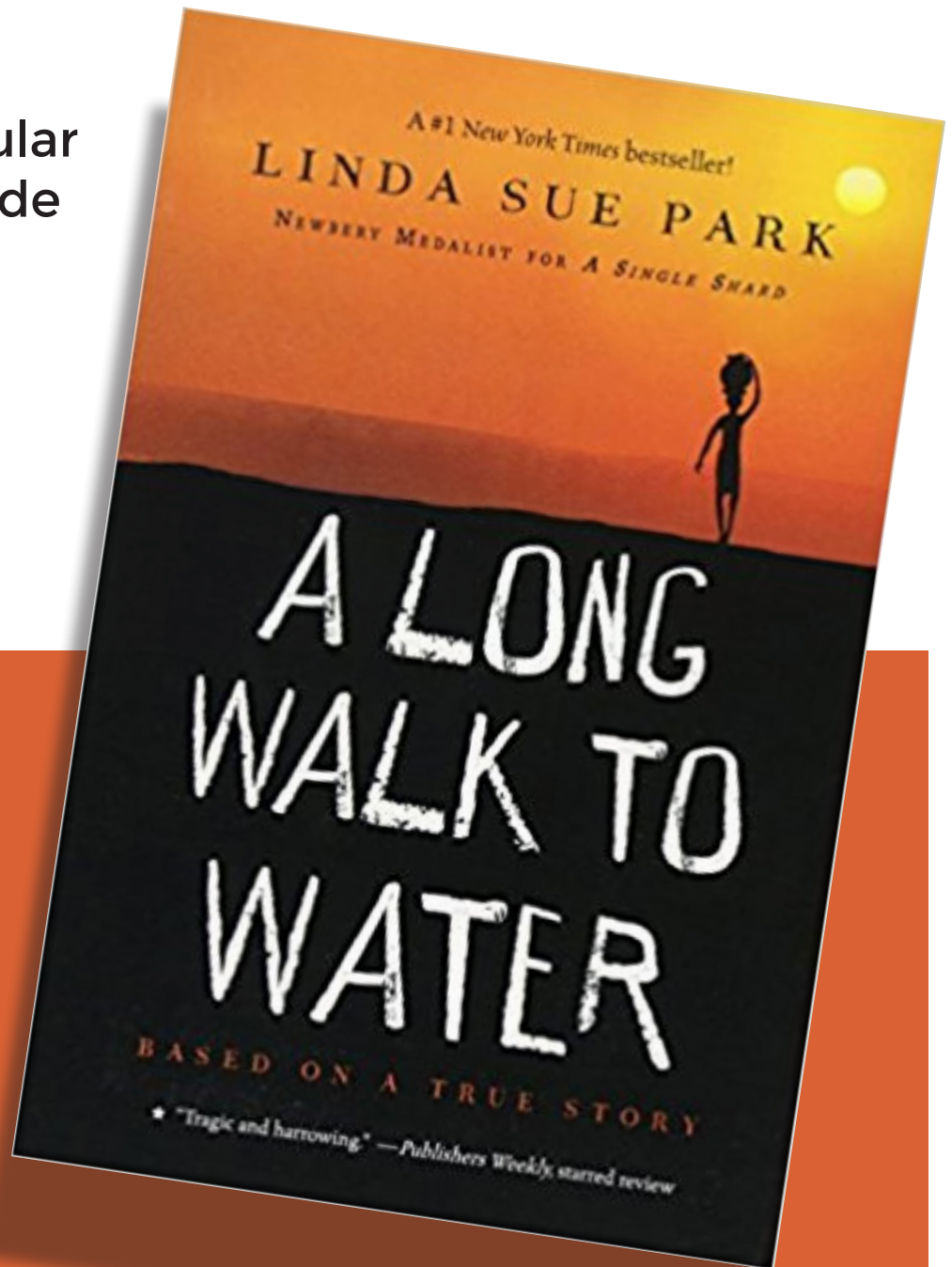


# A LONG WALK TO WATER

Cross Curricular  
Learning Guide



ENGLISH LANGUAGE ARTS • SOCIAL STUDIES •  
SCIENCE & ENGINEERING • MATH



## A Long Walk To Water

# Cross-Curricular Learning Guide

### THE POWER OF CROSS-CURRICULAR LEARNING

Cross-curricular units are proven to benefit student learning. These projects break down the walls of subjects, diversify the way students think, and include real world application. Who doesn't love the sound of that?

