UTK Unit 4 We Are Engineers!
Lesson 15

Phenomenon: Engineers design solutions to problems.	**Question to Investigate:** How do parachutes work?	**Lesson Objective:** Students make a parachute to learn about parachutes and how they work.

Success Criteria: I can persist through challenges.

Launch	
	***In the story Jack and the Beanstalk, Jack climbs down the beanstalk to get home and get away from the giant. What would be a faster way for Jack to get away from the giant?*** Allow for students to think and offer their ideas. ***Today we are going to build a faster way for Jack to get down from the beanstalk.***
	***We are going to make a parachute! Jack will be a lot faster than the giant if he had a parachute. Before we construct the parachute, let's look at this book How Do Parachutes Work on Epic for a deeper understanding about how parachutes work.***
Explore	
	***Now that we know a little more about how parachutes work, we are going to explore different materials to see which will work best for a parachute. Jack needs to get down the beanstalk quickly, but we also want him to be safe. What would be a good way to test these materials?*** Put different materials (see list on slide) out at the tables and ask students to explore the materials to see which one would work the best for making a parachute. Look for "floaty" and "non-floaty" materials by softly tossing items in the air to see if they "float."
	Introduce new vocabulary: Float. ***Float is when there is an upward force that pushes objects up in the air, making them move or hover slowly and lightly in the air. A safe parachute needs to be able to float slowly down to the ground.***
	***We are going to make a parachute to help Jack get away from the giant in a faster way. I have napkins for each of you to make your own, but you can also try one of the other materials we explored to make a parachute. Let's look at the following directions.*** Continue on to the next two slides. Then let students explore to craft a parachute.
	Note: For teacher's understanding: Watch the tutorial video . Follow the instructions to help the students make their own parachute.
	***Let's test our parachutes outside on the playground. They will work best if we are up higher. Can you think of a high place that is safe for us to be? I think the play structure will work well, but we will need to take turns. Make sure you try your parachute in a lot of different places to find where it flies best.***

	***The strings on a parachute can sometimes get tangled up when it flies. Remember that you can persist through challenges. Let's practice our* Habit of Mind of Persisting.** Show HOM #1 I can stick to it!
Reflect	
	***What did you learn about parachutes and how they work?***