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Play · Experience · Learn

Review

What is it like on the Moon

- Craters
- No air
- Temperature ~~100°~~ ^{-173°C to 127°C}
- Doesn't produce light
- Mountain
- Flats (sea)

What we need to live on the Moon

- ✓ Shelter
- ✓ Power
- ✓ Food
- Water
- Communications
- ✓ Tools / eqp
- Transport
- ✓ Air

Review

Food

- We need food to survive
 - 1.7kg per day for an adult!
- Very expensive to send food to the moon!
- Better to grow our own!



Astronaut Peggy Whitson harvests cabbage aboard the International Space Station



Our own Chinese Spinach growing in our center under artificial light!

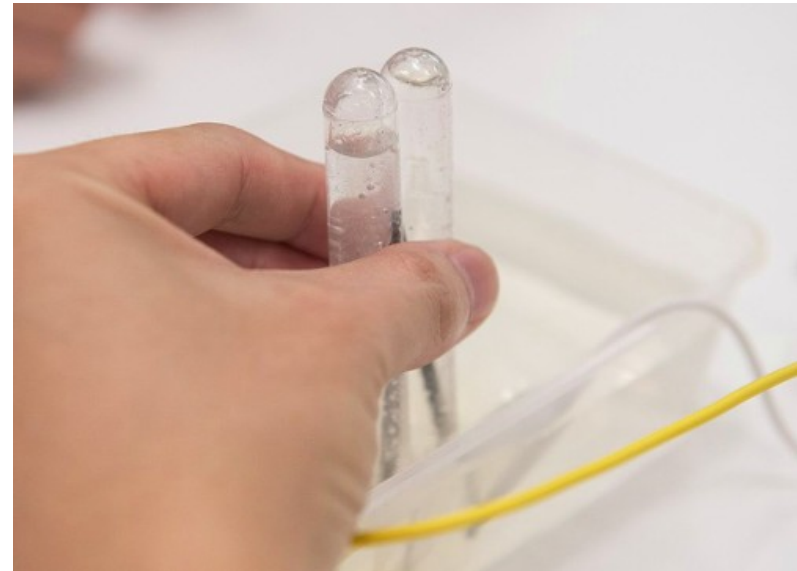
Review

Air

- Mixture of Oxygen, Carbon Dioxide, Nitrogen
- Humans need Oxygen
- Can make oxygen and hydrogen from water!



Elektron system on the International Space Station

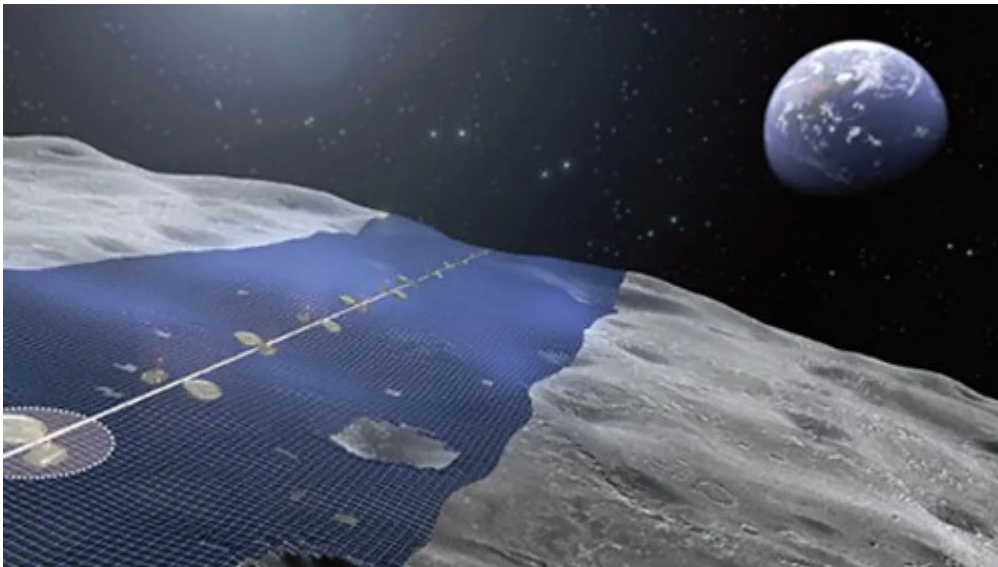


Making Hydrogen and Oxygen in our center

Review

Power

- Need power for lights, making oxygen, temperature control, grow food, etc
- Can get lots of power from the sun!



