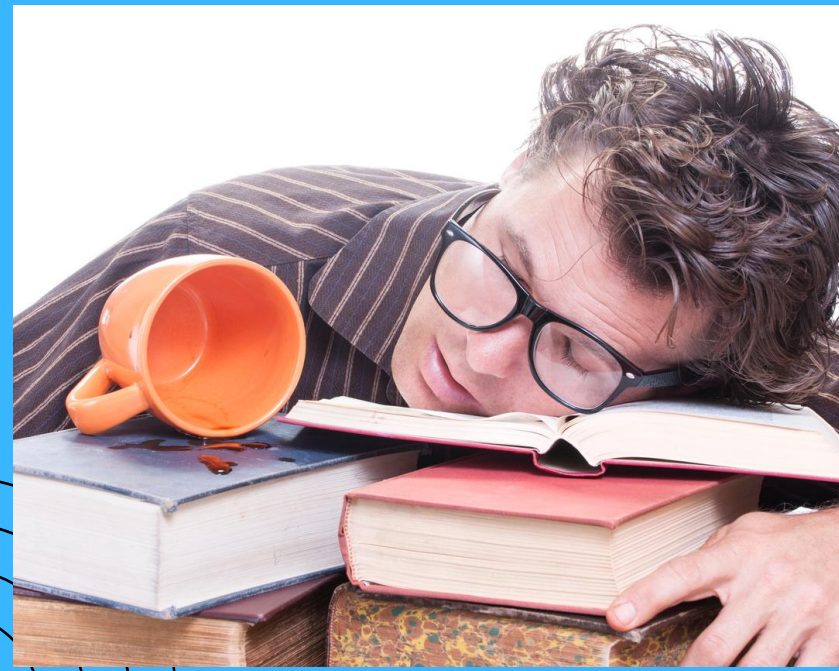
- 20% of children in schools encounter visual problems
- Among elementary school children, 41% have trouble with tracking (skipping lines while reading, confusing or omitting words)
- 6% have refractive errors (shape of eye causing blurriness)
- 4% have strabismus (eye muscles/movement)



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Mental Health



Human evolution is
shaped by light

Light regulates a large variety of bodily
processes such as sleep & alertness

Different wavelengths of light also affect blood
pressure, pulse, respiration rates, brain activity
and biorhythms

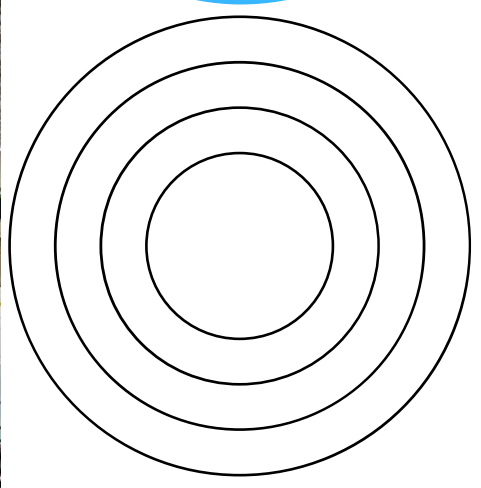


Mental Health

Daylight

The average MN school start time is 8:18 am. The average end time is 3 pm. Outside of school from November-March, students would have 3 hours of possible daylight outside of school. **Kids should get a min. of 2 hours of daylight per day.**

LED lighting & color temperatures can help supplement this daylight deficiency.



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**The U.S. insomnia market is
projected to reach 4.24 billion
dollars by 2021**

EXCUSE ME?



Mental Health

Sleep

Light plays a key role in setting and regulating the body's biological clock and circadian cycle.