The problem is, teachers have no time and cross-curricular planning takes time...and lots of it!

What if we tell you we have removed that problem all together?

This unit will take your students on a journey in science, math, social studies and english as they dive into the different skills necessary to solve the Global Water Crisis. It doesn't just take a 'math-mind' or a 'science-brain' to solve this issue but it takes the collaboration of it all.

I promise you this, this is a planning-free, hands-on, meaningful learning experience for your classroom. You will not regret checking it out!

### H2O FOR LIFE

This cross-curricular guide is offered free of charge by H2O for Life, a national organization that activates kids in the fight against the global water crisis.

[h2oforliveschools.org](http://h2oforliveschools.org)



Walk for Water hosted at a middle school to support an H2O for Life partner community in South Sudan

# Cross-Curricular Learning Guide

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## English Language Arts Reading Guide

# Reading Guide

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### BEFORE WE READ...

What do you think this story might be about?

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Where might this story take place?

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What clues is the audience given about the location (setting) and the characters?

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## English Language Arts Reading Guide

**SHADE IN SOUTH SUDAN ON THE MAP OF THE  
CONTINENT OF AFRICA**



# English Language Arts

## Reading Guide

### IMPORTANT VOCABULARY WORDS TO KNOW:

Refugee: \_\_\_\_\_

Survive: \_\_\_\_\_

Contaminated: \_\_\_\_\_

Peril: \_\_\_\_\_

### PREDICT

How do you think your life might be different from a child living in Sudan at this time during the story's setting?

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What do you think the title of the story means?

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**Let's begin our reading of the story! Each chapter includes two entries made in different years, until the dates meet at the end of the story. Pay attention to Nya's story, as well as the time frame.**

# English Language Arts Reading Guide

Directions for note taking: At the end of each chapter take a few minutes to answer the questions provided. This will help you to think about the main ideas of that chapter more critically.



## Read Chapter 1

### Chapter 1 Questions

1. Compare your daily life to Salva's daily life.

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2. Write about the Civil War that was happening in Sudan. How did the war impact the people who lived in South Sudan?

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3. Describe the thoughts and feelings Salva must have felt as he ran away from home.

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# English Language Arts

## Reading Guide



### Read Chapter 2

#### Chapter 2 Questions

1. What are the uncertainties in Salva's life?

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2. At the end of this chapter Salva found himself alone. What is he thinking? What is he feeling?

Salva is thinking...	Salva is feeling...

3. What do you predict will happen to Salva?

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# English Language Arts Reading Guide



## Read Chapter 3

### Chapter 3 Questions

1. How did Salva's circumstances change from good... to bad... to good?

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2. What do you predict will happen next?

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## Read Chapter 4

### Chapter 4 Questions

1. Why didn't the strangers want to include Salva in their group?

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## English Language Arts Reading Guide

2. What was a typical day for Salva when he was in this group?

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3. What does the term "simple pleasure" mean?

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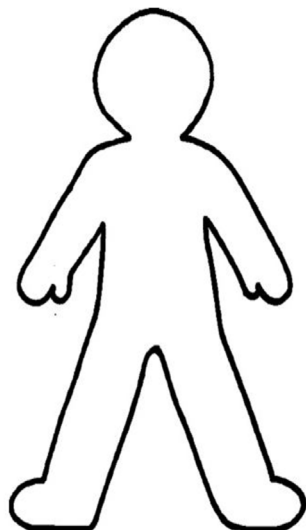
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### Read Chapter 5

#### Chapter 5 Questions

1. Describe Salva's new friend, Marial by listing 3 character traits next to the person.



# English Language Arts Reading Guide

2. How would life change for Salva, now that he has a friend?

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## Read Chapter 6

### Chapter 6 Questions

1. How did Salva's life change when he found his uncle?

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2. What do you think happened to his friend, Marial?

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## Read Chapter 7

### Chapter 7 Questions

# English Language Arts

## Reading Guide

1. What happened to Marial?

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2. How did uncle help Salva deal with his fears?