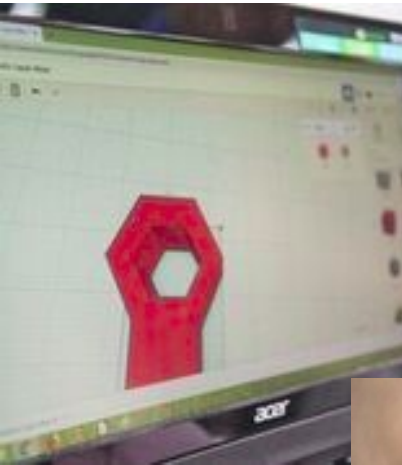
Possible solar panels on the moon



Review

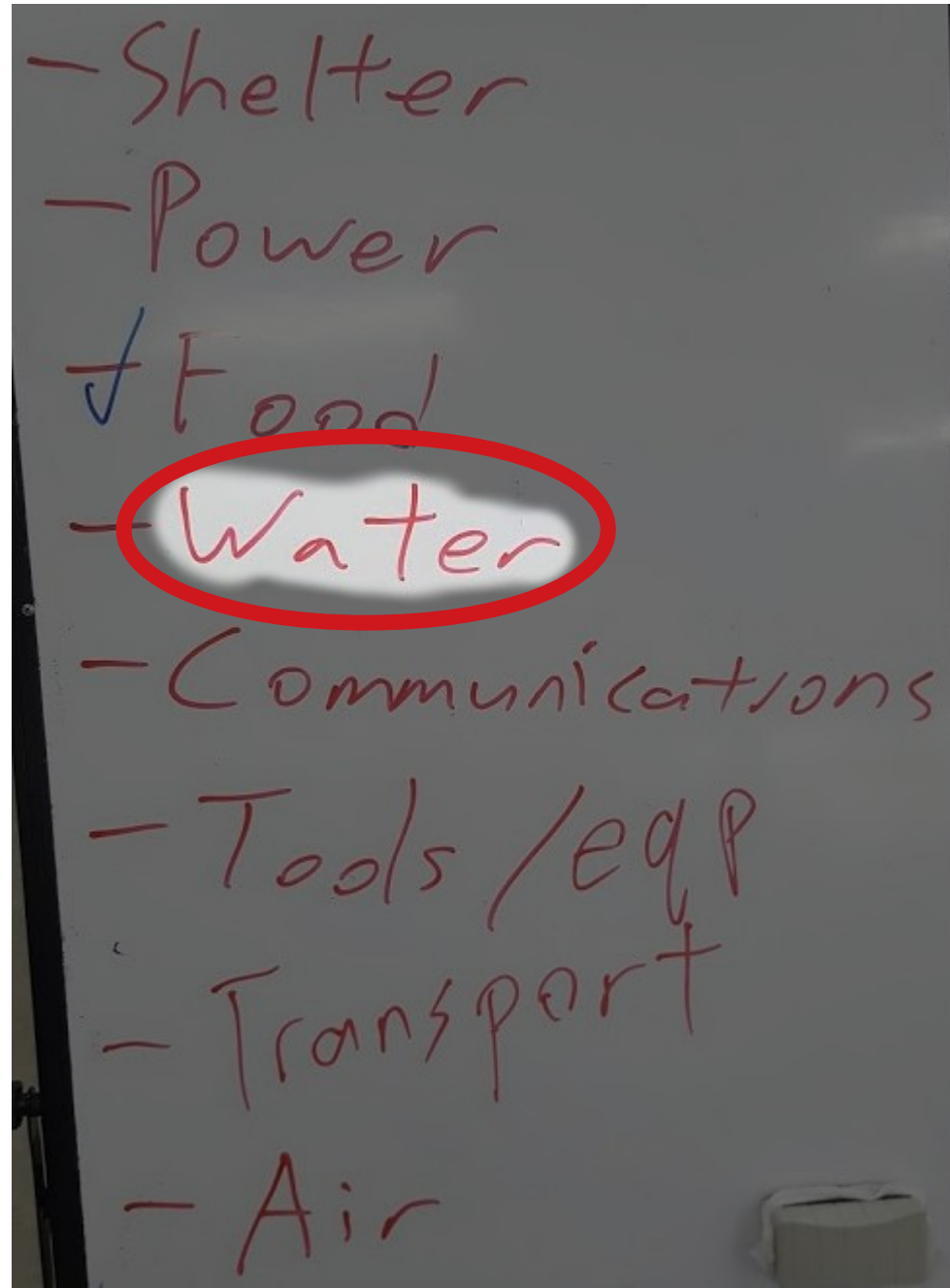
Tools and Shelter

- 3D print the tools that we need in space
- 3D print shelter using materials on the moon



Plan for Today!

