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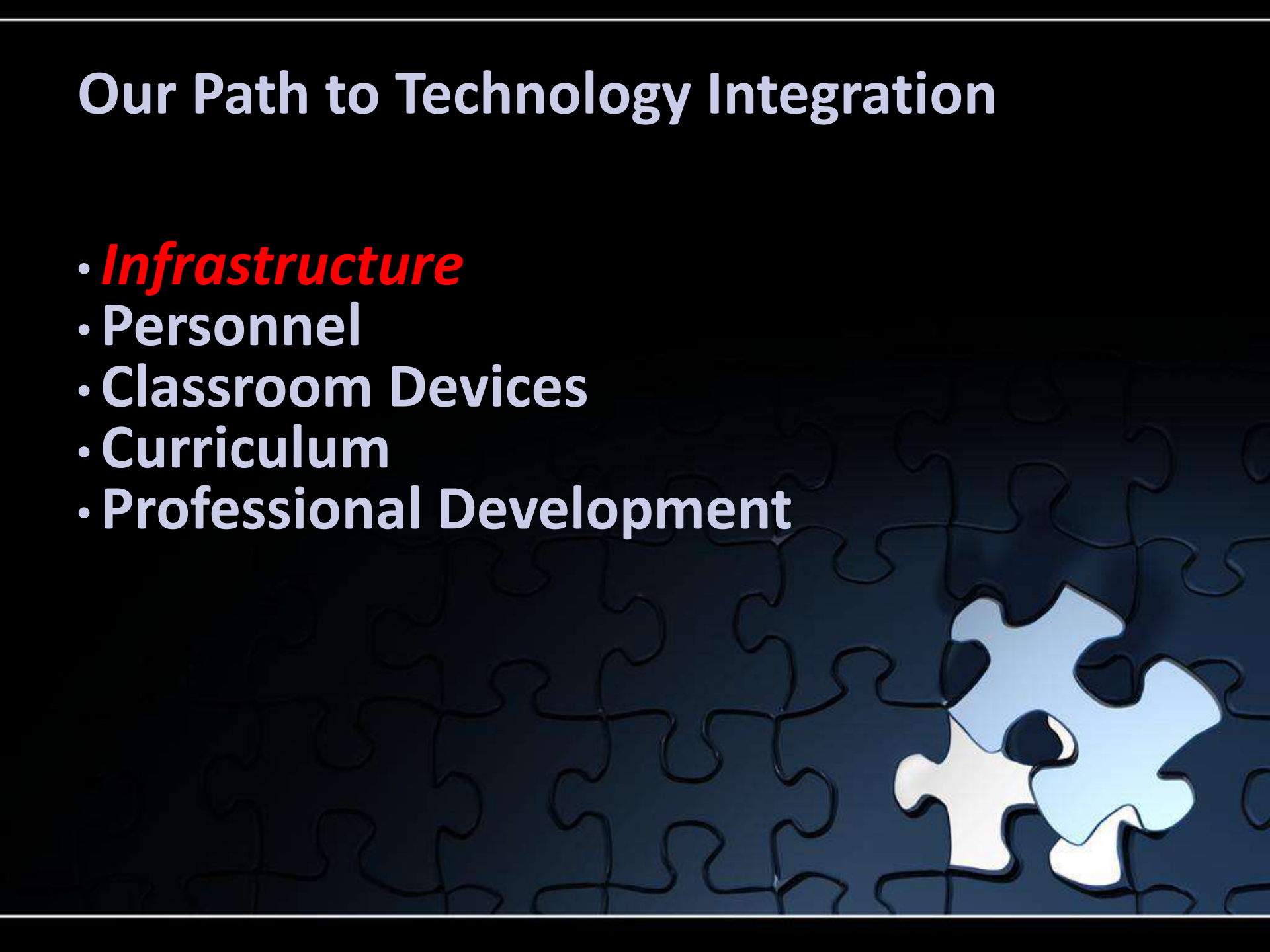
Technology Vision and Goals

May 11, 2015

Our Path to Technology Integration

- *Infrastructure*
- Personnel
- Classroom Devices
- Curriculum
- Professional Development



Infrastructure Improvements

Past and Currently Planned Infrastructure Projects

Past Infrastructure Improvements

- Replaced structured cabling runs at Copper Hill
- 300 Mbps Internet connection
- 200 Mbps Wide Area Network
- Virtual Server Environment with Storage Area Network (SAN)
- JPC power reconditioning and relocation of hub

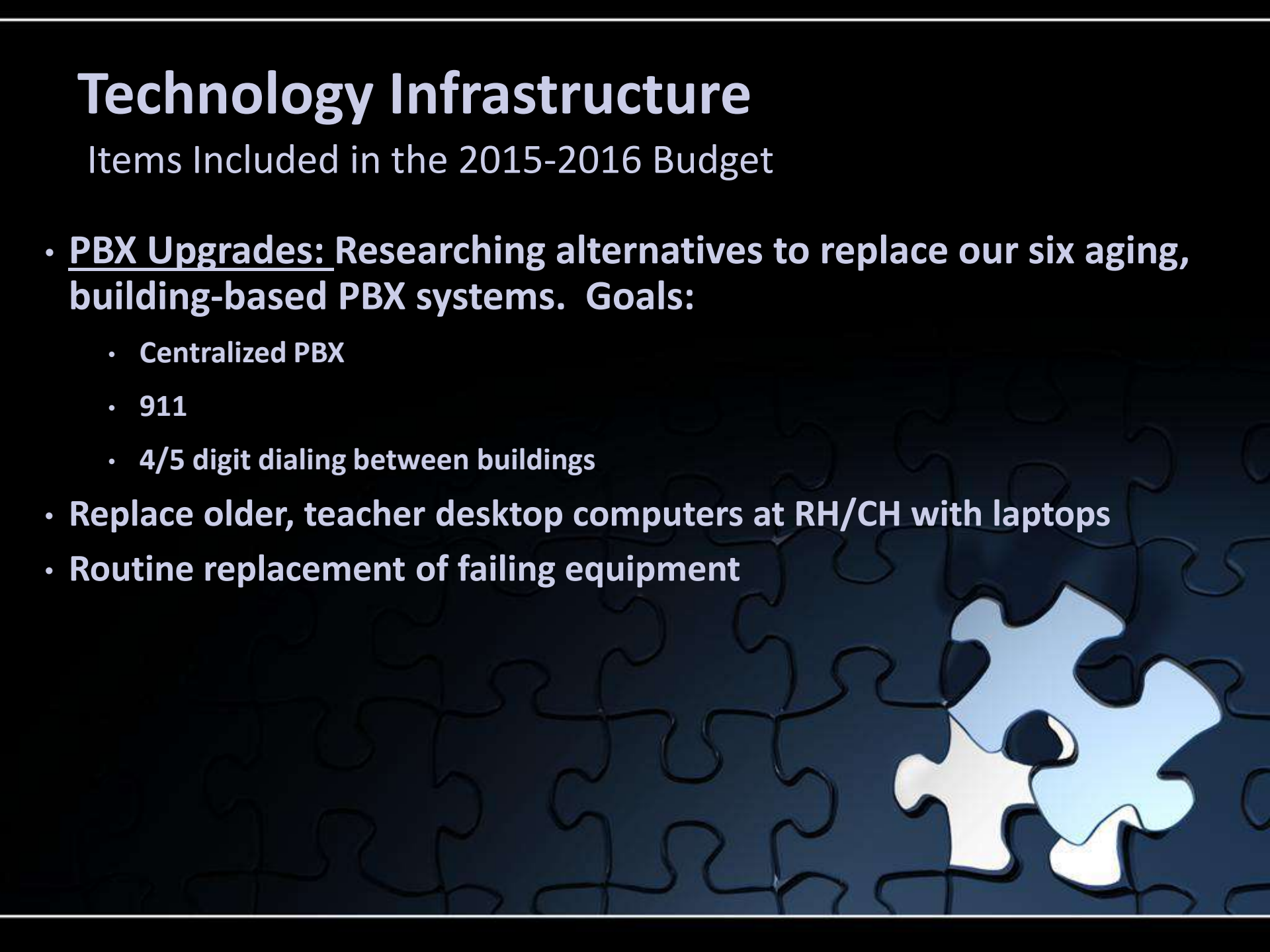
Budgeted and Planned for Summer 2015

- Upgrade to 1 Ggb Meraki switches
- Wireless Access Point installation moving toward 1 classroom to one WAP in every building

