

SPACE EXPLORATION PROJECT



SPACEX

CREW DRAGON LAUNCH



- After nearly two decades of effort, Space X successfully launched its first two people into orbit on Saturday the 30th May 2020.
- The two astronauts; veteran NASA fliers Bob Behnken and Doug Hurley rode into space inside SpaceX's new automated spacecraft called the Crew Dragon, a capsule designed to take people to and from the International Space Station. Strapped inside the sleek, gumdrop-shaped capsule, the duo lifted off on top of SpaceX's Falcon 9 rocket from NASA's Kennedy Space Center in Florida on Saturday.



WEEK 1
WATCH THE 4 VIDEOS



WATCH THE VIDEO



<https://www.youtube.com/watch?v=TxBj8R7XKe4>



THE PAST



THE APOLLO MOON MISSION

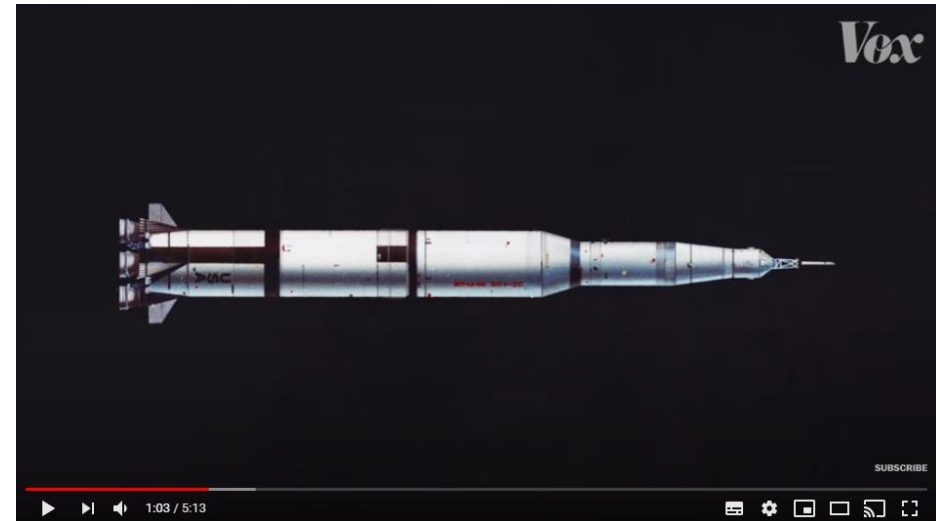


- Apollo 11 was the spaceflight that first landed humans on the Moon. Commander Neil Armstrong and lunar module pilot Buzz Aldrin formed the American crew that landed the Apollo Lunar Module Eagle on July 20, 1969
- The moon landing was watched by an estimated 600 million people around the world.
- The landing site that Apollo 11 crew had chosen was an area called the Sea of Tranquillity, which looked smooth and safe for landing. This isn't a sea as we know it. It's a lunar mare – a large plain formed long ago by a volcanic eruption.

COOL VIDEO ABOUT THE LANDING



<https://www.youtube.com/watch?v=OCjhCL2iqIQ>



THE SATURN V ROCKET



- The Saturn V rocket was the rocket of choice for the Apollo moon missions including Apollo 11 in 1969.
- Saturn V remains the tallest, heaviest and most powerful rocket ever flown.
- The 5 F1 engines pushed the 3000 Tonne vehicle to over 8000 KPH. Burning more fuel in 10 seconds than most people use in their lifetime.
- At the height of the Apollo Luna project there were around 375,000 people working on the project to get the “Saturn V” Rocket off the ground.



WATCH THE SATURN V LAUNCH



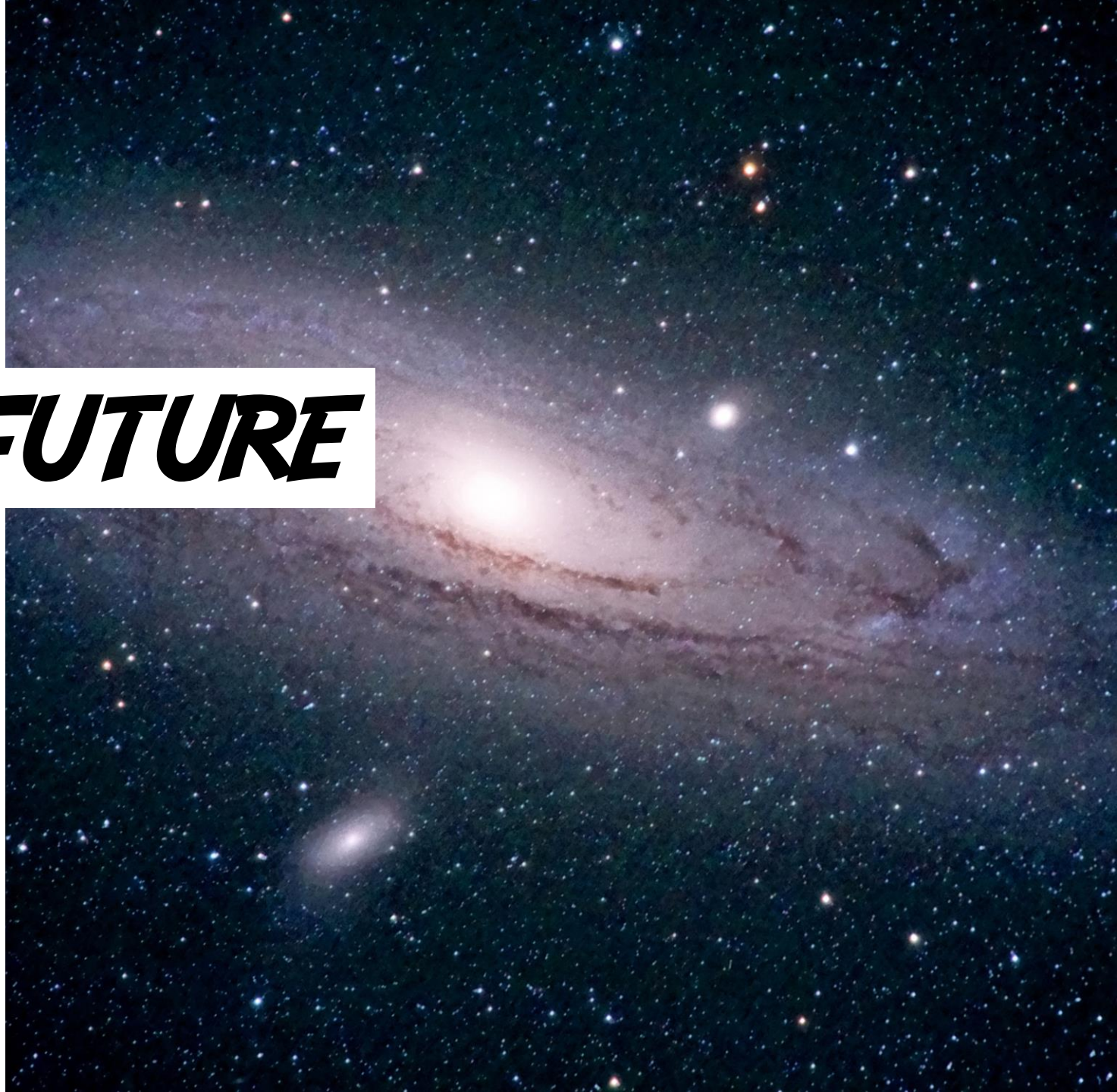
<https://www.youtube.com/watch?v=lwn4LVVvAUQ>



