

# HOW TO TEACH... SOURCE SUSTAINABLY

## A TEACHER'S GUIDE TO THE LIVE BETTER CHALLENGE

### INTRODUCING THE LIVE BETTER CHALLENGE

The Live Better Challenge is a nation-wide campaign introducing a series of challenges to help inspire and motivate individuals and families to live a better and more sustainable life.

Covering topics such as reducing food waste, getting fitter and lowering energy costs, the campaign has asked Guardian writers, staff and topic experts, plus readers and families across the UK, to participate in monthly challenges and contribute tips and advice,

creating engaging content and visuals to show how, as a nation, we are making an impact.

This month we're trying to source sustainably.

Will your school be taking the challenge? We've compiled lots of facts, figures and lesson ideas to help you explore the topic of sustainability in class and engage students in our Live Better Challenge.

**Share your experiences with us at [livebetterchallenge](https://livebetterchallenge.theguardian.com) @theguardian.com**

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Live Better Challenge

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## A BEGINNER'S GUIDE TO **SOURCING** **SUSTAINABLY**

**A**merican cartoonist Charles M Schulz famously said: "All you need is love. But a little chocolate now and then doesn't hurt." With 3bn pounds of the sugary treat scoffed every year around the world, Schulz can't be wrong, can he?

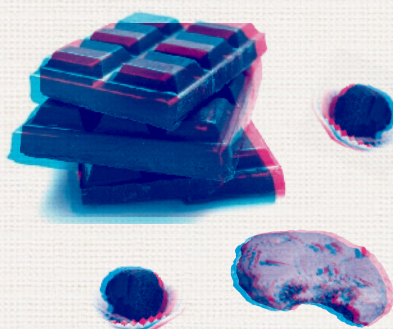
Our insatiable appetite for chocolate is taking its toll. Outdated farming methods have left cacao crops susceptible to ageing and disease, and the benefits for farmers are terrible. Farmers remain in poverty, trees are succumbing to deterioration and the world is slowly but steadily running out of cocoa as demand outstrips supply.

Transporting the ingredients to make our favourite soft centre or champagne truffle also makes the culinary pleasure a guilty one. On average, chocolate has to travel a whopping 3,705 miles to make it on to UK supermarket shelves. That's a sizeable carbon footprint.

### THE SWEET TASTE OF PUBLIC PRESSURE

It's a problem that is not just restricted to the production of chocolate. Most of the contents of your modern shopping trolley tell their own troubled story of waste, exploitation and environmental damage. From juicy steaks, through succulent fish fillets, to fresh fruit and vegetables, the food we eat on a daily basis might leave a bitter taste in our mouths if we knew the truth of how it ended up on our supermarket shelves.

Things are changing, though, and organisations are waking up to smell



### OUR INSATIABLE APPETITE FOR CHOCOLATE IS TAKING ITS TOLL

the sustainably sourced coffee. What was once a niche concern, embraced by hemp-clad hippies investing in produce that had minimal impact on the environment and people who deliver it, is now mainstream.

The Fairtrade mark came into being two decades ago, after years of campaigning by a movement that was appalled that millions of people who make the products we eat and wear were condemned to starvation wages and appalling working conditions. The distinctive sticker, which is found on everything from bananas to tea, has become a symbol of ethical eating.

Multibillion pound corporations have since caved into public pressure, with household names such as Kellogg's and Sainsbury's promising to put sustainability at the heart of their business operations.

### INDIVIDUAL SOLUTIONS

But what part can the individual play? Sourcing food locally at a high street butchers or farmer's market is not always an affordable option. But a bit of careful detective work when grocery shopping - checking the label for the country of origin and a Fairtrade stamp, for example - will reduce the food miles in your meals.

Vegetarianism is another option. Humans currently derive about 20% of their protein from animal-based products, but this may need to drop to just 5% to feed the extra 2 billion people expected to be alive by 2050, according to research by some of the world's leading water scientists.

