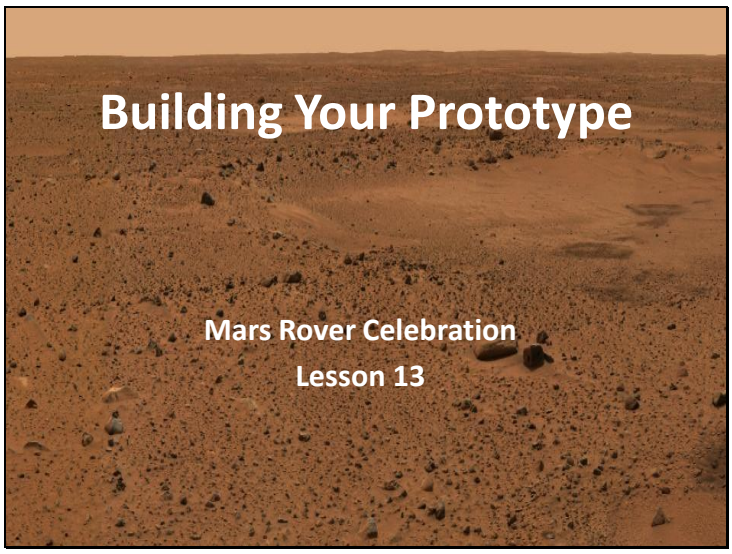
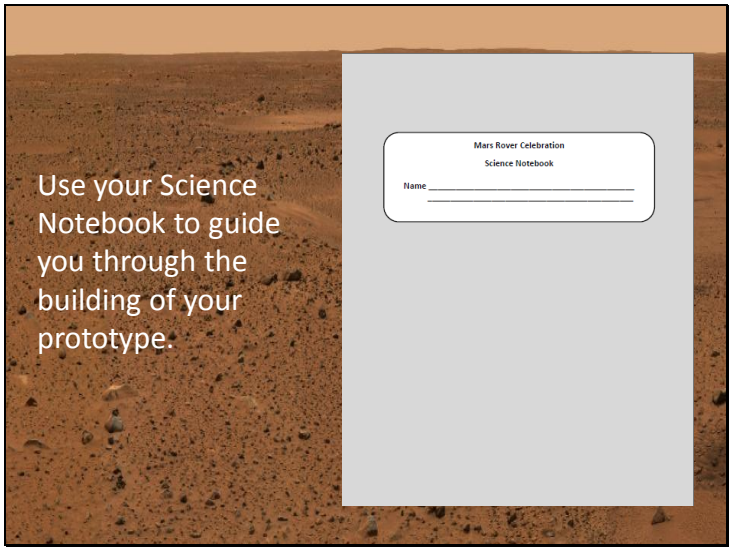
Slide 1



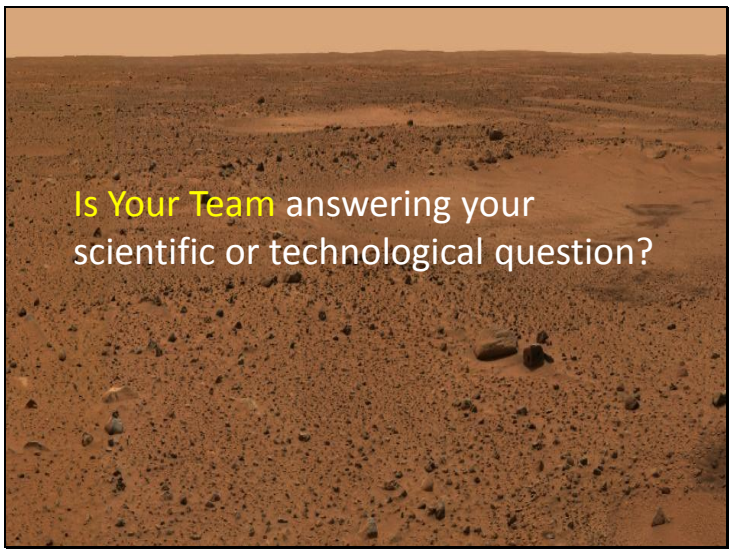
Today you will be working to build your team's prototype of your Mars Rover. As you work, reminders will be displayed on the screen so that your team can be sure to include all of the necessary elements in your prototype.

Teacher: This presentation is designed to play in a loop, providing students reminders as they work to build their rovers.