THE FUTURE



SPACEX



A photograph of Elon Musk, wearing a dark suit, white shirt, and dark tie. He is holding a small, silver, cone-shaped model of a spacecraft in his hands. The background is slightly blurred, showing an indoor setting.

ELON MUSK

Elon Musk owns Tesla and also SpaceX.

The SpaceX programme are developing a number of different spacecraft such as the Dragon to loan to NASA to use for space missions.

Elon Musk believes that humanity needs to expand out as soon as possible, because the current window of opportunity might not last too long.

“Earth has existed for around 4.5 billion years. Humans have only existed on Earth for a fraction of that time, and the species may only have a few hundred million years of existence left.”

The SpaceX logo, featuring the word "SPACEX" in a bold, blue, sans-serif font, followed by a stylized grey swoosh that curves upwards and to the right.

SPACEX

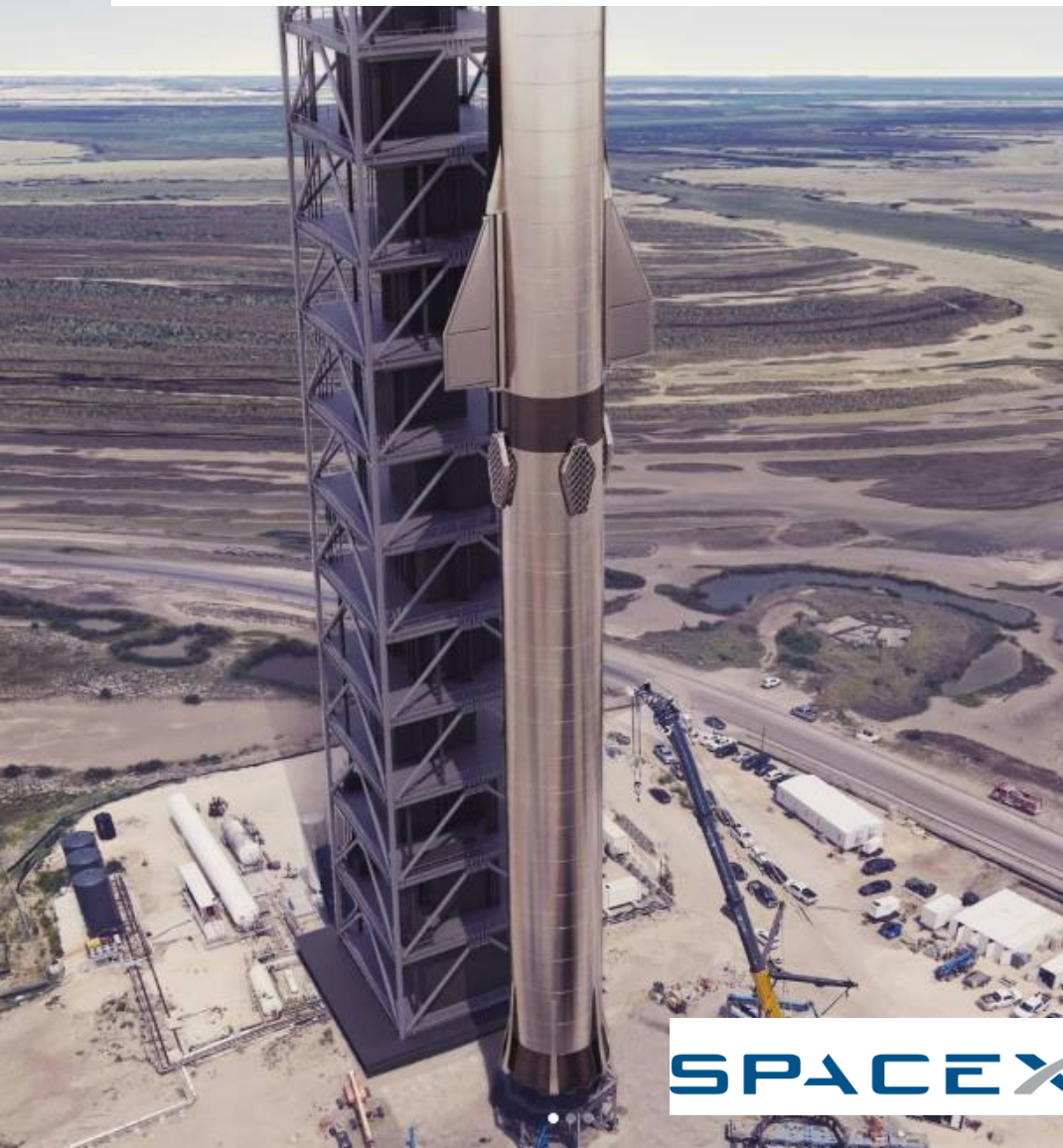


THE SPACE X STAR SHIP

- SpaceX's Starship, the giant stainless steel rocket under construction at a facility in Texas, is shaping up to be one giant machine. A concept render highlighted by Elon Musk has captured the sheer scale of this machine in new detail.
- The fully-reusable rocket is designed to send humans to Mars and beyond, with the impressive ability to send up to 100 people into space at once. When paired with the Super Heavy booster that enables it to leave the Earth, the whole construction is set to measure nearly 400 feet.

