

What can you grow?

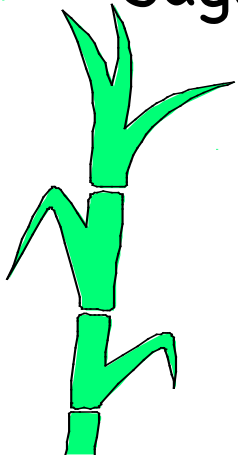
Barley

It needs temperatures of below 20 C and under 100 cm of rain each year.



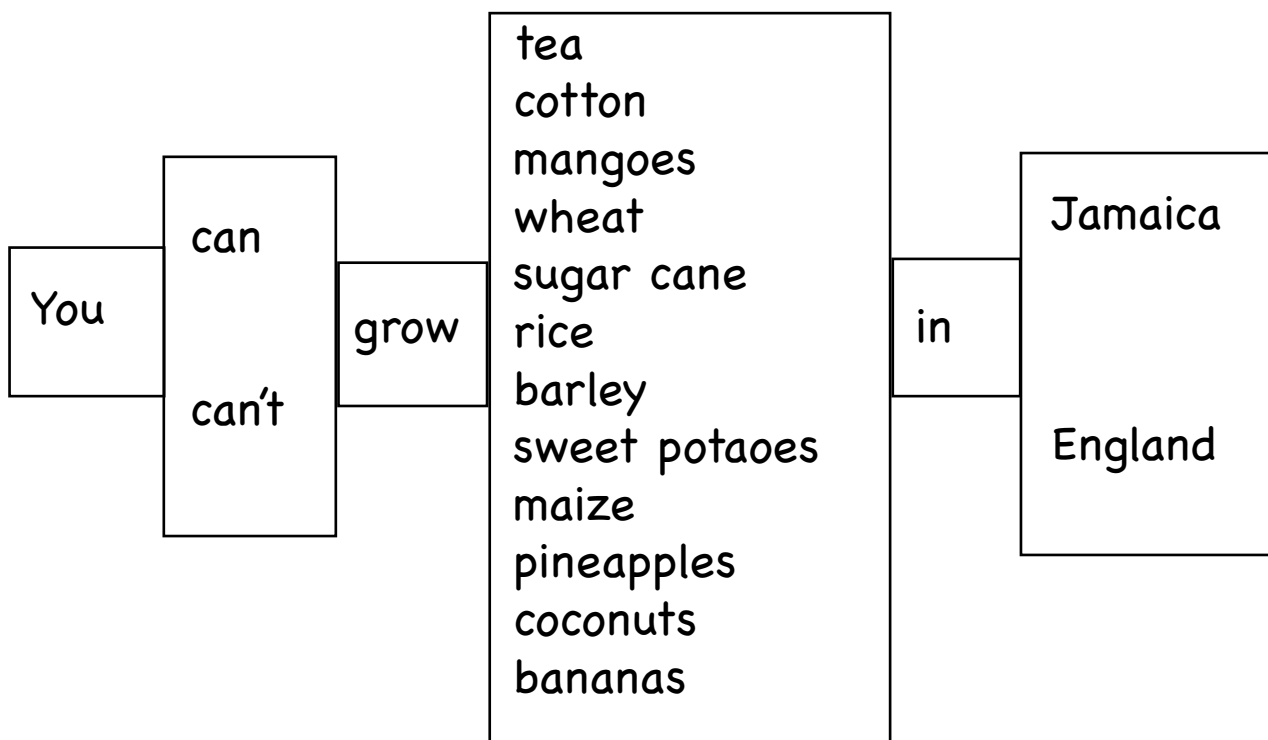
Mangoes

Sugar Cane



Rice

It needs five months of temperatures above 21 C and 200cm. of rain each year but with a dry summer.



What can you grow?

Developed by Steve Cooke

Webaddress for this activity is:

<http://www.collaborativelearning.org/whatcanyougrow.pdf>

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**If you can't talk it through with others, you won't
be able to write about it confidently!**

Collaborative Learning = Oracy in Curriculum Context
makes challenging curriculum accessible.
improves social relations in the classroom.
provides scaffolding for exploratory talk.

**Basic principles behind our talk for
learning activities:
Oracy in curriculum contexts!**

Build on children's own prior knowledge.
Move from concrete to abstract.
**Ensure everyone works with
everyone else.**
**Extend social language towards
curriculum language.**
**Provide motivating ways to go over the
same knowledge more than once.**

COLLABORATIVE LEARNING PROJECT

Project Director: Stuart Scott

We support a network of teaching professionals to develop and disseminate
accessible talk-for-learning activities in all subject areas and for all ages.

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Website: <http://www.collaborativelearning.org>

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Collaborative Learning Activity.

What can you grow?

The first activity involves pupils reading and completing climate graphs. All together there are four different graphs. Two of them have information about England (Nottingham) and two of them for Jamaica (Kingston). The two Nottingham graphs have half of the necessary information on them. The Nottingham (A) graph (Sheet 1) has the rainfall for January but not for February and is missing the January temperature but has February's. In a similar way the Nottingham (B) graph (Sheet 2) has all the missing information from the A graph and none of the information on the A graph. Therefore the two graphs are complementary in the sense that by bringing the information from both graphs together you get the complete picture. The Kingston graphs C (Sheet 3) and D (Sheet 4) work in exactly the same way.

The activity works like this:

In a group of four pupils each one is given a different graph so that one has Nottingham A, one has Nottingham B, one has Kingston C and the other Kingston D. The two pupils with the Kingston graphs work together and without showing each other their graphs, find out their missing information by asking and answering questions. For example:

"What's the temperature in Kingston in January?"

"It's 30 degrees in Kingston in January."

The pupils can mark the 'missing' information on their graphs and so end up with a complete graph.

The pair with the Nottingham graphs work together in the same way.

