

PROBLEM STATEMENT: Designing a shelter for those living on Kepler 1649c. Ideating the living space and other utilities such as clothing and food.

Abstract for solution:

"This intriguing, distant world gives us even greater hope that a second Earth lies among the stars, waiting to be found," said Thomas Zurbuchen, associate administrator of NASA's Science Mission Directorate in Washington. Like he said, we can hope for a second earth unless we make changes to the planet. So, here we are working on this planet called Kepler 1649c that revolves around a red dwarf star Kepler 1649.

Kepler 1649c is similar to earth in size and receives 75% of the light from its host star. So assuming the atmospheric conditions to be similar to that of the earth, existence of life is possible.

Although, Kepler 1649c receives frequent stellar flares. To tackle this, whole house surge protectors could be used to protect from lightnings and other power surges. Other household items can be protected from flares by placing them in cardboard boxes covered in aluminium foil.

The temperature of Kepler 1649c is assumed to be 22 degrees celsius on a general note. So, the clothing could be just anything that's worn on earth when the temperature's around the same.

Assuming the existence of water and considering the rocky texture of the soil, potatoes are the best food that can be grown. Required nutrients can be added artificially to the soil.

General conditions on Kepler 1649c:

- 1) Rocky texture of soil
- 2) General temperature ranging from 19-22 degreescentigrade
- 3)Frequent satellite flares
- 4)

Shelter

Housing

There can be two types of housing depending on whether atmosphere exists or not. When atmosphere exists, regular houses can be built considering the rocky texture of the soil. When atmosphere doesn't exist we require pressurised shelter. We need to build airtight rooms and create breathable conditions inside artificially.

Food

Plants can be grown by importing chemicals and nutrients. Also solid waste(human excreta), liquid waste can be used as manure. Since the texture of the soil is rocky, plants that can be best grown are potatoes, cherry tomatoes and zucchini. Natural light from Kepler 1649 is plentifully available for the growth of these plants. (Water existence is assumed)

