

Spaceship Earth Worksheet



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Needed: A Sustainable Spaceship

The Earth has been degraded to the point where it will no longer support our population. You and your team must design a spaceship capable of making a 6,000 year voyage, carrying everyone that you care about, and bringing your descendants back to Earth safe and happy. Propulsion and construction are already taken care of, so you don't have to figure out how to move the vessel or construct the hull. What you do have to deal with are the **life support systems** (oxygen, food, water, energy and waste) and the **social systems** (governance, recreation and entertainment). The ship can be as large as you want. The **only thing you can take in is sunlight**, and the **only thing you can exhaust is heat**. Everything must be done **using existing technology**.

Life Support	Society
<u>How will you provide oxygen?</u>	<u>How will you make sure everyone is healthy?</u>
<u>How will you provide water?</u>	<u>How will you make sure everyone is happy?</u>
<u>How will you provide food?</u>	<u>How will you make sure everyone is safe?</u>
<u>How will you provide energy?</u>	<u>How will you retain skills and knowledge?</u>
<u>What will you do with waste?</u>	<u>How will you resolve problems and make decisions?</u>

Hints

- How are life support functions provided on Earth?
- Don't forget that in addition to physical and health needs, people also have emotional, intellectual and societal needs.
- Think about already-existing technologies, but if you have a good idea of something new, write it down.

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Three Pillars of Sustainability

How do the systems in your spaceship fit into the 3 pillars?