SPACEX

WATCH THE VIDEO



SPACEX

<https://www.youtube.com/watch?v=FYU-N2RWfso>

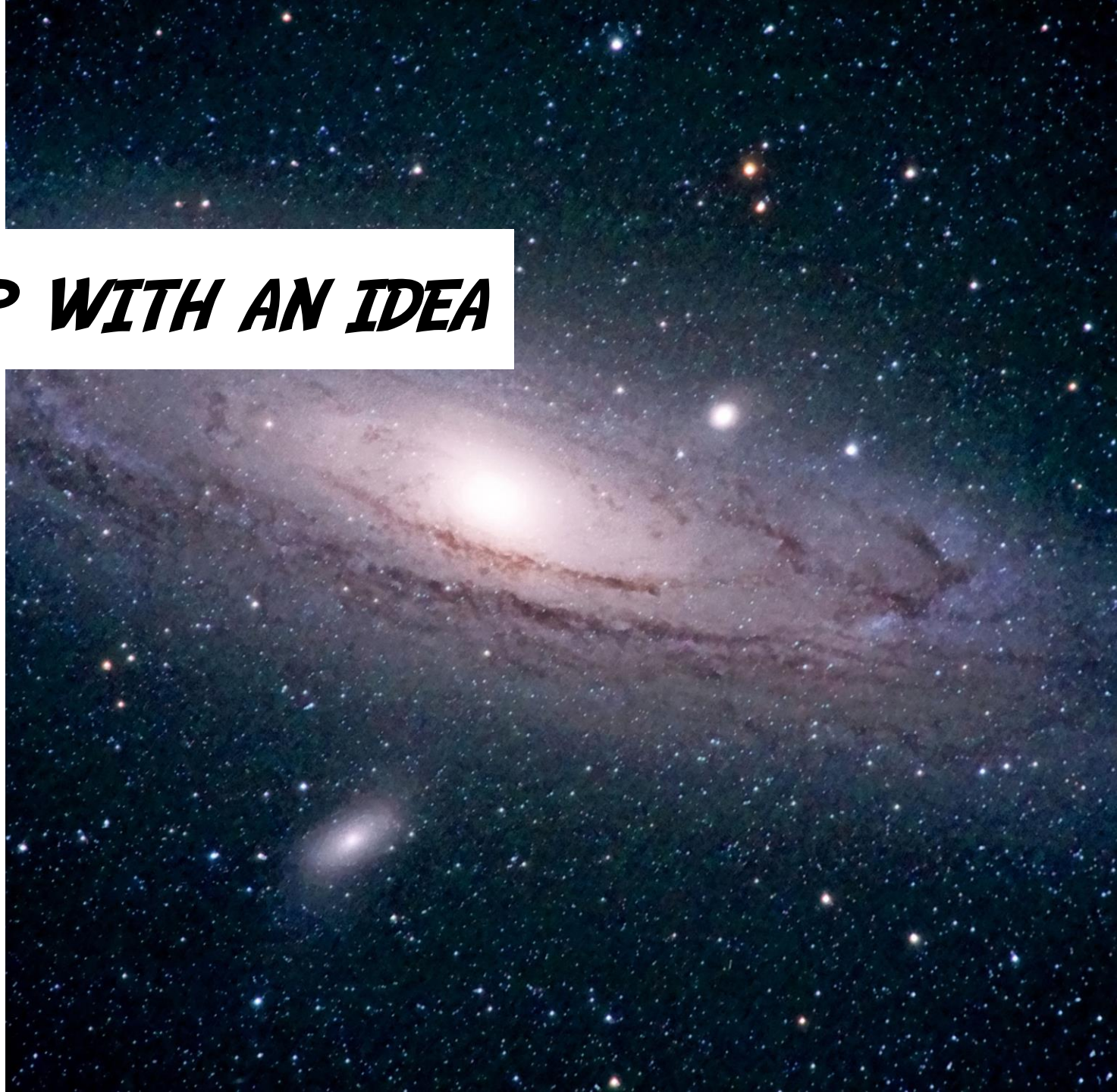


WEEK 2

COME UP WITH AN IDEA



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NASA'S PLAN

NASA is currently working on a programme called “Artemis”

“With the Artemis program, NASA will land the first woman and next man on the Moon by 2024, using innovative technologies to explore more of the lunar surface than ever before. Then, we will use what we learn on and around the Moon to take the next giant leap – sending astronauts to Mars.”

<https://www.nasa.gov/specials/artemis/#late>



HUMANITY'S RETURN TO THE MOON

YOUR MISSION

Before humans travel to and settle on Mars, NASA must practice with the Moon. The moon is closer and cheaper to get to and also easier to live on.

You are going to design a Moon base that the first group of humans will live on to practice for living on Mars.

You need to draw out some ideas and then a final idea with annotation.

