A. Mission Statement

The Denver School of Science and Technology is dedicated to providing a diverse student body with an outstanding secondary liberal arts education with a science and technology focus. By creating a powerful learning community centered on core values and a shared commitment to academic excellence, DSST will increase the number of underrepresented students (women, minorities and economically disadvantaged) who attain college science and liberal arts degrees. DSST graduates will be responsible, engaged citizens who are prepared to be leaders of the future.

Vision Statement

Expanding the Denver School of Science and Technology to serve students in grades 6-12 will enable DSST to better achieve its founding vision statement as it will allow us to build a stronger educational and social foundation for all students. The newly created 6-12 program will operate under the same founding vision statement.

- To become a premier secondary school in Colorado where 100% of our students meet state standards in math, science and English by the end of the 10th grade.
- To create an innovative school where students acquire a rigorous academic foundation that they can apply to the community and world around them in meaningful ways.
- To create an academic program where 100% of our students earn college acceptance and are prepared to successfully earn a college degree.
- To graduate students with character and a sense of civic responsibility of whom a significant percentage will assume leadership positions in an increasingly scientific based society.
- To be an innovative model school that helps redefine the American high school and middle school experience.

While the mission and vision explicate our purpose and short-term and long-term goals for our students, faculty and community, it is our core practices, systems and structures, and design elements that translate our purpose and goals into action. Many schools have mission statements and vision goals however, it is the implementation of practices aligned to the mission and vision that makes all the difference between schools that achieve their purpose and those that fall short.

In order to make progress toward achieving these ambitious vision goals, all systems, structures, and design elements at DSST must create conditions for the following overarching outcomes:

a. a school culture and community anchored by the core values, a shared vision and common commitments where each person is known, cared for and held accountable.

b. increased student achievement and progress toward high school and college readiness outcomes and preparation for DSST's challenging high school program requirements.

      c. a professional learning community characterized by staff collaboration, data inquiry, and improved knowledge of students and the craft of teaching.

Middle School Design Elements

DSST has operated with specific core school-wide guiding principles and has implemented intentional structures, practices and strategies to fulfill those principles.

School-wide Guided Principles: Rigorous

- To create an academic culture which requires students' best effort daily, expects all students to succeed, and supports their efforts to do so.
- To create an academic culture where core academic goals apply to all students
- To create an academic program centered on the belief that students need a strong foundation in each academic discipline to engage in rigorous project based work.
- To achieve student mastery in a set of core performance standards (writing, reading, math, science, critical thinking and technology) that enable students to be successful in college, graduate school and professionally.
- To build thinkers who have the skills to solve real world problems through the ability to understand, analyze, apply, and synthesize ideas and knowledge.
- To assess student learning in ways that challenge students to demonstrate mastery in a variety of forms, methods and settings.

Supporting Design Elements and Practices

1. Skill Building

Students will apply to DSST during their 5th grade year and will be admitted via lottery. Similar to the current practice with 9th graders, once students have committed to attending DSST, they will be asked to take a test of math and literacy skills to determine if they are performing at grade level. Those students whose skills are below an acceptable level will be required to attend additional summer school seminar classes as a condition of enrollment. Summer school will typically be two to four weeks long and will be centered on building basic and organizational skills, as well as introducing and reinforcing middle school responsibilities and school culture. Such skill-building will allow DSST to launch the Middle School program with all students understanding core values and meeting minimal standards. This will ensure that school is started on sure footing with a common commitment to and understanding of the school's vision, mission and purpose. Students are aware of their obligation to excellence and values and the academic work can begin immediately.

An essential component of the academic program is a curriculum supported by research which will specifically address student skill development and be directly aligned to the high school program. The design of the DSST middle school program will develop and build the necessary skills for students in grades 6-8 and successfully prepare them for the transition to the DSST high school. DSST will develop a set of performance standards for the middle grades that will be

clear, realistic, and measurable. Curriculum standards will meet and exceed Denver Public Schools requirements for every subject, and the middle school will replicate best practices from the high school. The three year scope and sequence will build skills in order for students to demonstrate proficiency in 8th grade exit standards. This will be a requirement before they are promoted to the high school's 9th grade.

2. Student Support

Since it is our belief that all students can learn and achieve, and it is our responsibility to ensure that this happens, support must be offered to provide access to the curriculum. Once the school year starts, there will be continued emphasis on remediation and skill building. "College Prep" time will be required for students who fail to complete assignments or meet standards. This after-school time will also give students one-on-one access to teachers. Math and English seminars during the academic year are designed to help students who are behind catch up. Seminars provide more time on task and exposure to material rather than replace core Math or English classes, as there is no remedial track at DSST. The Middle School will also have an extensive tutoring system that utilizes peers, high school students and teachers and will be required for some students.

3. Balanced Pedagogy

DSST recognizes the delicate balance between direct instruction, which helps students quickly build skills, and inquiry-based instruction, which helps students gain a deeper understanding of concepts. The school has struck a balance between these approaches in its curriculum and instruction. The school implements a spiraling of concepts in the classroom so that students see core skills and concepts many times throughout the year. Real-world applications of math concepts are also included in science classes. This helps reinforce important math concepts in a pragmatic, inquiry-based setting. The Middle School program will follow this instructional and curricular direction starting with the sixth grade.

4. Data-Driven Instruction

DSST frequently gathers data on student performance and uses that data to drive instruction focused on developing high school readiness skills, provide useful feedback, and align instructional outcomes. Instruction is aligned to a consistent assessment and re-teaching cycle that ensures key competencies are not overlooked. DSST's Benchmark Assessment Program includes standardized pre- and post- testing at the beginning and end of the year as well as four interim assessments and two performance assessments in each subject area. This not only provides information about longitudinal growth over the year, but it also helps faculty to identify areas of weakness and to tailor instruction to address specific problems. Student learning deficits are addressed through spiraled curriculum and re-teaching. The teachers of the Middle School program will apply this framework and implement the Benchmark Assessment Program model.