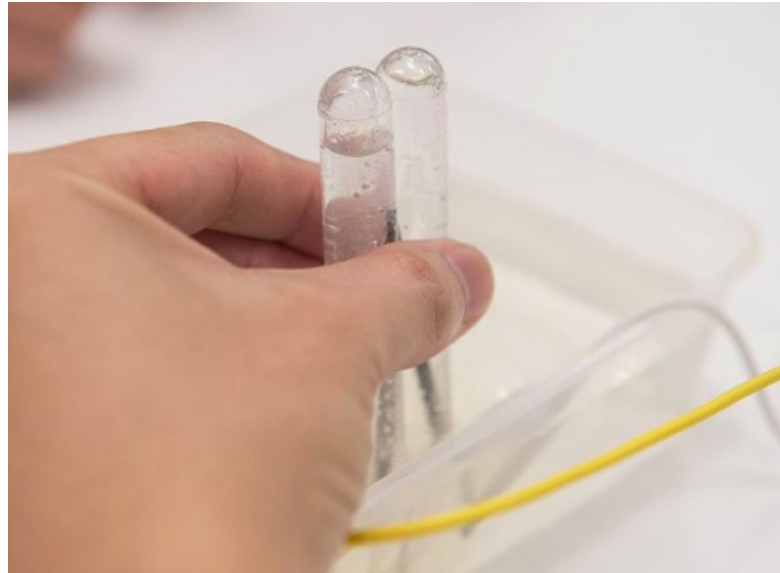
- Learn about getting water on the moon
- Experiment:
 - Extracting water from minerals
- Poster:
 - Complete “Show Me” poster
- Lego:
 - Build our moon base!



Why do we need water?



