

REGREEN THE DESERT

Pupil activity sheets



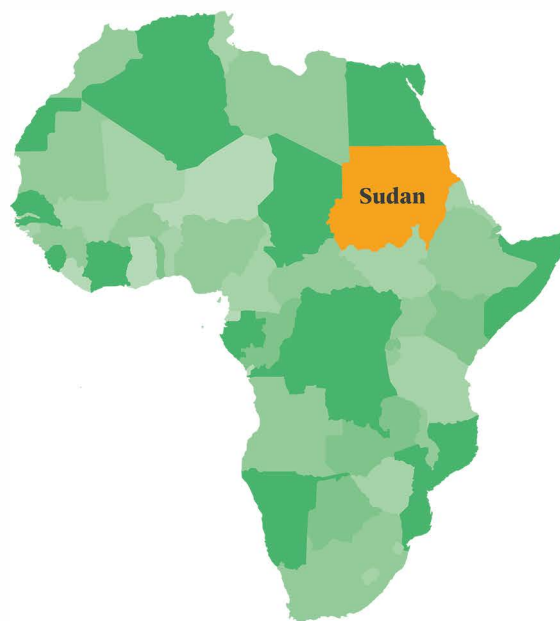
practicalaction.org/schools/regreen-the-desert

**Practical
ACTION**

Khadija's story

Facts about Sudan

1. Sudan is the third largest country in Africa and has a population of 43 million people. The official spoken languages are Arabic and English.
2. The capital city, Khartoum, is situated at the place where the Blue and White Nile rivers meet to form the River Nile.
3. North Darfur, where 69% of people live below the poverty line, is the poorest region of Sudan.
4. North Darfur is one of the areas in Sudan most affected by climate change.



Khadija

Khadija is a farmer who lives in the village of Delal in North Darfur. Delal is a village which has 400 households.

Khadija has lived in Delal her entire life. When she was younger she thought the village was a great place to live, surrounded by fruit trees. Now however, most of the trees are gone and getting water is becoming more and more difficult.

Due to drought caused by climate change, and trees being chopped down, the desert has crept into areas where the villagers used to grow crops. This is called desertification.

Khadija is one of many women who rely on farming both to feed their families and to make money to buy other things they need.

Each day Khadija walks for hours to collect enough water for her household as well as to water her crops.

The only drinkable water is four hours away. Every day in the scorching heat Khadija leads her donkey and youngest child to the well and back.



“Currently we grow sorghum, millet, sesame and peanuts... last year I only managed to grow 2-3 bags of sorghum which isn't enough to feed my children. We live on one meal a day.”



Khadija finds it hard to grow enough food to feed her family and cannot grow the variety of crops she needs to keep her family healthy.

As well as wanting to grow more crops, so she has enough for her children and to sell, Khadija would like to grow fruits and vegetables so her family can be healthier. The problem is that some crops, like sorghum and peanuts, can grow in dry conditions, but others, including fruit and vegetables, need more water to grow.

Khadija is not alone with her problems. Many farmers in the region are not growing enough to feed their families, let alone to have extra produce to sell at the market. This has led to poverty and malnutrition for many farmers and their families.

Practical Action want to help make Delal a place where Khadija and her family can overcome climate change, turn the desert green again and grow a range of crops to eat and sell. This will help them to be healthy and succeed... not just struggle to survive.

The good news is that there are lots of things that can be done to make this happen. These include:

Capturing Water - collecting water that falls in flash floods, e.g. in dams, reservoirs and large containers.

Irrigation - connecting the stored water to where it is needed to water crops.

Replanting – planning forests to regreen the land that had previously been turned into desert (reversing desertification).

Providing seeds – so farmers can grow a wider variety of crops needed to stay healthy.

Training – giving farmers knowledge of better farming methods to help them improve their productivity.

Practical Action has worked with other communities in Sudan putting these ingenious ideas into action for over 25 years and Khadija is really happy that soon they will be working with hers.

You can follow Khadija's story on Practical Action's website:
practicalaction.org/turn-the-tables



“Because we don’t have any other source of water we can’t grow many crops. If we try and grow anything else it will need a better supply.

I know how to grow vegetables and other crops but there is just no irrigation.”



“I’m really hopeful (about the project). I’m hoping to grow more and sell at El Fasher market”.

True or false?

Cut out the cards below. In pairs or small groups read the card and decide whether the information is true or false. Make a pile of each.

**If you have enough food to eat
you will be healthy.**

**Farmers in Sudan are lucky as
they can grow peanuts.**

**Drought and flash flooding cause
problems for farmers in Sudan.**

**Some crops grow better than
others in dry soils.**

**The word irrigation means
watering land to grow crops.**

**The capital city of Sudan
is Khartoum.**

**Malnutrition means a person
gets fatter or thinner.**

**Farmers in Sudan grow plenty of
food to sell at the market.**

**The official languages of
Sudan are Arabic and French.**

**Khadija and her family
have three meals a day.**

The Sustainable Development Goals

	No poverty	End poverty in all its forms everywhere.
	Zero Hunger	End hunger, achieve food security and improved nutrition, and promote sustainable agriculture.
	Good Health & Well-being for People	Ensure healthy lives and promote well-being for all at all ages.
	Quality Education	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.
	Gender Equality	Achieve gender equality and empower all women and girls.
	Clean Water & Sanitation	Ensure availability and sustainable management of water and sanitation for all.
	Affordable & Clean Energy	Ensure access to affordable, reliable, sustainable modern energy for all.
	Decent Work & Economic Growth	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
	Industry, Innovation & Infrastructure	Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation.
	Reducing Inequalities	Reduce income inequality within and among countries.
	Sustainable Cities & Communities	Make cities and human settlements inclusive, safe, resilient, and sustainable.
	Responsible Consumption & Production	Ensure sustainable consumption and production patterns.
	Climate Action	Take urgent action to combat climate change and its impacts by regulating emissions and promoting developments in renewable energy.
	Life Below Water	Conserve and sustainably use the oceans seas and marine resources for sustainable development.
	Life on Land	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss.
	Peace, Justice & Strong Institutions	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.
	Partnerships for the Goals	Strengthen the means of implementation and revitalize the global partnership for sustainable development.