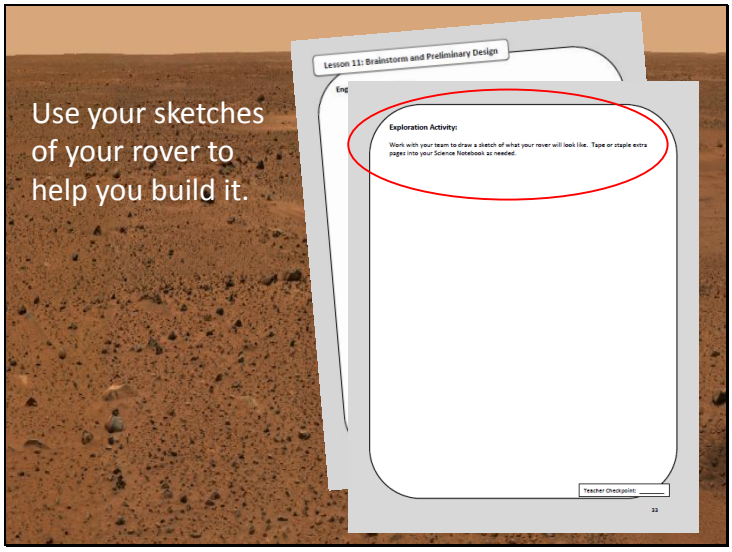
Slide 2


Use your Science Notebook to guide you through the building of your prototype.
Mars Rover Celebration
Science Notebook
Name

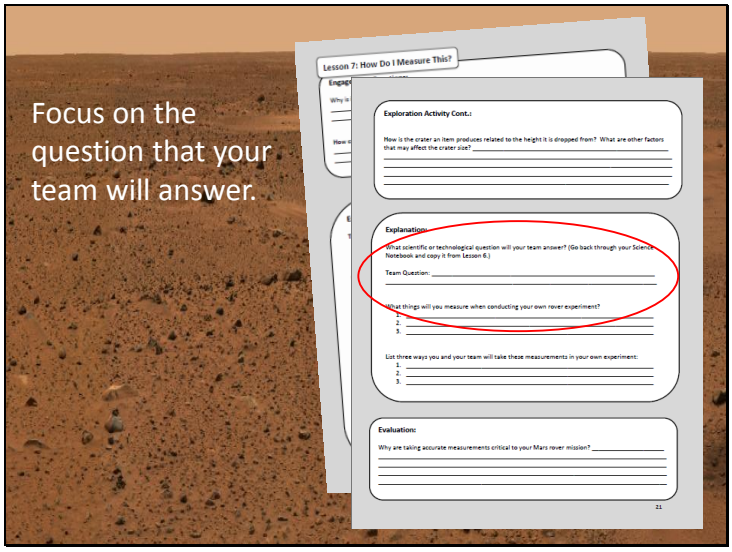
Slide 3


Is Your Team answering your
scientific or technological question?

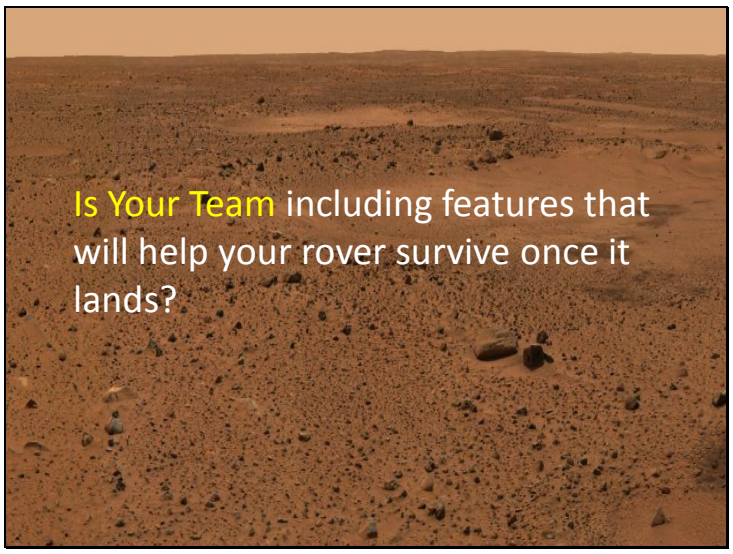
Slide 4


Use your sketches of your rover to help you build it.
Lesson 11: Brainstorm and Preliminary Design
Exploration Activity:
Work with your team to draw a sketch of what your rover will look like. Tape or staple extra pages into your Science Notebook as needed.
Teacher Checkpoint: _____
23