Tunable LED light is proven to help regulate circadian rhythm

Mental Health

Emotions

Lighting plays a key role in evoking emotions

Adjusting color temps to match the time of day can help students:

- concentrate
- relax
- focus
- improve retention & recall



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U.S. Department of Education (DOE)



Studies show more than 90% of people with autism spectrum disorder are particularly sensitive to external sensory stimulation, with bright lights being an issue of great concern

LED Lighting Fixtures: Better Learning Environment for Students with Autism [Study]

Mental Health

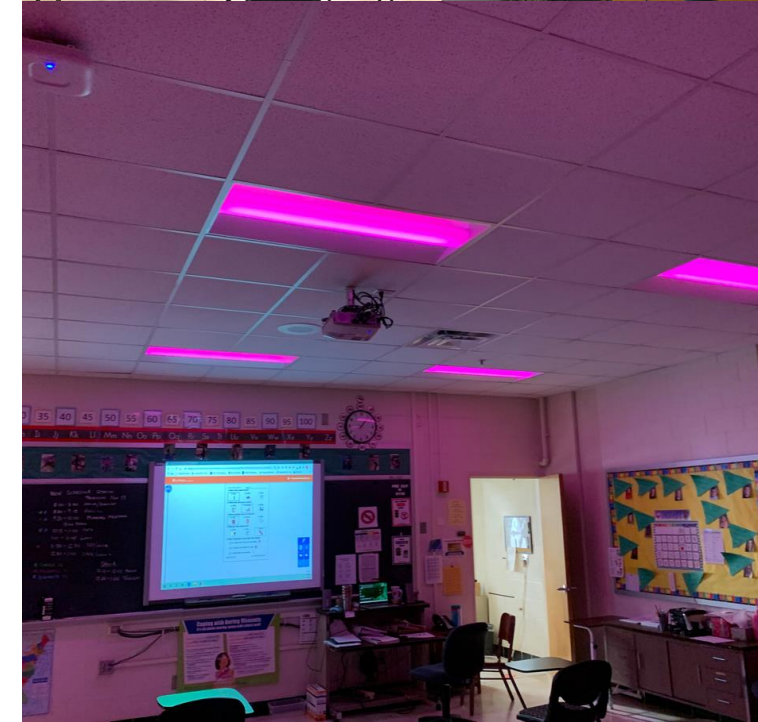
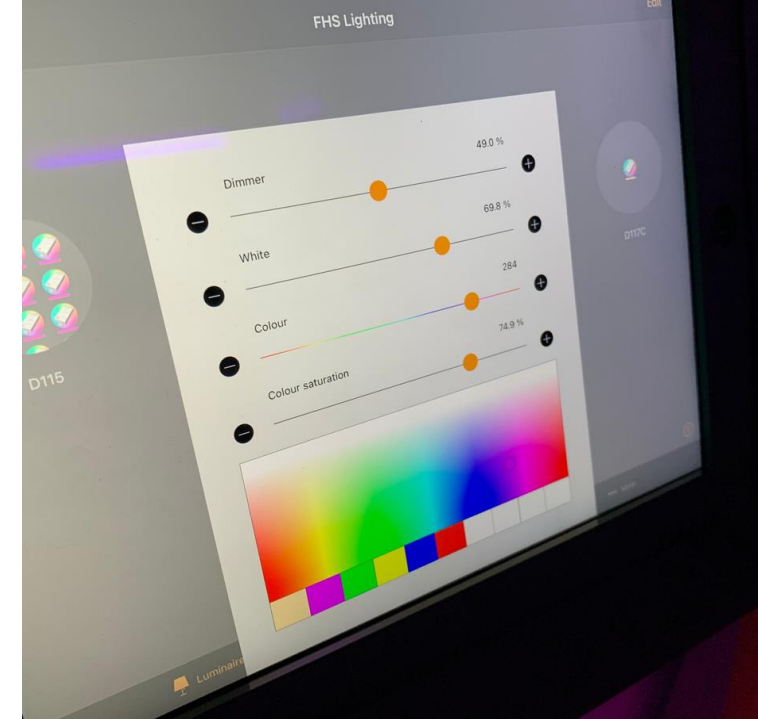
Autism Spectrum Disorder

The ability for teachers to adapt & adjust the color & light levels on demand make the learning environment more enjoyable and productive for special needs students.