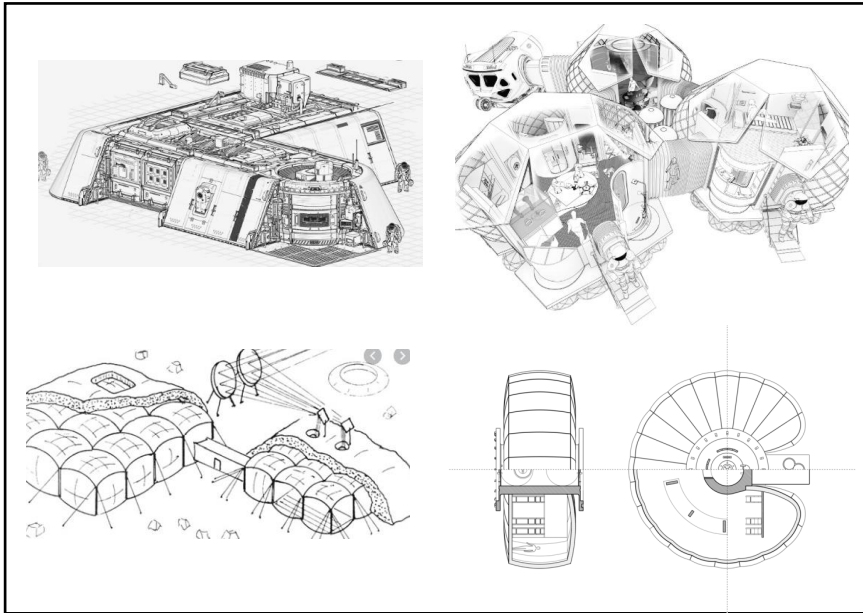


YOUR MISSION

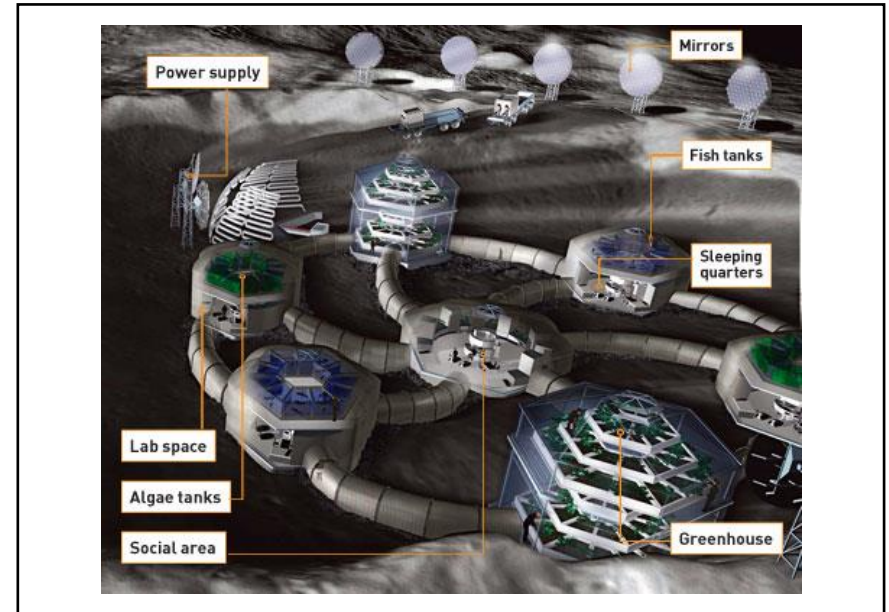
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Design Ideas Page:



Final Design Page:

