

2020 - 2021

ZERO CARBON  
SCHOOLS PILOT

# IMPACT REPORT



GREEN  
SCHOOLS  
PROJECT



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# EXECUTIVE SUMMARY

Green Schools Project ran a pilot of a new Zero Carbon Schools programme with four schools in Waltham Forest in 2020-21. The programme was originally intended to last a full year but, due to the pilot taking place during the pandemic, schools had significantly less time than this. However, the pilot was successful in testing most aspects of the programme model and there were some encouraging results.



# SUMMARY OF FINDINGS

## INTENDED OUTCOME

## KEY FINDINGS

## NEXT STEPS

More school communities take action to tackle the climate and ecological crisis.

We worked with all schools to calculate their carbon footprint. To our knowledge, this is the first time this has been attempted with schools in the UK. This is a starting point from which to reduce carbon emissions – ultimately to zero – in future years.

After a year of action being taken at the school, carbon calculations will be repeated to demonstrate progress towards zero carbon. From September, without covid restrictions, parent events can be held to involve the wider school community.

More teachers have practical ideas about how to include climate and nature in lessons.

A teacher training session was successful at one school with 100% of teachers who attended providing positive feedback. Other schools did not have the capacity to deliver sessions due to the pandemic.

All schools taking part in the programme next year will include two teacher training sessions so that this outcome can be achieved.

Young people better understand the severity of the climate and ecological crisis.

Pupils developed their knowledge of climate change, with 73% improving their score on a quiz given at the beginning and end of the programme.

When schools are fully open for an entire academic year, we will include more sessions that explore climate change and we anticipate that this will deepen pupils' knowledge of the climate and ecological crisis.

Young people carry out more actions that tackle the climate and ecological crisis.

175 pupils across the four schools carried out actions that tackle climate change, working on projects that aimed to reduce carbon emissions in the areas of food, travel, and energy at their schools.

With a full, uninterrupted school year pupils will spend longer developing and carrying out their projects. We anticipate that this will lead to more substantial changes at each participating school.

Young people develop the skills and values needed to successfully tackle the climate and ecological crisis.

Most pupils improved their communication, problem solving, teamwork and leadership skills while using a positive, collaborative and community-minded approach. Pupil focus groups and teacher interviews suggest that this is likely to be as a result of the intervention.

To embed skills and values more explicitly into the programme next year, there will be a focus on specific skills in each session and additional sessions that explain the role that values play in developing and sustaining positive environmental behaviour.



# 1. INTRODUCTION



## 1.1 WHAT IS GREEN SCHOOLS PROJECT?

Green Schools Project supports schools to develop an adequate response to the climate and ecological crisis. We help students to lead projects, we deliver teacher training sessions, and we support schools to reduce their carbon emissions with a focus on the learning opportunities provided by this process.

## 1.2 WHAT IS ZERO CARBON SCHOOLS?

Zero Carbon Schools is a new programme run by Green Schools Project that was piloted in four schools in Waltham Forest in 2020-21. The programme was developed to respond to the need for schools to start thinking about how they, like the rest of society, are going to move towards zero carbon emissions. This presents a huge educational opportunity for pupils, whose future will be determined by the extent of the climate crisis, to learn about climate change and be actively involved in taking steps to tackle it.

The programme involves the whole school community, with pupils leading projects, teachers trained to include nature and climate in their lessons and a parent group set up to run events that turn the school into a learning hub for reducing carbon emissions on an individual and local community level.

## 1.3 WHAT IS THE PURPOSE OF THIS REPORT?

This report is intended for teachers and senior leaders at schools, to understand what they can achieve by implementing the programme, and for funders interested in supporting our work. The report outlines the outcomes from the pilot year and next steps to grow the programme and increase its impact.

## 1.4 WHICH SCHOOLS TOOK PART IN THE PILOT?

We worked with 3 primary schools and one secondary school in Waltham Forest. They were: Greenleaf Primary School, Salisbury Manor Primary School, Selwyn Primary School and George Mitchell School (secondary phase).

## 1.5 HOW WAS THIS EVALUATION CONDUCTED?

The evaluation was carried out by Green Schools Project with support from The Centre for Education and Youth (CfEY). The table shows how many pupils and teachers took part in the research activities.