Technology Infrastructure

Items Included in the 2015-2016 Budget

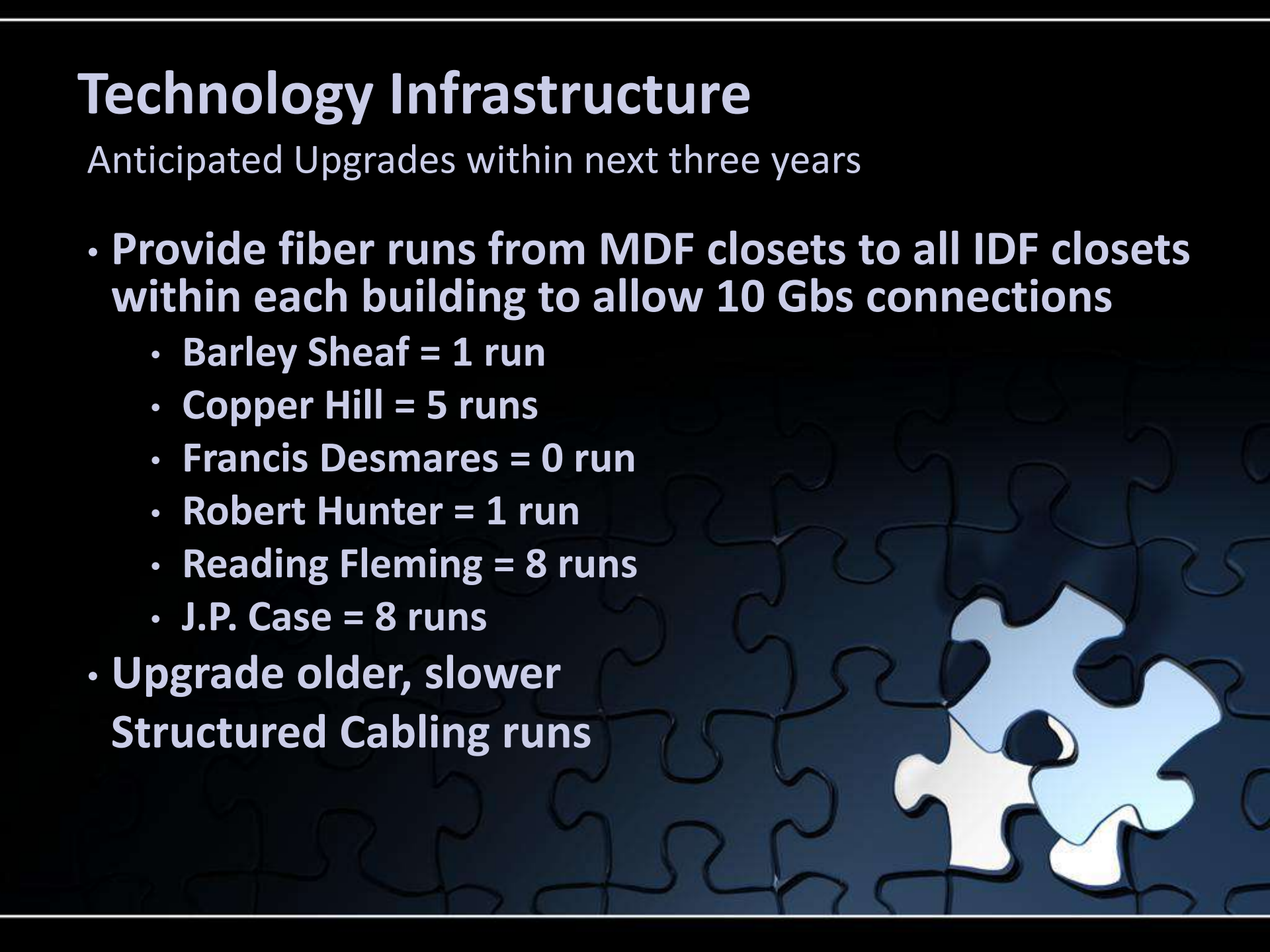
- **PBX Upgrades: Researching alternatives to replace our six aging, building-based PBX systems. Goals:**
  - **Centralized PBX**
  - **911**
  - **4/5 digit dialing between buildings**
- **Replace older, teacher desktop computers at RH/CH with laptops**
- **Routine replacement of failing equipment**



Technology Infrastructure

Anticipated Upgrades within next three years

- **Provide fiber runs from MDF closets to all IDF closets within each building to allow 10 Gbs connections**
  - **Barley Sheaf = 1 run**
  - **Copper Hill = 5 runs**
  - **Francis Desmares = 0 run**
  - **Robert Hunter = 1 run**
  - **Reading Fleming = 8 runs**
  - **J.P. Case = 8 runs**
- **Upgrade older, slower Structured Cabling runs**



Our Path to Technology Integration

- Infrastructure
- *Personnel*
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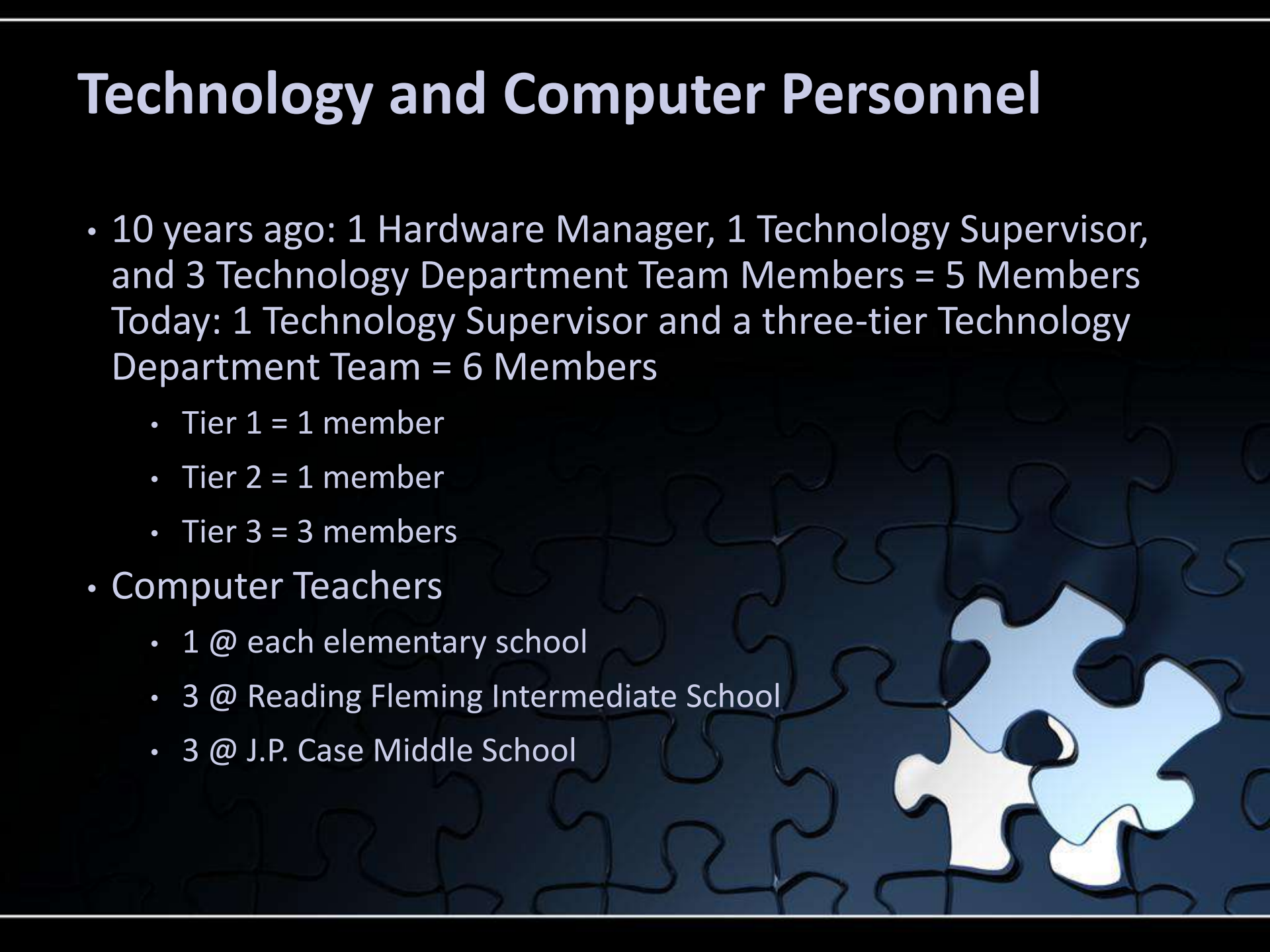
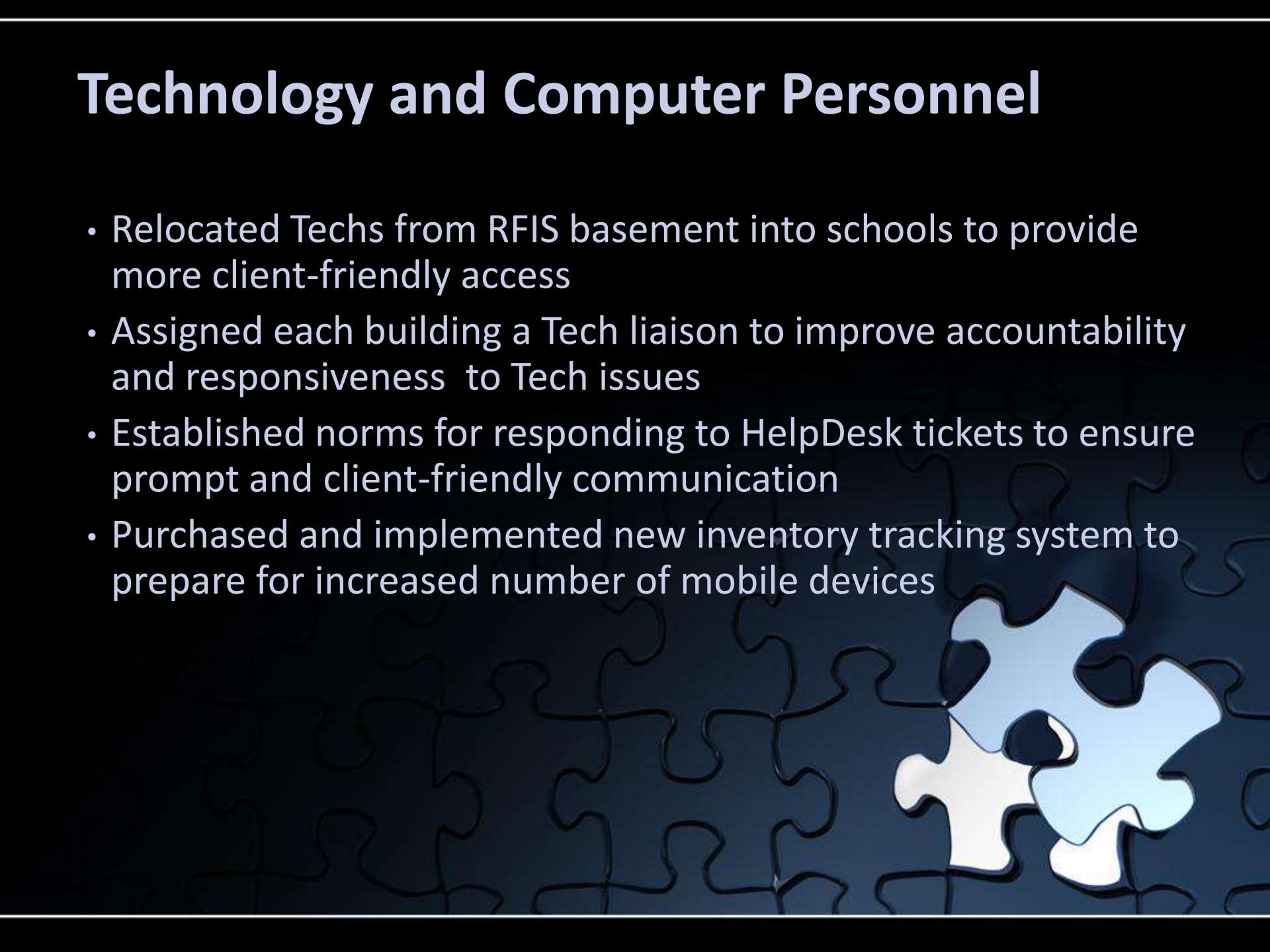
Technology and Computer Personnel