The second activity asks the pupils to use the information on the graph and a set of criteria to decide what crops can and can't be grown in the two countries.

It works like this:

The pair with the Nottingham graphs join together with the pair with the Kingston graphs. They are given a set of the crop growing criteria (Sheet 5). Their task is to go through each crop and apply the criteria to each country to see if the country's climate supports the cultivation of that particular crop. They record their decisions on a chart (Sheet 6)

Thus for the crop sugar cane the pupils can work out that because it needs temperatures of 21 to 30 degrees C throughout the year it is not possible to grow it as a crop in England because temperatures are too low. In addition to this it needs an annual rainfall of more than 200 cm. and so by referring to their England graphs they can calculate that the annual rainfall in England is too low. Therefore they can reach the conclusion that:

It is too cold and dry to grow sugar cane in England.

or

It is not hot enough or wet enough to grow sugar cane in England.

They can then apply the criteria to Jamaica and come to conclusion that:

It is hot enough and wet enough to grow sugar cane in Jamaica.

Note: Many youngsters will be able to draw upon their prior knowledge and will know, for example, that it is possible to grow sugar cane in Jamaica. This is useful in itself, but the activity requires pupils to go beyond their everyday knowledge and justify their decisions and give reasons for saying why a crop can or can't be grown.

In practice the activity is likely to generate useful dialogue amongst the pupils which results in them not only talking together but also thinking together. Their dialogue is essentially thinking aloud. For example:

Pupil A: What about wheat in Jamaica?

Pupil B: You must be able to grow wheat in Jamaica.

Pupil C: I don't think you can.

Pupil D: Why not?

Pupil C: Well it says you need an annual rainfall of between 38 and 98 cm.

Pupil A: Oh, yeah and in Jamaica you get a lot of rain.

Pupil B: Yeah the annual rainfall is about 200 cm and so it would be too wet.

Pupil: And it's probably too hot, too because it says you need temperatures of between 15 and 21 in summer.

In this way the pupils get a chance to hear and use the relevant vocabulary (annual rainfall, average temperatures etc.) and also language which expresses logic and reason such as:

You need, you must have, you can, you can't

Because, so, therefore

Which are important elements of constructing justifications and explanations in every area of the curriculum.

For pupils who are learning to use English as an additional language these activities also provide the support of the natural repetition of vocabulary and structures. This is particularly apparent in the first activity where they will hear the same basic questions and answers a number of times and be able to respond using the same language structure.

What's the temperature in (place)..... in ...(month)?...

It's (number) degrees in (place) in (month).

What's the rainfall in (place) in (month)?

It's (number) centimetres in (place) in (month).

A certain amount of natural repetition of vocabulary and structures continues into the second activity as well with

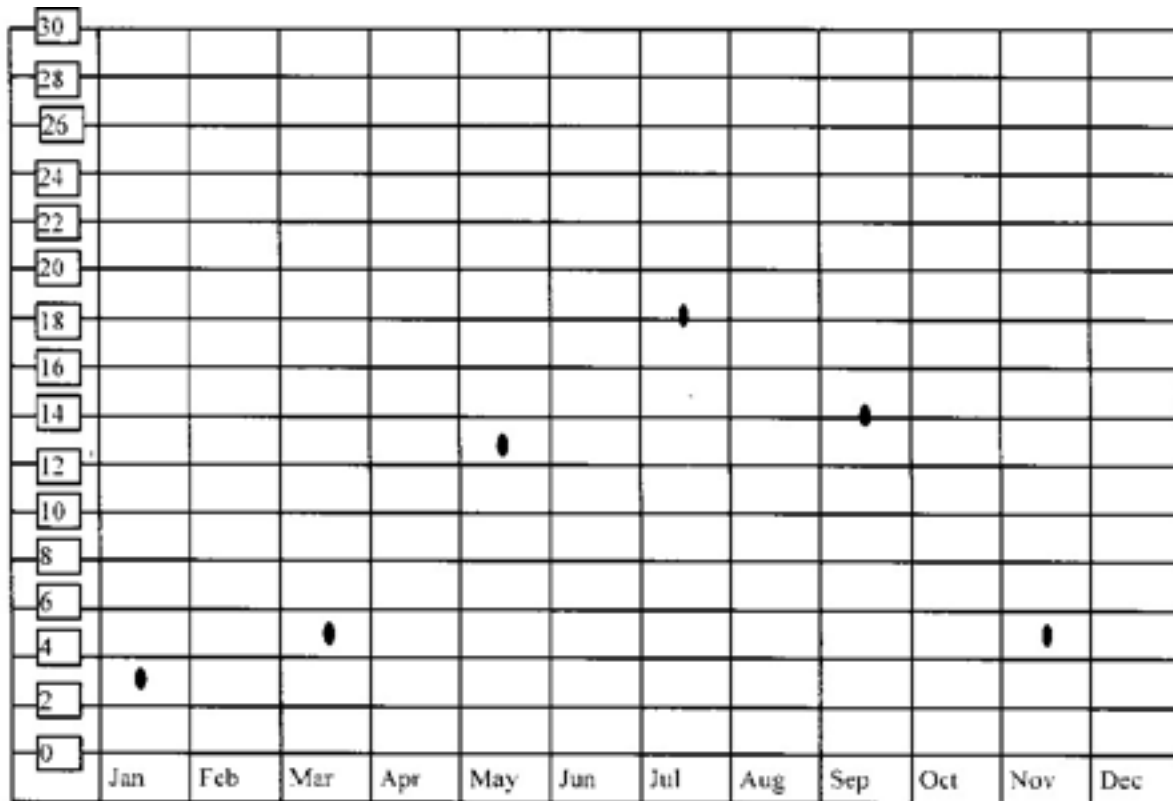
You can grow bananas in Jamaica because it's hot enough and wet enough.

