



LITTLETON

PUBLIC 

SCHOOLS

***THE FUTURE IN THEIR HANDS:  
A STRATEGY FOR LEARNING***



# JUST IMAGINE...

Just imagine . . . in 2020 Dillon was an LPS student. Like many children his age, he wanted to be a firefighter when he grew up.

His teachers exposed him to early sonic technology, which was capable of extinguishing small fires through the use of sound waves.

In 2050, Dillon directed the remote operation of a fleet of unmanned, fire-resistant drones using sound waves to extinguish an 80,000-acre fire in the remote San Juan wilderness area.

# A LETTER TO THE COMMUNITY

**Dear LPS Families, Employees, Community & Friends,**

I would like to tell you a story about the future. Oddly enough, this tale begins in the distant past – in the year 1296.

It was then that the people of Florence, Italy began construction of what was designed as the world's most magnificent structure, the Cathedral of Santa Maria Del Fiore. The crown of this architectural masterpiece was a towering dome to be built 177 feet above ground level atop an eight-sided structure.

There were, however, some significant design problems. Foremost, the technology to build such a dome didn't exist. The building practices used to support the weight of the massive vaulted ceilings in other large cathedrals were outlawed in Florence.

This problem – among others – was solved by Filippo Brunelleschi, *who was born more than 80 years after the cathedral construction began*. In 1420, Brunelleschi won an architectural competition to build the dome from brick and stone in such a way that it supported its own weight during and after construction.

The city was skeptical. But Brunelleschi was persuasive and his innovative plan worked. Even now, Brunelleschi's vision – known globally as The Duomo – stands as the world's largest masonry dome. His design is considered a model of *perfect* engineering, which inspired other great innovators, including Leonardo da Vinci.

Why is this story important? It's important because – much like Brunelleschi – our children will be addressing issues and solving problems that we are unable to solve today. They will also be working in careers and solving other problems that don't yet exist.

Thirty years from now – in 2050 – today's youngest LPS students will be pursuing careers, raising families and contributing to their communities and our society. What will our world look like? What will they be doing? What will be their challenges? Most important, what do we need to do today to prepare our children for life in the future?

School should inspire students to think about their futures.

It's impossible to predict what the future holds. But we do know some of the trends that will shape our society. Let's touch on just two of them:

## **Technology: Automation, Robotics & Artificial Intelligence**

Automation is already here – in self-driving cars and in the thermostat you operate from your phone. Robotics technology is also being used for many other tasks from the simple to the complex – from brick laying to assembling automobiles to performing surgery.

Artificial Intelligence (AI) – which enables our conversations with Siri, Alexa and Google – is bringing more change. Rather than just do simple or repetitive tasks, AI will help machines perform cognitive functions – speech recognition, visual perception, problem solving, decision making and even learning.

Technology will certainly result in the elimination of many jobs. But it will also create a host of new ones that require skills in coding, programming, data analysis and neural networks.



### The Future Workforce

Today's Millennials and GenZ/iGen will be followed by succeeding generations that demand even more freedom, independence and autonomy in their personal and work lives.

Work will be a concept rather than a place. A large portion of the working population will likely be freelance or self-employed. People may work in similar roles for multiple companies, which will increasingly adopt as-needed employment strategies. Technology will be used to create a bridge, linking peers around the globe with one

another. Most importantly, workers and employers will have to invest themselves in lifelong learning to stay abreast of what will be constant technological change and societal disruption.

But the question remains, how do we prepare our children now, so they are prepared to face this changing landscape?

That is the question this document aspires to answer. We must prepare our most precious resource for life tomorrow, for life in 30 years and for life beyond that.

Meeting the educational needs of our children and preparing them to adapt to the unknown will create rising incomes and further improvements in quality of life for them and for our community and society as a whole. All of us – whether or not we have children at LPS – have a vested interest in this outcome.

These pages provide a glimpse of what LPS students might achieve in 2050 if they have rigorous and relevant learning experiences. Also included are deeper discussions of the skills our children will need, what LPS is doing and the resources we will need to help our students learn at a high level.

Just like the architects in 1296, we find ourselves planning for a future we cannot predict with challenges we cannot yet solve. I invite you to join us on this journey by reading about – and imagining – what our children will be doing in the future. I'm betting there are several Filippo Brunelleschis among them.

With Enthusiasm and Warm Regards,



Brian Ewert  
Superintendent



We want our students to think for themselves.



