All of our classrooms are implementing STEM: Science, Technology, Engineering and Mathematics through project-based learning instructional strategies. The STEM approach to teaching is inquiry-based which is defined as the process of asking questions and trying to find answers for those questions. Using the STEM approach to teach effectively requires a combination of introducing engaging materials yet balancing the fun with the purposeful integration of connective activities that encourage the development of high level critical thinking skills.

STEM naturally applies to a preschool curriculum and the interests of young children. Children are naturally full of curiosity and love to investigate. The components of STEM: Science, Technology, Engineering and Mathematics all combine to offer children a vast array of highly engaging learning experiences in which teachers are able to capitalize on a child’s strong desire to learn about the world around them. The four content areas of STEM are an integral part of everyday life and are naturally engaging for young children.

Project-based learning, simply put, is learning-by-doing. Project-based learning, or PBL, tends to be deeper learning that is more relevant to students and thus remembered longer. We need to educate students to be global competitors and to do so, we must require them to think creatively, to take risks, and put what they are learning into practice.

- Self-selected activities - leads to developing decision-making skills and increases engagement.
- Utilize resources - uses for technology as a tool to develop digital literacy - performing tasks effectively in a digital environment by incorporating interactive white boards; Skype; videotaping; publishing to create props such as labels, signs and charts.
- Critical thinking opportunities - open-ended questions or prompts that lead to higher level thinking, risk-taking, and investigation (solving problems versus finding the one correct answer)
- Creativity options - activities that allow for innovative strategies or solutions to be shared; (a reminder that creativity is not for the select few—we can all be creative with practice)
- Engaging, relevant learning experiences - activities related to students’ lives make the concepts being taught more meaningful, and thus more memorable (global awareness activities)
- Skills for organization, self-regulation, planning, and sequencing to use the information provided or researched (learning how to implement ideas and use all the information gathered)
- Social learning - Practice communicating, sharing ideas, theories, discoveries; using appropriate vocabulary; demonstrating understanding through drawings, graphs, charts, etc. (developing social skills necessary to work in groups) Time for collaborations in a classroom and via technology (helps students internalize their observations, initiate higher level thinking, and see the bigger picture)