You can't grow bananas in England because it's not hot enough or wet enough.

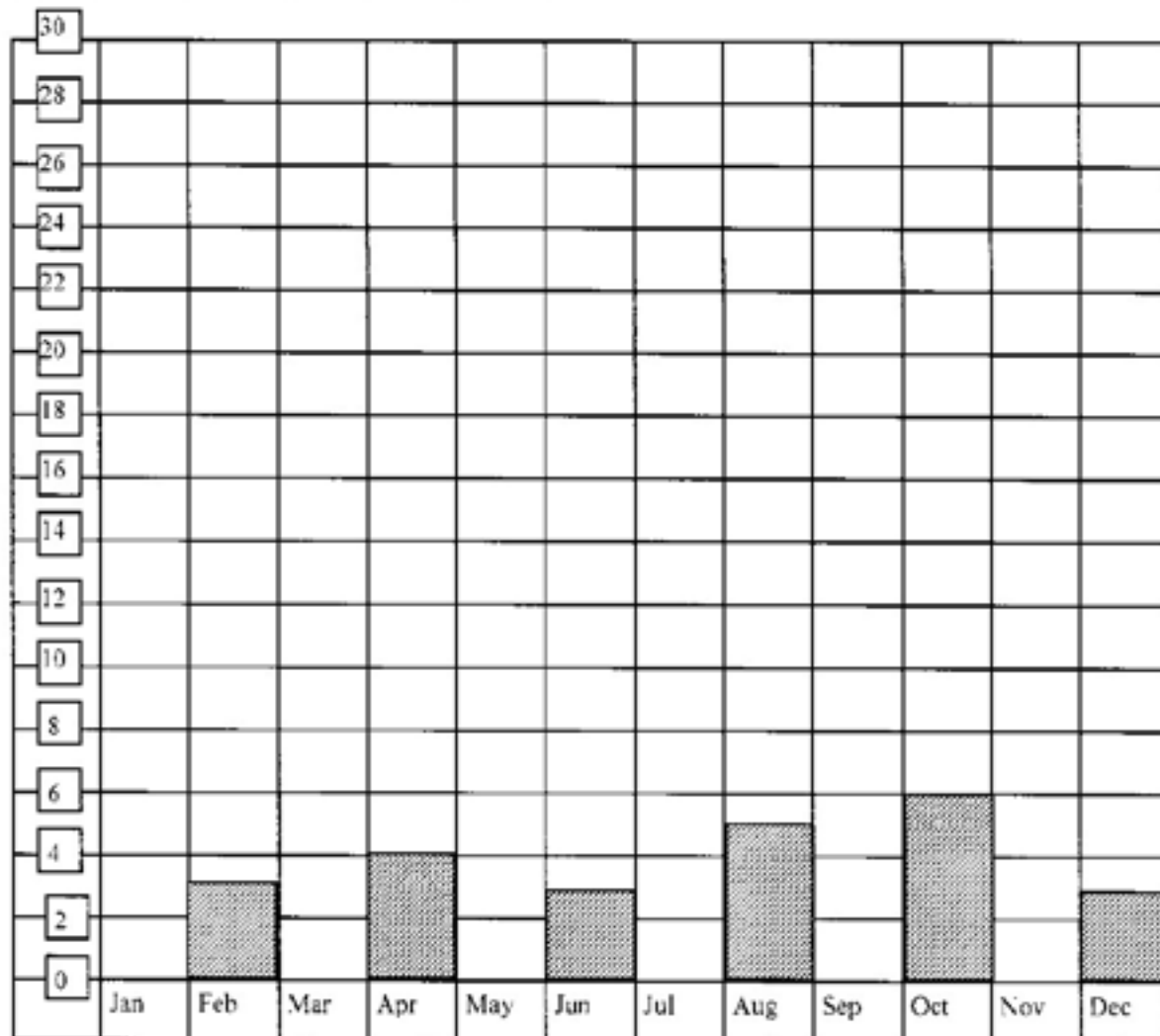
Further practise in these structures can be provided by giving pupils a substitution table which they can use to construct true sentences either orally or in writing or both.

