Berea MS Lesson Plan 2025 - 2026 **Week :** 9/22 - 9/26 **Teacher**: Jeffreys **Grade/Subject: GTT** Automation and Robotics

Unit Title:	Unit 1: Welcome Engineers
Unit Vocabulary:	**Smart Motors (2x)** – For driving the left and right wheels. **Robot Brain** – Controls the robot and motors. **Smart Cables** – Connect the Smart Motors to the Brain. **Wheels (4x)** – Typically 200mm or similar wheels for driving. **Axles** – Used to mount wheels and gears to structural parts. **Axle Collars** – Hold wheels and gears in place on the axles. **Structural Beams** – Form the frame of the robot (e.g., 1x12, 2x beams). **Corner Connectors** – Join beams at right angles to form a rigid frame. **Pitch Connectors** – Used to connect beams at varying angles or positions. **Battery Pack** – Powers the Brain and motors.
Upcoming Common Assessments (MasteryConnect):	None

	Standard(s) + Learning Objective	**Activating Experience** (Opening, may include "Scholar Starter")	**Learning Experience** (Work Time: SB Materials and Resources, Vocab, Scaffolds/Supports, SWRL, Costas)	**Formative or Summative Assessment(s)**	**Summarizing Experience** (Closing)	**WICOR, AVID and/or ELLevation Strategies** (aligned with learning objective)

MONDAY	**Standard** (write out)**:** SC CTE Standard 6.C.4 — Apply knowledge of engineering to solve simple design challenges. **Learning Objective** **Scholars will program a virtual robot to follow commands to move through a maze.**	Brainstorm everyday items; decide if they are inventions or innovations.	Identify and name Vex IQ Parts **Standards Based Materials & Resources:** Vex IQ Parts **Content/Academic Vocabulary:** **ILAP/IEP/504 Scaffolds & Supports:** Name **Opportunities to SWRL:** *Speak* (discuss examples with partner), *Write* (student response sheet), *Read* (presentation slides), *Listen* (teacher explanation). **Costa's Levels of Thinking/Questioning:** **Level 1:** What are the main parts needed to build the Basebot using VEX IQ components? **Level 2:** How would you connect the Smart Motors and wheels to the VEX IQ Basebot frame to make it drive forward? **Level 3:** If your Basebot is not driving straight during testing, what possible design or assembly issues could be causing this, and how would you troubleshoot and redesign it to fix the problem?	Completion of first section of the response sheet.	Pair share — One invention or innovation that has impacted your life.	*Inquiry* — Using questioning to distinguish between invention and innovation.
TUESDAY	**Standard** (write out): SC CTE Standard 6.C.4 — Apply knowledge of engineering to solve simple design challenges. **Learning Objective** **Scholars will program a virtual robot to follow commands to move through a maze.**		Building of the base bot Teacher presents 1.1a slides; **Standards Based Materials & Resources:** *Skill* — Identify engineering fields. *Content* — Differentiate between mechanical, electrical, civil, and chemical engineering. *Product* — Complete the Engineering Fields section of the student response document. **Content/Academic Vocabulary:** **ILAP/IEP/504 Scaffolds & Supports:** Word banks; visuals with field examples; peer support; modified note-taking templates. **Opportunities to SWRL:** *Speak* (turn-and-talk about fields), *Write* (response document), *Read* (presentation text), *Listen* (presentation). **Costa's Levels of Thinking/Questioning:** **Level 1:** What are the main parts needed to build the Basebot using VEX IQ components?	Accuracy of student responses.	*Organizing* — Categorizing information into four engineering fields.	Students share one engineering field and why it interests them.

			Level 2: How would you connect the Smart Motors and wheels to the VEX IQ Basebot frame to make it drive forward? **Level 3:** If your Basebot is not driving straight during testing, what possible design or assembly issues could be causing this, and how would you troubleshoot and redesign it to fix the problem?			
WEDNESDAY	**Standard** (write out)**:** SC CTE Standard 6.C.4 — Apply knowledge of engineering to solve simple design challenges. **Learning Objective** **Scholars will program a virtual robot to follow commands to move through a maze.**	Quick review game;students guess which field matches a short description.	Continue to build the base bot **Standards Based Materials & Resources:** Student response documents; projector/visuals for presentations. **Content/Academic Vocabulary:** **ILAP/IEP/504 Scaffolds & Supports:** Option to present in small groups; sentence stems ("One interesting fact I learned is Peer/teacher feedback on presentations…."); extended time. **Opportunities to SWRL:** *Speak* (presentation), *Write* (notes from peers' presentations), *Read* (response sheets), *Listen* (classmate presentations). **Costa's Levels of Thinking/Questioning:** **Level 1:** What are the main parts needed to build the Basebot using VEX IQ components? **Level 2:** How would you connect the Smart Motors and wheels to the VEX IQ Basebot frame to make it drive forward? **Level 3:** If your Basebot is not driving straight during testing, what possible design or assembly issues could be causing this, and how would you troubleshoot and redesign it to fix the problem?	Peer/teacher feedback on presentations.	Reflection — "One engineering field I'd like to learn more about is…"	*Collaboration* — Learning from peer presentations.

THURSDAY	**Standard** (write out**):** SC CTE Standard 6.C.4 — Apply knowledge of engineering to solve simple design challenges. **Learning Objective** **Scholars will program a virtual robot to follow commands to move through a maze.**	Quick brainstorm — Which type of engineer do you call when…? (Show problem prompts.)	Continue to build the base bot **Standards Based Materials & Resources:** Case study cards (real-world problems: e.g., building a bridge, designing a phone, cleaning water, producing medicine); chart paper; markers. **Content/Academic Vocabulary:** **ILAP/IEP/504 Scaffolds & Supports:** Heterogeneous grouping; graphic organizer for case study; teacher check-ins. **Opportunities to SWRL:** *Speak* (collaborate in group), *Write* (group notes), *Read* (case study), *Listen* (group members). **Costa's Levels of Thinking/Questioning:** **Level 1:** What are the main parts needed to build the Basebot using VEX IQ components? **Level 2:** How would you connect the Smart Motors and wheels to the VEX IQ Basebot frame to make it drive forward? **Level 3:** If your Basebot is not driving straight during testing, what possible design or assembly issues could be causing this, and how would you troubleshoot and redesign it to fix the problem?	Group poster/chart matching problems with fields.	Gallery walk — students share and review each group's work.	*Writing to Learn* — Organizing group ideas into written problems–solution matches.

F R I D A Y	**Standard** (write out)**:** SC CTE Standard 6.C.4 — Apply knowledge of engineering to solve simple design challenges. **Learning Objective** **Scholars will program a real robot to solve a maze, make a noise and print my name.**	Watch a short video about engineering careers.	Continue to build the base bot **Standards Based Materials & Resources:** Reflection prompt; engineering career exploration video; student notebooks. **Content/Academic Vocabulary:** **ILAP/IEP/504 Scaffolds & Supports:** Graphic organizer for reflection; **Opportunities to SWRL:** *Speak* (pair share before writing), *Write* (reflection), *Read* (reflection prompt), *Listen* (career video). **Costa's Levels of Thinking/Questioning:** **Level 1:** What are the main parts needed to build the Basebot using VEX IQ components? **Level 2:** How would you connect the Smart Motors and wheels to the VEX IQ Basebot frame to make it drive forward? **Level 3:** If your Basebot is not driving straight during testing, what possible design or assembly issues could be causing this, and how would you troubleshoot and redesign it to fix the problem?	Written reflection turned in.	Class discussion — "It is important to be able to identify vex IQ parts because…"	Reading/Writing — Reflection writing to synthesize the week's learning.