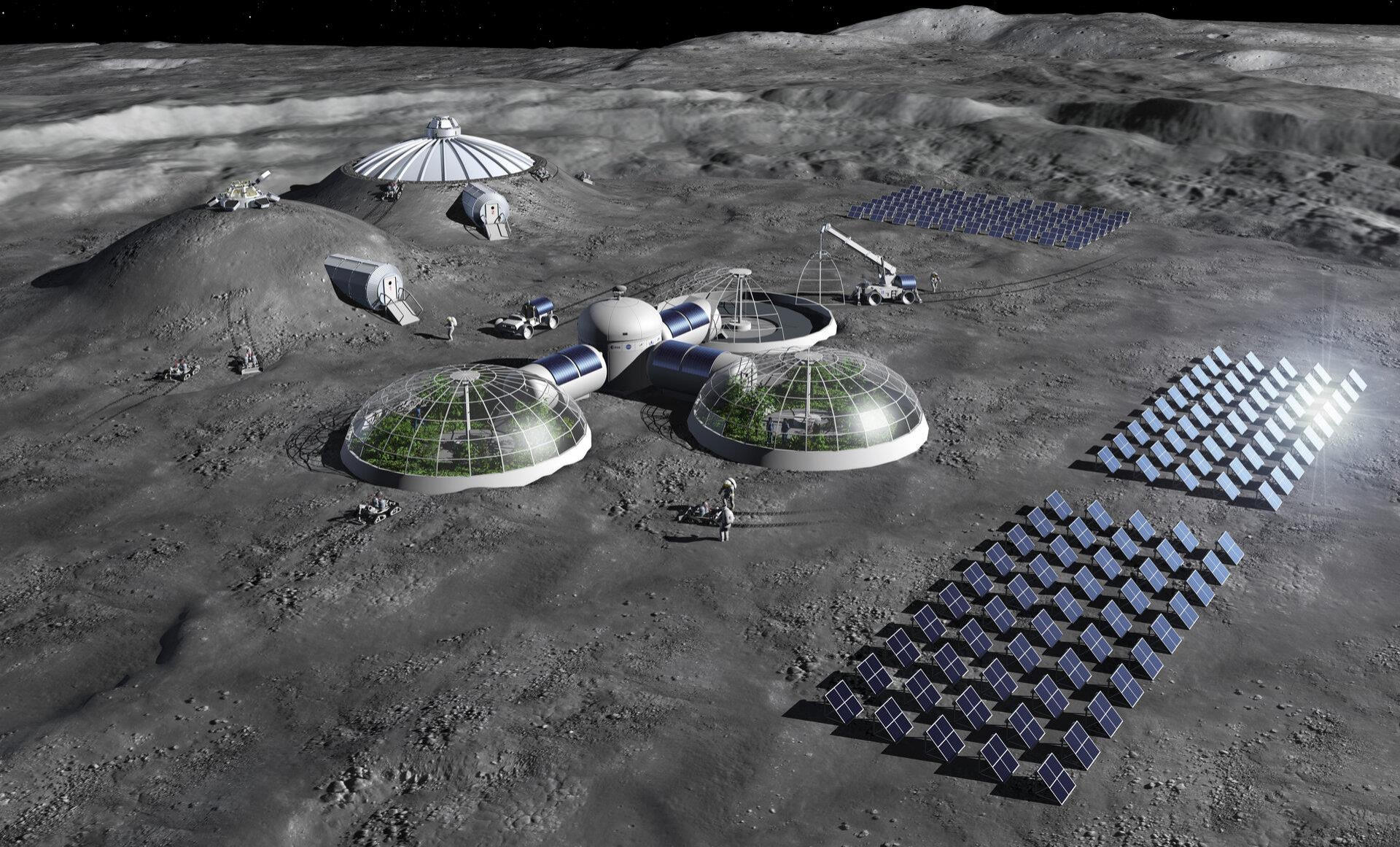




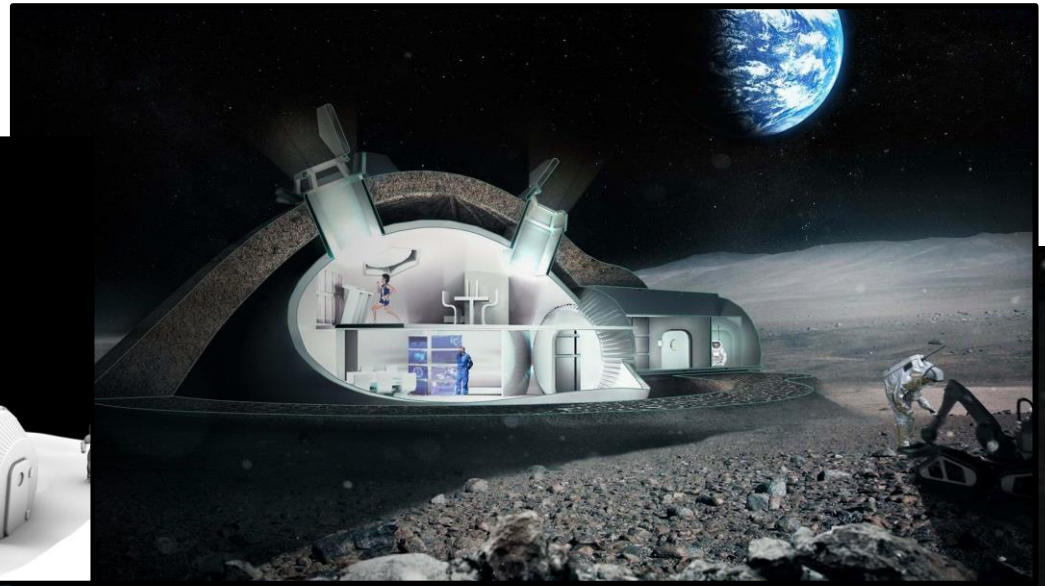
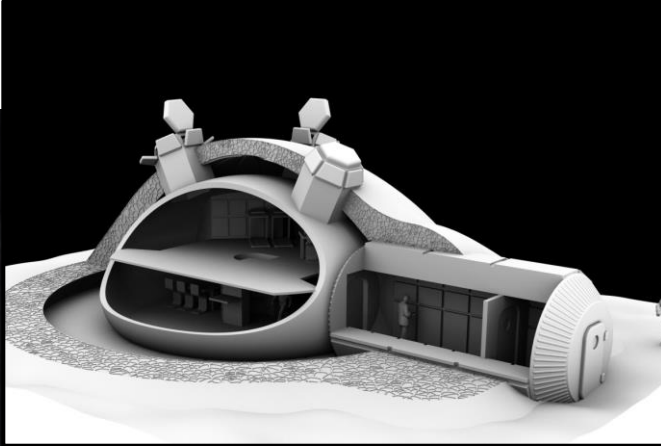
WHAT IS NEEDED ON THE MOON BASE?

- Power supply
- Living quarters (Kitchen / Sleeping area)
- Social Area
- Area to grow crops / Food
- Scientific laboratory
- An area for vehicles and spacecraft to dock to the base
- Landing Pad