METHOD	NUMBER OF PARTICIPANTS	NUMBER OF SCHOOLS
Pupil knowledge quiz	158	4
Pupil survey	143	4
Pupil focus groups	25	4
Teacher interviews	4	4

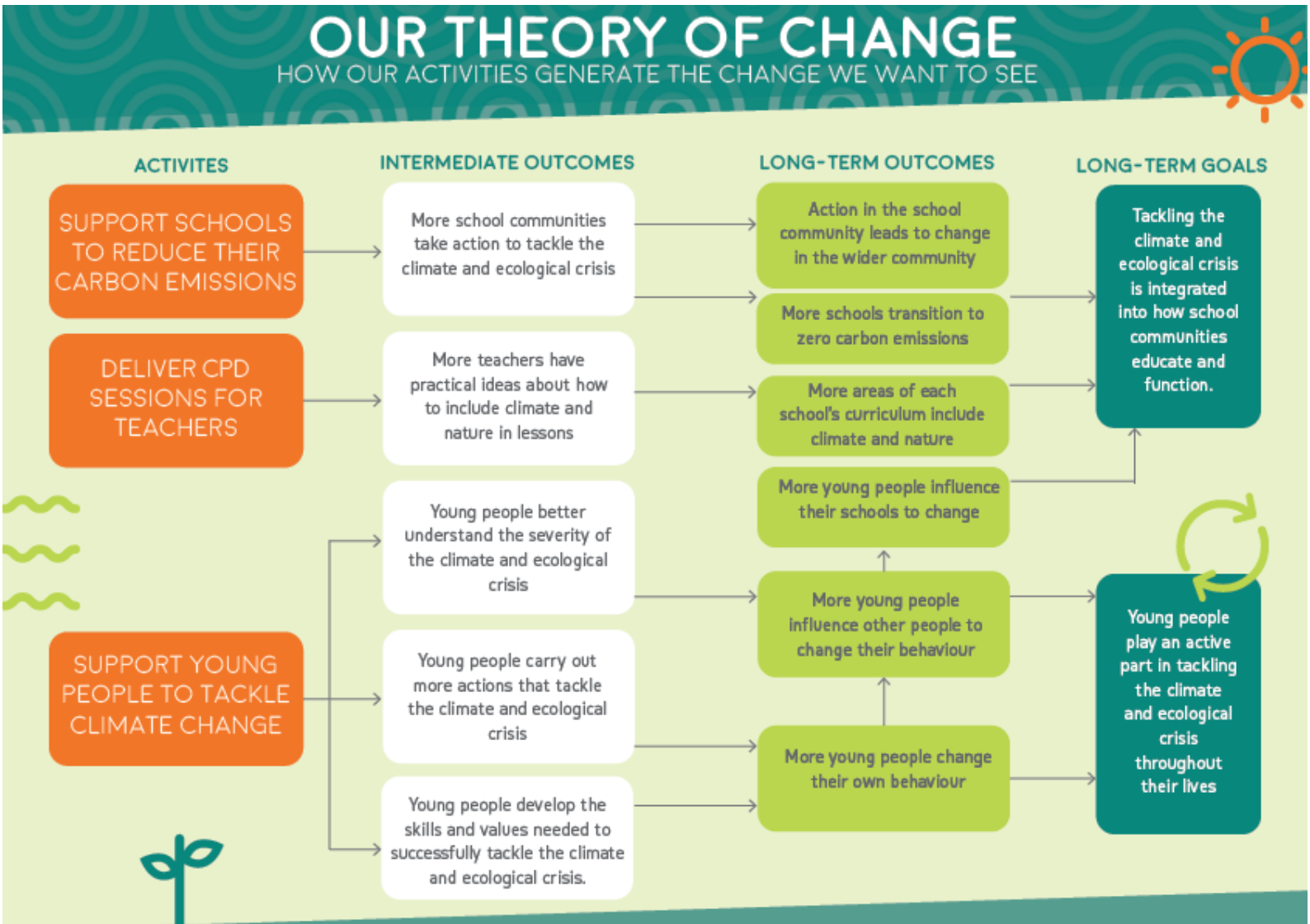
CfEY helped to determine outcomes, indicators, and methods for collecting data. Green Schools Project collected the data, carried out the analysis and wrote the report. CfEY then provided quality assurance on the report.