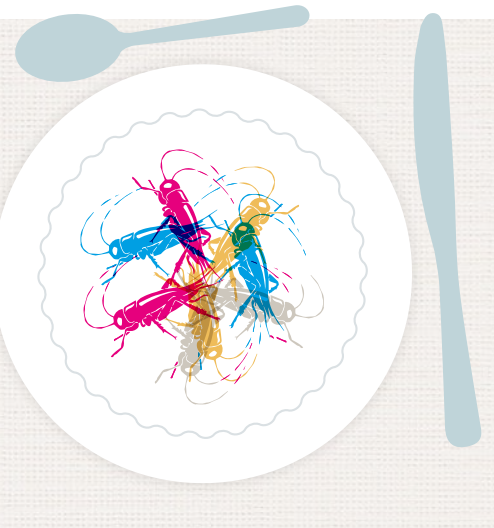
Adopting a vegetarian diet would increase the amount of water available to grow more food in an increasingly climate-erratic world, they say. An animal protein-rich diet requires five to 10 times more water than a vegetarian diet and one third of the world's arable land is used to grow crops to feed the animals we eat.

As technology and globalisation bring the world ever closer together, the negative impact of our modern lifestyles on the planet and its population is being brought into sharp focus. So whether it's small actions, such as buying Fairtrade goods, or bold statements like growing your own vegetables or giving up meat, any change we make as individuals or collectively to live more sustainably will help secure the protection of our precious world resources for generations to come.

# DISH UP A SUSTAINABLE BUG MEAL

BY 2050, THE WORLD'S POPULATION IS EXPECTED TO RISE TO 9 BILLION. WE WILL NEED TO PRODUCE NEARLY TWICE AS MUCH FOOD AS WE CURRENTLY DO TO FEED THE NEW ARRIVALS. BUT THE UN HAS A SOLUTION: PUT INSECTS ON THE MENU.

HERE ARE THREE CREEPY-CRAWLY RECIPES TO WHET YOUR APPETITE:



## YUM YUM

### - CHOCOLATE-DIPPED CANDIED - GINGER CRICKETS -

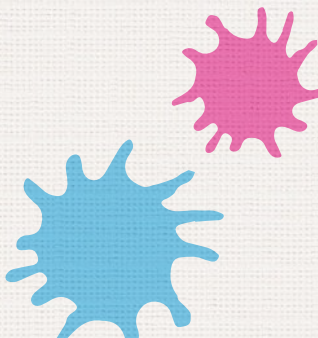
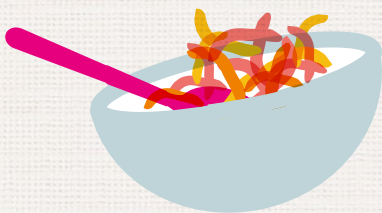
#### Ingredients

110g high-quality dark chocolate  
20 pieces crystallised ginger  
20 dry-roasted crickets  
(can be sourced online)



**1** Line a plate with parchment paper. Break the chocolate into pieces and put in a microwave-safe bowl. Heat for 30 seconds at 50% power, remove, stir, and continue cooking at 50% power in 10-second increments, stirring after each burst, until the chocolate is melted.

**2** Take a piece of ginger, hold a cricket alongside it and dip the bottom half in melted chocolate. Let the excess drip away. Place each chocolate-dipped ginger and cricket duo on the prepared plate and leave in the fridge until the chocolate sets.



## GRUBS UP

### - BANANA WORM BREAD -

#### Ingredients

75g shortening fat  
130g sugar  
2 bananas, mashed  
300g flour  
1 tsp soda  
1 tsp salt  
60g chopped nuts  
2 eggs  
50g dry-roasted mealworms



**1** Mix together all the ingredients and bake in a greased loaf tin at 180C/350F/gas mark 4 for about one hour.



## SCRUMPTIOUS

### - CRICKET FRIED RICE -

#### Ingredients

2 large eggs  
1 tsp kosher salt  
Powdered ginger, to taste  
Powdered coriander, to taste  
Garlic powder, to taste  
1 tsp fresh ground black pepper, or to taste  
4 tbsp oil for stir-frying, or as needed  
1kg cold cooked brown rice  
180g roasted crickets (about 3-4 dozen)  
150g chopped spring onions  
1½ tbsp light soy sauce or oyster sauce, as desired  
125g cooked corn kernels



**1** Lightly beat the eggs with the salt, ginger, coriander, garlic powder and pepper.

**2** Heat a wok or frying pan and add two tablespoons of oil. When the oil is hot, add the egg mixture and cook, stirring until lightly scrambled but not too dry. Remove the eggs and wipe clean the wok or frying pan.