- 10 years ago: 1 Hardware Manager, 1 Technology Supervisor, and 3 Technology Department Team Members = 5 Members
  Today: 1 Technology Supervisor and a three-tier Technology Department Team = 6 Members
  - Tier 1 = 1 member
  - Tier 2 = 1 member
  - Tier 3 = 3 members
- Computer Teachers
  - 1 @ each elementary school
  - 3 @ Reading Fleming Intermediate School
  - 3 @ J.P. Case Middle School



Technology and Computer Personnel

- Relocated Techs from RFIS basement into schools to provide more client-friendly access
- Assigned each building a Tech liaison to improve accountability and responsiveness to Tech issues
- Established norms for responding to HelpDesk tickets to ensure prompt and client-friendly communication
- Purchased and implemented new inventory tracking system to prepare for increased number of mobile devices



Technology and Computer Personnel

Proposed

- Increase Technology Department members from current 6 to 7 to allow for a Supervisor, IT Manager and eventually 1 Tech per building
- Create 4 new Technology Integration Specialist positions replacing 2 ES computer teacher positions, 1 RFIS teacher position, and 1 JPC teacher position (not an increase in FTE)
  - Develop job description
  - Post vacancy
  - Interview and hire
  - Provide professional development
- New Technology Integration Specialists will have access to Atlas Rubicon to share technology integration ideas and resources

Our Path to Technology Integration

- Infrastructure
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- *Classroom Devices*
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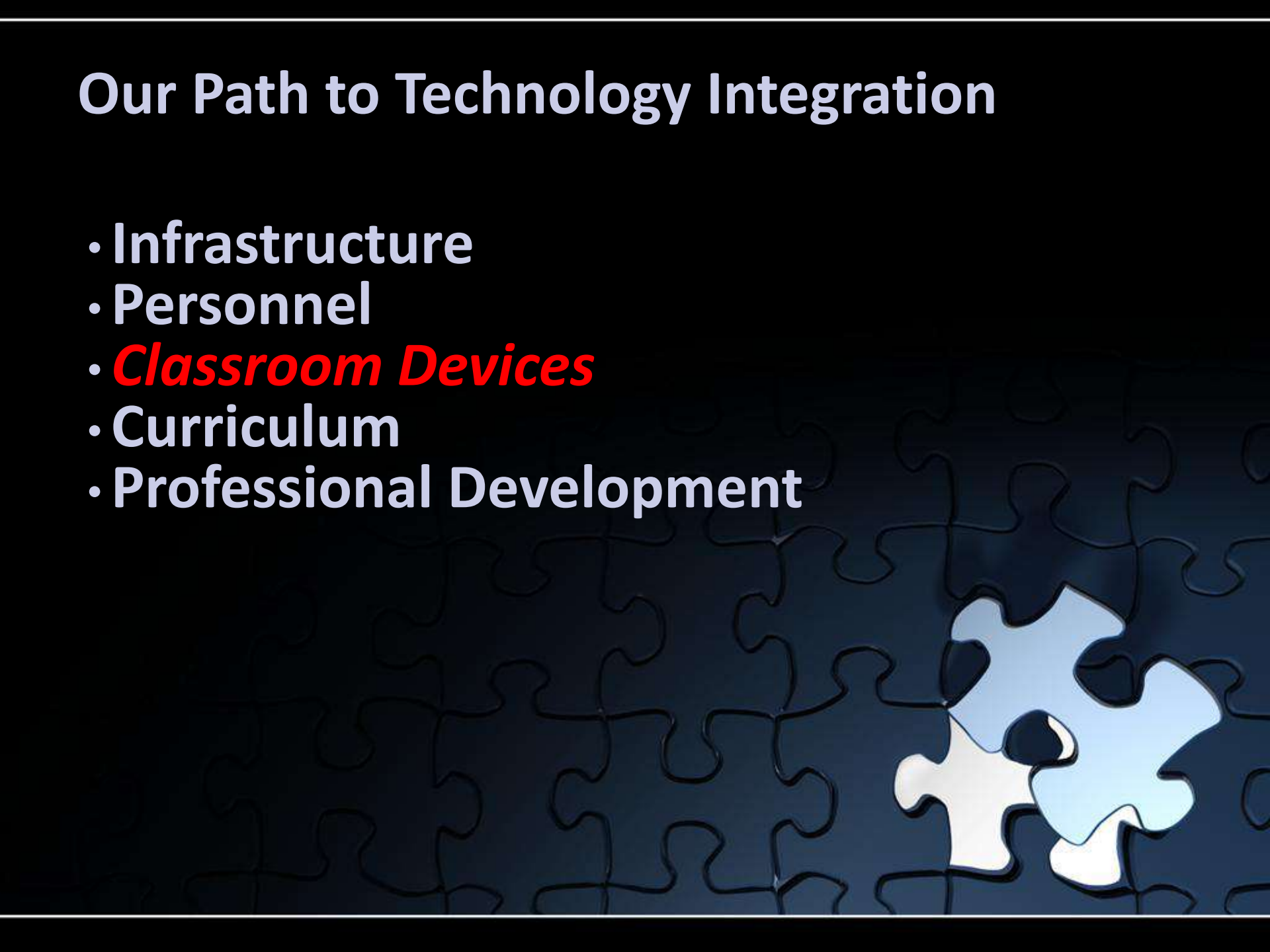


Classroom Technology Devices

LCD Projectors

- Provided LCD Projectors, preferably ceiling mounted (at the discretion of the building administrator)

Document Camera

- Provided Document Camera for all classrooms

AppleTV

- Provided AppleTV to allow mirroring of content via the LCD Projector

District Devices

Current Inventory

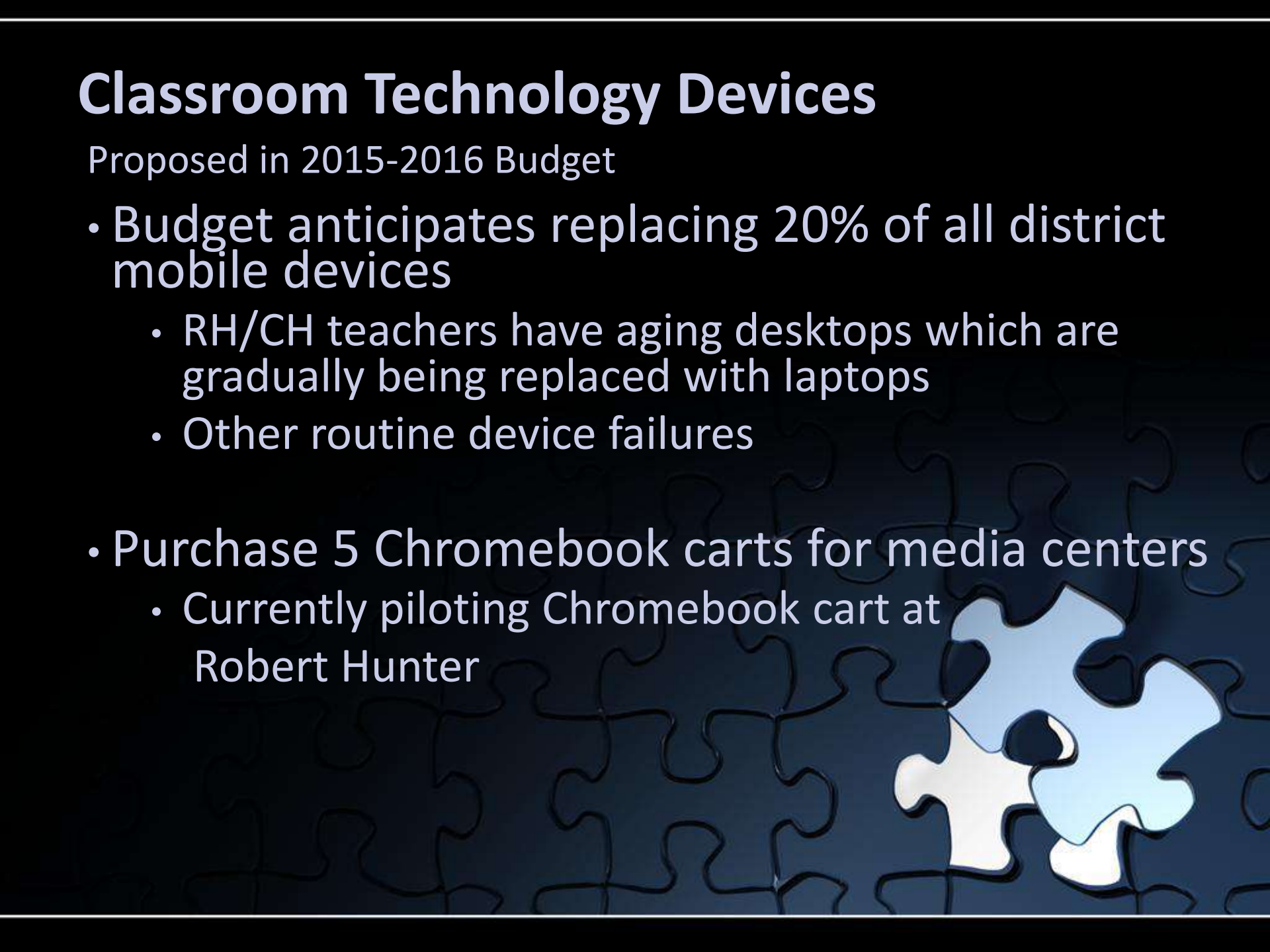
Mobile Devices	# of Devices
Laptops	331
Desktops	618
Chromebook	1,506
iPad	641
Total	3,096