# JUST IMAGINE...

Just imagine . . . in 2020 as an LPS student, Abbie developed an interest in Artificial Intelligence (AI).

While learning about the many societal benefits of machines that could reason and learn, she became concerned that machines could eventually dominate the human race if proper controls and limits were not established.

In 2050, working as a lawyer and AI ethicist for a medical equipment manufacturer, Abbie testified before a U.S. Senate subcommittee on the dangers of proposed legislation that would loosen existing laws on the use of intelligent computers and robots in manufacturing and surgical procedures.

# THE NEW SKILL SET



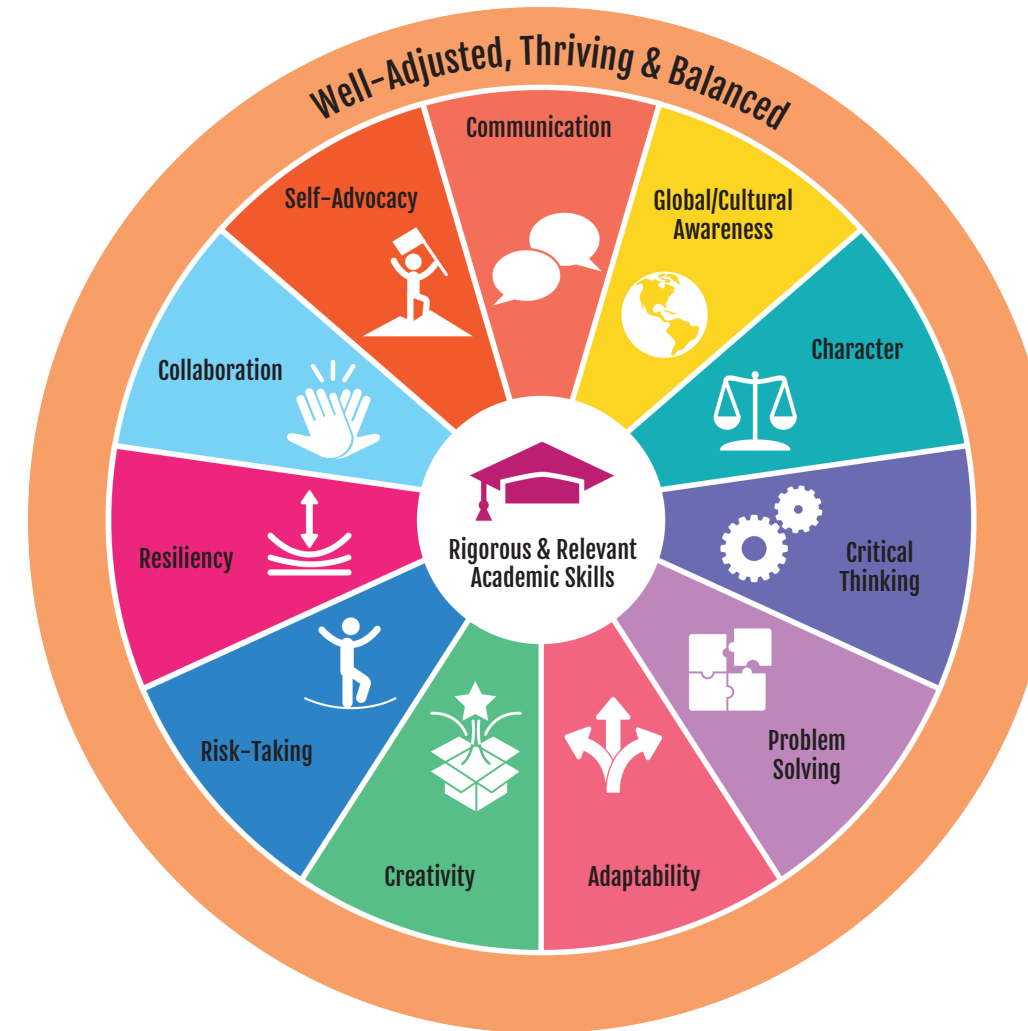
Tomorrow's workers will succeed by constantly adapting to the changing world around them. Today's students must begin by learning new life skills.

Reading, writing, arithmetic – are “The Three R’s” gone? Not at all. There will continue to be an urgent need for foundational learning and skills in reading, writing and mathematics. But there is a dramatic need for more emphasis on what are being called the new basics, or “The Three T’s”: thinking, technology and teamwork.