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3. How did Salva's group work together to build a canoe? Do you think this was a good strategy?

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### Read Chapter 8

#### Chapter 8 Questions

1. Salva arrived at an island in the Nile River. What parts of the day were fun? Which parts were unbearable (not fun)?

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2. How did the travelers prepare for the desert?

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# English Language Arts Reading Guide

List things they did and brought in the box below.

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## Read Chapter 9

### Chapter 9 Questions

1. Describe the trek through the desert.

What did the journey look like?	What did the journey feel like?

## English Language Arts Reading Guide

2. How did Salva's uncle help reach his destination? Do you think this was a good idea?

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### Read Chapter 10

#### Chapter 10 Questions

1. Draw a picture of what was found in the desert.

2. Who were the heroes in this chapter? Why? Would you give away your water in this situation? Why or why not?

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# English Language Arts Reading Guide



## Read Chapter 11

### Chapter 11 Questions

1. How did the death of Uncle and Marial impact Salva?

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2. Describe the refugee camp in Ethiopia.

What did it look like? (Draw a picture)	How does it make you feel? (Write about it)



## Read Chapter 12

### Chapter 12 Questions

## English Language Arts Reading Guide

1. After 6 years in a refugee camp, the people were being forced out. How would you feel if you were Salva?

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### Read Chapter 13

#### Chapter 13 Questions

1. What was Salva's escape across the river like? Draw a picture of it.

## English Language Arts Reading Guide

2. Now Salva is 17 years old. What new responsibilities does he have now? Do you think he is prepared for those responsibilities?

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### Read Chapter 14

#### Chapter 14 Questions

1. What things did Salva learn from Michael? How did this make Salva feel?

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2. What qualifications did Salva meet in order to go to America?

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### Read Chapter 15

#### Chapter 15 Questions

# English Language Arts Reading Guide

1. Who are the "lost boys"? Why do you think they were called "lost?"

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2. Imagine you are Salva, taking your first steps in the United States. What do you have to say?

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**Read Chapter 16**  
Chapter 16 Questions

# English Language Arts Reading Guide

1. Name one way that Salva's life had changed when he moved to the United States?

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2. Why did Salva return to Sudan?

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## Read Chapter 17

### Chapter 17 Questions

1. What did Salva learn about his family when he met his father?

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2. What do you think Salva's "project" is?

What might it look like? (Draw a picture)	Write about it

# English Language Arts

## Reading Guide



### Read Chapter 18

#### Chapter 18 Questions

1. Salva's "project" is revealed in this chapter. Are you surprised?

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2. What is the relationship between Nya and Salva?

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3. How do Salva's actions impact Nya's future life?

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**You did it! You completed the book!**  
**You should be so proud of yourself.**





## English Language Arts Discussion Questions

3. Clean water is still a global problem. How does the story of Salva encourage you to be a part of the solution? (Discuss as a group)

4. There are many themes this book touches on, circle the one you think is best.

Water

Family

Leadership

War/Refugees

Hope

Why do you think that one is best?

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Social Studies  
**Geographic/Cultural Impact**

# Geographic/Cultural Impact

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**Phase One: Explore your partner school**

Visit [h2oforliveschools.org](http://h2oforliveschools.org) to find the following information:

What is H2O for Life’s Mission Statement?

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List the Countries that H2O for Life currently works in:

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# Social Studies Geographic/Cultural Impact

Look specifically at your partner on the H2O for Life website and identify the answers to the following questions:

1. Where is \_\_\_\_\_ School Located?

2. How many students attend \_\_\_\_\_ School?

3. What is their current source of water?

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After exploring your project a little bit, what are three questions you have about the project, location, and/or students that attend?

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## Social Studies

# Geographic/Cultural Impact

Without any further knowledge of this location make a prediction for what has influenced this communities access to safe water. In other words, what factors have led to the conditions in which these students are living? Write a short paragraph with an introduction sentence, transition words, and concluding sentence.

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### Phase Two: Research Project

Spend time researching the following topics about

\_\_\_\_\_ School in \_\_\_\_\_(country).