LED saves the school district energy costs & the lights do not flicker in classrooms occupied by special-needs children



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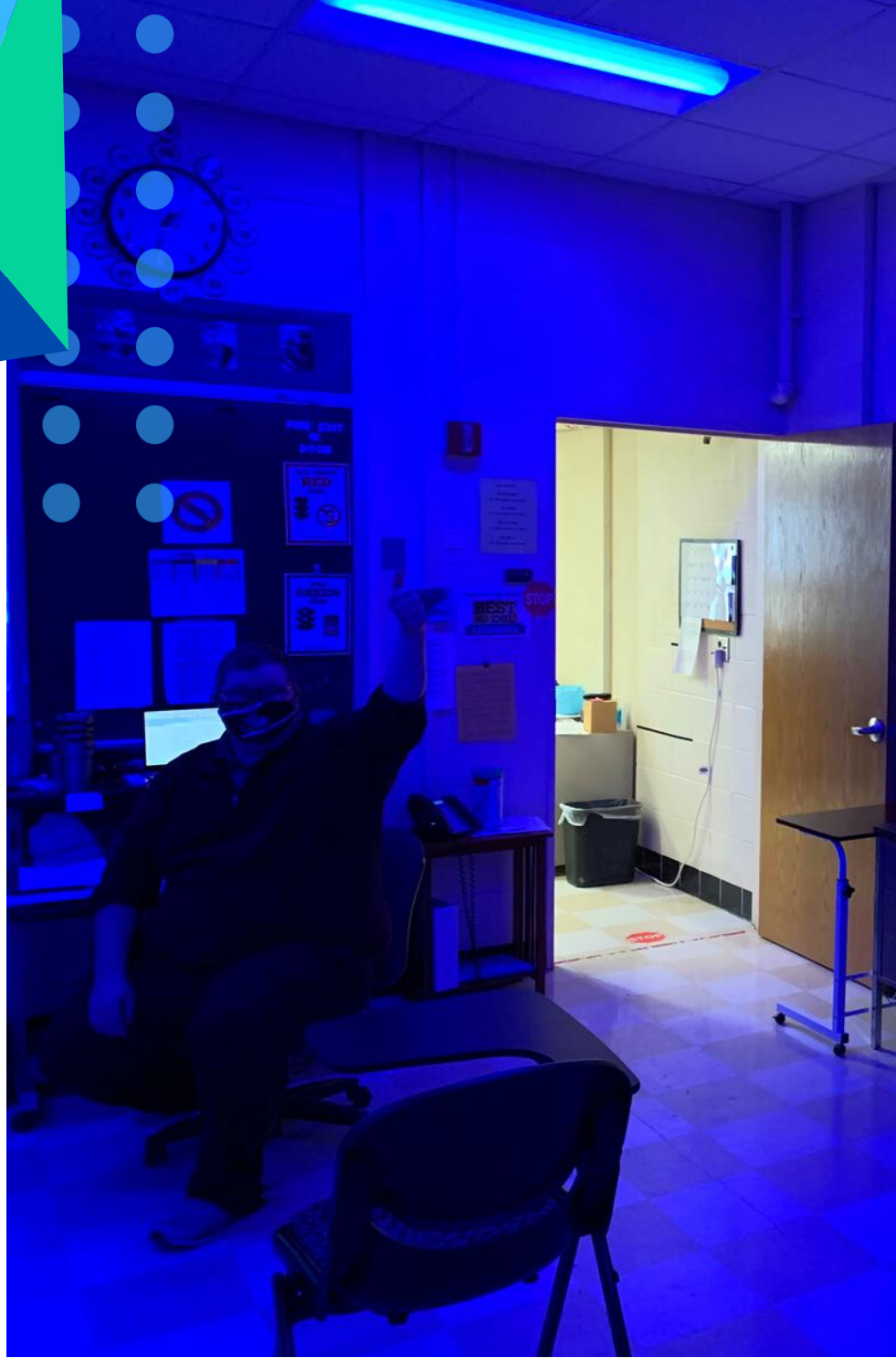
LED Lighting technology will reduce your energy & maintenance costs