**3** Add two tablespoons of oil. Add the rice and stir-fry for a few minutes, using a wooden spoon to break it apart. Add the crickets and onions, and stir in soy or oyster sauce as desired. Continue stir-frying for a few more minutes. When the rice is heated through, return the egg to the pan, mix and stir in corn kernels. Serve hot.

# SOURCING SUSTAINABLY QUIZ



- 1. More than 100m tonnes of bananas are produced every year. What proportion sold in the UK are Fairtrade?**
  - a) One in three
  - b) One in four
  - c) One in five
- 2. How many million tonnes of carbon dioxide does the UK emit from transporting food?**
  - a) 9
  - b) 19
  - c) 29
- 3. What percentage of fruit and vegetables eaten in the UK are imported?**
  - a) 75% of fruit and 30% of vegetables
  - b) 85% of fruit and 40% of vegetables
  - c) 95% of fruit and 50% of vegetables
- 4. Humans derive about 20% of their protein from animal products. How much do we need to reduce this by to feed the extra 2 billion people expected to be living on the planet by 2050?**

5%    10%    15%
- 5. What percentage of global food production is wasted?**

11%    22%    33%
- 6. According to the Soil Association, how much more expensive is the average organic shopping basket compared to one filled with non-organic equivalents?**

3.4%    4.4%    5.4%
- 7. Which of the following fish, featured on a special series of Royal Mail stamps, is threatened by unsustainable fishing methods?**
  - a) Red gurnard
  - b) Pouting
  - c) Common skate
- 8. The global honey bee population is in dramatic decline. How many crops are the insects responsible for pollinating worldwide?**
  - a) More than 90
  - b) More than 100
  - c) More than 110
- 9. Livestock emissions currently account for what percentage of global greenhouse gases?**

10.5%    14.5%    18.5%
- 10. Insecticides have been identified as the key factor in the recent reduction in numbers of what animal?**
  - a) Birds
  - b) Pigs
  - c) Squirrels



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# GOING BANANAS

## BANANA PRICING: THE UNSUSTAINABLE NATURE OF THE UK'S FAVOURITE FRUIT

Read the Guardian article below as a class, in groups or pairs, and then consider the following questions:

Britain is a nation of banana lovers. On average, UK consumers eat 10kg of the energy-rich, nutritious fruit every year - equivalent to about 100 bananas per person. But our passion for bananas could be endangering the very industry responsible for the bendy yellow fruit.

For the best part of a decade, UK supermarkets have been locked in a price war over banana sales, which account for about 7% of the world export market. As a result, the price at the till has gradually reduced, squeezing the margins for people throughout the banana industry.

"There's no way this can continue much longer," says Alistair Smith, international co-ordinator for consumer group Banana Link. "It's just not sustainable for anyone in the supply chain. We've now got a price that is half what it was in real terms 15 years ago."

The cost of loose bananas at Tesco, Asda, Sainsbury's and the majority of other UK supermarket chains stands at



68p a kilo, down from 108p/kg in 2001. The only exception is the Co-op, where the price is 31% higher, at 99p/kg. By comparison, a cox apple in Tesco costs £1.75/kg and a conference pear £2/kg. It's little wonder bananas are so popular.

"British retailers have led the race to the bottom in the world banana market," says Smith, who alleges that UK supermarkets now frequently sell loose bananas for less than they buy them. He is calling for European regulators to crack down on the practice, which is illegal in

many EU states.