IDEAS

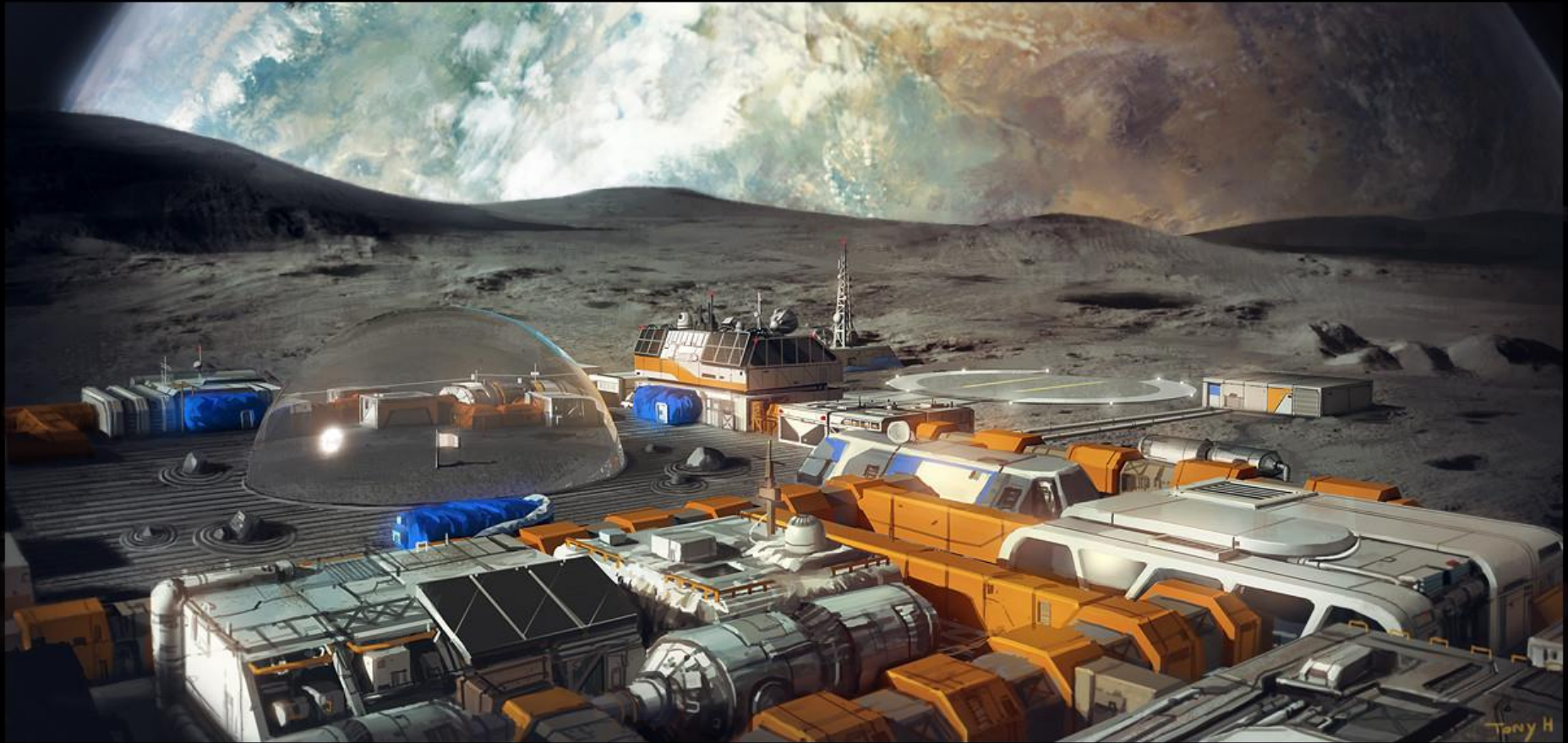


IDEAS

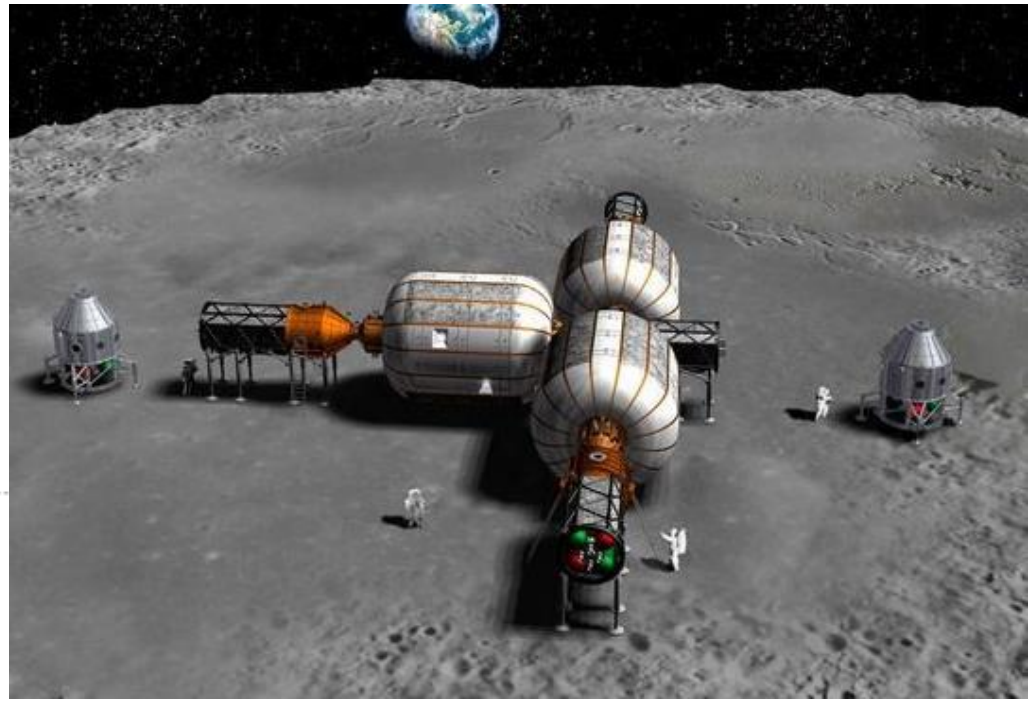
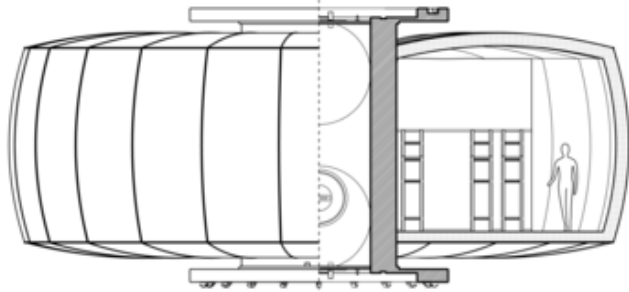
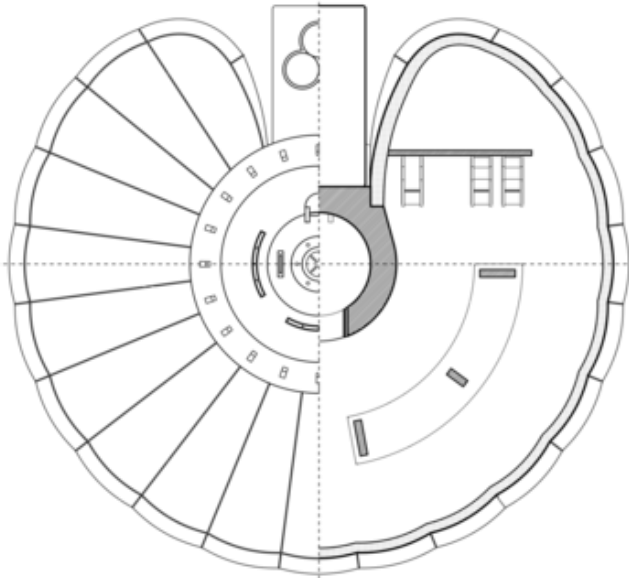


IDEAS

PROJECT VERONA Moon Base



IDEAS



WEEK 3

MAKE A MODEL



TIME TO MAKE A MODEL

Now you need to model your final design idea. Be creative and use things you find around the house:

