

## KDS Middle School STEM Summer Camps



This summer, MindGear and Huntsville STEAMworks offered engaging STEM Summer Camps to KDS Middle School students. The MindGear staff secured donations and grant funding to offer the camp at a drastically reduced rate on the KDS campus.

These camps provided students with the options to sign up for PiBots and/or Sumobots. In each camp, the students created a project utilizing digital tools, math concepts, engineering design, and technology skills. Students were provided materials and instruction to design and program EV3 robots and PiBot robotic arms.

SumoBots incorporated EV3 Lego materials to design and build a robot to compete and withstand structural opposition from other groups' robots. The robot had to successfully push the opposing robot out of the ring while resisting the opponent's attempt to do the same. At the end of the week, SumoBot tournaments were conducted among the teams to reveal the winning model. Students had to work well with teammates to strategically utilize engineering and programming concepts taught at camp.



PiBots Camp utilized laser cut acrylic arms and the Raspberry Pi programming system to build

and program a robotic arm. Students worked in pairs to build the arm and connect wiring for a successful programming experience. Then, students were instructed on Raspberry Pi basic concepts of internal computer programming and commands. At the end of camp, the

students were able to personally program the robotic arm to make unique movements. Each student took his/her robotic arm home with information on how to obtain a Raspberry Pi system for home.