5. Differentiated Instruction

Perhaps one of the greatest accomplishments of DSST has been the effective use of differentiated

instruction. Heterogeneous groups of students are in the same classroom, working on different lessons, and succeeding. Classes offer Level l and Level 2 approaches to topics that challenge students at all levels. Teachers focus on developing flexible group instruction with strong measures of accountability most often associated with traditional teaching. This is also supported by "re-teaching" where students are expected to demonstrate mastery of concepts, not just get "good grades." This will be particularly useful in the Middle School Program, as students will benefit from strong differentiated instruction of college readiness skills and standards.

School-wide Guided Principles: Integrated

- To build a common understanding that each student embraces being a part of our community, sharing in the responsibilities and sacrifices such a commitment brings.
- To build a unified student body, embracing the challenges of gender, economic and racial diversity, fulfilling our commitment to have a student body of at least 40% students from economically disadvantaged families and 45% women.
- To create a community truly centered on our six core values where values are lived and shared, not just talked about. And where academic learning and character development are seen as a common endeavor, not separate.
- To effectively use technology as a tool to enhance learning and integrate its across disciplines.
- While recognizing that academics always come first, understanding that a strong liberal arts education must include athletic, artistic, service endeavors.
- To actively encourage parents to partner with DSST and to play significant roles in the daily lives and work of their children.

Supporting Design Elements and Practices

1. Values-based Culture and Community

DSST recognizes that a values based school culture is the foundation upon which academic achievement is built. DSST has a set of six core values that permeate every aspect of the school. These core values are:

Respect	*Appreciating the value of a person or an object through your words, actions, and attitude – treating people with common courtesy*
Responsibility	*Able to be trusted and depended upon to complete tasks, follow directions and own up to your actions*
Integrity	*Being truthful, fair and trustworthy in your words and actions – doing as you say and saying as you do*
Courage	*Possessing confidence and resolve to take risks and make right decisions in the face of pressure, and adverse or unfamiliar circumstances*

Curiosity	*Eager to learn, explore and question things to gain a deeper understanding*

Doing Your Best	*Putting your best effort into everything you do*

Following the high school model, the middle school program will implement a set of established practices and rituals that help reinforce the importance of these core beliefs including:

- An orientation summer program for all incoming 6th graders that acquaints students to the meaning and school culture shaped by the core values.
- Daily all-school morning meetings that highlight and put into practice the core values through presentations, core value and effort awards, shout-outs, apologies, and other shared messages.
- Core value grades as a part of the report card process to provide real feedback to students and parents on how effectively students are living the core values.

2. Technology

DSST works hard to build a technology environment that helps transform teaching and learning. The middle school will continue to use technology as a transformative learning tool to support great teaching The school has a wireless teaching and learning environment for all students and staff. Pedagogy utilizes technology to enhance and transform outstanding teaching practices.

3. Parents

DSST works diligently to connect with parents regularly about their child's education. Through the advisory program, teachers and staff work hard to connect with parents on a monthly basis. The school communicates to parents about student progress every 5 weeks through progress reports and mandatory parent-advisor conferences at the end of the first and second trimesters.

4. Extracurricular Activities

Through our elective and athletic programs, DSST commits to provide a full complement of athletic and artistic opportunities for students. Students are provided a choice of electives (when not required to be in academic support seminars) which often include courses focused on the studio and performing arts. Students also have the opportunity to compete on athletic teams and learn a life-time sport.

School-wide Guided Principles: Personalized

- To create a community where each student is known and supported to achieve his potential.
- To create an advisory where each student has personalized adult guidance and understands her unique place in the larger school community.
- To embrace the positive elements of a small school while recognizing, and within reason, attempting to mitigate the drawbacks of our size.
- To instill in students the desire and the knowledge of how to pursue independent learning.

- To teach with the aim of producing outstanding individual results, not to adhere to particular pedagogical philosophy that dictates how we teach.

Supporting Design Elements and Practices:

1. Advisory Program

Like the high school, all students in the middle school program will be assigned to an advisory group of no more than 15 students at the beginning of the year. The faculty members who lead advisories are responsible for helping students to understand and live by the core values of DSST. Currently at the high school, advisor groups meet twice a week for 50 minutes, allowing time for goal setting, planning, and reflection. Advisors get to know students well and serve as the primary liaison to families. Because every student has a close relationship with an advisor, any student with academic or social issues will be supported. Advisors monitor students' academic and social progress throughout the school year, intervening early when problems arise and communicating frequently with families about both challenges and successes. The personal connection that develops between advisors and students communicates to students that they are valued and that they are expected to perform at a high level. In the middle school, the advisory program will mirror the high school, with an added emphasis on student social issues, day-to-day organizational skills, and responsibilities.

2. Faculty and Staff Development:

DSST would not have been able to achieve the remarkable results it has demonstrated to date without a highly professional staff that is well supported. Core to DSST's model are clear systems of goal-setting, accountability and professional growth for all staff. These systems include a shared commitment to the school's core values, joint staff goal-setting on behaviors that reflect our core values, and individual and staff accountability systems to measure implementation of those values. DSST's performance evaluation process also includes extensive classroom observation, goal-setting, self and 360 evaluations, and a performance-based compensation system.

3. Balanced Pedagogy

To best meet the needs of individual students and their learning styles, DSST employs a balanced pedagogical approach. Please see page 9 for further explanation in the Balanced Pedagogy section.