Recently, more than 300 local industry leaders, teachers, community members, parents and students discussed what the priorities should be for LPS moving forward. Also, focus groups of LPS high school students shared their priorities and compiled the Portrait of an LPS Graduate, which outlines the skills every LPS graduate should have.

We as educators must develop curricula and programs that better challenge and stretch our students, help them develop the necessary skills and engage with each other, with their teachers and their communities. Rather than simply teaching students, the focus needs to change to helping students learn how to learn and to apply their new skills in daily life.

## PORTRAIT OF AN LPS GRADUATE



### Well-Adjusted, Thriving & Balanced

Physical well-being, emotional well-being, positive relationships and social awareness, self-awareness, self-management and happiness.



### Communication

To share your thoughts and ideas through speaking and writing, and to actively listen to the perspectives of others, while always keeping your audience in mind.



### Character

To know and value your authentic and unique self. Ultimately, who you are is what matters most.



### Problem Solving

To know the complexity of an issue, to find multiple strategies to solve it, and to employ a workable resolution.



### Creativity

To imagine, design and produce possibilities beyond what is already known.



### Resiliency

To learn from your failures and work through your challenges; to persevere; to bounce back.



### Self-Advocacy

To understand your personal strengths and to speak your truth.



### Global/Cultural Awareness

To understand perspectives and ideas that are both similar and different from your own and to use these perspectives to stretch and broaden your own thinking.



### Critical Thinking

To creatively work your way through problems and think of new solutions, realizing that the world is not always linear or objective.



### Adaptability

To demonstrate flexibility and an openness to change.



### Risk-Taking

To push beyond your limits and challenge yourself to continually improve.



### Collaboration

To work well with others and function as a contributing member of a team.



### Academic Skills

Math, Science, Literacy (Reading/Writing/Speaking/Listening), Social Studies, Fine Arts (Visual & Performing), Physical Education/Health & World Languages.



# JUST IMAGINE...

Just imagine . . . in 2020 as an LPS student, Tanner's teachers fueled his interest in airplanes by pursuing a learning module that taught mathematics principles while studying fundamental advancements in airplane engine technology over several decades.

In 2050, Tanner helped develop the lightweight cells that powered the inaugural non-stop, battery-powered commercial airline flight from San Francisco to Sydney, which took just nine hours.

# THE EDUCATION LEARNING CHALLENGE



The change in focus from education to learning also means we approach teaching differently than we did in the past. Among the changes LPS is pursuing are:

### **Meeting the Learning Needs of All Students**

Our district achievement goal states: *100% of LPS students will be prepared for meaningful post-secondary opportunities.*

All students matter.

Educators refer to this concept as Equity, which means meeting the needs of each student where they are in their learning journey and moving forward to a high level of achievement. This approach seeks to close the opportunity gap by addressing individual students' learning needs in many different ways.

### **Creativity and Innovation**

To inspire creativity and develop a mindset of innovation in our students, their learning process also must be creative and innovative. While LPS is held to the same academic standards as all other Colorado school districts, LPS is giving teachers permission to think about and use them differently. Geometry, for example, is being taught through a course on construction, giving students a practical application for what previously seemed like abstract math processes.

Learning by problem-solving naturally places greater emphasis on interdisciplinary learning. Rather than separate, structured curricula in, for example, English, math and social studies, teachers can work together to develop a single program of study based on solving a problem that incorporates all three disciplines, mirroring a real-world environment. With students working in teams

to solve the problem, the learning becomes experiential with a focus on advancing communication, negotiation and teamwork.

LPS currently offers a variety of Career and Technical Education pathways for students. Now is the time to enhance and expand these offerings so that more students have more choices that lead to college credit or certification in highly skilled industries.

LPS defines innovation as a way of thinking that creates something new or better. With innovation in mind in 2017, we changed school start times to better align with adolescent sleep patterns. Also, to keep homebound students present in their classroom, LPS deploys OTIS the robot – a digital platform that allows a student to participate in classroom activities, converse with teachers and classmates, and be part of the learning experience from a remote location.

**Students should understand why they are learning what they learn.**





### The best teachers make all the difference.

#### Teacher Education

An environment characterized by constant change also means that educators have the opportunity to learn new skills and learn from one another. Beginning in the 2017-2018 school year, LPS devoted the first hour of each Wednesday for the purpose of ongoing teacher education. Teachers in each LPS school use this time to collaborate in what are called Professional Learning Communities (PLCs) to discuss their challenges, what

is most important for students and ways to improve student learning.