Your goal is to collect enough relevant information to convince your community to support building a \_\_\_\_\_(type of water project) at the school. As you research consider the following questions:

## Social Studies

# Geographic/Cultural Impact

1. Why is this community in need of support with their water?
2. Why is this region in need of water?

**Be sure to include your source and write your information in your own words.**

**Recent History:** What are recent current events in or near

\_\_\_\_\_ (school location)? ie: natural disasters, conflict, etc.

Fact	Source

How have these recent current events influenced how humans live in this region?

## Social Studies

# Geographic/Cultural Impact

What are the environmental conditions in/near \_\_\_\_\_  
(school location)? ie: Weather, type of land, available natural resources etc.

Fact	Source

## Social Studies Geographic/Cultural Impact

How do these environmental conditions influence human settlement?

ie: Highly populated, low population, resources available etc.

What are the demographic trends in/near \_\_\_\_\_

(school location)? ie: pop. growth/decline, push/pull factors and urbanization

Fact	Source

## Social Studies

# Geographic/Cultural Impact

Do the demographic trends align with your reflection on how environmental conditions influence human settlement? How or how not?

What is daily life like in/near \_\_\_\_\_ (school location)? ie: Schooling, work, common meals, etc.

Fact	Source

## Social Studies Geographic/Cultural Impact

How is daily life influenced by environmental conditions, current events and/or demographics?

What is the Water Crisis in/near \_\_\_\_\_ (school location)?

Fact	Source

## Social Studies

# Geographic/Cultural Impact

### General Water Crisis Facts

Fact	Source

### Phase Three: Develop a Persuasive Presentation

Through your research you should have identified many reasons WHY \_\_\_\_\_  
\_\_\_\_\_ School needs the support of your class to bring safe drinking water to their school. Using your research develop a persuasive speech or presentation explaining to your community why they should choose to care!

**Write a short persuasive outline using the guide below:**

## Social Studies Geographic/Cultural Impact

**Introduction:** Thesis Statement- You should help support the \_\_\_\_\_  
(water project) in \_\_\_\_\_(school location) at the \_\_\_\_\_  
(name of school) School because (reason 1), (reason 2) and (reason 3).

Reason 1

Reason 2

Reason 3

## Social Studies

# Geographic/Cultural Impact

Now put it all together in a complete sentence:

You should help support the \_\_\_\_\_(water project) in \_\_\_\_\_  
(school location) at the \_\_\_\_\_(name of school) School because  
(reason 1), (reason 2) and (reason 3).

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**Paragraph One:** Support reason 1 with facts

Fact 1

Fact 2

# Social Studies

## Geographic/Cultural Impact

Fact 3

Now put it all together in complete sentences:

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# Social Studies

## Geographic/Cultural Impact

Paragraph Two: Support reason 2 with facts

Fact 1

Fact 2

Now put it all together in complete sentences:

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## Social Studies Geographic/Cultural Impact

Paragraph Three: Support reason 3 with facts

Fact 1

Fact 2

Fact 3

# Social Studies

## Geographic/Cultural Impact

Now put it all together in complete sentences:

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**Conclusion:** In conclusion, you should help support the \_\_\_\_\_(water project) in \_\_\_\_\_(school location) at the \_\_\_\_\_(name of school) School because (reason 1), (reason 2) and (reason 3)..

Now put it all together in a complete sentence:

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## Social Studies

# Geographic/Cultural Impact

### Phase Four- Create a Public Service Announcement for Your School.

Your presentation should include the following:

- Claim- Why is it essential that your class/community supports the water project?
- Images of your partner school and/or community
- Detailed description/maps for where your partner school is located
- Demographics
- Environmental Conditions- how does the water crisis influence this region?
- The influence of current events, environmental conditions, and demographics on human settlement and development of society.

### Phase Five- Reflection

In this final reflection use your newly acquired knowledge to revisit the question. What has influenced this communities access to safe water. In other words, what factors have led to the conditions in which these students are living? Write a paragraph with an introduction statement, transition words, and a concluding sentence. Be sure to include at least one cited quotation.

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# Social Studies

## Geographic/Cultural Impact

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How does it make you feel to be able to be a part of the solution? Write a paragraph with an introduction statement, transition words, and a concluding sentence.