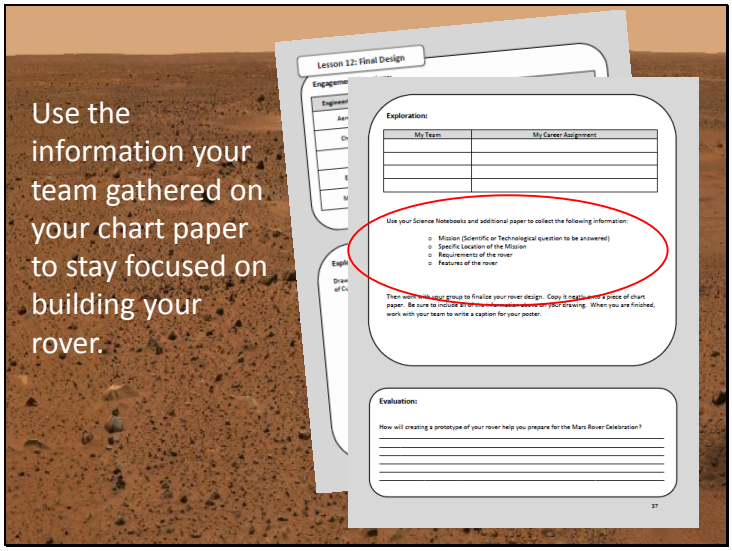
Slide 5


Focus on the question that your team will answer.
Lesson 7: How Do I Measure This?
Exploration Activity Cont.:
How is the crater an item produces related to the height it is dropped from? What are other factors that may affect the crater size?
Explanation:
What scientific or technological question will your team answer? (Go back through your Science Notebook and copy it from Lesson 6.)
Team Question:
What things will you measure when conducting your own rover experiment?
1.
2.
3.
List three ways you and your team will take these measurements in your own experiment:
1.
2.
3.
Evaluation:
Why are taking accurate measurements critical to your Mars rover mission?
21

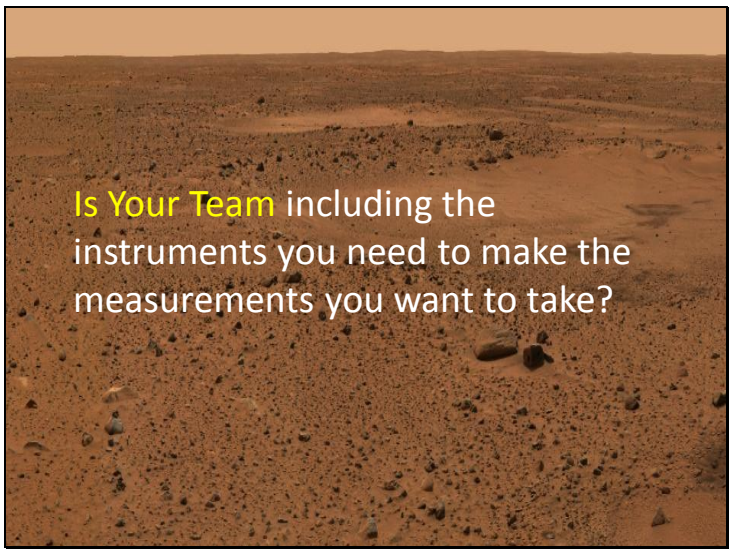
Slide 6


Is Your Team including features that will help your rover survive once it lands?