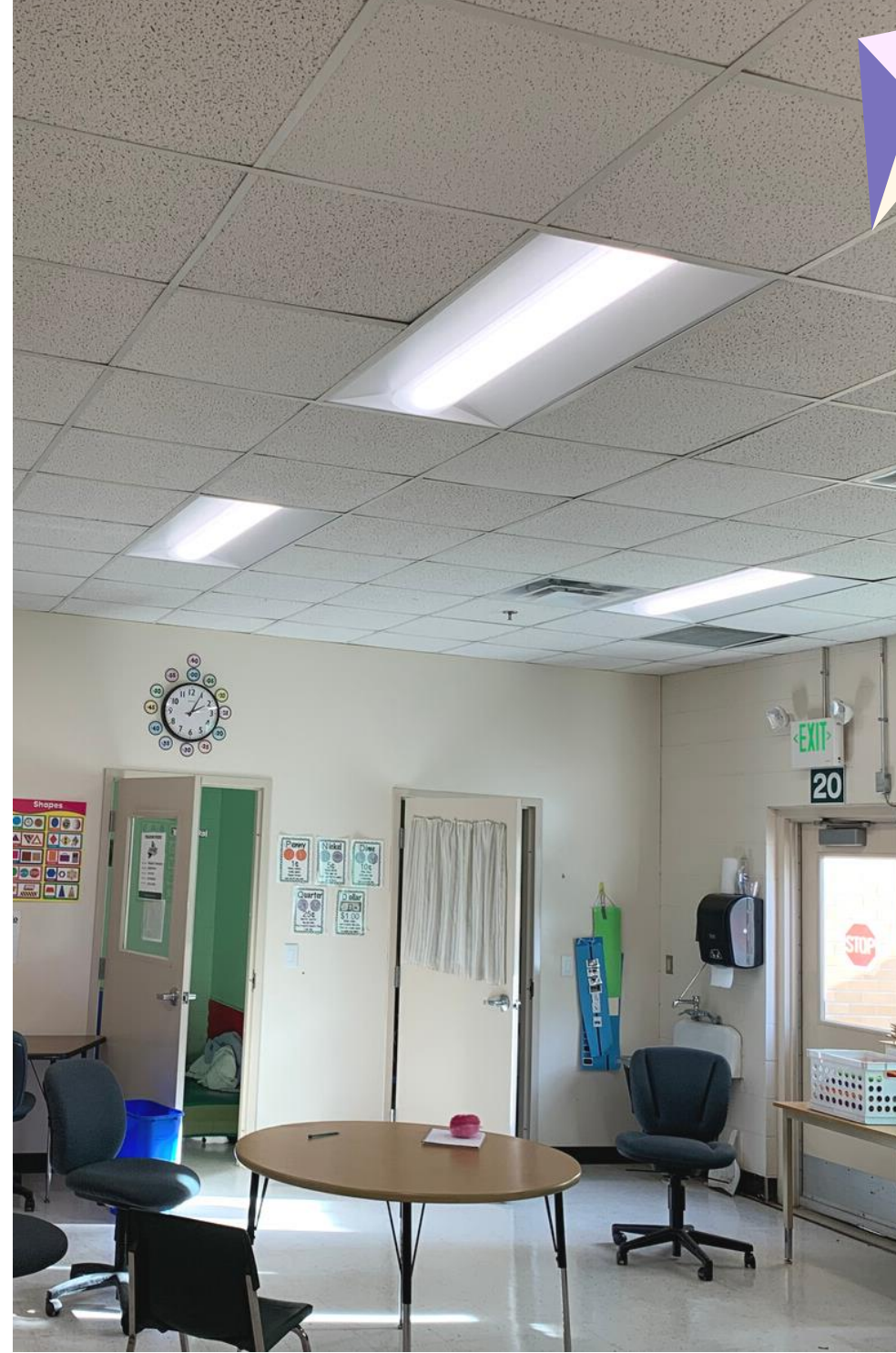
LED provides a safer & more secure environment for students & staff



LED lighting improves the learning environment



Tunable lighting controls give teachers customized learning environment for every activity



Tunable LED lighting helps teachers better manage their classroom



Better student engagement & behavior helps districts retain teachers



RETROFIT
LIGHTING & DESIGN

Questions?

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www.retrofitcompanies.com