Nottingham, England sheet A

temperature in degrees Celsius

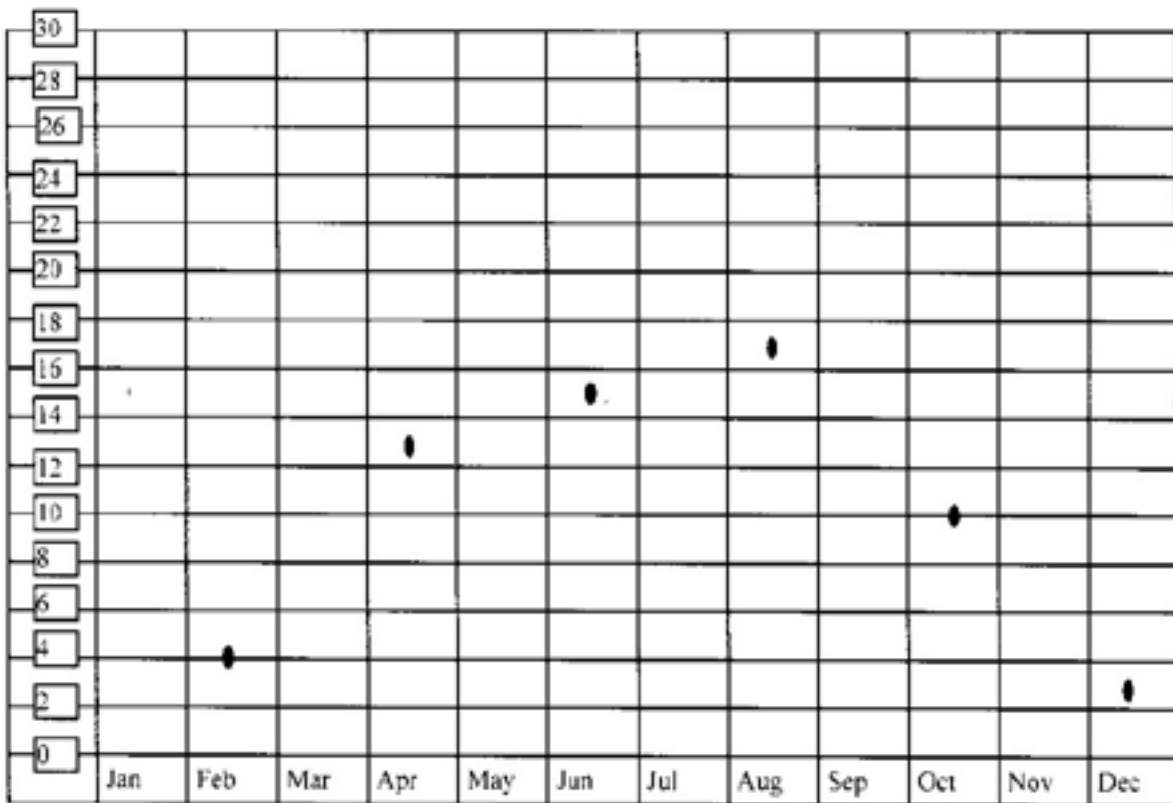


rainfall in cm.