Egg Cartons

Tin Foil

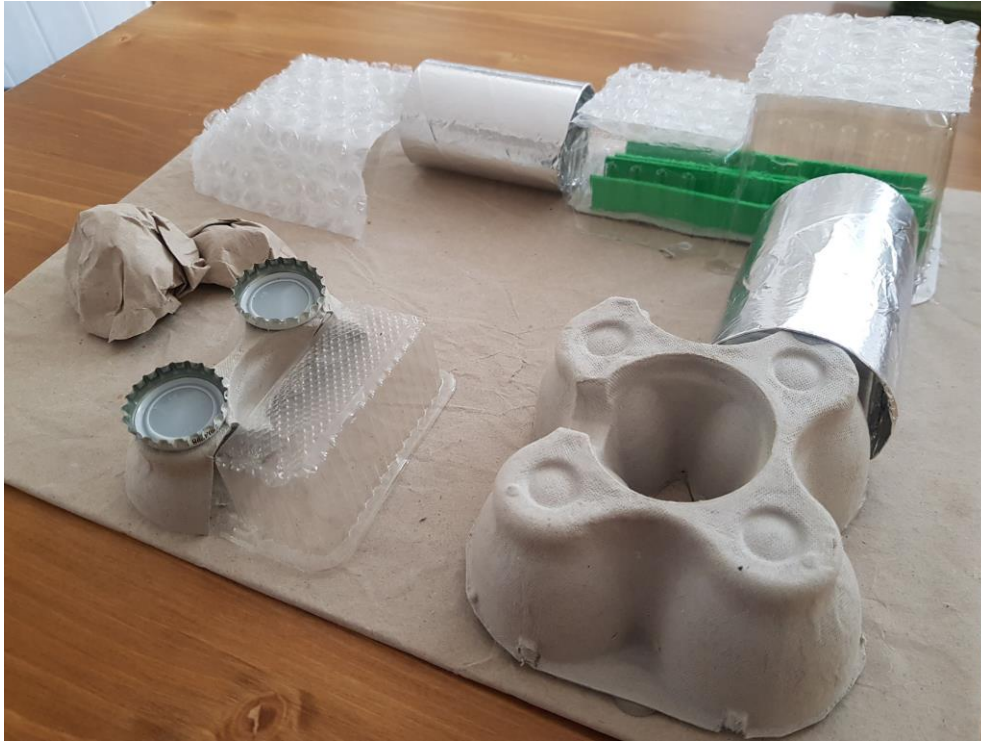
Bottle tops

Plastic Trays

Toilet roll tubes



EXAMPLE MODEL

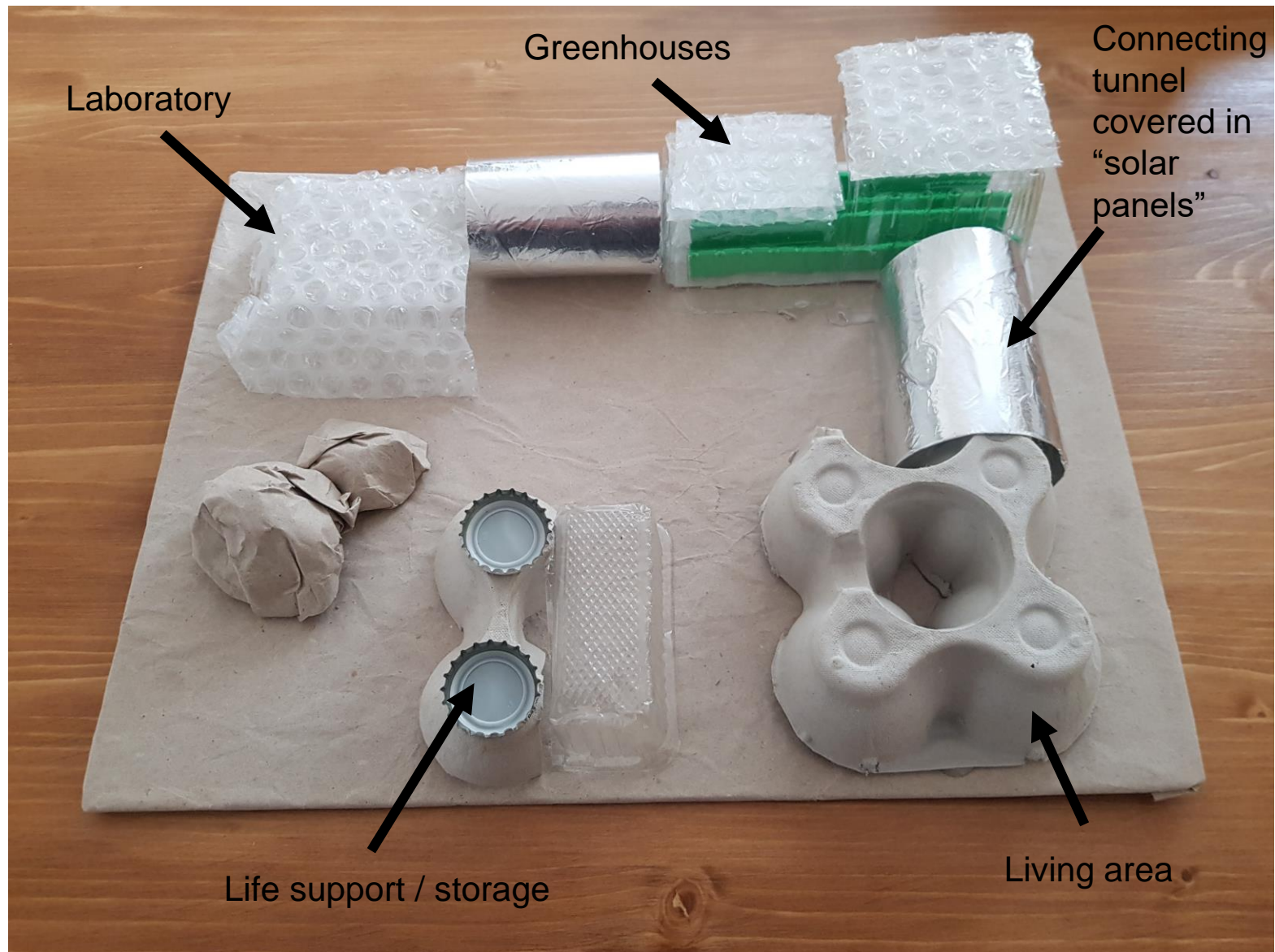


Here is my example moon base that I have made. I used Lego people for scale (A storm trooper and Dr Freeze from Batman). Wrapping toilet roll holders in tinfoil works really well and egg cartons look very "Moony".



