

SPACE TRAVELER CHALLENGE

AND FIDEL HELPS VETERIS CHALLENGE

Iso, Sufi and Euclid built a space vehicle to fly to the moon to establish their own colony. Veteris wants to go and to take his giant dog named Sir Fidelis Canis, or Fidel for short. Fidel is so big that he and Veteris weigh the very same amount. Euclid and Sufi will go on the mission with Veteris and Fidel, while Iso will stay on Earth. Fidel is a super smart dog and can fly the ship by himself if he has to, but the ship cannot fly itself.

Sufi and Euclid weigh the same as each other, which is exactly half of what Veteris weighs. The space ship can only carry two living things at one time, and it can only hold, as a maximum, the weight of one adult. Any more weight than one adult and it does not have the power to leave Earth's gravitational pull.

1. How do they get everyone to the moon? How many round trips does it take?
2. What if Fidel doesn't like Sufi and will bite her if they are left alone? Can you still get everyone to the moon?

Veteris has been injured and his dog Fidel has the medicine to fix him. Use your robot (ozobot) to go get Fidel! There are secret tunnels in the city that you will create with lines and there are barriers and traps that must be avoided!

- a. Draw a circle, which will be the starting point that.
- b. Create 4 barriers, each of paper that is exactly 1 inch in width (north to south) and 4 inches long (east to west)
 - i. On one write BLOCK, draw a creepy image, and put a dot in the center
 - ii. On one write PIT, draw a sad image, and put a dot in the center
 - iii. On one write GUARD, draw a strong image, and put a dot in the center
 - iv. On one write VALLEY, draw a dark image, and put a dot in the center
- c. Place the barriers as follows, look at the map to confirm
 - i. Place the Blockade with its dot 10 inches to the East and 4 inches south of the start point
 - ii. Place the Pit of Despair with its dot at the same longitude (north south) as the beginning of the line for the start of the robot, and 10 inches south of the start point, check the map
 - iii. Place the Guard Station with its dot 10 inches to the East and 8 inches south of the start point
 - iv. Place the Valley of Death with its dot 10 inches to the East and 17 inches south of the start point

- d. Draw a circle that is 10 inches to the East and 24 inches to the South of your start circle, look at the map. That is Fidel.
- e. Using your solution to the Ship getting the team to the moon, do the following:
 - i. Every time you cross from the Earth to the Moon, draw a line West to East that is 10 inches long
 - ii. Every time a kid gets off the ship on the Moon, turn right 90 degrees, draw a line forward 3 inches, turn right 90 degrees
 - iii. Every time you cross from Moon to Earth, draw a line East to West that is 10 inches long
 - iv. Any time anyone gets out of the spaceship to get on Earth, turn left 90 degrees, draw a line forward 2 inches, turn left 90 degrees
 - v. Any time an adult (or dog) is dropped off on the Moon, turn right 90 degrees, draw a line forward 2 inches, turn 90 degrees
- f. Set your robot to follow the lines you drew. Set the robot to the edge of the circle that is the Start. Tell the robot to go! If you got it right, the robot will avoid every barrier and get to Fidel for the medicine.