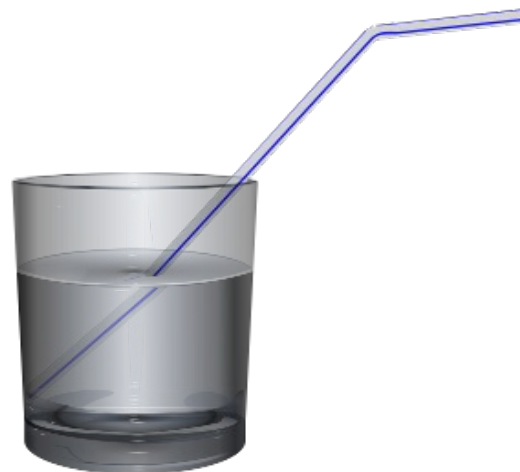
Cooking



Making Oxygen and Hydrogen



Watering Plants



Drinking



Showering

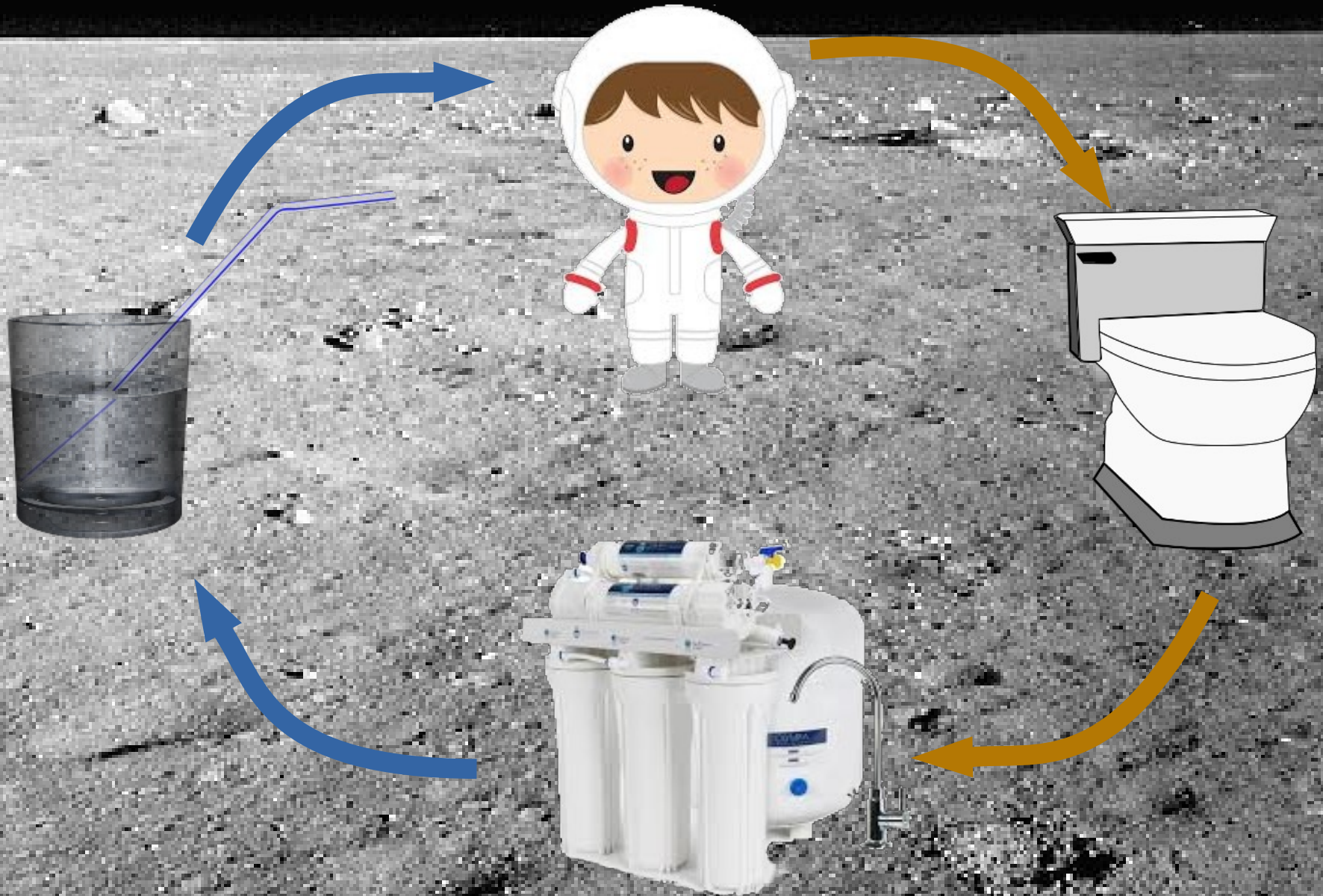
How to get water on the moon?

