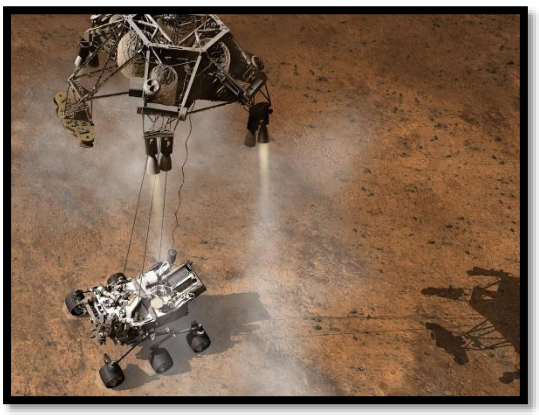
Mars Rover Lander

Procedures



- ☐ Locate a stairwell where students can drop their final projects. Place a tarp and hula hoop at the bottom of the landing zone.
- ☐ Divide students up into teams of 4 or 5.
- ☐ *(Optional)* Pass out NASA Center table tents.
- ☐ Pass out Ziploc bags with supplies.

- ☐ Quick Mars Discussion (*some suggestions*):
  - Talk about NASA's (and industry's) goal to get to Mars by the 2030's
  - Talk about the presence of Rovers on Mars
    - Curiosity Rover landed 2012
    - New rover scheduled for 2020 – name TBD.
  - Importance of landing *just* right, with the exact speed and at a desired location. You wouldn't want to land on top of a mountain or rocky terrain!

Design time!

- ☐ Provide students with 25 minutes to create their designs!
  - If an item breaks, like a balloon, it is up to the class to see if that team can "purchase" a new item with "NASA's limited budget".
  - Walk around and ask them about their designs, thought processes, their hypotheses, etc.
- ☐ When they're almost done, give them a heads-up for the "launch window".
- ☐ Have each team discuss their designs (a show-and-tell to the class)
- ☐ Have teams designate a "launch engineer" to drop their rovers

Launch Time!

- ☐ Up high, teams will drop their projects one at a time, attempting to land in the hula hoop (and tarp below).
- ☐ Bring everyone back to the classroom, checking to see if their payload/egg survived
- ☐ Discuss what happened, evaluate their structural design
- ☐ Would they do anything different, if they had more time?
- ☐ Does NASA work by themselves? Are all the teams' designs the same?

Clean-up

- ☐ Tell everyone to put the reusable materials back in the bag; throw away the rest.

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