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# Social Studies Geographic/Cultural Impact

## Science & Engineering Engineering Design

# Engineering Design

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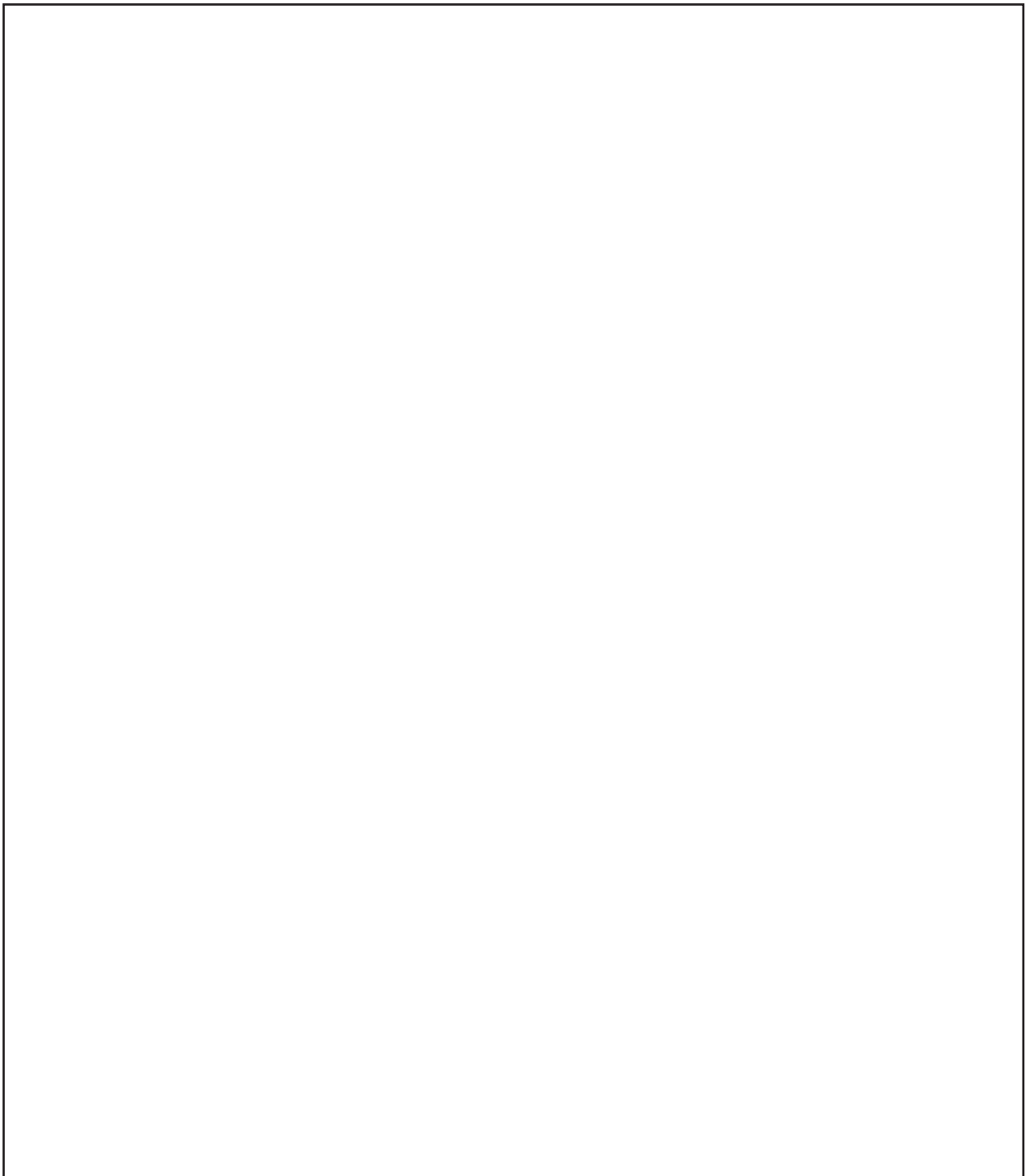
**PROBLEM:** There are individuals walking all over the world for miles to gather water for their communities and families. To gather the water individuals are using Jerry Cans that can weigh up to 40lbs. These Jerry Cans may have previously been contaminated, have holes, and/or simply be a challenge to carry due to the weight of the water.