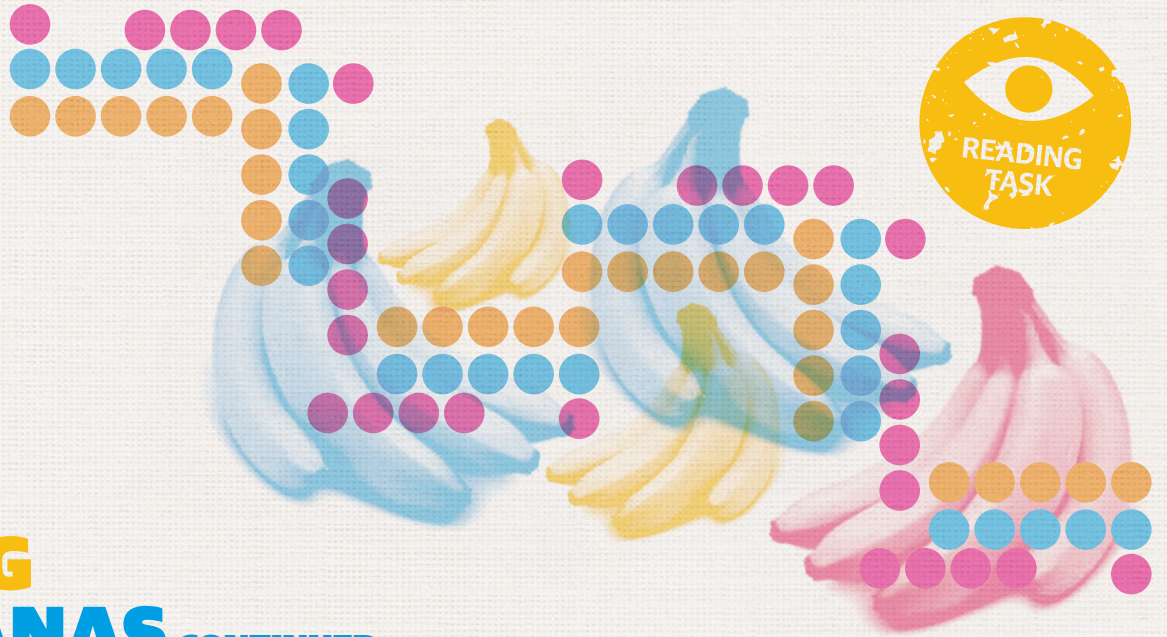
"Competition law so far deals only with cartels of suppliers, not with cartels of buyers. But we're in a new world where cartels of buyers can force down prices, whatever the sector."

### LOSE-LOSE SITUATION

The big losers in this battle are banana growers and their workers, most of whom are in poor countries in the Caribbean, South and Central America, and Africa. For farmers in former British colonies such as the Windward Islands, today's lower prices are compounding the effects of gradual trade deregulation, which has opened up the European market to large-scale Latin American producers over recent years.

"If we look at the root causes of the lack of sustainability in the banana sector, it's mostly linked to very low producer prices, which are mainly due to low consumer prices. Producers do not get paid enough for their bananas so that they can invest in sustainable production methods," says Pascal Liu, senior economist at the UN-based FAO and manager of the World Banana Forum.





## GOING BANANAS CONTINUED



“Producers are not able to invest in, for example, an integrated pest management system if the price is really too low. They are likely to use whatever pesticides they have, even if they are low quality or dangerous.

“If retailers raise the price, it becomes easier for producers to invest in sustainable production methods.”

The situation in banana-producing countries has now reached “such a bad level” that retailers are beginning to take note of such warnings. If farmers aren’t able to make ends meet, the bananas on the shelves of UK supermarkets will either drop in quality or become increasingly scarce.

Such a scenario is a lose-lose for everyone, including supermarkets, the producers and their banana-loving customers.

A breakthrough could be in the offing, however. At the end of November, under the umbrella of the World Banana Forum, global retailers are to meet banana traders, importers, distributors and others in the supply chain. It is understood that a possible price rise of a few cents per kilo will be under discussion.

Even a small rise could make a huge difference at the beginning of chain, says Smith. For that to be true, producers and their workers need to see the positive results of any price increase. Collective bargaining is critical in this respect. In countries such as Costa Rica, where trade unions face substantial opposition, the ability of banana growers to negotiate is sketchy at best.

