# Lesson Review: Touchdown Activity

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# Touchdown Activity

Description and link of lesson

My class did the activity called Touchdown from the JPL website. To do this activity my students were given a selection of materials and needed to build a lander that does not fall over or knock out the 'astronauts' represented by two large marshmallows. Students have to use engineering skills, collaboration skills, and their knowledge of motion, gravity, and shock-absorbing systems. For my students this activity required them to use their fine motor skills, speaking skills, and social skills.

Link: https://www.jpl.nasa.gov/edu/teach/activity/touchdown/

Summary of experience

I greatly enjoyed the Touchdown lesson and so did my students, they have already asked if we could do it again. I gathered all the materials and had them prepared for my students on trays. My students are in 6th-8th grade and our class is a special education self-contained class. Most of my students cannot read or read at a kindergarten/first grade level. I gave the students the Activity Challenge PDF, but I read it to them and we went over the activity as a whole group. While I was introducing the activity, my evaluator came in for a surprise informal observation, thankfully she loved it. After introducing the challenge, I put into groups of three and were given a large paper to draw out their ideas, while I continually reminded everyone not to eat the marshmallows.

One modification I made was to give my students more tape since they struggle to work with tape and a lot of it ends up bunched up due to a lack of quick fine motor skills. I also allowed students to trade in marshmallows for replacement ones if the marshmallows got messed up from multiple attempts and changes to their landers. My students have struggles with fine motor movements and the marshmallows were easily squished and rendered a useless mess. I

wanted to focus to be the building of the lander and those ideas instead of focusing on a limited number of materials. If we did this challenge again, I would build off the ideas they had and limit the materials they have to build the landers. Another modification I did to this activity was I extended the time to complete it. I gave my students and hour and a half so that they were able to spend enough time on the brainstorming and design aspect instead of rushing right to building their landers.

One challenge I had during this activity was one of the classroom aids kept trying to tell the students what to do instead of letting the students think for themselves. She also thought her group of kids was competing against the other group of students and their aid. This has been an issue all year because she is older and she wants to kind of baby them like she is their grandma and give them the answer instead of letting them fail and learn from it. Since my evaluator was there I had to be very careful when dealing with this issue so I didn't embarrass my aid. But then she had the kids cheat by taping the astronaut marshmallows to the cup so they wouldn't fall out. I give them props for the ingenuity- they called the tape sticky seatbelts. The lander fell over anyways so I was able to distract my aid and tell the students start over and build their own idea.

I really liked the collaboration my students used to complete this activity. I also liked the students getting to use their engineering skills for this challenge. My students struggled with the requirement of brainstorming and designing first. They all wanted to jump right into building the lander. One group really spent quality time in the brainstorm and design step and it was reflected in the quality of their lander. The other group rushed through brainstorming and design and the first lander fell apart.

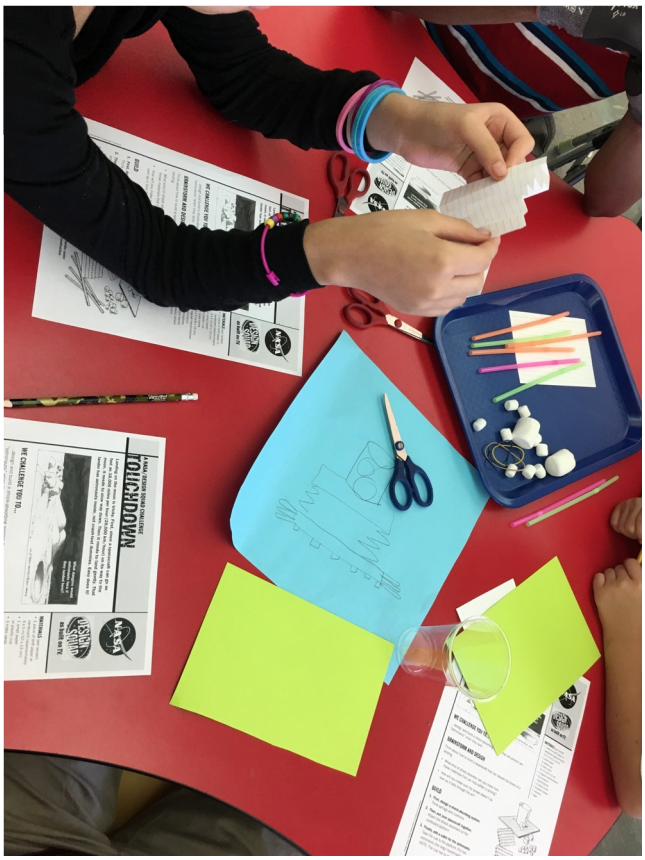
One new activity I have implemented this year was the use of Seesaw in our classroom. I had the students record an explanation of their landers, what they did, and then record testing

them out. I really liked adding this component to have students explain their thinking. My students often get shy even around adults they have known for years, but give them a camera and they aren't shy and are more confident.

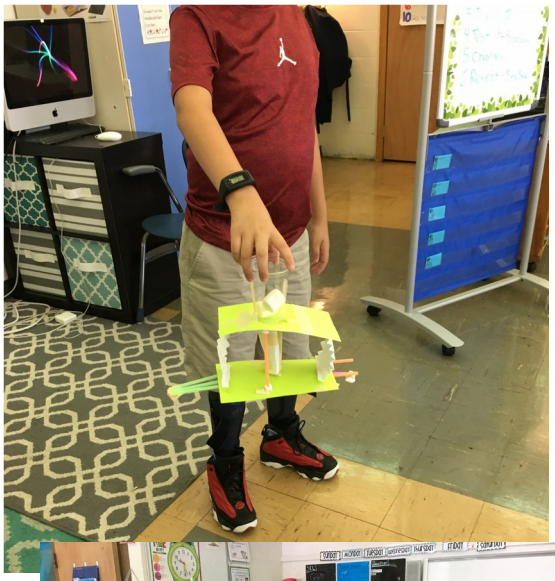

Video 1: Group 1 explaining the parts of their landers.