**CHALLENGE:** Design a solution to the Jerry Can that would make the transportation of water easier until a more sustainable solution is brought to the community.

**CRITICAL QUESTION:** How can you create a solution to transporting water that would combat the impacts of contamination, durability of the container, and ease to carry?

## Science & Engineering Engineering Design

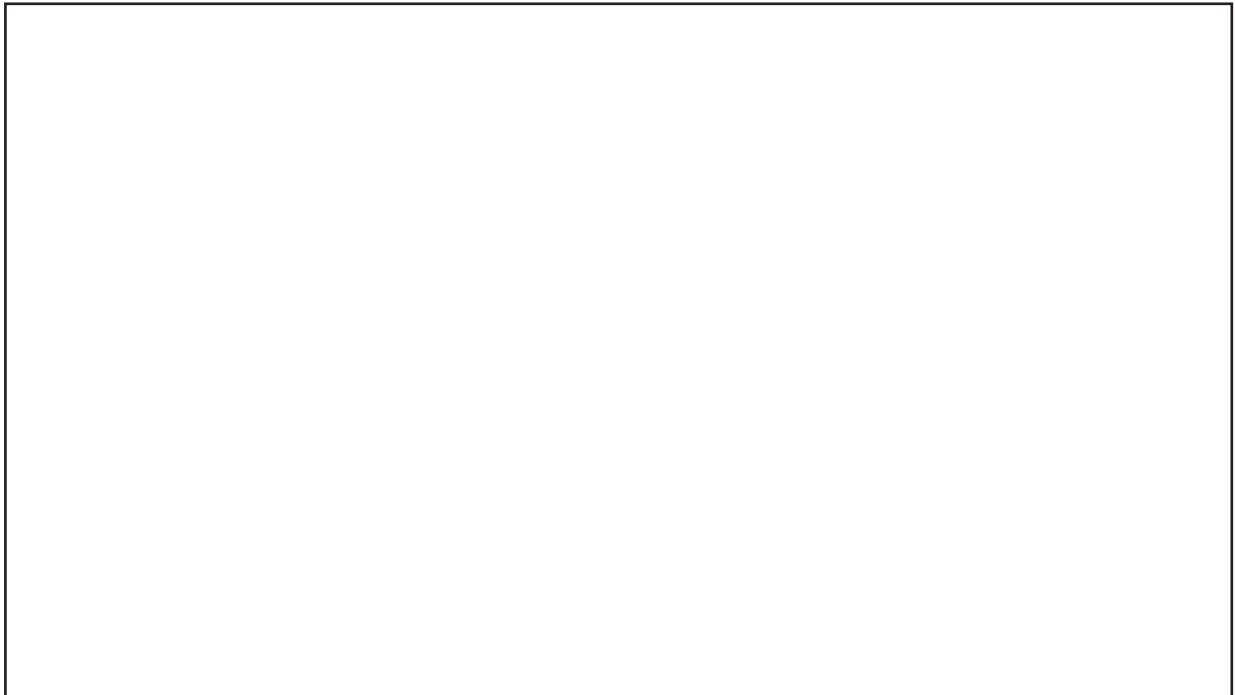
**Step One:** Create a Sketch of your Design

A large, empty rectangular box with a thin black border, intended for students to draw a sketch of their engineering design. The box occupies most of the lower half of the page.