Numbers include all computer labs, computer carts, media centers, office computers, teacher computers, Raptor, and other non certified staff

Classroom Technology Devices

Proposed in 2015-2016 Budget

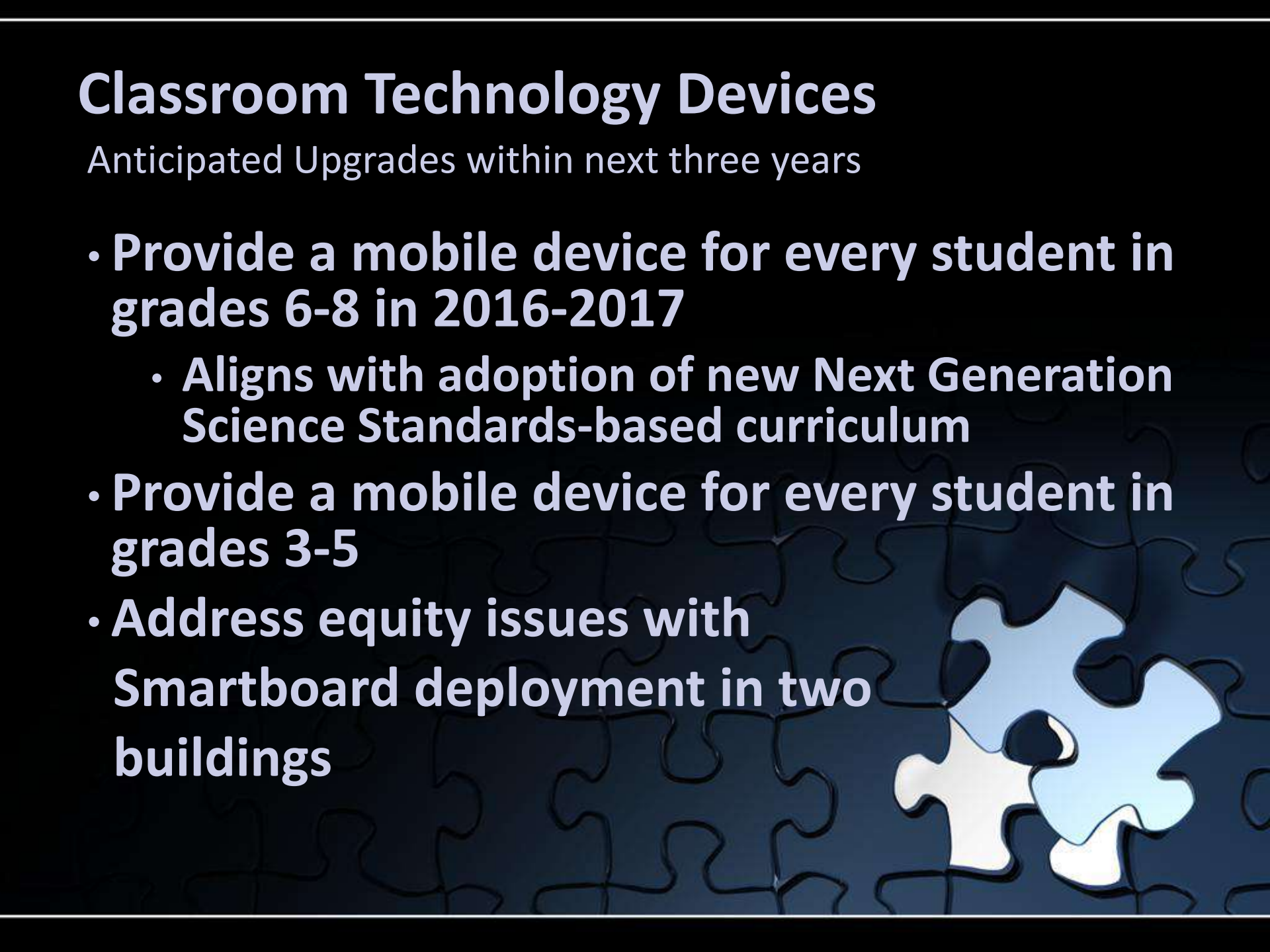
- Budget anticipates replacing 20% of all district mobile devices
  - RH/CH teachers have aging desktops which are gradually being replaced with laptops
  - Other routine device failures
- Purchase 5 Chromebook carts for media centers
  - Currently piloting Chromebook cart at Robert Hunter



Classroom Technology Devices

Anticipated Upgrades within next three years

- **Provide a mobile device for every student in grades 6-8 in 2016-2017**
  - **Aligns with adoption of new Next Generation Science Standards-based curriculum**
- **Provide a mobile device for every student in grades 3-5**
- **Address equity issues with Smartboard deployment in two buildings**



Our Path to Technology Integration

- Infrastructure
- Personnel
- Classroom Devices
- *Curriculum*
- Professional Development

Our Path to Technology Integration

Begins with our District Mission Statement

The Flemington-Raritan Regional School District provides our students with an exceptional education, empowering them to become problem solvers, collaborators and critical thinkers. The district creates a culture in which students act responsibly and communicate effectively in preparing to become productive citizens in a changing, global society.

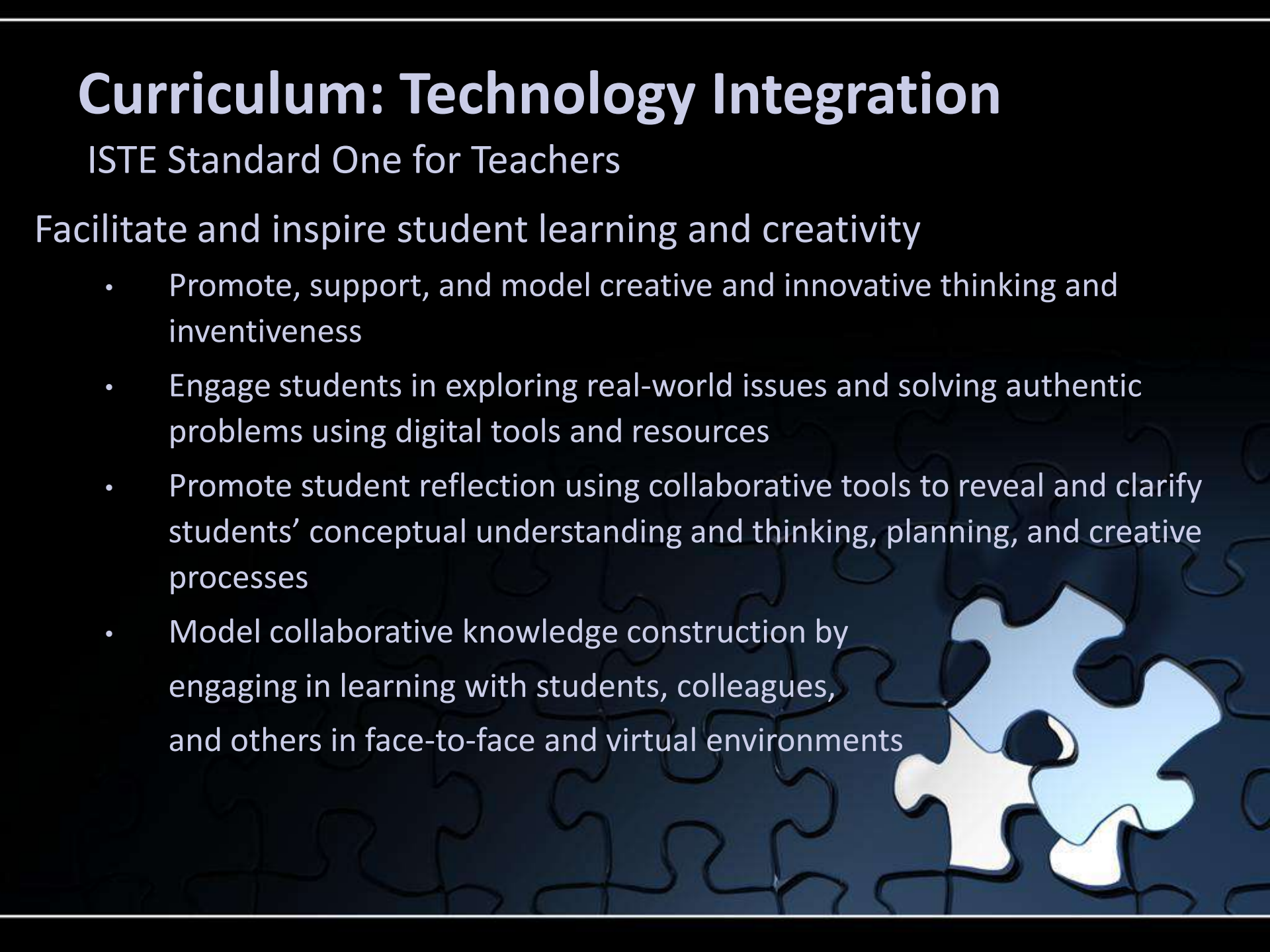
It is the expectation of the Flemington-Raritan School District that all pupils achieve the New Jersey Core Curriculum Content Standards at all grade levels.

