Back-up activity in case we have poor weather.

1. If you launched two identical rockets, and the first rocket had a load of 1 ton and the second rocket had a load of 10 tons, which would go higher?
2. What makes a rocket move?
3. How long does it take for the earth to rotate (turn) once?
4. Tell us something you learned in science bus this quarter.
5. How long does it take for the earth to orbit once around the sun?
6. We use a globe as a model of the earth. Name one way in which a globe is a good model for the earth.
7. If you were trying to find your way from East Palo Alto to San Francisco, what type of a model could you use to help you?
8. What causes the phases of the moon?
9. If we shrink the universe and everything in it so that the sun is the size of a basketball, about how large would the earth be?
10. If you wanted a rocket to move horizontally, like a car, which direction should the fuel move?
11. Which is bigger, the earth or the sun?
12. Name one thing that you would have to do differently if you lived in the space station. How would you do it?
13. How long does it take for the moon to go around the earth?
14. What are the different phases of the moon?
15. Give an example of a model. (For example, a globe is a model for the earth)
16. What is it called when the earth comes between the moon and the sun (when the earth casts its shadow on the moon)?
17. Which is bigger, Mars or the sun?
18. Imagine you make a balloon rocket like we did in class. You launch the rocket twice. Each time you blow the balloon up the same amount. The first time you tape 5 paper clips to the balloon. The second time you don't tape any paperclips to the balloon. Which time will it go higher?
19. We use a globe as a model of the earth. Name one way in which a globe is a bad model for the earth.
20. What keeps your desk on the ground?
21. How can you experience weightlessness without going into space?
22. Which is bigger, the earth or the moon?
23. An engineer builds a rocket and launches it. It only goes 10 feet into the air before falling back down. What can the engineer do to get the rocket to go higher?
24. Why does it seem like there is no gravity in the space station?
25. What is it called when the moon is between the earth and the sun (when the moon blocks the sun's light from getting to the earth)?
26. If you make a balloon rocket and tape 10 paper clips to it, it will not go up. Why? What is holding it down?
27. What do we call a scientist who studies the solar system?
28. If we shrink the universe and everything in it so that the sun is the size
of a basketball, about how far away from the basketball would the earth be?
29. Remember when we made the balloon rockets in class: what caused the balloons to go up?
30. Which is bigger, the sun or the moon?
31. Imagine you make a balloon rocket like we did in class. You launch the rocket twice. The first time you blow the balloon up so it is 5 cm in diameter. The second time you blow the balloon up so it is 20 cm in diameter. Which time will it go higher?
32. Remember when we made the balloon rockets in class: what caused the balloons to fall back to the ground after they were launched?
33. If I drop a cup full of water, will the water spill out while the cup is in the air?
34. Rank from big to small: earth, moon, sun, rocket
35. Imagine you make a balloon rocket like we did in class. You launch the rocket twice. The first time you tape the balloon to the straw with the "spout" pointing down. The second time you tape the balloon to the straw with the "spout" pointing left. Which time will it go higher?
36. If we shrink the universe and everything in it so that the sun is the size of a basketball, about how large would the moon be?

Questions for $5^{\text {th }}-8^{\text {th }}$ graders only

1. How can we measure the size of the moon? What can we use?
2. How could we measure how far away the moon is from the earth?
3. What information do you need to know to measure the distance to the moon?
4. When the space station is orbiting the earth, what keeps it from flying off into space?