Producer rights for those trading under the Fairtrade label are far more



THE UK IS A NATION OF BANANA LOVERS

secure. Guidelines set by the Fairtrade Foundation, which now covers 35% of all banana sales in the UK, are designed to guarantee safe worker conditions as well a fair minimum wage. The current minimum price for producers of unpacked Fairtrade bananas ranges from \$6.1 (£3.77) to \$8.15 (£5.03) a box (equivalent to 18.14kg). Each box commands an additional \$1 premium.

### SUPERMARKET SUMS

In the UK, Waitrose and Sainsbury’s have committed to selling 100% Fairtrade bananas. They are the only supermarkets to do so. Alistair Swan, a fruit buyer for Waitrose, says the retailer wants to help growers build secure and viable businesses for the future. In addition to paying a premium, the

company also pays for agronomists to advise farmers on agricultural best practices, such as the reduction of pesticide use.

Yet the fact that retailers selling Fairtrade bananas keep to the current 68p/kg price is worrying.

First, it defies basic economics. Ultimately, someone has to pay the Fairtrade premium. If retailers refuse to pass it on to their consumers, their shareholders will have to pick up the bill. Few will be happy doing so for ever.

Second, it sends out the wrong message to the banana-eating public, who see the Fairtrade label and presume 68p/kg is a fair price. It’s not. Tesco, which has a seat on the steering committee of the World Banana Forum, refutes claims that current prices are endangering banana production.

The UK retailer insists that it works directly with banana farmers and has “ethical plans” in place that guarantee a viable livelihood for producers. “We believe banana sourcing conducted responsibly is viable [and] we would never compromise on these issues to achieve a better price,” says a Tesco spokesperson.

Tim Aldred, head of policy and research at the Fairtrade Foundation, queries the level to which production and logistical efficiencies can offset the effects on farmers of long-term price reductions.

“We estimate that farm-level production costs have probably doubled over the course of a decade ... which results in very severe pressure on banana farmers, especially those unable to sell on Fairtrade terms,” he says.



## **CAN YOU ANSWER THESE QUESTIONS?**

- 01** Roughly how many bananas does a UK consumer eat per year?
- 02** Why is the price of bananas threatening the future of the fruit?
- 03** Calculate the difference in price between a kilo of bananas and a kilo of cox apples.
- 04** What measures does Banana Link's Alistair Smith suggest to combat the supermarket price war?
- 05** Who are the biggest losers of the price war and why? List the main consequences of pricing bananas too low.
- 06** Why are Fairtrade bananas potentially controversial?
- 07** What have you learnt from reading and studying this article?





# WHY BUY STRAWBERRIES FROM SPAIN?

We are used to the idea of being able to visit the supermarket to buy foods that aren't available in Britain at a particular time of year. Examples include asparagus from Peru, beans from Zimbabwe and strawberries from Spain. The food miles involved in bringing these foods to our shores can have a considerable environmental impact.

Let's look at the example of Spanish strawberries. Do we need strawberries out of season? Could we wait until strawberries are ripe in Britain? Is eating seasonally be a good thing?

CUT OUT THE STRAWBERRY OPINION CARDS OVERLEAF. IN PAIRS OF SMALL GROUPS, ASK PUPILS TO DO THE FOLLOWING:

**1** Ask students to think about the arguments that relate to energy and hand out these cards. Which is the most important issue? Is there one or many?

**2** Then ask pupils to put all cards into one of these two groups: arguments for bringing in strawberries from Spain during our winter and arguments against.

**3** Finally, ask pupils to think about this statement: "The carbon dioxide produced by heating greenhouses in the UK might be more than the carbon dioxide produced by transporting strawberries from Spain." Ask if they think this is likely to be true. (It is.)

This means that it might not be so bad, but there may be other issues to consider that concern the sustainability of food.

## WHAT ARE THOSE ISSUES?

**Prompts include:**

- A discussion about pesticides, which are more widely used in Spain.
- Strawberries are a part of the cultural heritage in many parts of the UK.
- Strawberry fields often have diverse food webs or eco systems with many visiting birds.
- Greenhouses in the UK are usually glass but in Spain strawberries are grown under polytunnels. Polythene carries a big carbon footprint.
- What about the waste? Is more waste associated with Spanish strawberries?