Curriculum: Technology Integration

ISTE Standard One for Teachers

Facilitate and inspire student learning and creativity

- Promote, support, and model creative and innovative thinking and inventiveness
- Engage students in exploring real-world issues and solving authentic problems using digital tools and resources
- Promote student reflection using collaborative tools to reveal and clarify students' conceptual understanding and thinking, planning, and creative processes
- Model collaborative knowledge construction by engaging in learning with students, colleagues, and others in face-to-face and virtual environments

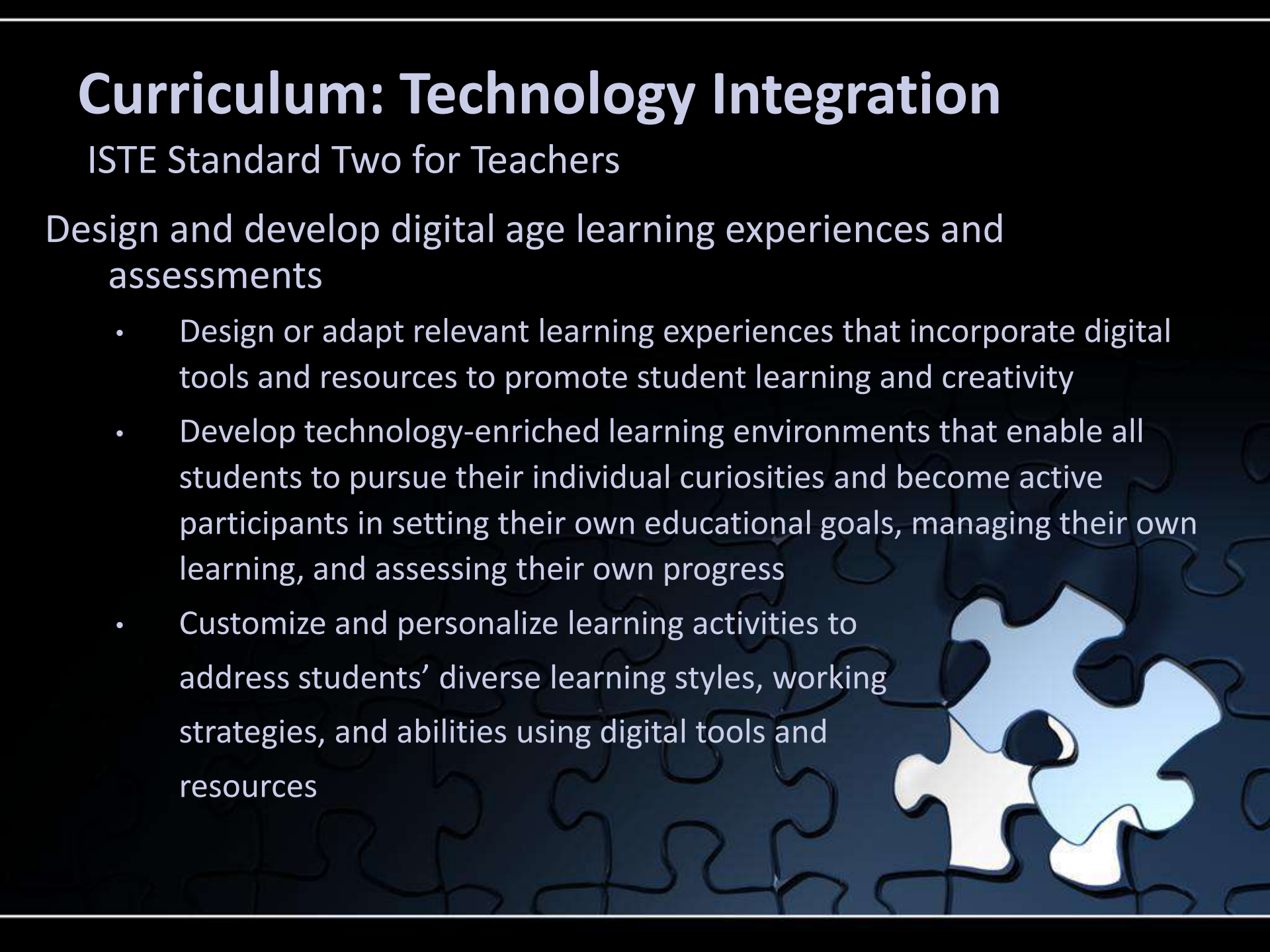


Curriculum: Technology Integration

ISTE Standard Two for Teachers

Design and develop digital age learning experiences and assessments

- Design or adapt relevant learning experiences that incorporate digital tools and resources to promote student learning and creativity
- Develop technology-enriched learning environments that enable all students to pursue their individual curiosities and become active participants in setting their own educational goals, managing their own learning, and assessing their own progress
- Customize and personalize learning activities to address students' diverse learning styles, working strategies, and abilities using digital tools and resources

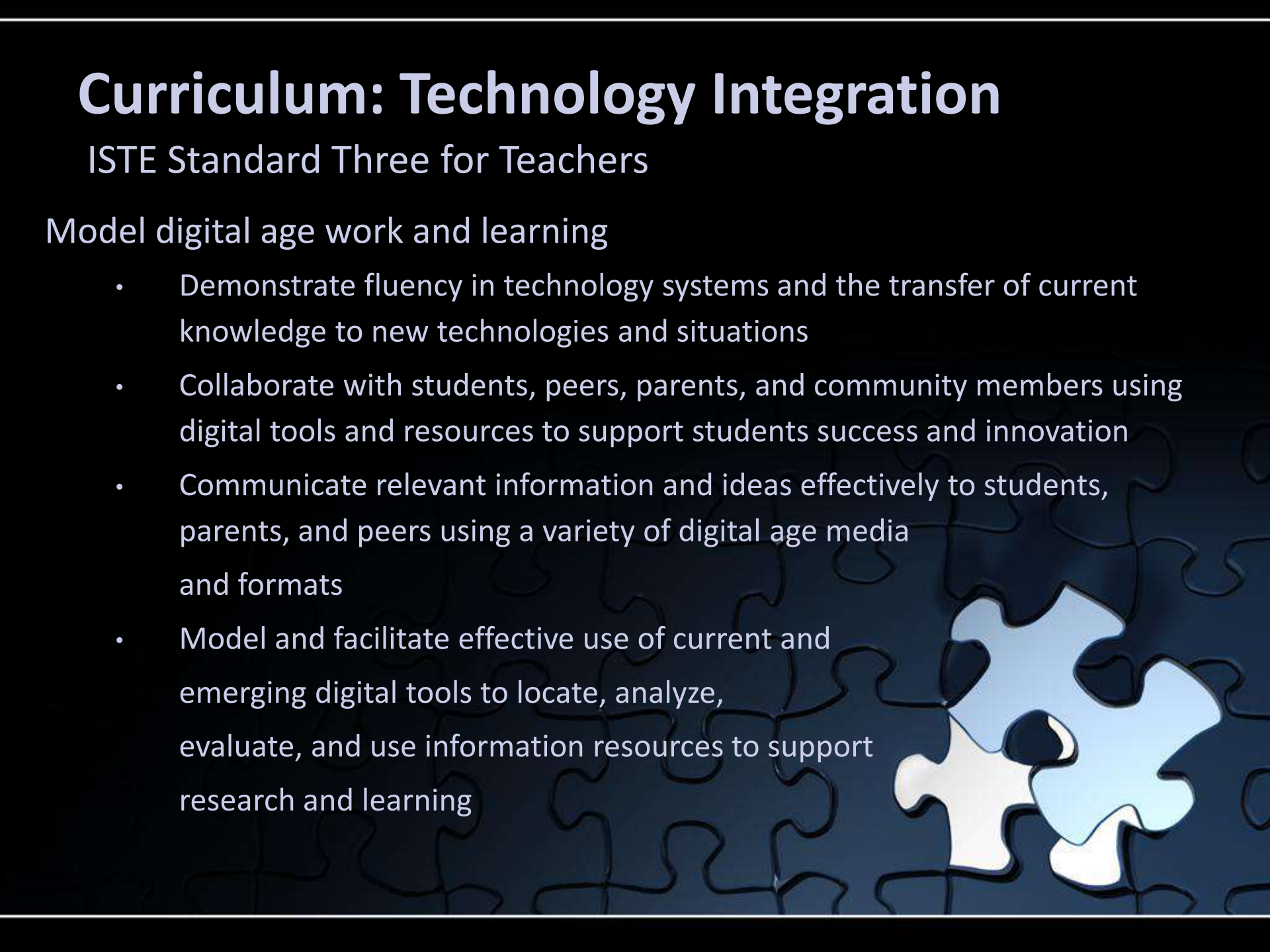


Curriculum: Technology Integration

ISTE Standard Three for Teachers

Model digital age work and learning

- Demonstrate fluency in technology systems and the transfer of current knowledge to new technologies and situations
- Collaborate with students, peers, parents, and community members using digital tools and resources to support students success and innovation
- Communicate relevant information and ideas effectively to students, parents, and peers using a variety of digital age media and formats
- Model and facilitate effective use of current and emerging digital tools to locate, analyze, evaluate, and use information resources to support research and learning