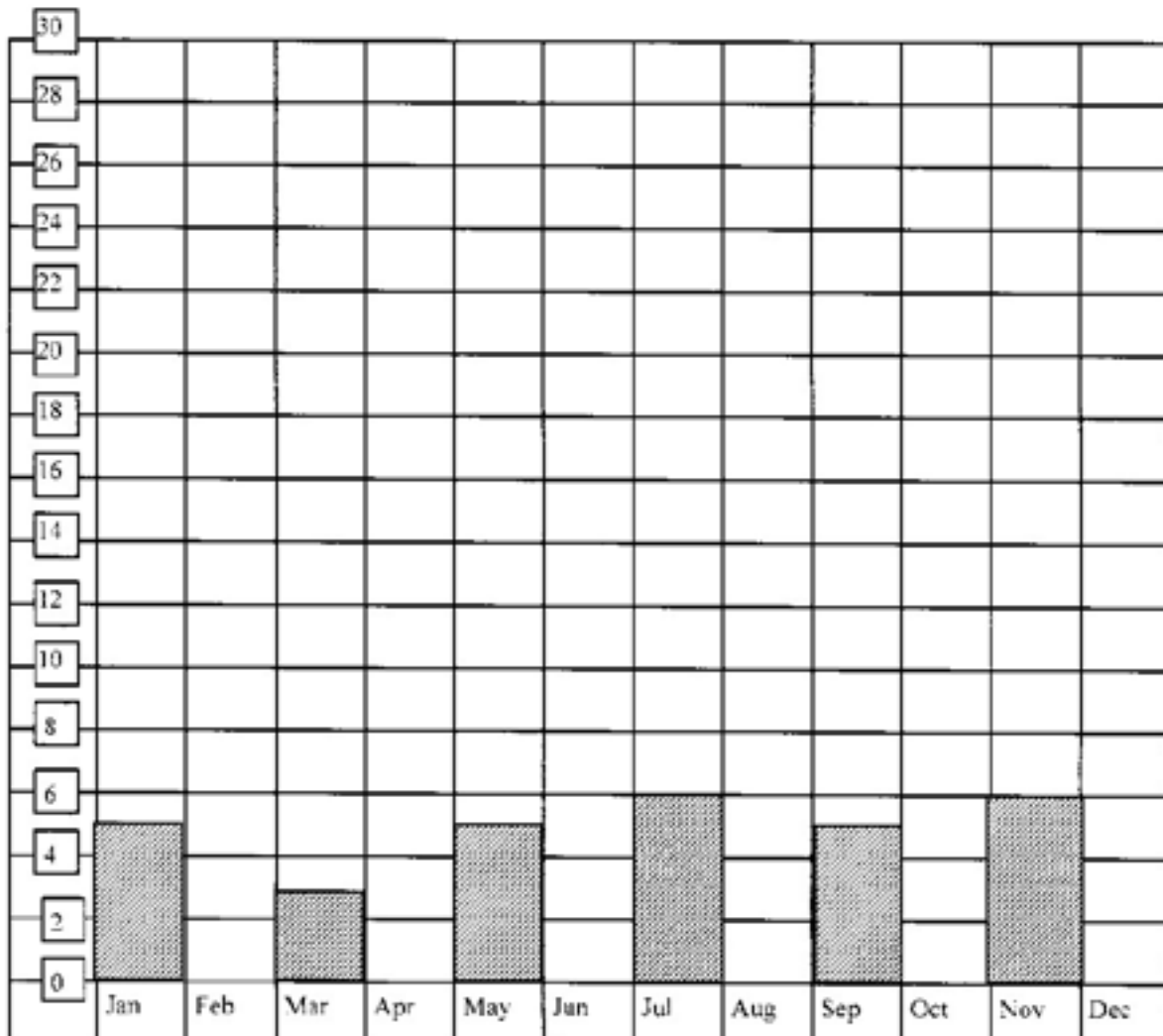


Nottingham, England sheet B

temperature in degrees Celsius

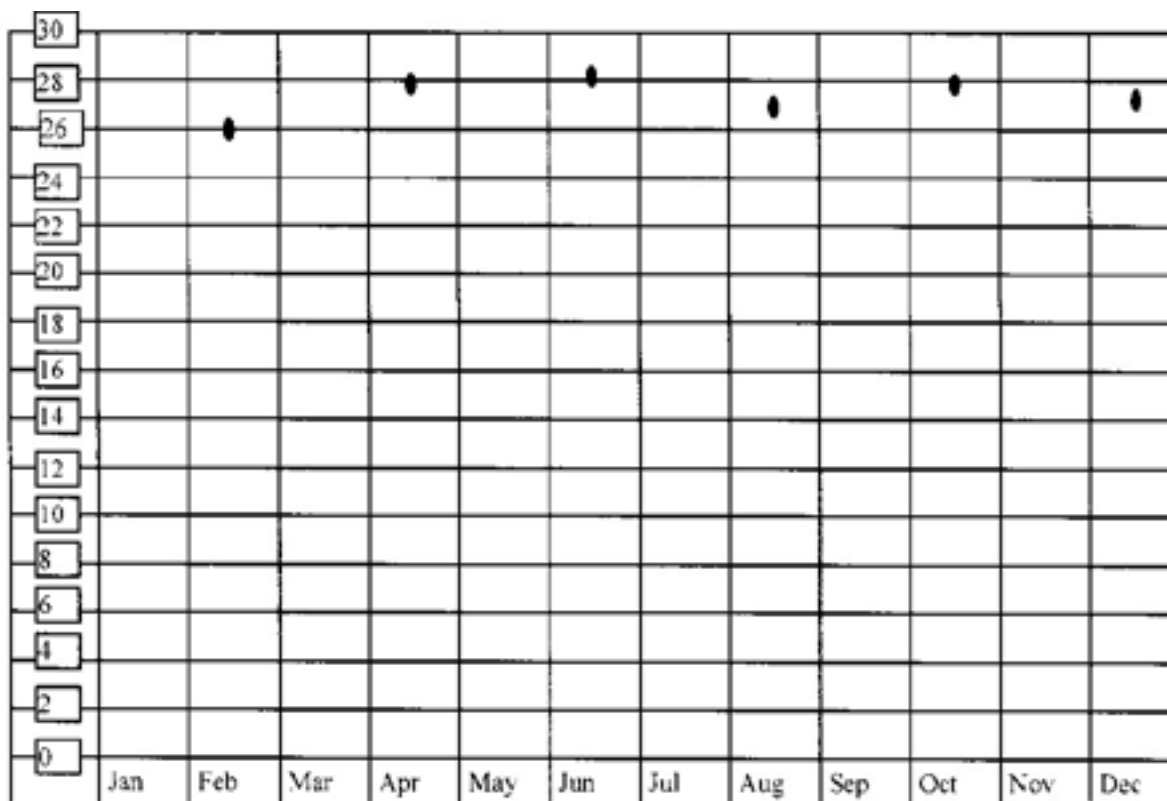


rainfall in cm.

