



UKRI GCRF
action
against
stunting

The Road to Zero Hunger

PUPIL
ACTIVITY
SHEETS



What is the problem?

India



What is the problem? Role play cards: India



Researcher one

Hello, I am a nutritionist at the National Institute of Nutrition in India.

I am working on a project called Action Against Stunting, looking at child stunting. By that I mean how some children are smaller than others of the same age and have delays in their development.

My research is looking at whether the health and diet of women during pregnancy affects the size and health of their babies.



Researcher two

Hello, I am a researcher at the National Institute of Nutrition in India.

I am also working on the project Action Against Stunting.

In my research I am looking at the types of foods that people can buy throughout the year.

We want to find out whether the foods available at different times of the year in rural areas affect children's growth.



Community health worker

Hello, I am a health worker.

I visit schools to monitor the height and weight of babies and young children.

I also run classes for pregnant women and mothers to educate them about eating a variety of foods during their pregnancy and how to give their babies and children a healthy diet.

In general, pregnant women and children should eat a variety of food. Pregnant women should eat more fruit and vegetables than usual.



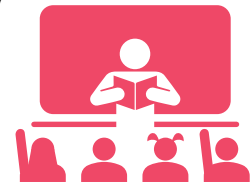
Teacher

Hello, I am a teacher in an Anganwadi child care centre in India.

Anganwadi centres were set up in India to help children who experience hunger and malnutrition.

In my experience, approximately 2 children in my class of 20 will have stunted development.

I feel that the reason many children who do not reach their appropriate height is due to a deficiency of nutritious food and/or genetics.



Mother

Hello, I have two young children aged two and four and I am expecting my third baby soon.

The older people in my community advise me that during pregnancy I should avoid eating some foods such as papaya and bananas. But I have been to some classes to learn about nutrition and have learnt that eggs, carrots, fruits and vegetables, especially green leafy ones, are good for me and my baby. A problem I have is that there are very few vegetables for sale in my local area.



Farmer

Hello, I have a small farm of one acre.

I grow papaya, bananas, spinach, tomatoes and carrots. I also keep chickens and sell their eggs.

During the growing season I hire a van to transport the fruits and vegetables to a market about 10 miles away.

Sometimes I think it's not worth the hassle as transport is expensive and much of the fruit and vegetables get damaged or rots in the heat on the way to market.



What is the problem?

Indonesia



What is the problem? Role play cards: Indonesia

Researcher one

Hello, I am a nutritionist at the University in Indonesia.

I am working on a project called Action Against Stunting. The project is searching for answers as to why some children here are smaller than others of the same age and have delays in their development.

My research is looking at whether the health and diet of women during pregnancy affects the size and health of their babies.



Researcher two

Hello, I am a researcher at the University of Indonesia.

I am also working on the project looking at child stunting.

In my research I am looking at the types of foods that people can buy throughout the year.

We want to see if not being able to buy some foods affects children's growth.



Community health worker

Hello, I am a nurse who goes into schools to monitor children's weight and height, and their language and play development skills.

Parents ask me for more information about child stunting and how to prevent it.

So, I run classes for parents where we prepare and share a meal that has four parts to it.

We call these parts the 4 stars.

They are rice, vegetables, fruit and fish or meat.



Primary school teacher

Hello, I am a teacher working with children who are three and four years old.

Each month, people from the local health team come to measure children's heights, weights, and head diameter. This way, working together, we can identify under-developed children.

We teach children about eating healthy meals. We call it the 4-star method where we teach that healthy meals should consist of rice, vegetables, fruit and fish or meat.



Father

Hello, I have three children who are under the age of eight. My wife and I have been to classes to learn how to prevent child stunting.

In our home we keep dried meat, eggs, fermented soybeans, rice, instant noodles, cassava, cooking oils and sometimes potatoes.

If fruits and vegetables are available at our market we will buy them, but at some times of the year they are not available.

If we find fruit, we share with our relatives, with the hope that when we do not have any, they will share with us.



Farmer

Hello, I am a farmer in Indonesia. I live on my farm with my wife and our four children between the ages of one and nine years old.

Our farm is only one acre and here we mainly grow rice. We produce enough rice to feed my family and sell a little at market.

From the money we get from selling rice, my wife tries to buy fruits and vegetables.

But they are expensive to buy in our region. Many farmers like me don't grow them as they are harder to grow in our climate.



What is the problem?

Senegal





Researcher one

Hello, I am a nutritionist working at the University Cheikh Anta Diop in Dakar, Senegal.

I am working on a project called Action Against Stunting, looking at child stunting. By that I mean how some children are smaller than others of the same age and have delays in their development.

My research is looking at whether the health and diet of women during pregnancy affects the size and health of their babies.



Researcher two

Hello, I am a researcher at the University Cheikh Anta Diop in Dakar, Senegal.

I am also working on the project looking at child stunting.

In my research, I am looking at the types of foods that people can buy throughout the year.

We want to see if not being able to buy some foods affects children's growth.



Nurse at health clinic

Hello, I am a community health worker in Kaffrine, Senegal.

I ask mothers to bring their babies to the health centre every month to measure their height and weight.

It is difficult for me to assess how many children are stunted in my area as not all parents bring their babies and children to be measured. My experience shows that malnutrition can prevent a child from growing well and can negatively affect a child's ability to learn.



Primary school teacher

Hello, I am a primary school teacher in Kaffrine, Senegal.

In school, there is some stigma towards stunted children, and they can be laughed at. But we try to show and teach children compassion.

We talk to the parents to give them advice. We encourage them to go to the hospital so that the children can be screened and taken care of.

We don't want the children and families to feel isolated.



Pregnant woman

Hello, I live in an area of Senegal called Kaffrine.