Curriculum: Technology Integration

ISTE Standard Four for Teachers

Promote and model digital citizenship and responsibility

- Advocate, model, and teach safe, legal, and ethical use of digital information and technology, including respect for copyright, intellectual property, and the appropriate documentation of sources
- Address the diverse needs of all learners by using learner-centered strategies providing equitable access to appropriate digital tools and resources
- Promote and model digital etiquette and responsible social interactions related to the use of technology and information
- Develop and model cultural understanding and global awareness by engaging with colleagues and students of other cultures using digital age communication and collaboration tools

Curriculum: Technology Integration

ISTE Standard Five for Teachers

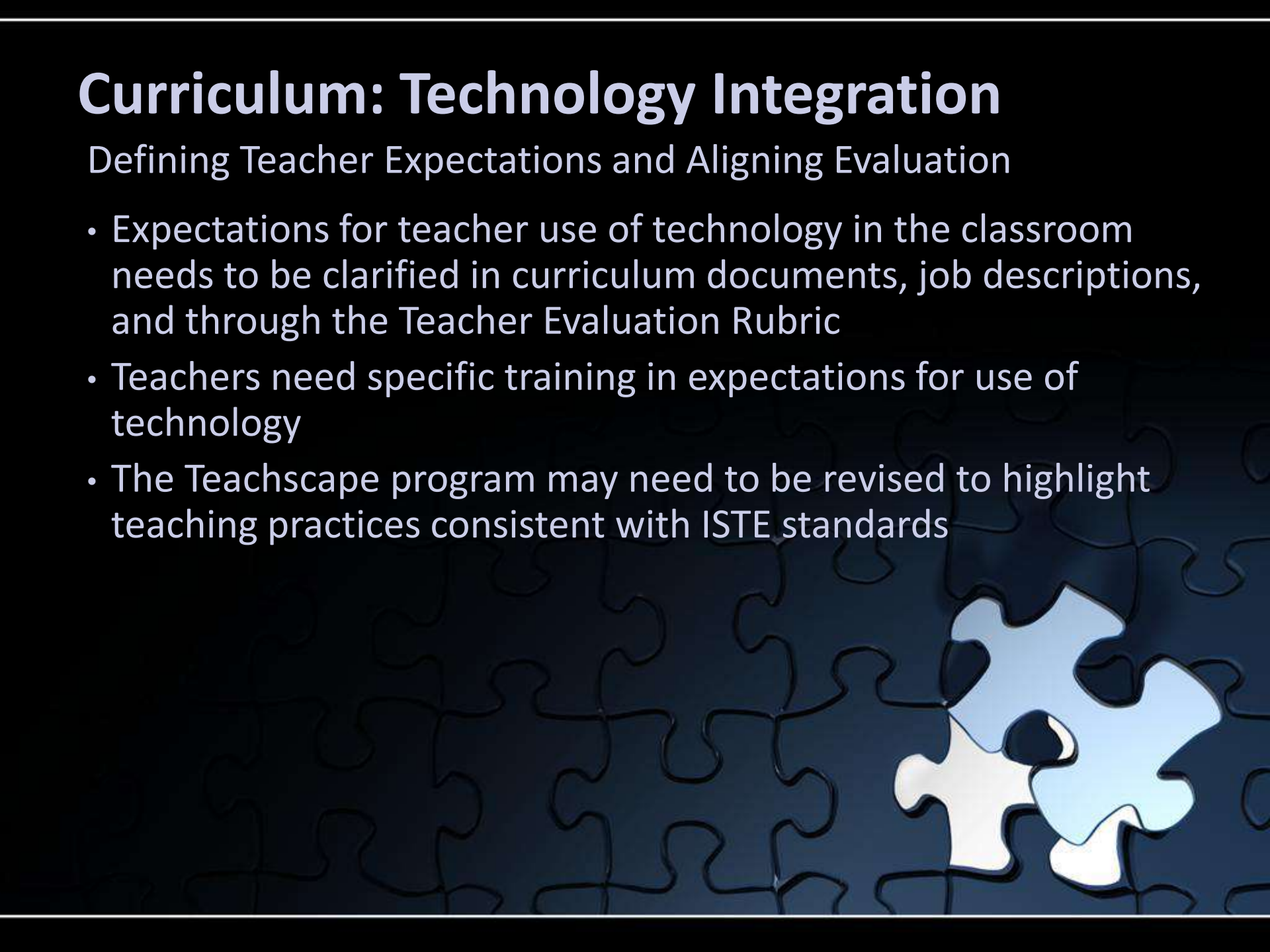
Engage in professional growth and leadership

- Participate in local and global learning communities to explore creative applications of technology to improve student learning
- Exhibit leadership by demonstrating a vision of technology infusion, participating in shared decision making and community building, and developing the leadership and technology skills of others
- Evaluate and reflect on current research and professional practice on a regular basis to make effective use of existing and emerging digital tools and resources in support of student learning
- Contribute to the effectiveness, vitality, and self-renewal of the teaching profession and of their school and community

Curriculum: Technology Integration

Defining Teacher Expectations and Aligning Evaluation

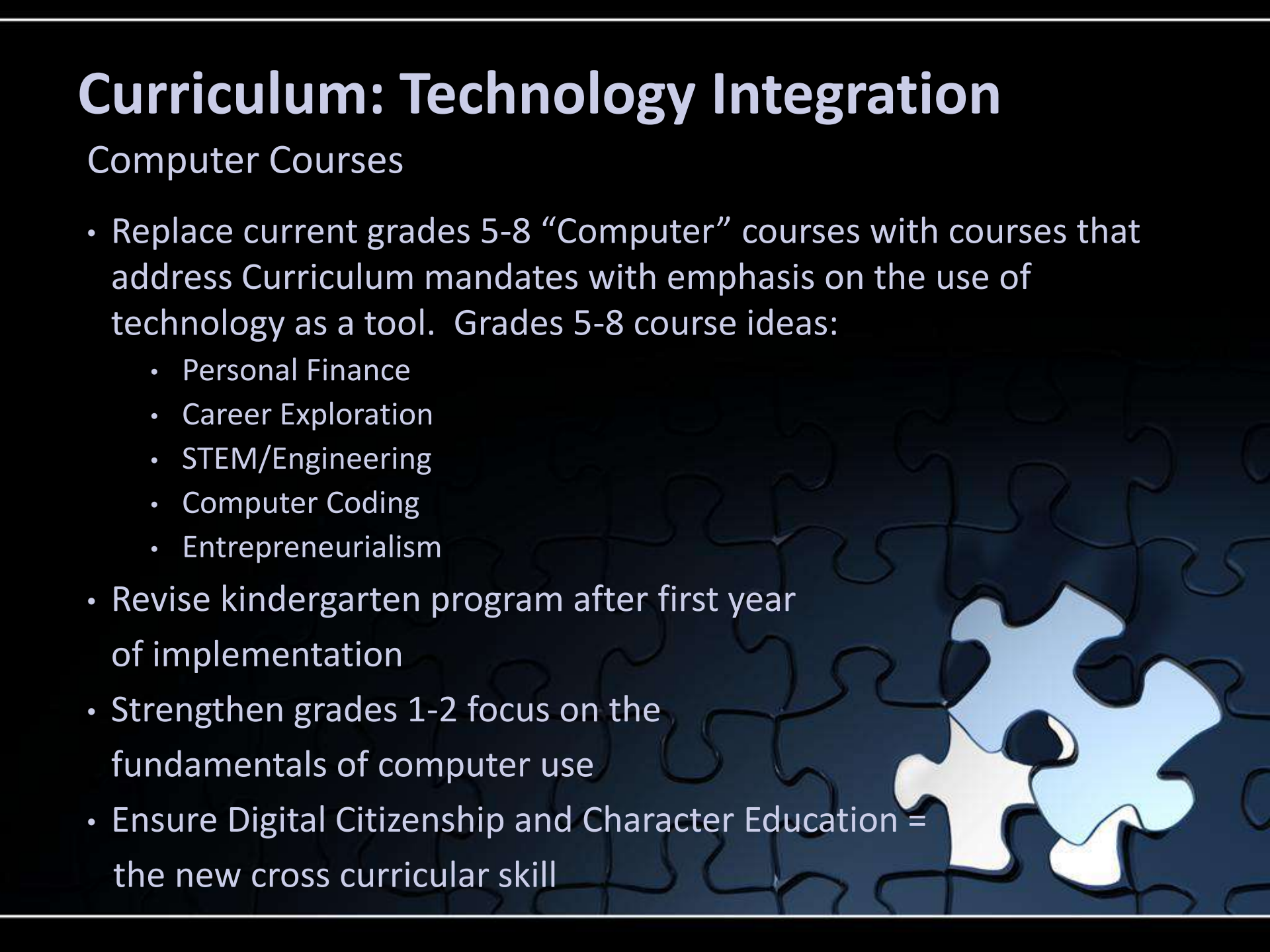
- Expectations for teacher use of technology in the classroom needs to be clarified in curriculum documents, job descriptions, and through the Teacher Evaluation Rubric
- Teachers need specific training in expectations for use of technology
- The Teachscape program may need to be revised to highlight teaching practices consistent with ISTE standards