The one common understanding among the highest performing school systems in the world is that a school can only be as good as the people within it. PLCs enhance student learning and close opportunity gaps because they produce better teaching strategies, by more teachers, more often.

#### Safety / Security / Mental Health

Healthy hearts and minds facilitate effective learning and high achievement. LPS has and will continue to invest heavily – a multi-million-dollar budget commitment – to create a safe environment for our children.

Based on a recent audit, school safety experts from Safe Havens International concluded that LPS has made significant strides in upgrading its violence prevention capabilities. The group said that LPS has achieved the most effective balance between security technology and human prevention approaches of any public or nonpublic school client it has ever assessed. As a reflection of these efforts, Littleton Public Schools ranked #4 nationally in the 2019 Security 500 rankings for Education K-12 security.

LPS has been surveying students, parents and staff on their perceptions of individual school environments for three years through the Comprehensive School Climate Inventory survey. An LPS mental health liaison connects families with mental health support in the community, as necessary. We also asked Dr. Anna Mueller, a sociologist from the University of Indiana, to conduct research in our community examining how social environments facilitate mental health and help-seeking among youth. Additionally, LPS' threat assessment process is a national model. Annually, LPS also hosts community mental health events with hundreds of people in attendance.

We want our children to care for each other.





# JUST IMAGINE...

Just imagine . . . in 2020, Mheret was an LPS student. Mheret's teachers recognized her early aptitude for leadership, which she demonstrated through high emotional intelligence.

Mheret's teachers sought and recommended various activities that would help her build her natural inclination toward leadership.

In 2050, having proven her leadership skills in several upper management positions, Mheret was named CEO of a top Fortune 500 company, which provides consulting services in robotics and AI.

# THE RESOURCE CHALLENGE

Resources will be a challenge as we move into the future. As has happened every year for the past decade, the Colorado Legislature continues to withhold millions of dollars from all Colorado school districts through the Budget Stabilization Factor, also known as the Negative Factor, which has shortchanged LPS of more than \$138 million in the last eight years. For the 2020-2021 school year alone, the loss to LPS is projected to be \$9 million, which is resulting in significant budget reductions.

Passage of the \$298 million LPS Bond Election (4A) in 2018 was an important step. Bond proceeds are already being used to fund much needed school construction and reconstruction.