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EXAMPLE MODEL

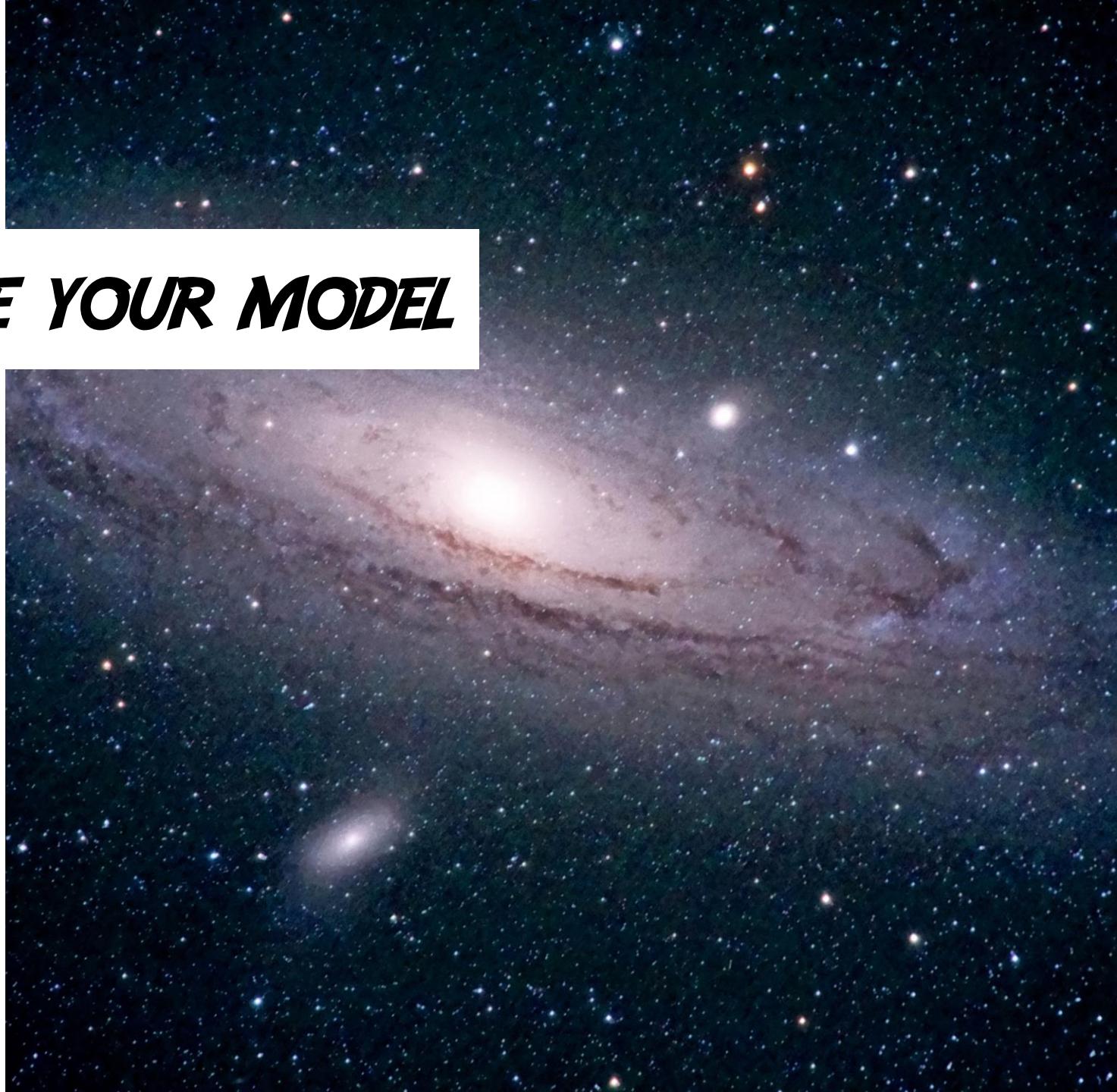


WEEK 4

EVALUATE YOUR MODEL



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EVALUATION

Finally you need to evaluate your final design idea / model using the following key words:

Form – How it looks, why does it look like this?

Function – How well does your moon base function? What different areas are there and why is this good?

Materials – What will you have to think about in terms of materials for your design?

Environment - How will your design be perfect for the moon?

Safety – How will you make sure your design is safe?



EVALUATION

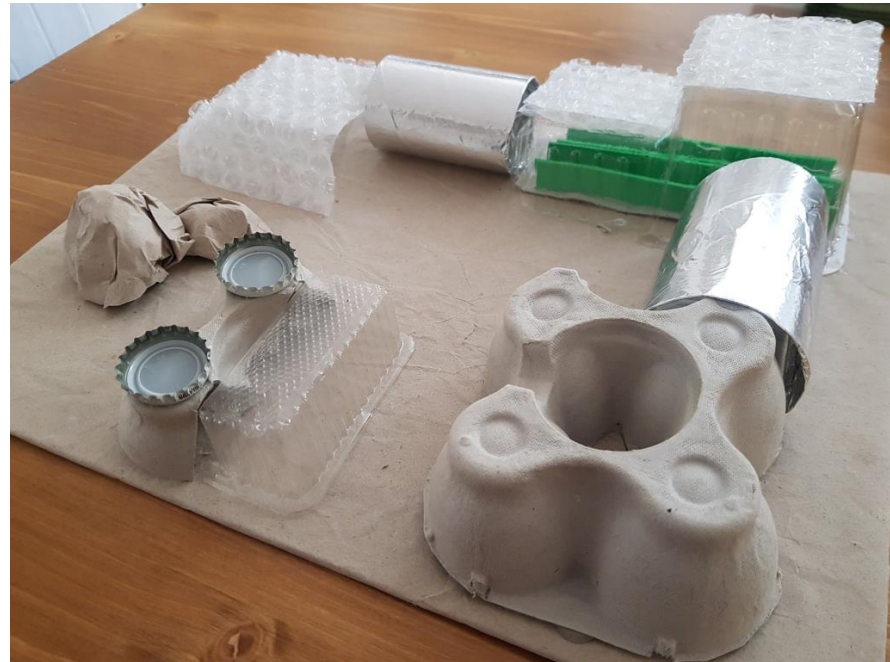
Function: My design has a large area for sleeping and eating. The laboratory and the greenhouses are together for convenience. The green house has different height buildings for growing different foods. The connecting tunnels are all covered in solar panels as this would be the main power source on the moon.

Materials: Because the weather is so extreme on the moon, the buildings have to be made from materials which can withstand very low and very high temperatures.

The material used would also need to be able to flat pack or inflate so that they can be transported from earth

Form: My design uses buildings which are would not ruin the landscape of the moon and would try to blend in. The buildings are all quite low down so that the habitat could fit inside a lunar crater.

Environment: On the moon there are lots of cosmic rays and meteorites. The best solution for this complex would be for it to be built in caves or in a crater. This would provide natural cover.



Safety: There would need to be airlocks on any buildings where astronauts came in from outside. There would also need to be part of the complex that was separate from the rest of the buildings for the astronauts to stay in case of emergency. The right amount of food would have to be grown so that they didn't starve.

***PLEASE EMAIL YOUR
COMPLETED WORK EVERY
WEEK TO YOUR TEACHER,
PHOTOS WILL DO JUST
FINE!***



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