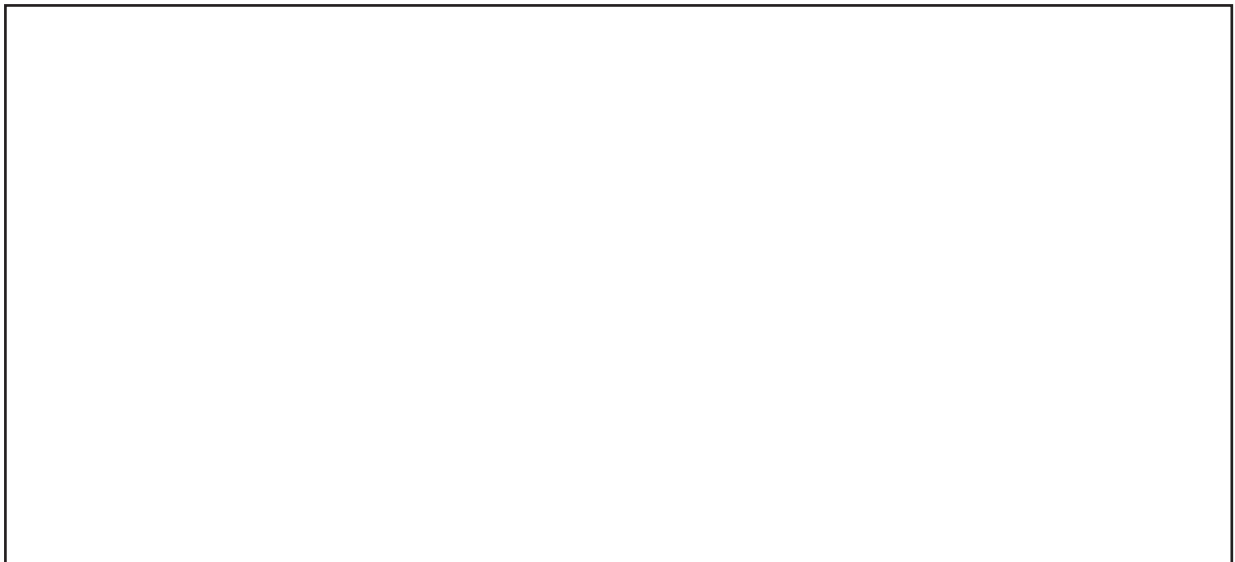
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# Science & Engineering Engineering Design

**Step Two:** What materials are needed to build your design?



**Step Three:** What is the approximate cost of your design?



## Science & Engineering Engineering Design

**Step Four:** How does your design solve the following problems with the current Jerry Can?

Contamination	
Durability	
Ease to Carry	

**Step Five:** Build a model of your design to share with the class

## Math: Surface Area & Volume

### Rainwater Catchment Tanks

# Rainwater Catchment Tanks

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**Real-World Problem:** There is a school in (partner school location) that is struggling with access to safe drinking water. Access to safe water impacts this communities way of life greatly. Without safe drinking water students lose the opportunity to attend school and can battle serious disease caused by their current drinking water. One solution to this problem is to build a rainwater catchment tank on the property of the school. By building a safe water source at the school you will provide students with the opportunity to receive an education as well as prevent the spread of water-borne illnesses. With the limited resources provided H2O for Life needs you to design a Rainwater Catchment tank. **The challenge: design a Rainwater Catchment Tank where the rooftop has the smallest surface area but the tank catches the greatest volume of water.**

# Math: Surface Area & Volume

## Rainwater Catchment Tanks

### Materials you can use:

Clay

Popsicle Sticks

Thin Cardboard Pieces

Fringed Brown Paper

Plastic Cup (rain catchment)

### STEP 1: UNDERSTAND

What is a Rain Catchment Station?

Why do individuals use a Rain Catchment Station?

### STEP 2: EXPLORE

What materials are generally used in building a Rain Catchment Station?

In what areas would a Rain Catchment station generally be used? What environment?

# Math: Surface Area & Volume

## Rainwater Catchment Tanks

### STEP 3: DEFINE

What are the design constraints?

What are the functional requirements?

### STEP 4: IDEATE

Graph your first design idea on the graph paper provided. Remember to keep in mind the materials you are using and how you will capture the highest volume of rain off of the smallest surface area.

### STEP 5: IMPLEMENT

Build your first design

What is the Surface Area of the rooftop? Show your work below:



## Math: Surface Area & Volume

### Rainwater Catchment Tanks

What is the predicted volume of water captured? Show your work below:

#### **STEP 6: TEST**

In this phase you will take notes about what was successful and what failed in your design. You must also weigh the amount of water you caught in your rain catchment station.

Volume of Water ACTUALLY Captured

---

# Math: Surface Area & Volume

## Rainwater Catchment Tanks

<p>What was successful in Design One?</p>	<p>What failed in Design One?</p>
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## Math: Surface Area & Volume

### Rainwater Catchment Tanks

#### **STEP 7: Redesign**

What is one thing you are keeping the same? Why?