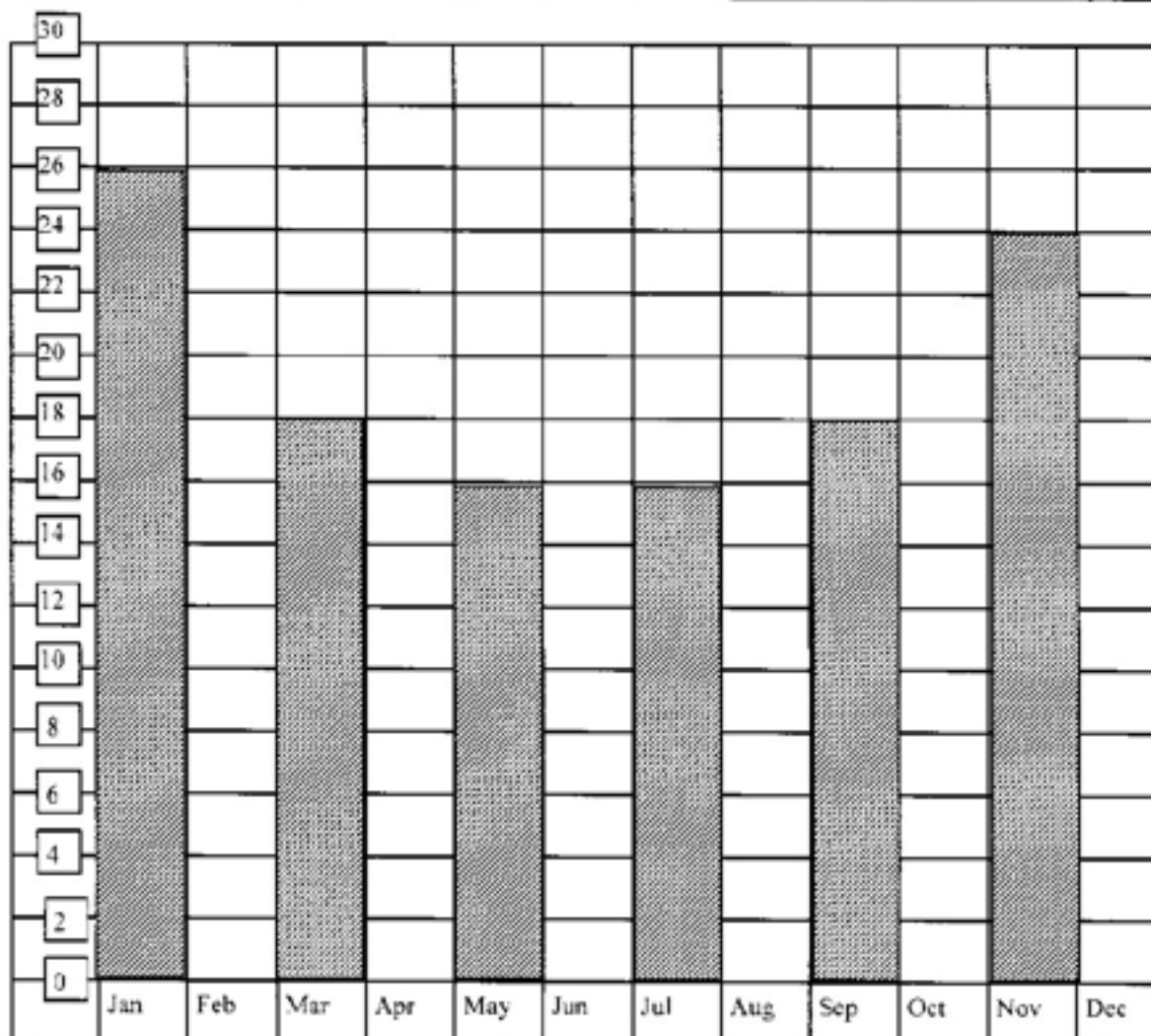


Kingston, Jamaica sheet C

temperature in degrees Celsius

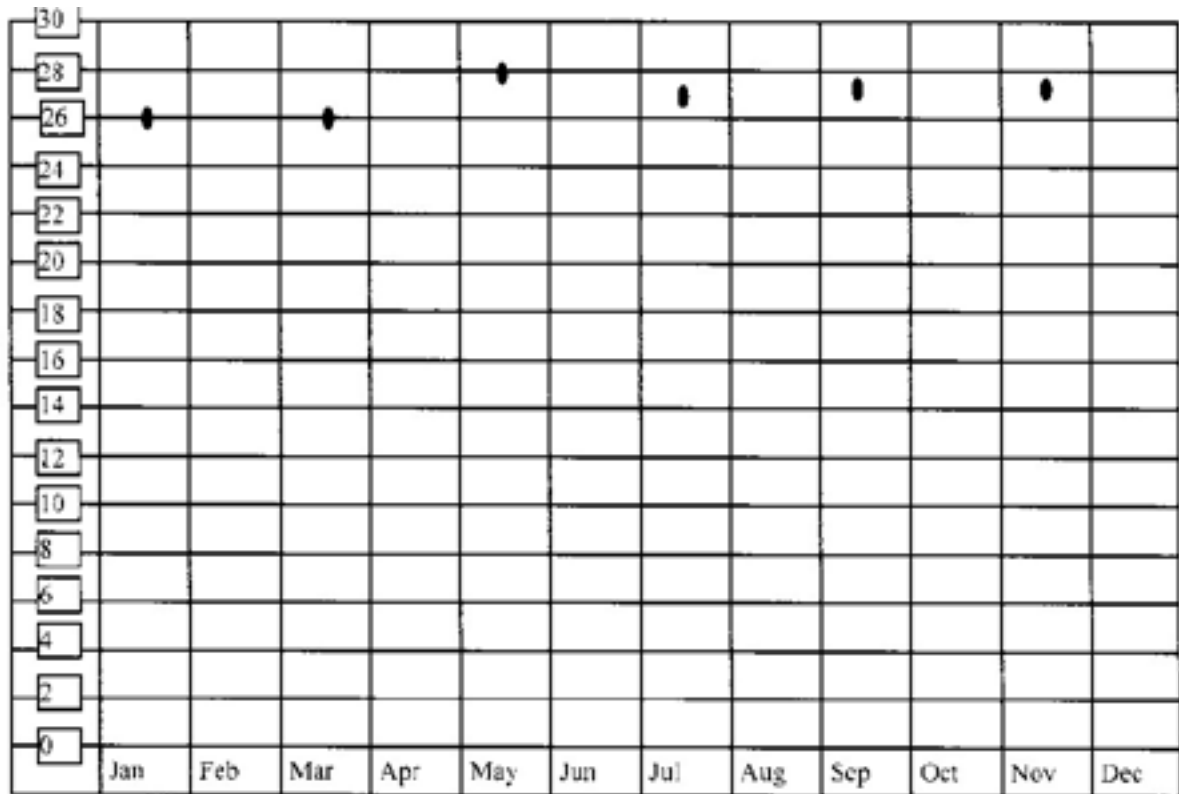


rainfall in cm.

