STEM BY DESIGN

CONNECTION
How might we seek out and strengthen relationships between people, places, and concepts in order to build communities that share with and learn from each other?

INTEGRATION
How might we design standards-based learning opportunities that blend, build, and expand upon transdisciplinary concepts so that learners can apply knowledge to complex situations?

ADAPTATION
How might we evolve with our rapidly changing world so that we can flexibly learn, unlearn, and relearn the necessary skills for success?

INNOVATION
How might we develop a culture of curiosity, creativity, and design so that we can identify and solve for our own needs and the needs of others?

PERSONALIZATION
How might we customize instruction so that learners are both challenged and empowered to advocate for their interests and needs in order to drive their own learning?

ESSENTIAL SKILLS
How might we develop communicators, problem solvers, community members, and empowered individuals so that learning goes beyond content knowledge in order to become global citizens?

STEM FOR ALL

St. Vrain Valley Schools
academic excellence by design

science | technology | engineering | math

INNOVATION CENTER
of ST. VRAIN VALLEY SCHOOLS

STEM by Design is used to purposefully ignite innovation through STEM practices and philosophies throughout the district to all of our stakeholders, from our youngest preschoolers to our highest levels of leadership. This document outlines the elements considered in identifying and defining STEM and details the specific attributes of STEM students, teachers and environments within St. Vrain.

	A STEM STUDENT	A STEM EDUCATOR	A STEM ENVIRONMENT
INTEGRATION	Applies skills and knowledge across content areas in order to develop a strong interdisciplinary understanding of the complex world around them.	Meaningfully and intentionally integrates disciplinary concepts to provide opportunities for transfer and application of skills and knowledge.	Reflects transdisciplinary opportunities and highlights the integration of concepts through real-world experiences represented in the learning space.
INNOVATION	Believes in their capacity to create change though divergent thinking, innovative problem solving, and human-centered design.	Practices divergent thinking to expand possibilities for student involvement and problem solving in the classroom context to support productive struggle.	Provides materials and necessary resources for divergent, innovative thinking, including but not limited to instructional technology, advanced learning technology, and industry level technology.
ESSENTIAL SKILLS	Uses essential skills to contribute their unique abilities to their community, as well as leverage the strength of others to further their own understanding.	Intentionally models and explicitly labels essential skills in interactions with students and colleagues.	Provides safety for every learner, allowing for cognitive risk-taking and personal growth.
PERSONALIZATION	Values productive struggle and takes ownership of their learning behaviors in order to advance as learners.	Considers instructional impact on each student and designs experiences and environments with student needs in mind, recognizing growth as it occurs.	Invites diversity and inclusion in order to maximize opportunities to learn from others and further oneself.
ADAPTATION	Understands and embraces both a growth mindset and an innovator mindset toward learning in order to synthesize new information and apply it to real-world situations.	Prioritizes lifelong learning by embracing necessary change and modeling comfort with ambiguity.	Can flex and change, adapting to the learning that will take place that time period and environment.
CONNECTION	Seeks out opportunities to connect to other people, places, or concepts that are relevant to their learning.	Connects the classroom to the real world, through discussion, immersion, engagement and real experiences.	Provides opportunities and resources for educators, students, and classrooms to collaborate and co-create with others.