Curriculum: Technology Integration

Computer Courses

- Replace current grades 5-8 “Computer” courses with courses that address Curriculum mandates with emphasis on the use of technology as a tool. Grades 5-8 course ideas:
  - Personal Finance
  - Career Exploration
  - STEM/Engineering
  - Computer Coding
  - Entrepreneurialism
- Revise kindergarten program after first year of implementation
- Strengthen grades 1-2 focus on the fundamentals of computer use
- Ensure Digital Citizenship and Character Education = the new cross curricular skill



Curriculum: Technology Integration

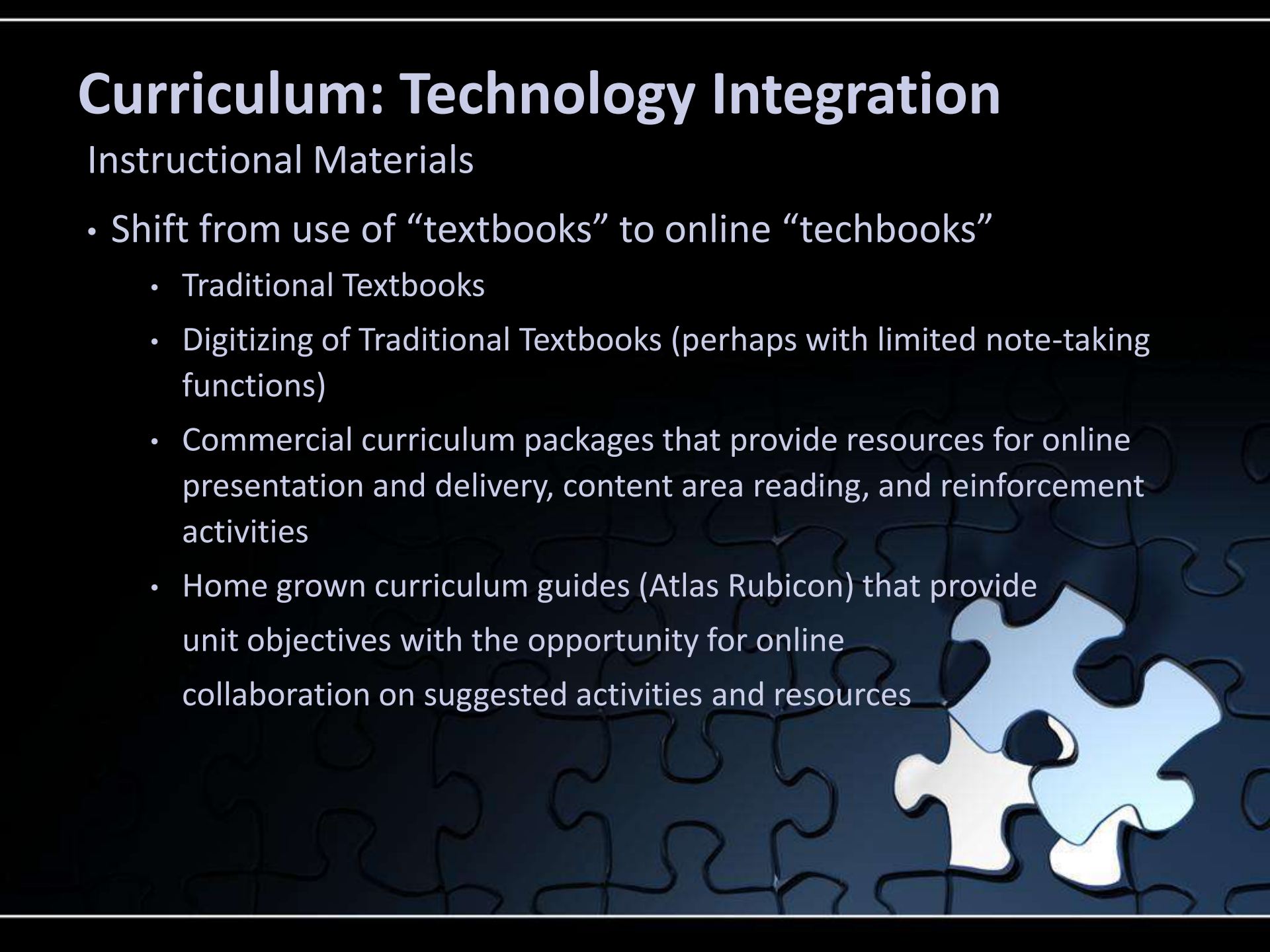
Instructional Materials

- Curriculum guides' unit objectives must require the use of technology. Suggested activities and resources should be updated regularly and collaboratively to ensure "best practices"
- Resources will include high quality, reputable, and research-based open sources materials
- Resources will include engaging multi-media sources:
  - YouTube, Ted-like Talks, access to Primary Sources, video conferences with guest speakers
  - Online programs to provide reinforcement and enrichment (FrontRow, Alek, etc.)
- Shift from "paper based" to digital resources

Curriculum: Technology Integration

Instructional Materials

- Shift from use of “textbooks” to online “techbooks”
  - Traditional Textbooks
  - Digitizing of Traditional Textbooks (perhaps with limited note-taking functions)
  - Commercial curriculum packages that provide resources for online presentation and delivery, content area reading, and reinforcement activities
  - Home grown curriculum guides (Atlas Rubicon) that provide unit objectives with the opportunity for online collaboration on suggested activities and resources



Our Path to Technology Integration

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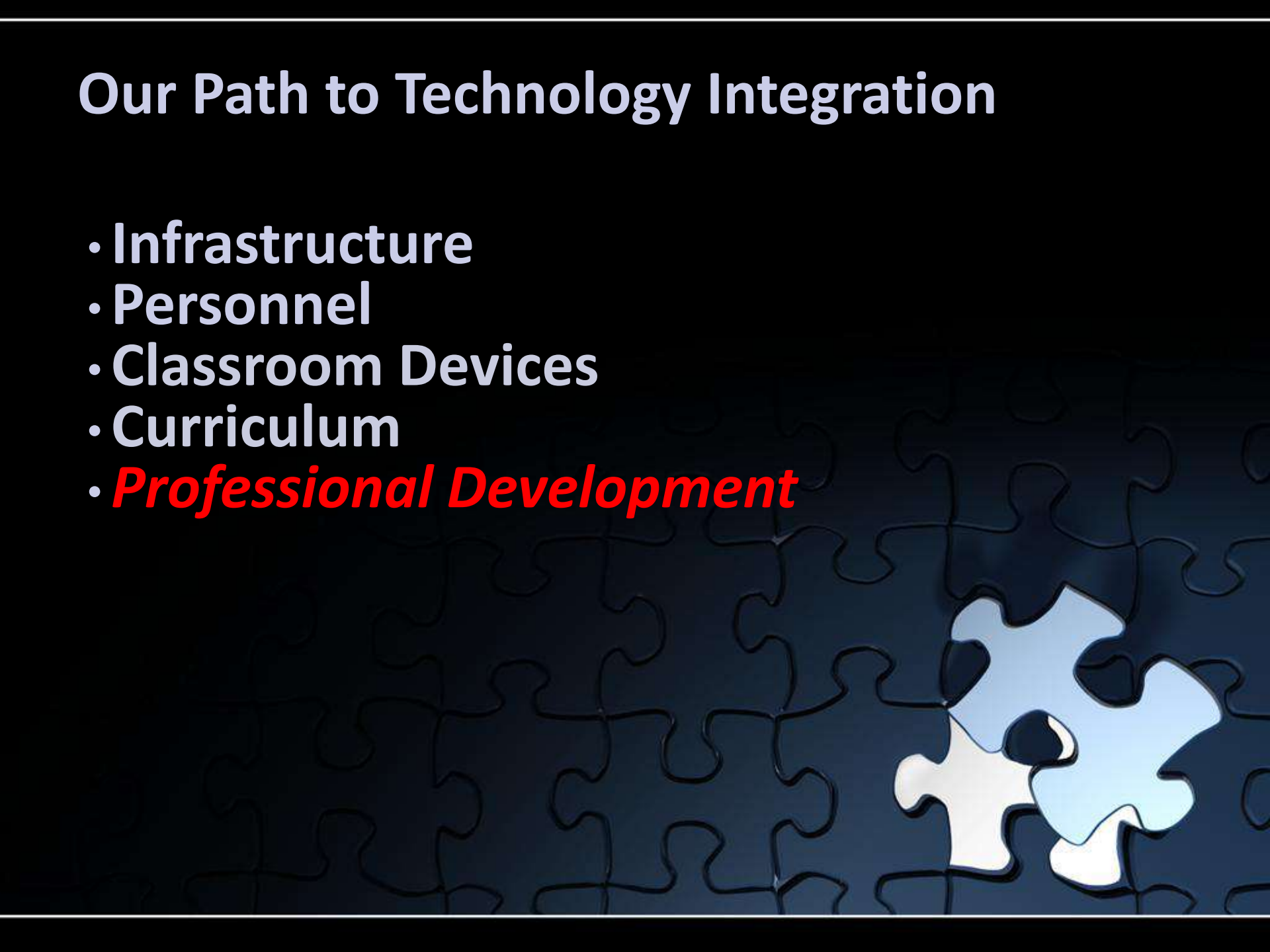
- ***Professional Development***



