

Sphero Spk + and K-nex = Ancient Chariots

Objective: Students will gain an understanding of ancient chariots. How ancient ideas contribute in today's world? Students will build a Chariot with K-nex and the Sphero will push or pull the chariot. Students will also code the chariot to race around a track that is 5 feet by 10 feet. Students will need to time and measure distances to program the chariot. Students work in groups of 2-3.

Introduction: Ask students what do they know about Ancient Chariots?

What Materials were used? What were they used for? What civilizations used them? Have students research information about chariots and have them present to the group. STEM Steps: Explain to students the STEM steps and the importance of following the steps. How important it is for engineers to follow these steps?

STEP 1: ASK: What is the Problem? What are the Constraints? Will their Sphero push or pull the chariot? (you decide how many wheels, pieces etc).

STEP 2 IMAGINE: What are some solutions? Students brainstorm in their group's ideas. Then they choose the best one.

STEP 3: PLAN: Draw a diagram, make a list of the materials that they will need.

STEP 4: CREATE: Build the chariot. Test it many times. Encourage students do constantly test as they are constructing the chariot.

STEP 5: IMPROVE: Ask students to keep a record of the improvements they had to make. What works best? What didn't work? (this will take the students several weeks to build and improve. Help them realize that their chariot must be able to turn a corner).

Code: When students have finished their chariot and have tested the chariot to manually drive the race track have them program using the app Sphero EDU. (teacher have early finishers create the track with masking tape on the floor 5 feet by 10 feet) *For the race I timed each chariot rather than race because of the crashing into one another.*

