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# Ping Pong Ball Retriever Engineering Challenge Worksheet

## Answer Key

**ASK:** What problem are you being asked to solve? What is the need? What are the constraints?

A wheelchair table tennis team in Egypt does not have any way to pick up ping pong balls in their wheelchairs, but they do have help from able-bodied people helping pick up ping pong balls during practices and games. Thus, the need is to design a reusable prototype for the table tennis wheelchair team that can pick up as many ping pong balls as possible at one time. The constraints to the prototype include that it has to be built using common materials found in Egypt and, when testing the device, I cannot put my hand lower than the seat of the chair.

**RESEARCH:** What are common Egyptian materials?

Some common materials that can be found in Egypt are plastic, bottles, plastic bags, takeout containers, rubber bands, straws, chopsticks, and more.

**IMAGINE:** Sketch out at least TWO different designs for your reusable prototype.

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Student sketches will go here.

**PLAN:** Get together with your engineering group and sketch out one prototype. All group members' sketches should be the same.

Students group sketch will go here.

**CREATE:** Work with your group to build your first prototype following the rubric guidelines.

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### TEST and IMPROVE

With your teacher's approval, pick up a tub of ping pong balls and get started testing and improving.

### Final Rubric

	Expectation Not Met	Expectation Partially Met	Expectation Met	Score
Explain how you used the engineering design process	0	1	2	
Picks up balls	0	1	2	
Users' needs considered	0	1	2	
Use of common Egyptian materials	0	1	2	
Aligns to at least 2 SDG goals	0	1	2	