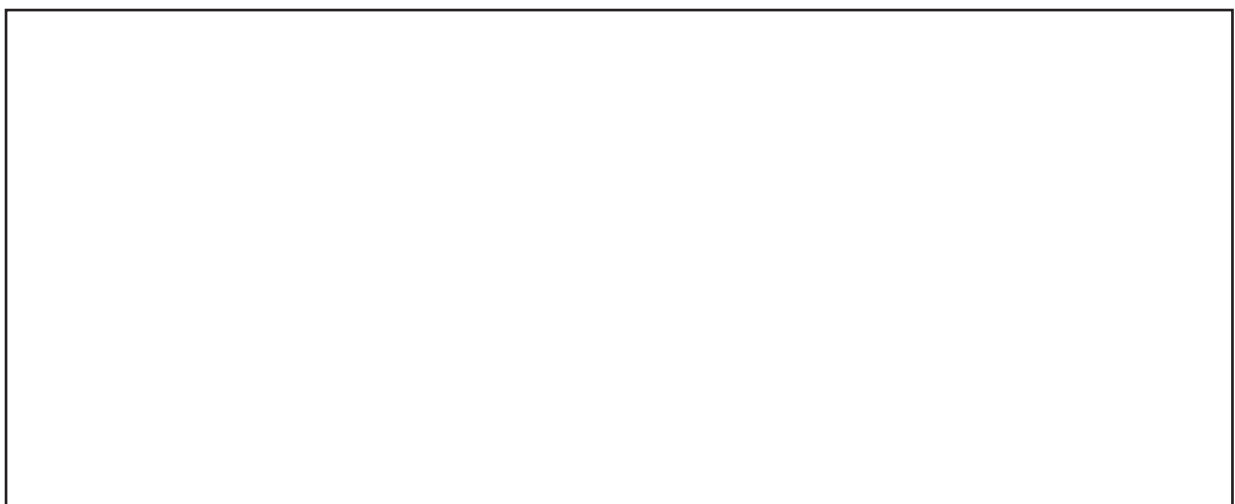
What is one thing you are changing? Why?

Graph your second design idea on the graph paper provided. Remember to keep in mind the materials you are using and how you will capture the highest volume of rain off of the smallest surface area.

#### **STEP 8: IMPLEMENT**

Build your second design

What is the Surface Area of the rooftop? Show your work below:



---

## Math: Surface Area & Volume Rainwater Catchment Tanks

What is the predicted volume of water captured? Show your work below:

### **STEP 9: TEST Design 2**

In this phase you will take notes about what was successful and what failed in your design. You must also weigh the amount of water you caught in your rain catchment station.

#### **Volume of Water ACTUALLY Captured**

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## Math: Surface Area & Volume Rainwater Catchment Tanks

What was successful in Design Two?

What failed in Design Two?

## Math: Surface Area & Volume

### Rainwater Catchment Tanks

#### **STEP 10: Final Redesign**

What is one thing you are keeping the same? Why?

What is one thing you are changing? Why?

Graph your final design idea on the graph paper provided. Remember to keep in mind the materials you are using and how you will capture the highest volume of rain off of the smallest surface area.

#### **STEP 11: IMPLEMENT**

Build your final design

What is the Surface Area of the rooftop? Show your work below:



## Math: Surface Area & Volume

### Rainwater Catchment Tanks

What is the predicted volume of water captured? Show your work below:

#### **STEP 12: Final TEST**

In this phase you will take notes about what was successful and what failed in your design. You must also weigh the amount of water you caught in your rain catchment station.

Volume of Water ACTUALLY Captured

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# Math: Surface Area & Volume

## Rainwater Catchment Tanks

<p>What was successful in the Final Design?</p>	<p>What failed in the Final Design?</p>
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## Math: Surface Area & Volume Rainwater Catchment Tanks

**STEP 12: Reflect** (In this stage take time to reflect on all of the changes you made and the observations that were made- did your final product turn out better?)

What were the challenges? What about the materials made this process challenging?

What did you learn about the struggle to collect water in a place where resources for building are slim?



**H2O for Life**

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