Finally, ask the students where they stand on the argument? A useful way to end the lesson is to draw a line in the classroom. One end is marked as for importing strawberries and the other against. Ask the children to stand somewhere along that line according to how much they agree or disagree with the issue. Most will realise from this exercise that decisions aren't as easy as they seem. You could ask pupils to articulate their views.



# STRAWBERRY OPINION CARDS



Energy is needed to extend the period when strawberries are grown in the UK



It is much warmer in Spain, both earlier and later in the year, so strawberries can be grown from February to December without any extra heating



The carbon dioxide produced by heating greenhouses in the UK might be more than the carbon dioxide produced by transporting strawberries from Spain



Trucks bringing strawberries up from Spain use fossil fuels and produce carbon dioxide



Strawberries have been grown in UK for many years and their cultivation provides work for many people



Most greenhouses in the UK are heated during winter by gas, a fossil fuel



The energy needed to heat greenhouses out of season in the UK creates carbon dioxide and this contributes to the greenhouse effect



Some greenhouse owners in the UK use combined heat and power, which means they generate their own electricity, selling it to the national grid and using waste heat for their glasshouses



# STRAWBERRY OPINION CARDS



**The cultivation and sale of strawberries in the UK brings in money to the local area**



**Strawberries have been grown in the UK for many years and the skills in cultivation are passed from one generation to the next**



**Growers of strawberries in the UK cannot put solar panels on their greenhouse roofs to make renewable energy because they cut out the sun**



**Energy is needed to extend the period when strawberries are grown in UK.**



**The packaging on UK strawberries is biodegradable and can be composted, creating no waste**



**More energy is needed to transport strawberries from Spain than grow them in the UK all year round**



**Strawberries grown in the UK do not travel very far and can be very local. They have low food miles from grower to customer.**



**Strawberries grown in hot sun are the sweetest and tastiest**





# SHOULD WE ALL BECOME VEGGIES?



PUPILS SHOULD UNDERSTAND THAT FOR A SUSTAINABLE FUTURE, WE NEED TO CURB OUR MEAT EATING HABITS.



Generally, the less red meat someone eats, the lower their carbon footprint. However, a person's carbon footprint is determined by many factors other too. Let's call the dietary component of the carbon footprint the "foodprint".

Pupils should understand that for a sustainable future, we need to curb our meat-eating habits.

Ask students which country is most strongly associated with meat eating? You could supply visual prompts, such as a map of the world.

The US is one of the biggest consumers of red meat. Look at the following data. Emissions are calculated from food that's eaten, food that's wasted by consumers and food that is lost in the supply chain.

#### ASK PUPILS TO ANALYSE THIS DATA:

- Which diet produces the highest CO<sub>2</sub> emissions per year?  
**Answer:** Meat eating.
- Which diets produce the lowest foodprints?  
**Answer:** Vegetarian and vegan.
- Why is there a difference between a vegetarian diet and a vegan diet?  
**Answer:** Dairy products produce considerable CO<sub>2</sub> emissions.

#### DATA: HOW MUCH CO<sub>2</sub> DO DIFFERENT DIETS PRODUCE?



- Are there any other foods that don't feature on this chart that might cause relatively high carbon emissions?  
**Answer:** Non-seasonal fruit

**A more difficult activity is to ask pupils to explain why meat eating is associated with very high CO<sub>2</sub> emissions:**

- Animals require feeding either on grass, grass products or grain. The energy from that goes into the cow. The cow moves around, has to keep warm and this means the cow uses some of that energy. By the time we eat beef much of the energy has been lost. If we want to reduce our carbon footprint we should be eating plants (or plant-derived food) in the first place.
  - Processing of red meat requires energy. The meat then has to be transported and refrigerated.
- Dairy involves a big footprint for similar reasons, often using more energy than is used in processing meat.
- Most pupils will know cows also produce methane and this increases the carbon footprint of a meat eater. Methane production is associated with the greenhouse effect but it doesn't result in any more carbon dioxide.