**Bond funds are being used to:**

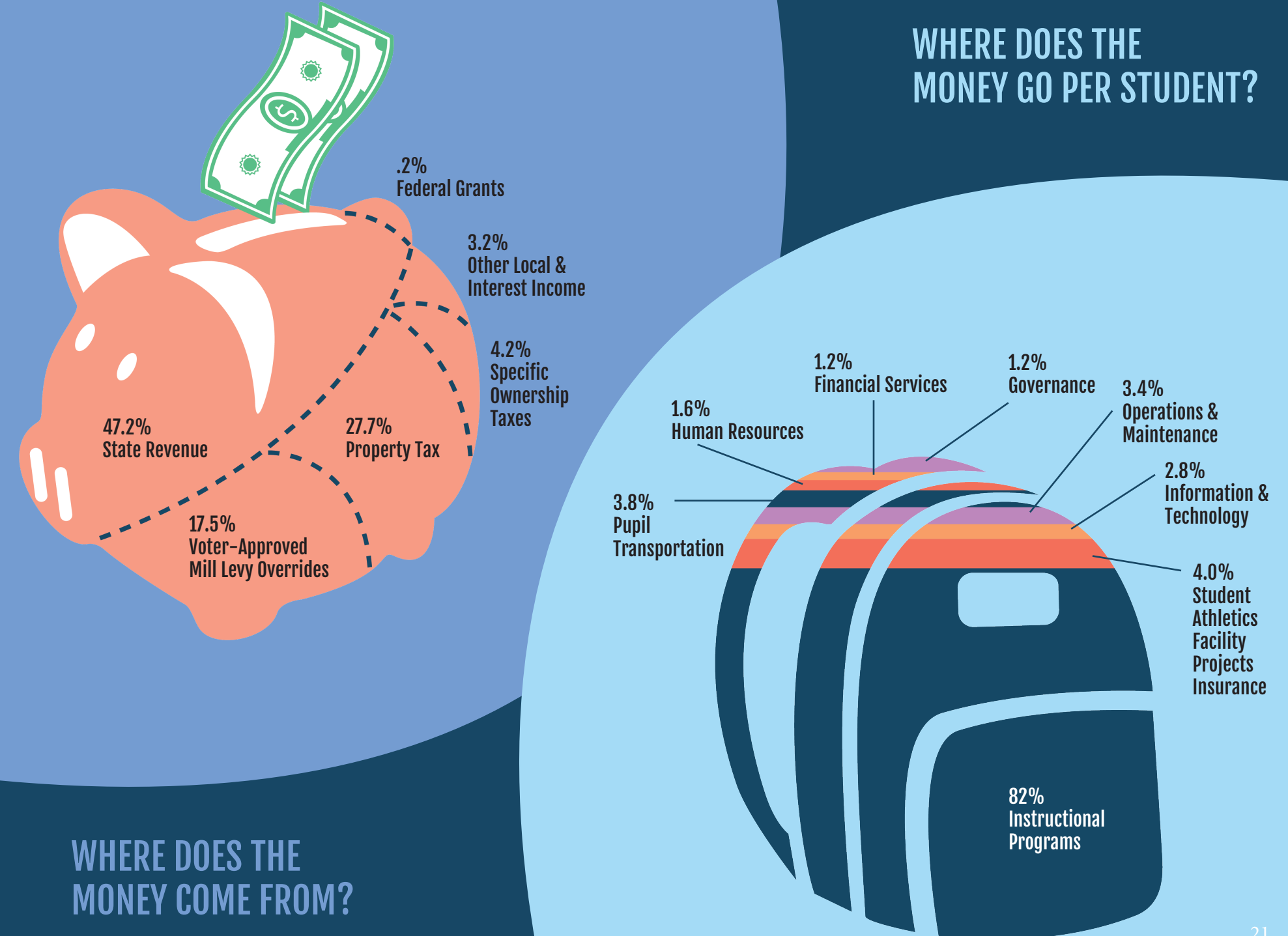
- Construct a cutting-edge Career and Technical Education and Innovation Center for the entire district adjacent to Littleton High School.
- Build new schools on the Newton Middle School campus – including a new Junior Stadium for use districtwide – and new elementary schools on the Ames Facility campus and the current Franklin campus to service the Highland and Franklin communities.

- Repair, renovate or reconstruct other aging school buildings to improve safety, efficiency and accessibility for all students.

But this is only the beginning. It's important to remember that by Colorado statute, bond funds can only be spent on capital expenses, such as facility repairs, construction, Americans With Disabilities Act (ADA) modifications, etc. Additional funding sources will be needed to address program changes in our new learning environment.

Without the State Legislature providing adequate funding, LPS may explore a local mill levy override as one way to fund new programming opportunities and to fulfill on-going requirements.

The LPS Board of Education is planning to engage in conversations about possible local solutions.



## LPS FOCUS AREAS

1

Enhance instructional systems and career pathways that maximize achievement for all students and integrate knowledge and skills relevant to 21st century career choices.

2

Expand utilization of instructional technology with appropriate use for student achievement while providing the infrastructure for organizational efficiency and effectiveness.

3

Provide an educational and work environment that supports professional learning and collaborative work for all staff.

4

Promote, sustain, and create quality programs that make Littleton Public Schools the uniquely preferred choice for families inside and outside the District.

5

Engage the community and parents as active partners in the objectives, activities, and performance of the school district and its students.

6

Optimize the use of District resources and facilities to meet student learning needs while operating the District efficiently.

7

Promote and provide a safe environment that fosters caring, respect and compassion for others.

8

Enhance and support quality early childhood and childcare programs.

9

Educate and support staff, parents and community to address equity through innovation, including student-centered learning, and by providing access and opportunity for all students.

10

Partner with parents and community to expand and enhance programs that address the physical, social and emotional well-being of students, families and staff.



JUST IMAGINE!



## LITTLETON PUBLIC SCHOOLS

Arapahoe County School District #6

Littleton Public Schools

5776 S. Crocker Street

Littleton, CO 80120

**STAY**   
**CONNECTED**  
**WITH LPS**



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### MISSION STATEMENT:

The Littleton Public School District shall strive to educate all students for the future by challenging every individual to continuously learn, achieve and act with purpose and compassion in a safe and secure environment.

### VISION STATEMENT:

Littleton Public Schools: Extraordinary learning, exceptional community, expanded opportunity and success for all students.