I am expecting my first baby soon. I know that good nutrition during pregnancy is very important so I am trying to eat well.

I have been selling rice and maize from my farm to buy fruit and vegetables. But sometimes there is little or nothing for sale at the local market and often it is too expensive for me to buy.

I hope I have a healthy baby.



Farmer

Hello, I am a farmer in Kaffrine, Senegal. I grow millet, peanuts, corn, and bené (to make vegetable oil).

I would like to grow watermelon, cabbages and eggplant as I know people want to buy more fruit and vegetables.

But in this region, we lack water to irrigate the crops and the soil is poor quality. So, it is too risky for me to try to grow other crops.



What is the problem?

UK





Research investigator

Hello, I work at the London School of Hygiene & Tropical Medicine.

I am working on a project called Action Against Stunting. My area of research is population health. For me this means looking for solutions to health problems, in this case 'child stunting'.

You might want to find out more about my work by researching 'Population Health' online.



Research investigator

Hello, I work in the School of Computing, Engineering and Maths at the University of Brighton in the UK.

I am working on a project called Action Against Stunting. I will be developing computer programmes and systems to help generate useful information that comes out of the research from each of the countries taking part in the project.

You might want to find out more about my work by researching 'Data Analyst' online.



Research investigator

Hello, I work at the Rowett Institute of Nutrition and Health at the University of Aberdeen in Scotland.

I am working on a project called Action Against Stunting.

I am trying to find out whether the foods that babies and children eat affects their growth.

You might want to find out more about my work by researching 'Nutritionist' online.



Research investigator

Hello, I work as a pathologist at the Royal Veterinary College in London.

I am working on a project called Action Against Stunting.

I am investigating whether some diseases and illnesses could cause stunting in children.

You might want to find out more about my work by researching 'Pathologist' online.



Research investigator

Hello, I am a psychologist at University College London.

I am working on a project called Action Against Stunting.

I am going to be part of a team that is researching the behaviours of babies and children who are affected by stunting.

You might want to find out more about my work by researching 'Psychologist' online.



Research investigator

Hello, I am at clinical scientist working at the Liverpool School of Tropical Medicine.

I am working on the Action Against Stunting project. I am part of the international team working out the best ways to test samples of urine and blood taken from pregnant women and children. We are hoping that testing these samples in laboratories for different diseases will help us find any causes of child stunting. If you want to find out any more about my work, then research 'Clinical Scientist' online.



Meet a farmer from Senegal

Malick Dia is a 48-year-old farmer who lives in the Kaffrine region of Senegal in West Africa.



Like most farmers in Kaffrine, Malick grows a mixture of millet, corn, peanuts, sorghum, and aubergines.

In recent years, farming has become more difficult for him. Climate change has affected rainfall patterns. This has caused the land to be dry for long periods. As a result, many farmers like Malick are finding their land to be less productive. This means less produce to feed families and/or to sell at market.

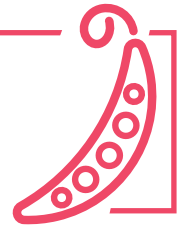
In Senegal the latest national survey shows that nearly one in five children (18%) suffers from chronic malnutrition, meaning it leads to growth failure that causes both physical and cognitive delays in growth and development.

For Malick, another problem is that when he has fruit and vegetables to sell at market, the cost of paying to package and transport his produce by truck is so expensive that it is hardly worth his while.

'It is difficult for me to transport my produce because the transport is expensive... sometimes produce rots in our hands.'



Delay the decay!



Name:

The fruit or vegetable we are investigating is:

Date	Observation (write or draw)	
	Produce kept at room temperature	Produce kept in the cool (Our produce is kept in)

What conclusions can you draw from your observations of your fruit or vegetable?



The Road to Zero Hunger – Your STEM challenge!

Name:

A problem

Many people in the world today are not eating their daily recommended amount of fruits and vegetables. A poor diet during pregnancy and childhood can lead to child stunting, affecting children's growth and development.

In some countries farmers do not transport their fruit and vegetable to local markets as it is too costly, and their fresh produce often gets damaged.

What if we could find a way to make it worthwhile for farmers to get their produce to local markets so, it can reach families who are not eating the recommended daily amount of fruit and vegetables?

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Your challenge

Can you design and make an attachment or trailer for a bicycle to help farmers safely transport two different types of fruit and vegetables to local markets?

You might want to consider how to package the fruits and vegetables to prevent them from becoming bruised and/or how to keep them protected from the heat or rain during transportation.

Design brief

In your own words describe the problem you will be trying to solve:

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Design criteria

Write a list of the features that you want your bicycle attachment or trailer to have (e.g. attach to the back of my bike).

My design will:

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Research

Name:

Spend some time researching things that will help you with your challenge. This might include research into:

- different bike attachments/trailers
- methods to package fruits and vegetables to prevent them becoming bruised and/or to protect them from the sun and rain.

Make a record of your findings.

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My ideas so far...

Name:

Sketch and/or write down any ideas you have for your challenge. You might want to try modelling some of your ideas before developing your final idea.

My final idea

Name:

**Sketch your final idea for your bicycle attachment.
Annotate your design with features such as choice of materials.**

Presenting your challenge

Name:

Your Team:

As a team, you will be asked to make a short presentation about your challenge. You might want to include some of the following.

Teamwork: How well did you work together in your team?
Did you split the tasks well between you? Did you listen to each other?

Problem solving: How did you go about solving the problem you were set?

Research: What research did you do to help you solve the problem?

Knowledge and skills: What knowledge and skills have you gained?
What do you know now that you didn't know before?

Test and evaluate: How well did your model transport the two different fruits and/or vegetables to 'market'? If you repeated the challenge, what would you do differently?

Make notes here of your answers to the questions above to help you to develop your presentation.

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