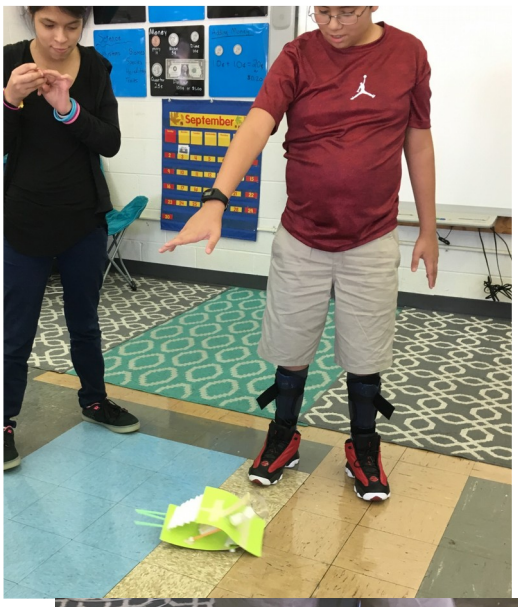
Video 2: Group 2 testing out their landers. This is their second lander design after their first lander failed. One student is easily distracted and struggles to follow directions so while his group made a moon lander, he made a paper alien. The group was going to make more adjustments and try again, but it was time to go home.

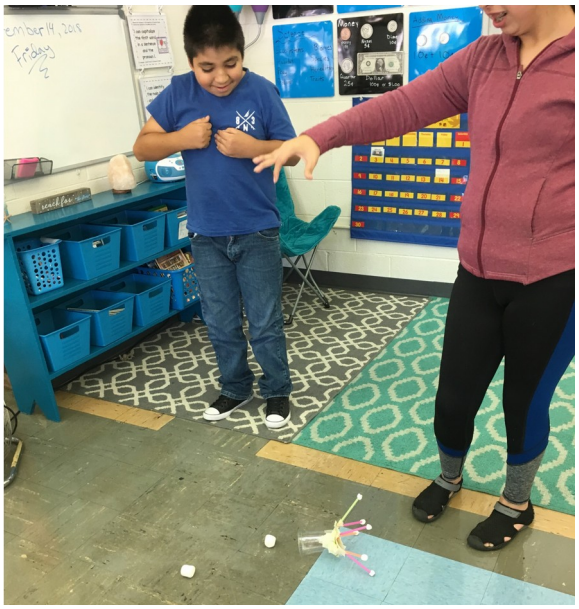
Students collaborating, brainstorming, and designing their landers:



Students testing out their landers.

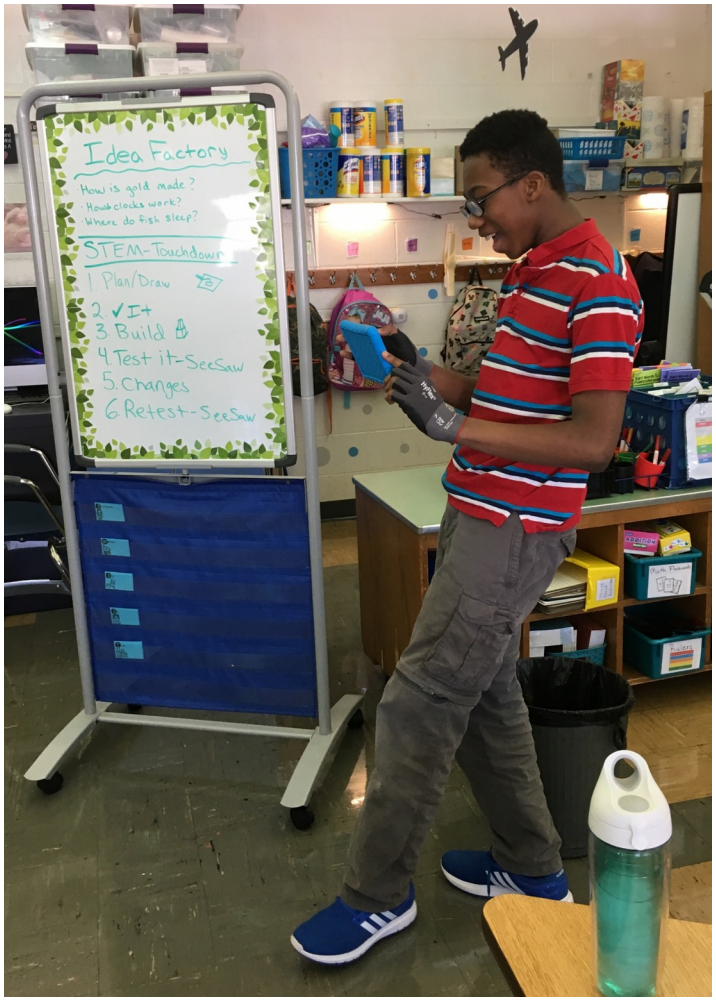






## Touchdown Activity

Students use Seesaw app on the classroom Kindles to talk about their designs and to record the testing of their landers.



References

Jet Propulsion Laboratory. (n.d.). Touchdown Activity. Retrieved on September 16, 2018 from https://www.jpl.nasa.gov/edu/teach/activity/touchdown/