3 Ways

- Recycle
- Polar Ice
- Water of Hydration

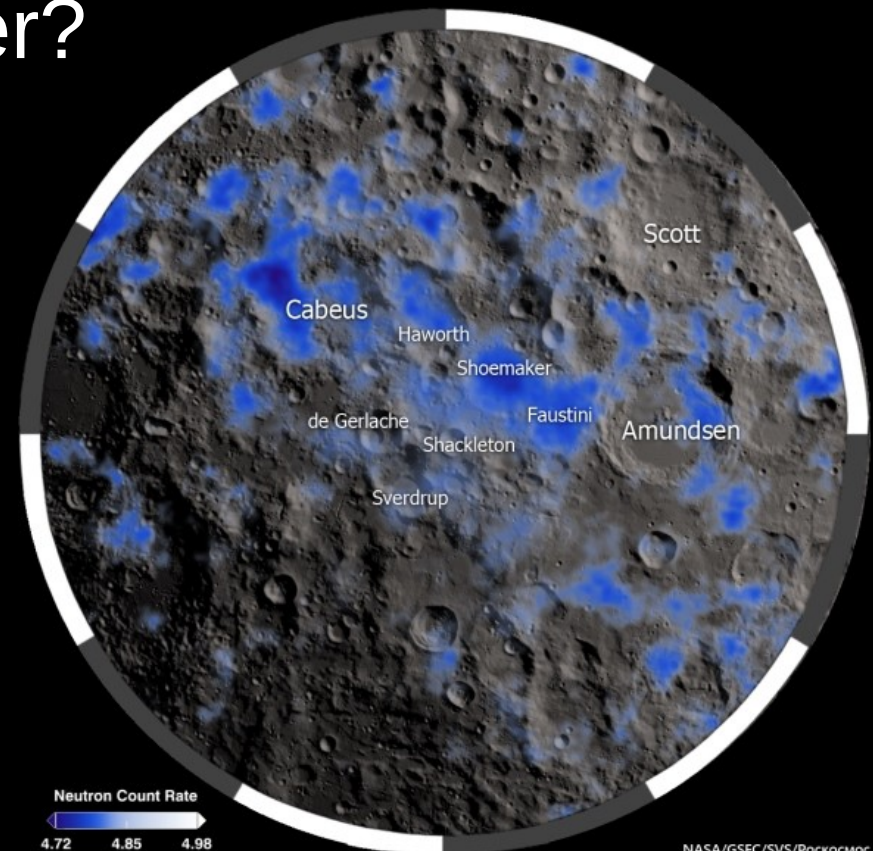


Recycle Water



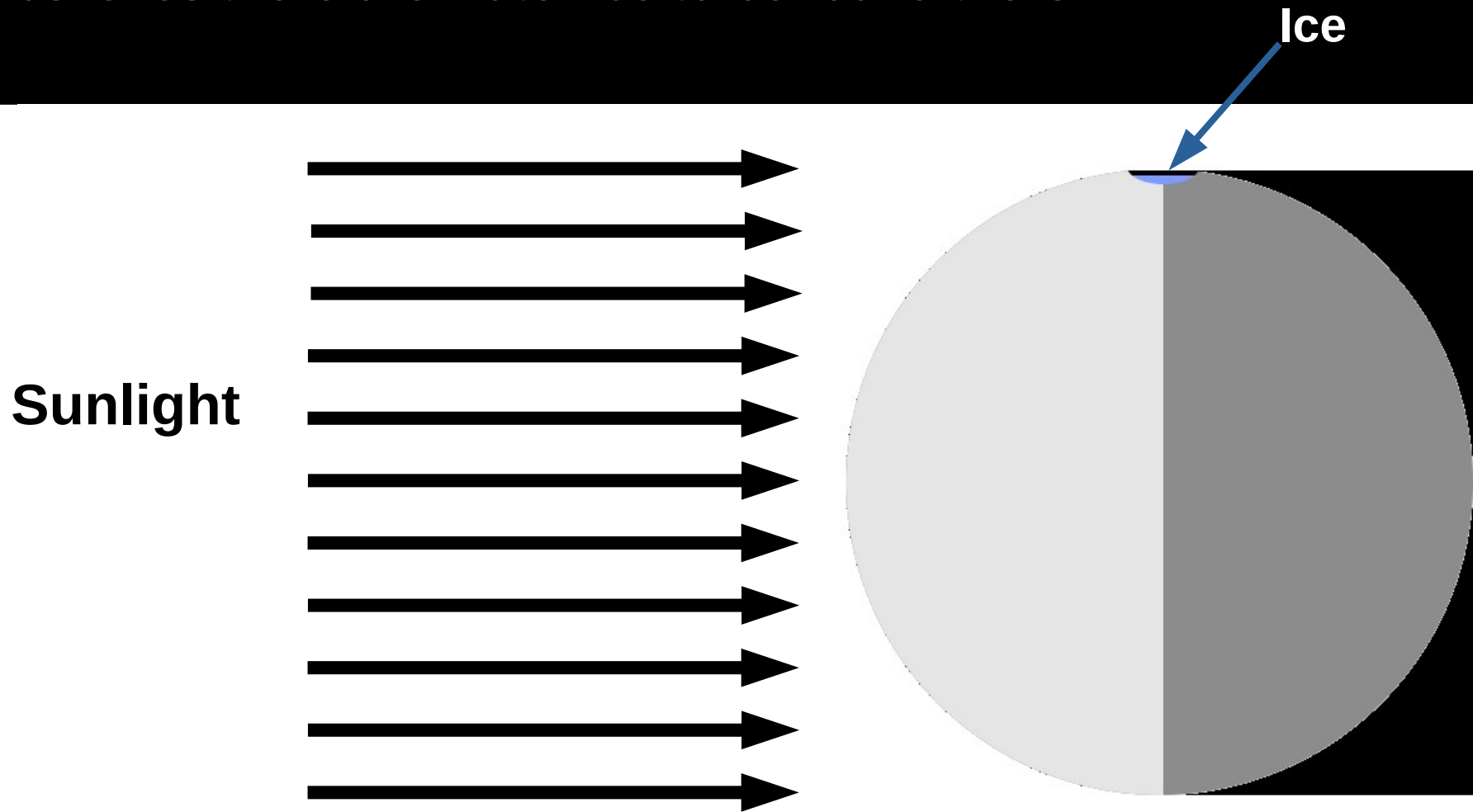
Polar Ice

- Moon temperature is 127°C in the day
- Water on moon surface will boil away!
- Where can we find water?



Polar Ice

Deep craters at the moon's poles are not exposed to sunlight. Scientist believes there are water ice to be found there!



Water of Hydration

- Some minerals contains water
- Scientist believes that there is a small amount of these minerals on the moon



Epsomite



Limonite

Experiment Time!

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