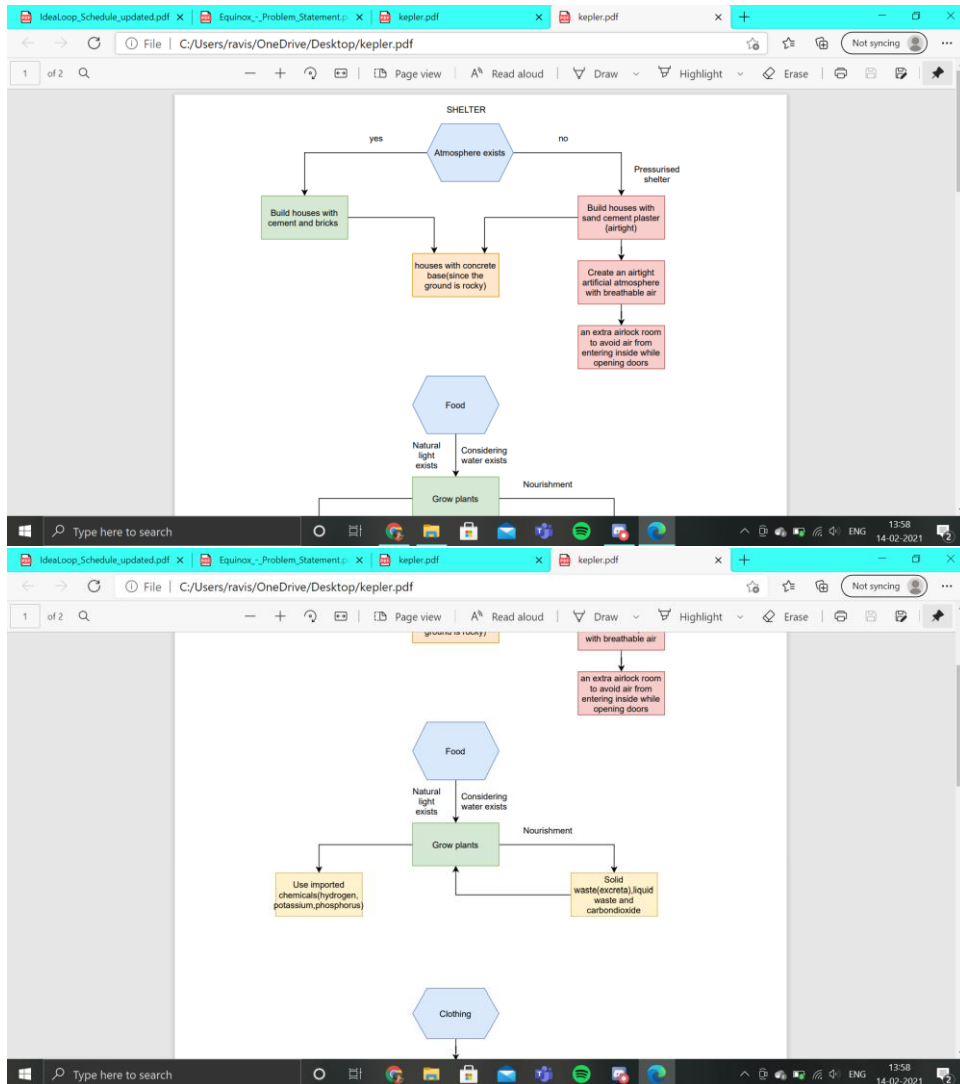
Clothing

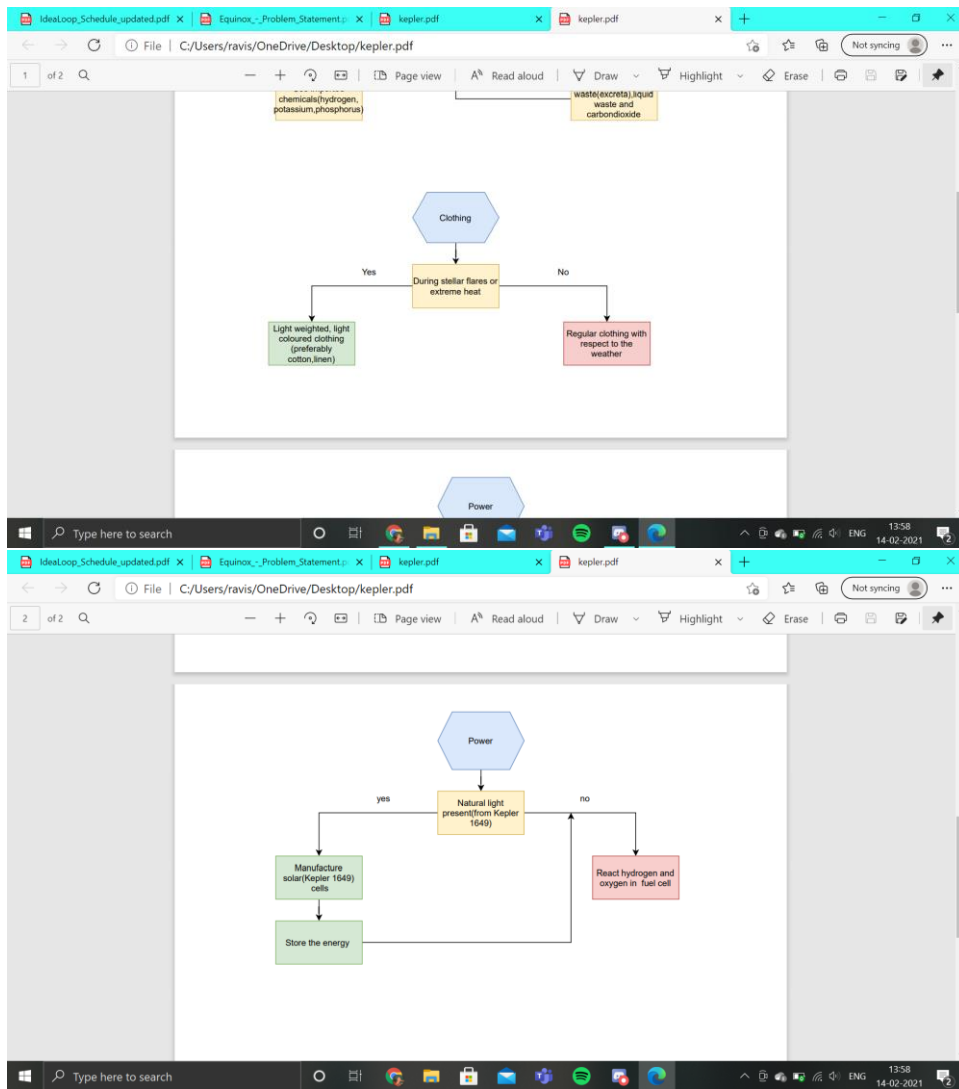
Frequent satellite flares occur on Kepler 1649c. During Satellite flares and extremely hot conditions light weighted and light coloured clothes can be worn. Otherwise the temperature usually ranges between 19-22 degrees celsius so,regular clothes can be used. Spfs can be used to protect skin during flares.

Power

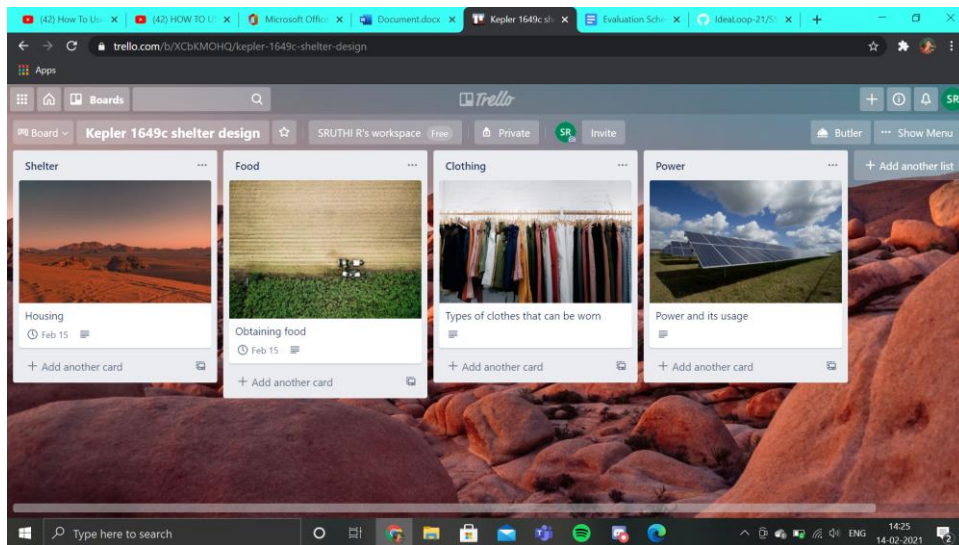
Solar (Kepler) panels and cells can be installed during the day. The energy obtained during the day can be stored for usage at nights. Otherwise when natural light is not available hydrogen and oxygen can be reacted in a fuel cell.

Pictures of drawio





Screenshot of my trello board



Link to my trello board:

<https://trello.com/b/XCbKMOHQ/kepler-1649c-shelter-design>