

Build a Machine to Lift Water

Name: _____

Date: _____

Student worksheet

Answer these questions after watching the first season of Global Problem Solvers: The Series.

1. In season 1, the Malawi villagers get their water from a well with a pump. Where does your water come from? How does it get to your home?
2. Is there anything the Global Problem Solvers team did that you would have done differently? Explain why or why not.

Do this part of the worksheet after your class discusses the challenge you will be trying to solve. (If you need additional space, use the back of the page or blank paper, as necessary.)

The problem: In your own words, write down the problem that you are trying to solve.

Background research: Use this space to write down important things that you learn from your background research. Hint: to start your research, do an online search for “water lifting devices.”

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Design a solution

1. Make a list of the building materials available either from school or home.
2. After talking to your group, write down the requirements your group agreed on for your device.
3. Write down any constraints you have on building your device, for example, time or space limitations.
4. Use this space to sketch at least two different designs.

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5. After talking to your group, decide on a single design. Draw that design here and make a list of the materials you will need.

	<u>Materials</u>
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Build and test the solution

Use this space to take notes as you build and test your device. Write down or draw:

- If anything breaks
- What you did to fix it
- Any changes you make to your design

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Measure results

Write down what measurements your class chose to compare for each device and the results for your group's device. For example, if the class decided to measure how fast each device can lift water, write that down and record your device's cups of water lifted per minute measurement.

Make a business plan

In Global Problem Solvers: The Series, the characters had to come up with a business plan to make, sell, and use their devices in the real world. Use this space to write down your business plan.

Communicate results

You have a design and a business plan – now you need to convince people to buy your device! Make a presentation to show the rest of the class your device and tell them about your business plan.