Under Pressure

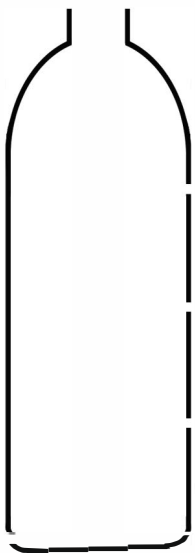
Name: _____

Class: _____

To help you design your water irrigation system you are going to find out more about water pressure.

1. Set your bottle up in a tray as shown below.
2. If your empty water bottle does not already have holes in it make holes as demonstrated by your teacher. Keep the holes small and the same size.
3. You are going to fill the bottle with water, let it squirt out and measure how far it goes. Predict what will happen when the water squirts out of the bottle.

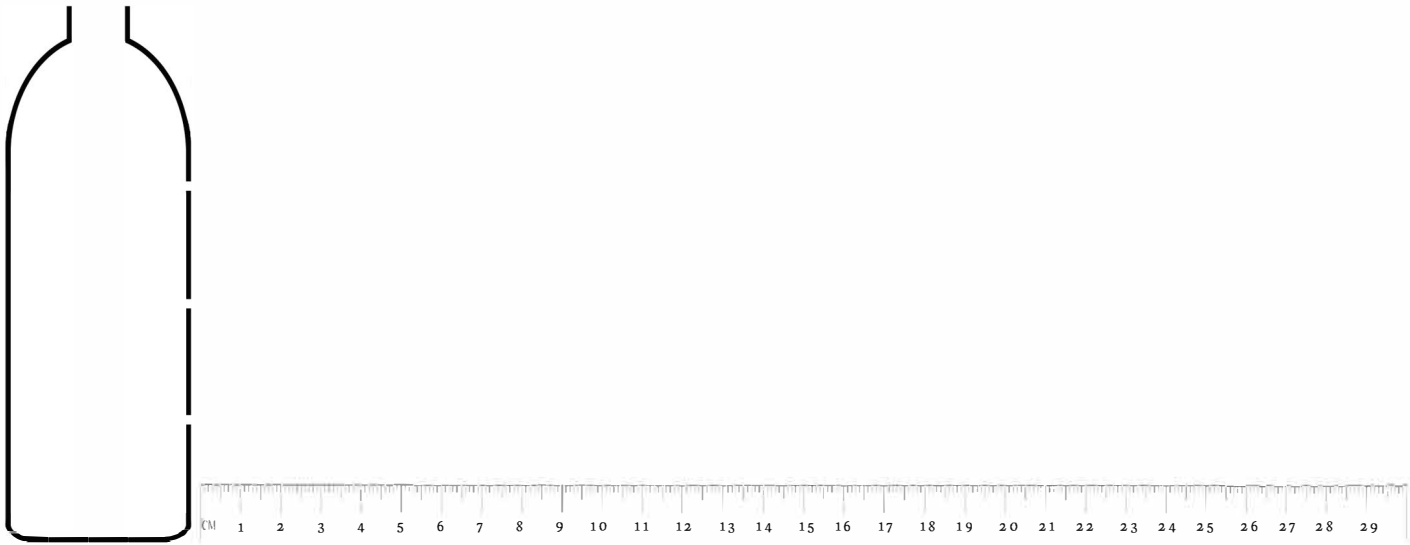
This is what I think will happen.






4. Two or three people in your group should now use their fingers to cover the holes. One person needs to use the beaker to fill up the bottle with water.
5. Take your fingers off the holes at the same time and watch what happens! Measure how far the different water streams squirt out. Take your measurements quickly, measuring the furthest each one goes, then cover the holes with your fingers again and empty the bottle.

6. Draw what you saw happen below.

This is what did happen!



Now decide what you want to test that might make water go as far as possible. You may decide to look at:

-  the size of the holes
-  the height of the holes
-  the height of the container above the ground

Or come up with an idea of your own.

Our group decided to do an experiment to see how changing the

..... might make the water go further.

We think what will happen is

.....

We found out that...

.....

.....

.....

Regreen the desert

Name:

Class:

Please draw your design in the box below — **Design 1**



A large empty rectangular box with a dotted border, intended for drawing a design.

Regreen the desert

Name:

Class:

Please draw your design in the box below — **Design 2**



A large empty rectangular box with a dotted border, intended for drawing a design.

Regreen the desert

Name:

Class:



Tell us which design you chose to make, and why you chose to make it.

Tell us more about your final design.

How many plants could your model water?

Did you have any problems when building your model that you were able to fix?

If you had more time or were able to use different materials what would you like to change?

Does your group have any other ideas of how you could help the community get more water?



Team Feedback

Imagine you are working for a charity and need to choose one group's model design to scale up to make a full-size irrigation system.

Practical ACTION

Name:

To help you decide, when listening to the presentations of other groups think about how well they met the criteria for the challenge set out below. Make notes and give them a mark out of 5 for each area, where 5 is the best.

[illegible]