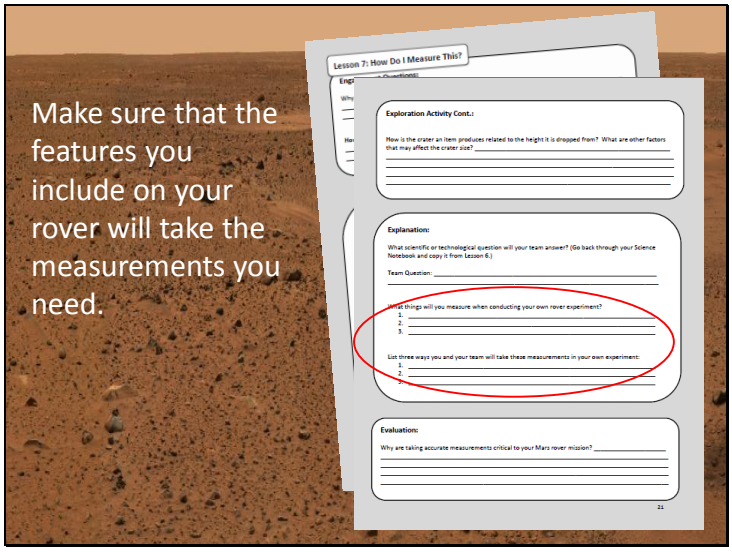
Slide 7


Use the information your team gathered on your chart paper to stay focused on building your rover.
Lesson 12: Final Design
Exploration:
My Team
My Career Assignment
Use your Science Notebooks and additional paper to collect the following information:
Mission (Scientific or Technological question to be answered)
Specific Location of the Mission
Requirements of the rover
Features of the rover
Then work with your group to finalize your rover design. Copy it neatly on a piece of chart paper. Be sure to include ALL of the features you have on your drawing. When you are finished, work with your team to write a caption for your poster.
Evaluation:
How will creating a prototype of your rover help you prepare for the Mars Rover Celebration?
37

Slide 8

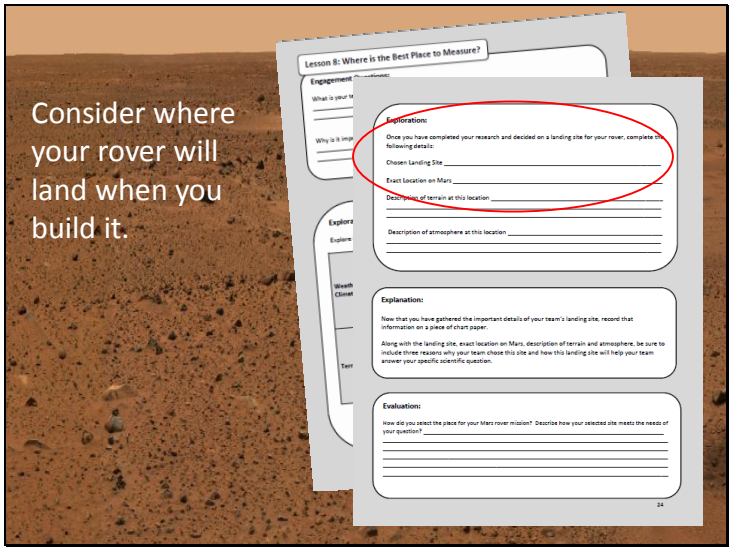

Is Your Team including the
instruments you need to make the
measurements you want to take?

Slide 9

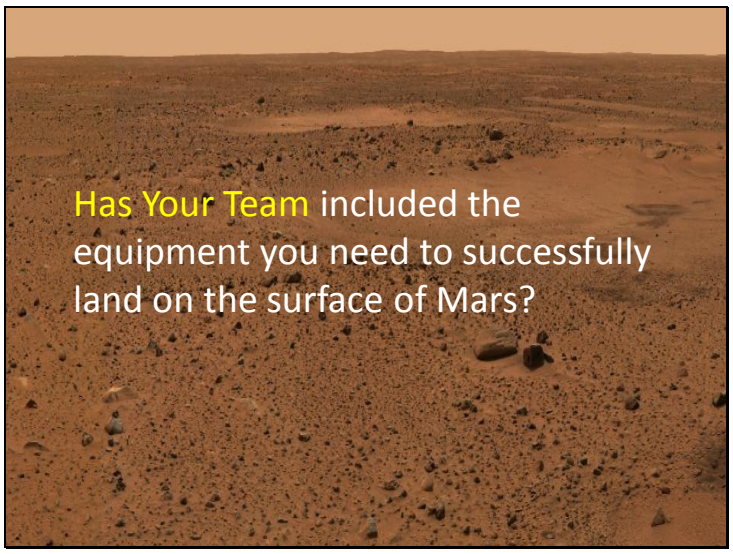

Make sure that the features you include on your rover will take the measurements you need.
Lesson 7: How Do I Measure This?
Exploration Activity Cont.:
How is the crater an item produces related to the height it is dropped from? What are other factors that may affect the crater size?
Explanation:
What scientific or technological question will your team answer? (Go back through your Science Notebook and copy it from Lesson 6.)
Team Question:
What things will you measure when conducting your own rover experiment?
1.
2.
3.
List three ways you and your team will take these measurements in your own experiment:
1.
2.
3.
Evaluation:
Why are taking accurate measurements critical to your Mars rover mission?
21

