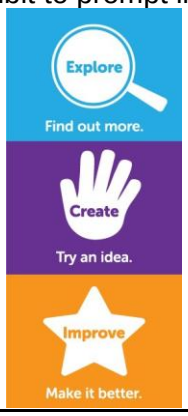
Magnetic Wall DoS Evaluation – Post Installation

Dimensions of Success: Features of Learning Environment	Scale of 1 to 4 1=Evidence Absent 2=Inconsistent Evidence 3=Reasonable Evidence 4=Compelling Evidence	Notes Refer to "Anticipated Exhibit Environment" in support of Rating
Organization *Are there enough materials for the activity to be successful for more than one child at a time?* *Are they organized in a way that makes sense to the exhibit user?*	4	Ample materials and space for 8-10 users of differing ages provide opportunities to experiment with ramps at the same time giving users opportunities to share and negotiate for space. Materials are stored in a low storage trough easily accessible to users. Eliminated Ball Storage Tube, replaced with a storage box attached to wall.
Materials *Can exhibit props be used comfortably and safely?* *Will the exhibit materials help the child reach the STEM learning goal?* *Will the materials hold the user's attention for 10 minutes or more?* *Are materials developmentally appropriate?*	*4*	Materials are being used safely and have no sharp edges or small pieces that would be choking hazards. Pieces including ramps, target cups, tunnels, etc. can be combined to create ramp systems to solve specific challenges that aid exhibit users in increasing their understandings of forces, motion, inclined planes, and potential & kinetic energy. Exhibit manipulatives provide limitless opportunities to explore, create, observe, evaluate, and modify systems. Challenge cards are provided to extend the experience. Age appropriate for ages 3 and up.
Space Utilization *Is the amount of space appropriate for the activity?* *Is the space utilized in a way that is conducive to informal STEM learning?* *Do set-up and resources allow for exploration and active learning?*	*4*	Sixteen linear feet of wall space is devoted to the exhibit. Exhibit users have multiple entry points to begin exploring the materials and building ramp systems. Activities are student driven. The exhibit's large size is easily visible when families enter the space inviting users to explore the materials and interact with other children in the space.

Dimensions of Success: **Activity Engagement**	**Scale of 1 to 4** **1=Evidence Absent** **2=Inconsistent Evidence** **3=Reasonable Evidence** **4=Compelling Evidence**	**Notes Refer to "Anticipated Exhibit Environment" in support of Rating**
Participation *Do multiple youth have access to the exhibit activity at any given time?* *How does the exhibit invite kids to participate?* *How are kids engaging in the exhibit?*	4	Multiple users have enough of each type of material to have access at the same time. Exhibit has moving parts and is open-ended encouraging kids to self-direct and make choices. Exhibit pieces are easy for kids to manipulate. Exhibit users select unique building materials to construct a ramp system and test it by rolling balls through the system.
Purposeful Activities *Does the learning goal lead to kids thinking/reasoning about a STEM idea?* *Does each part of the activity help youth move towards understanding the learning goal?*	4	Kids are designing, building, and testing ramp systems. Problem-solving Challenge Cards engage kids in hands-on, minds-on experiences aligned with the learning goal. Tape measures are provided. Challenge Cards include reflection questions to assist parents in scaffolding their child's learning. Designing, building, testing and redesigning, to meet exhibit challenges will lead youth to a better understanding about how the degree of a ramp's angle impacts distance and speed that an object will travel.
Engagement with STEM *Do kids have an opportunity to manipulate materials physically or virtually?* *Are there opportunities for kids to do the cognitive work of exploring STEM content?*	4	Exhibit users will be able to manipulate materials physically to build ramp systems on the magnetic wall. Exhibit users are cognitively exploring STEM concepts by asking questions, making predictions, and exploring cause and effect to try to figure out how force and energy influence the motion of balls.

Dimensions of Success: STEM Knowledge and Practices	Scale of 1 to 4 1=Evidence Absent 2=Inconsistent Evidence 3=Reasonable Evidence 4=Compelling Evidence	Notes Refer to "Anticipated Exhibit Environment" in support of Rating
STEM Content Learning *Are STEM ideas presented accurately?* *Does exhibit help kids make connections between STEM ideas?* *Does exhibit avoid having kids simply parrot back definitions or memorize facts?*	4	The exhibit integrates STEM concepts by prompting kids to understand science and math concepts by applying engineering and technology solutions to specific challenges presented in the exhibit. Exhibit users are constructing their own knowledge by experimenting with real objects in an open-ended, child-directed active learning environment.
Inquiry *Does exhibit provide kids with opportunities to do authentic practices that STEM professionals do (ask questions, experiment, predict, etc.)*	4	Exhibit users are investigating how forces and energy influence the motion of balls in the context of an engineering design problem. Engineering graphic will be included in exhibit to prompt inquiry. 
Reflection *Does exhibit ask open-ended questions to help students make sense of what they're learning?* *Are kids provided opportunities to process throughout the activity instead of just at the end?*	4	Exhibit includes open-ended questions on Challenge Cards, i.e. *"What changes can you make to your track that helps the ball hit the Target Cup?" "What happened to the ball when you made that change?"* Challenges invite users to process their experience throughout the activity by working to solve problems and responding to "what if" reflection questions.

Dimensions of Success: **Youth Development in STEM**	**Scale of 1 to 4** **1=Evidence Absent** **2=Inconsistent Evidence** **3=Reasonable Evidence** **4=Compelling Evidence**	**Notes Refer to "Anticipated Exhibit Environment" in support of Rating**
Relationships *Does the exhibit encourage and help develop positive relationships between:* *Kids & Kids,* *Kids & Parents/Caregivers,* *Kids & Staff,* *Staff & Parents/Caregivers* *Does the exhibit encourage Family Learning Together?*	4	The exhibit allows for diverse collaborations of activity engagement encouraging positive relationship building. Challenges are designed to encourage working together with a partner or family member. The exhibit has enough unique materials to lessen user frustration with competition for supplies. Challenge cards encourage families to learn and explore together providing *Challenges and Reflection Questions* encouraging parental involvement.
Relevance *Does the exhibit prompt youth to discuss why the STEM content is important to their personal lives, future careers, communities, or greater society?* *What are exhibit's real-world connections?*	1	This dimension needs more work to make the exhibit piece relevant. No direct connection to personal lives or careers is evident. No real world connections evident.
Youth Voice *Does the exhibit allow kids to guide the learning activity?* *Is there a pathway within the exhibit for kids to share their ideas with the greater community?*	*3*	All exhibit activities are child directed. The large magnetic wall allows multiple kids to share their ramp engineering activities naturally with other people playing in the exhibit. Add signage to strengthen: "*Work with a partner" "Tell a friend about your design."*