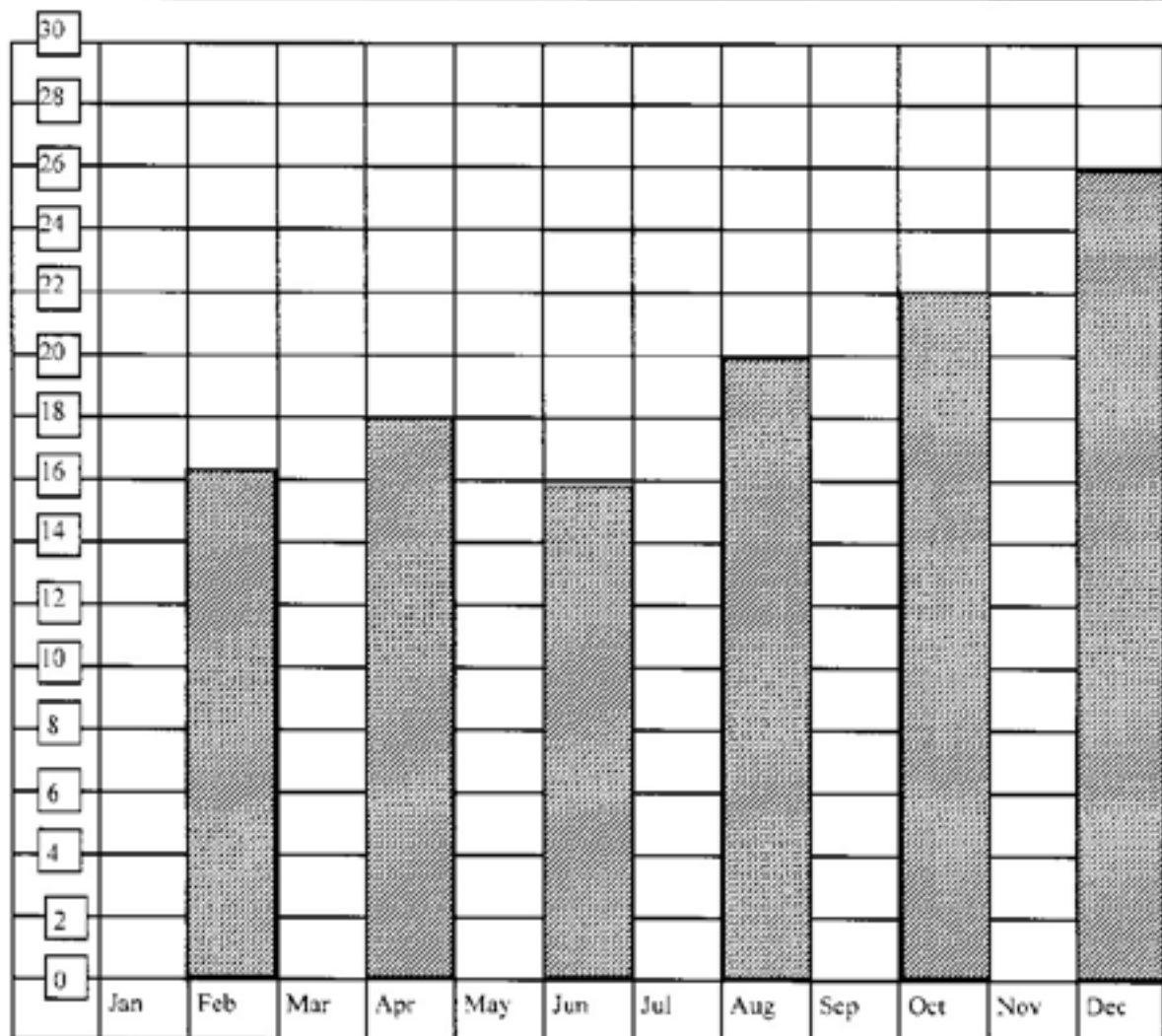


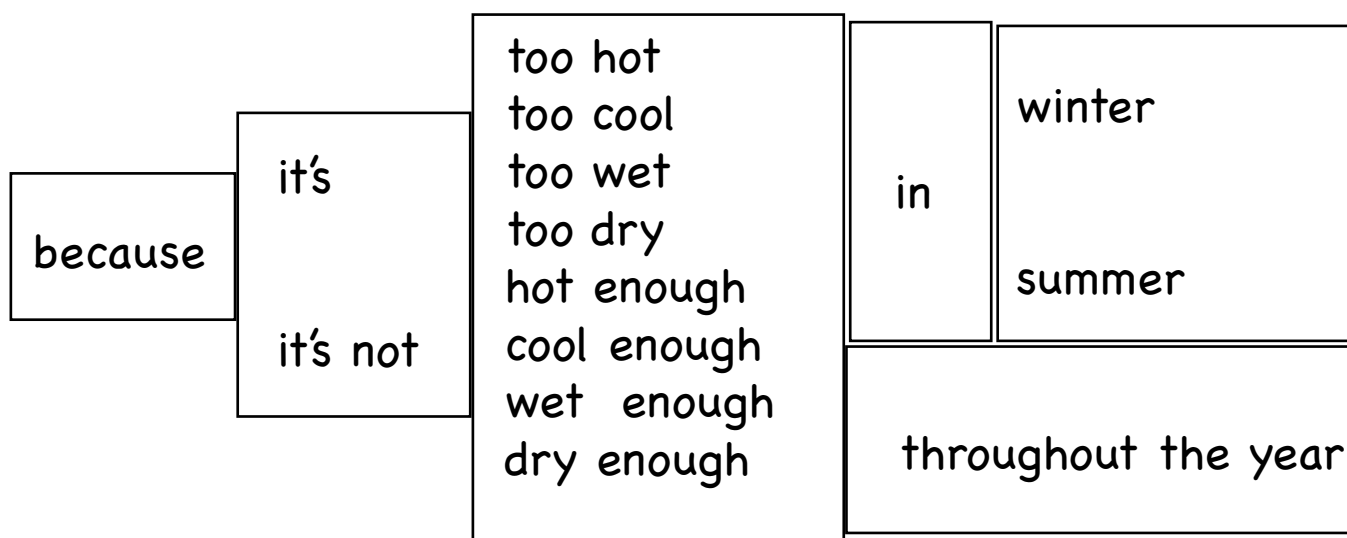
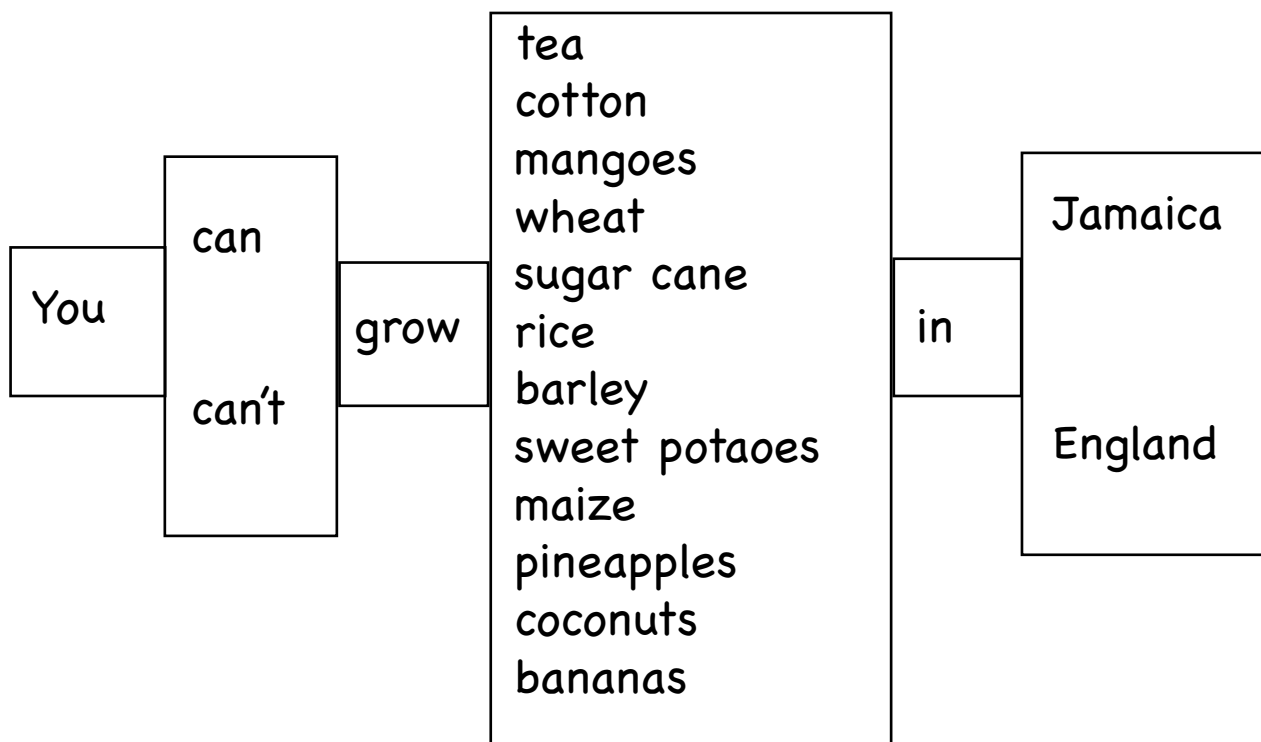
Kingston, Jamaica sheet D