Slide 10

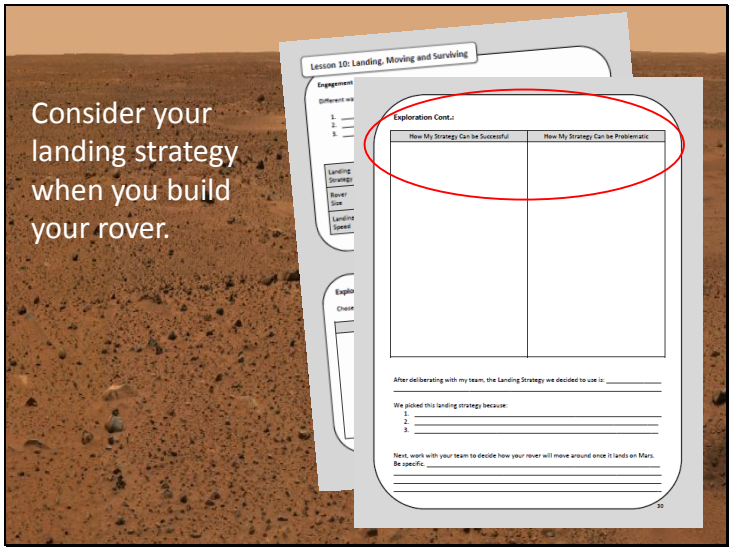
Slide 11


Consider where your rover will land when you build it.
Lesson 8: Where is the Best Place to Measure?
Exploration:
Once you have completed your research and decided on a landing site for your rover, complete the following details:
Chosen Landing Site
Exact Location on Mars
Description of terrain at this location
Description of atmosphere at this location
Explanation:
Now that you have gathered the important details of your team's landing site, record that information on a piece of chart paper.
Along with the landing site, exact location on Mars, description of terrain and atmosphere, be sure to include three reasons why your team chose this site and how this landing site will help your team answer your specific scientific question.
Evaluation:
How did you select the place for your Mars rover mission? Describe how your selected site meets the needs of your question?
24

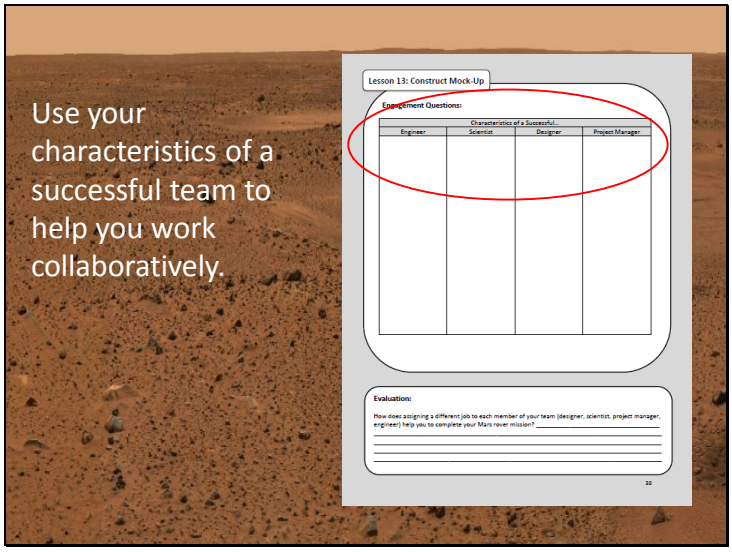
Slide 12


Has Your Team included the equipment you need to successfully land on the surface of Mars?

Slide 13


Consider your landing strategy when you build your rover.
Lesson 10: Landing, Moving and Surviving
Exploration Cont.:
How My Strategy Can be Successful
How My Strategy Can be Problematic
After deliberating with my team, the Landing Strategy we decided to use is: _____
We picked this landing strategy because:
1. _____
2. _____
3. _____
Next, work with your team to decide how your rover will move around once it lands on Mars.
Be specific. _____

Slide 14


Use your characteristics of a successful team to help you work collaboratively.
Lesson 13: Construct Mock-Up
Engagement Questions:
Characteristics of a Successful...
Engineer
Scientist
Designer
Project Manager
Evaluation:
How does assigning a different job to each member of your team (designer, scientist, project manager, engineer) help you to complete your Mars rover mission?