








# UTK Unit 4 We Are Engineers!


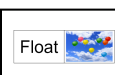



## Lesson 15

 <b>Phenomenon:</b> Engineers design solutions to problems.	 <b>Question to Investigate:</b> How do parachutes work?	 <b>Lesson Objective:</b> Students make a parachute to learn about parachutes and how they work.
<div style="display: flex; justify-content: space-between; align-items: center;">  <b>Success Criteria:</b> I can persist through challenges.            </div>		

### Launch

	<p><b>In the story <i>Jack and the Beanstalk</i>, 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?</b> Allow for students to think and offer their ideas.</p> <p><b>Today we are going to build a faster way for Jack to get down from the beanstalk.</b></p>
	<p><b>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 <a href="#">How Do Parachutes Work</a> on Epic for a deeper understanding about how parachutes work.</b></p>

### Explore

	<p><b>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?</b> 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.”</p>
	<p>Introduce new vocabulary: Float. <b>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.</b></p>
	<p><b>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.</b></p> <p>Continue on to the next two slides. Then let students explore to craft a parachute.</p>
	<div style="border: 1px solid black; padding: 10px;"> <p>Note: For teacher's understanding: Watch the <a href="#">tutorial video</a>. Follow the instructions to help the students make their own parachute.</p> </div>
	<p><b>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.</b></p>

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