temperature in degrees Celsius

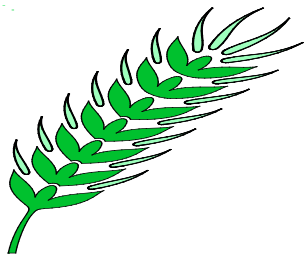


rainfall in cm.

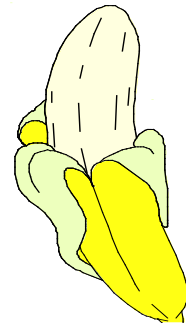




What can you grow?



Wheat



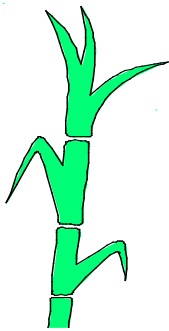
Bananas



Mangoes

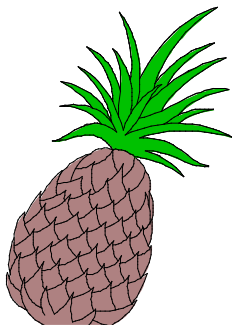
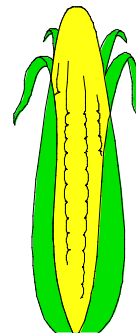


Coconuts

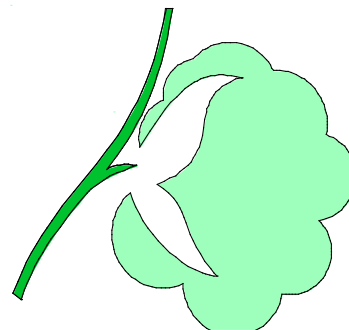


Sugar Cane

Maize



Pineapples



Cotton



Sweet
Potatoes

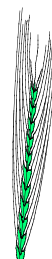


Rice



Tea

Barley



<p>Wheat</p> <p>It needs an annual rainfall of 38 to 98 cm and temperatures of between 15C and 21 C in the summer months.</p>	<p>Bananas</p> <p>They need temperatures of between 21 C and 26 C throughout the year an annual rainfall of about 200cm.</p>
<p>Mangoes</p> <p>They need temperatures of about 26 C during the year and more than 175 cm of rain a year</p>	<p>Coconuts</p> <p>They need temperatures of about 25 C all year and more than 180 cm of rain in the year.</p>
<p>Pineapples</p> <p>They need temperatures of about 26 C all year and above 180 cm. of rain a year</p>	<p>Maize</p> <p>It needs five months of temperatures of above 20 C and an annual rainfall of 62 to 100 cm.</p>
<p>Rice</p> <p>It needs five months of temperatures above 21 C and 200cm. of rain each year but with a dry summer.</p>	<p>Cotton</p> <p>It needs 200 days in the year of temperatures about 20 C and between 50 and 100 cm. of rain in the year.</p>
<p>Sweet Potatoes</p> <p>They need temperatures of above 24 C all year and over 200 cm. of rain during the year.</p>	<p>Tea</p> <p>It needs temperatures of between 15 and 30 C all year and more than 125 cm of rain in the year.</p>
<p>Sugar Cane</p> <p>It needs an annual rainfall of about 200 cm. and temperatures between 21 C and 30 C all year.</p>	<p>Barley</p> <p>It needs temperatures of below 20 C and under 100 cm of rain each year.</p>

What Can You Grow?

Crops	England	Jamaica
Wheat		
Mangoes		
Bananas		
Coconuts		
Sugar Cane		
Maize		
Pineapples		
Cotton		
Sweet Potatoes		
Rice		
Tea		
Barley		

What can you grow?

Crops	England	Why can you / can't you ?	Jamaica	Why can you / can't you ?
Wheat				
Mangoes				
Bananas				
Coconuts				
Sugar Cane				
Maize				
Pineapples				
Cotton				
Sweet Potatoes				
Rice				
Tea				
Barley				