



**Benefits of Play:** Creative, Cognitive, Communication, Social

Students communicate and work together to design and build a vehicle utilizing creative engineering building kits.

**STEAM Skills:** Science, Technology, Engineering, Math

**Grades:** 4, 5, 6

**Materials:**

- creative engineering building kit with wheels
- pencils
- large bulletin board paper or smaller sheets of paper taped together to make a larger sheet

**Step 1:** Instructor to utilize the large paper (about 4' wide by 6' long) and draw out a large maze/path with turns of different angles (90 degrees, 45 degrees, etc.).

**Step 2:** Students are placed in small groups, working together to design and draw a layout of what they want their vehicle to look like.

**Step 3:** Once students have created their designs, they will use the building kit to physically build their vehicle. As they work, students will likely have to do some problem-solving on the size of their vehicles, wheel placement, etc.

**Step 4:** After their vehicle is constructed and runs to their liking, students will place their vehicle on the teacher's drawn path and "drive" it through the maze to see if their vehicle can make all the designated turns without falling over or falling apart.

**Challenge 1:** Students can build on a cart to the back of their vehicle to hold smaller items as a transportation type vehicle and determine if they need to make design changes.

**Challenge 2:** Students can create their own mazes and build tunnels and hills to make it more of a challenge.

**Challenge 3:** Utilize building kits made of waterproof parts to create an underwater maze in a small splash pool.