Professional Development

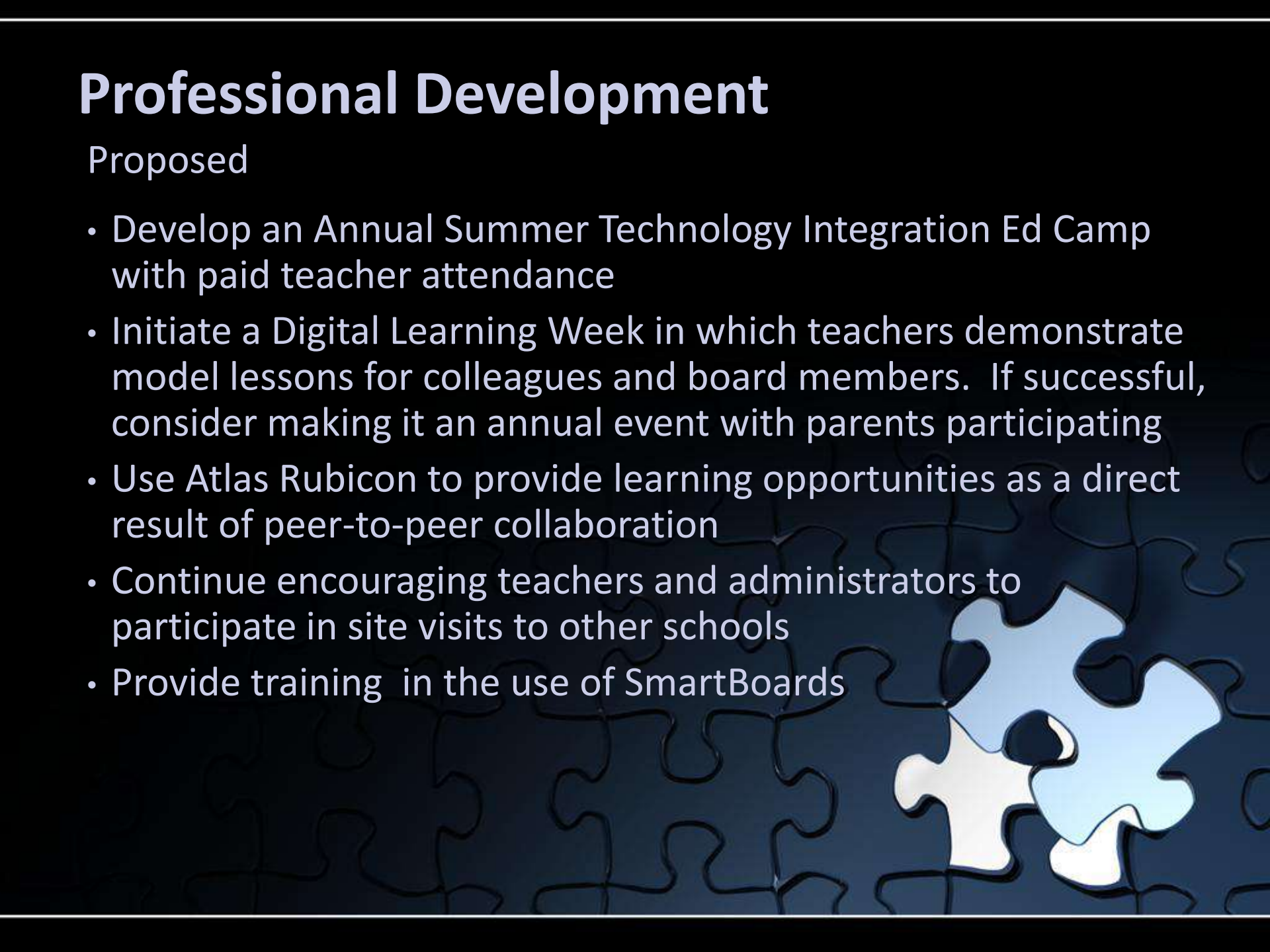
Current Practices

- Summer unpaid courses that are generally not well-attended.
- Topics shifting from basic “how to” use software to more advanced topics of curriculum integration
- Computer teachers serving as technology “help desk” helper to computer teachers increasingly offering support in technology integration
- November 2014 Professional Development Day was our first, district-wide Tech Ed. Camp
- 12 teachers/administrators attending national ISTE Conference in Philadelphia
- Pilot Technology Integration position at JPC

Professional Development

Proposed

- Develop an Annual Summer Technology Integration Ed Camp with paid teacher attendance
- Initiate a Digital Learning Week in which teachers demonstrate model lessons for colleagues and board members. If successful, consider making it an annual event with parents participating
- Use Atlas Rubicon to provide learning opportunities as a direct result of peer-to-peer collaboration
- Continue encouraging teachers and administrators to participate in site visits to other schools
- Provide training in the use of SmartBoards



Curriculum: Technology Integration

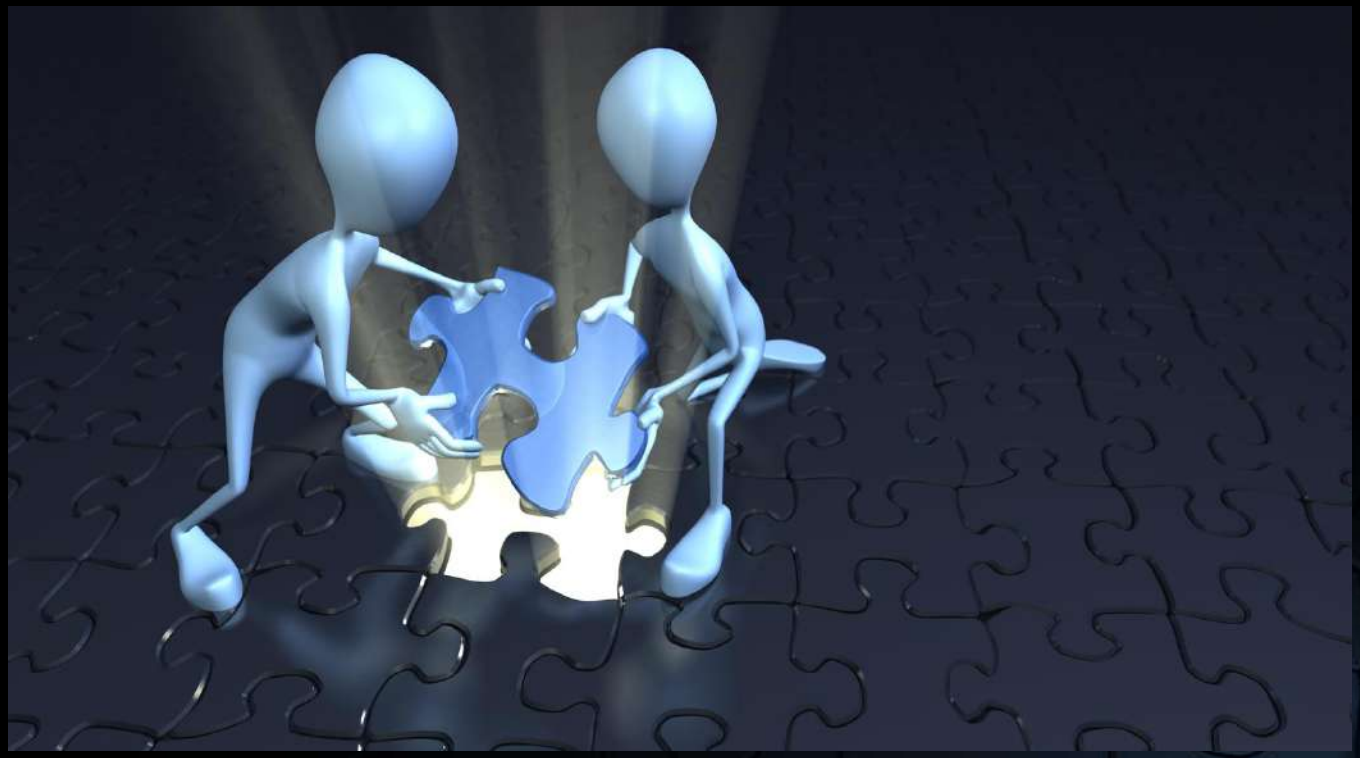
Instructional Delivery

	Traditional	Increasing Prevalent
Content Instruction	Teacher-driven; lectures; note taking skills	Student-driven; discovery-based; research and synthesis; flipped instruction
Learning Activities	Focus on reiterating information and repetitive use of new skills	Focus on using information and skills to demonstrate ability to apply/solve problems
Collaboration	Relies on small group discussions; creating a paper-based record of discussion; uneven levels of participation; little accountability for quality	Relies on discussion with an infinite number of stakeholders in/outside the classroom; sharing online resources, online collaboration; greater accountability for quantity and quality of contributions
Practice	Focused on rote-recall. Numerous problems using the same skill; homework is an artifact	Adaptive programs provide differentiated practice of skills; homework is data used to plan future instruction

Curriculum: Technology Integration

Instructional Delivery

	Traditional	Increasing Prevalent
Topics	Teacher driven; restricted by access to teaching materials	Student generated; interest driven; access to abundant online resources
Classroom Discussion	Teacher asked/student answered; recall knowledge and comprehension	Also includes student asked/student answer; students build on others' comments; greater focus on applying knowledge, analysis, synthesis, and evaluation
Curriculum Guide	Revised every five years; focus gap analysis and realigning curriculum to meet revised standards; largely static; not user friendly	Objectives revised periodically; focus on improving instructional delivery through constant sharing of successful lesson activities, and updating available resources; online collaboration; curriculum guide is an indispensible tool for ensuring consistent instruction based on "best practices" and research



Credits:
Daniel Bland
Dr. Jonathan Hart
Michael Mitchell
Robert Castellano
Dana Collins

Technology Goals 2015-2018

Putting the pieces in place for meeting the demands of 21st century learning