"WE WILL INHERIT THIS EARTH, SO WE HAVE TO MAKE IT **GOOD FOR THE FUTURE**"

PUPIL AT GEORGE MITCHELL SCHOOL

# 2. OUTCOMES

In the pilot programme, we carried out the activities set out in this Theory of Change in four schools with the aim of achieving the intermediate outcomes by the end of the year. Our hope is that if the activities continue and are embedded in schools, then the long-term outcomes will follow. The long-term goals are beyond the scope of one organisation to achieve, but we can play a part in helping them to become reality in the future.







## 2.1 PROGRAMME STRUCTURE

Pupil sessions involved three phases:

1. Learn about climate change and why we need to go zero carbon. This was delivered through classroom sessions at each school, with pupils in years 5, 7 and 8 taking part.
2. Learn about and calculate their schools' carbon emissions in four key areas: energy, travel, food and purchasing. Carbon emission calculations were carried out through collecting data from each school and using a method developed by Green Schools Project with support from [Carbon Intelligence](#).
3. Run projects to reduce the schools' carbon emissions in one or more of these key areas. Pupils chose which area to tackle, developed an action and ran the projects.

Examples include:

- Encouraging more low carbon and healthy dishes on the school menu.
- Holding a pupil and teacher walk to school week.

## 2.2 NOTE ON WORKING DURING THE CORONAVIRUS PANDEMIC

Due to partial school closures in 2020 and 2021, a full academic year was not available for the pilot as originally intended and we worked with schools in different ways across the year:

- Greenleaf started the programme in November and switched to online activities from January to March.
- Salisbury Manor started in January with live remote sessions then switched to in-person sessions from March.
- George Mitchell and Selwyn delayed the start until in person sessions were possible in March 2021.

Covid restrictions also meant that the community engagement element of the programme was not able to take place, and the teacher training element only took place in one school.

## 2.3 FINDINGS

This section sets out findings from the impact evaluation. Each subsection includes findings relevant to each intermediate outcome.

### INTENDED OUTCOME 1: MORE SCHOOL COMMUNITIES TAKE ACTION TO TACKLE THE CLIMATE AND ECOLOGICAL CRISIS.

Each school taking part in the pilot took some actions to tackle the climate and ecological crisis. The first action was to calculate the school's carbon emissions. Then pupils at each school carried out projects to reduce them.

We used data provided by schools in the areas of energy, food, travel and purchasing to calculate an estimate of their carbon emissions with support from [Carbon Intelligence](#).

	GREENLEAF	SALISBURY MANOR	GEORGE MITCHELL	SELWYN
	<b>TONNES OF CARBON EMISSIONS</b>			
ENERGY	79	66	156	133
FOOD	70	41	111	111
TRAVEL	20	27	37	36
PURCHASING	81	56	172	(No Data)
<b>TOTAL</b>	<b>249</b>	<b>190</b>	<b>476</b>	<b>280</b>
<b>TOTAL PER PUPIL</b>	<b>0.59</b>	<b>0.60</b>	<b>0.83</b>	<b>0.41*</b>

\*not including the missing data point

This is the first programme that we know of to attempt to calculate schools' carbon emissions. The results are an estimate, and it is not possible at this stage to benchmark schools' results. As more schools follow this method benchmarks will be developed.

Calculating the carbon emissions of a school is a useful step which creates a baseline. Actions can then be taken and, if measured again using the same methods, it will be possible to see whether reductions are made which would demonstrate progress on the school's journey towards zero carbon.

We had hoped to measure the impact of the programme on teachers' environmental attitudes and behaviour with baseline and endpoint surveys. However, due to schools starting the programme late in the year this was not possible.

The community element of the programme could not be delivered due to covid restrictions. However, some teachers and pupils remarked that they continued the conversations that they had during the sessions at home with siblings and parents.

This would suggest a wider impact on the families of the participating pupils. The quotes below, taken from teacher interviews and pupil focus groups, provide an illustration of some of the findings outlined, above:

"The school now plans to take action, with meetings in September with the new staff and the governing body to try implement it ... there's talks of more climate days and drop down days in next year. It's having a massive impact on our attitude as a school to the climate crisis."

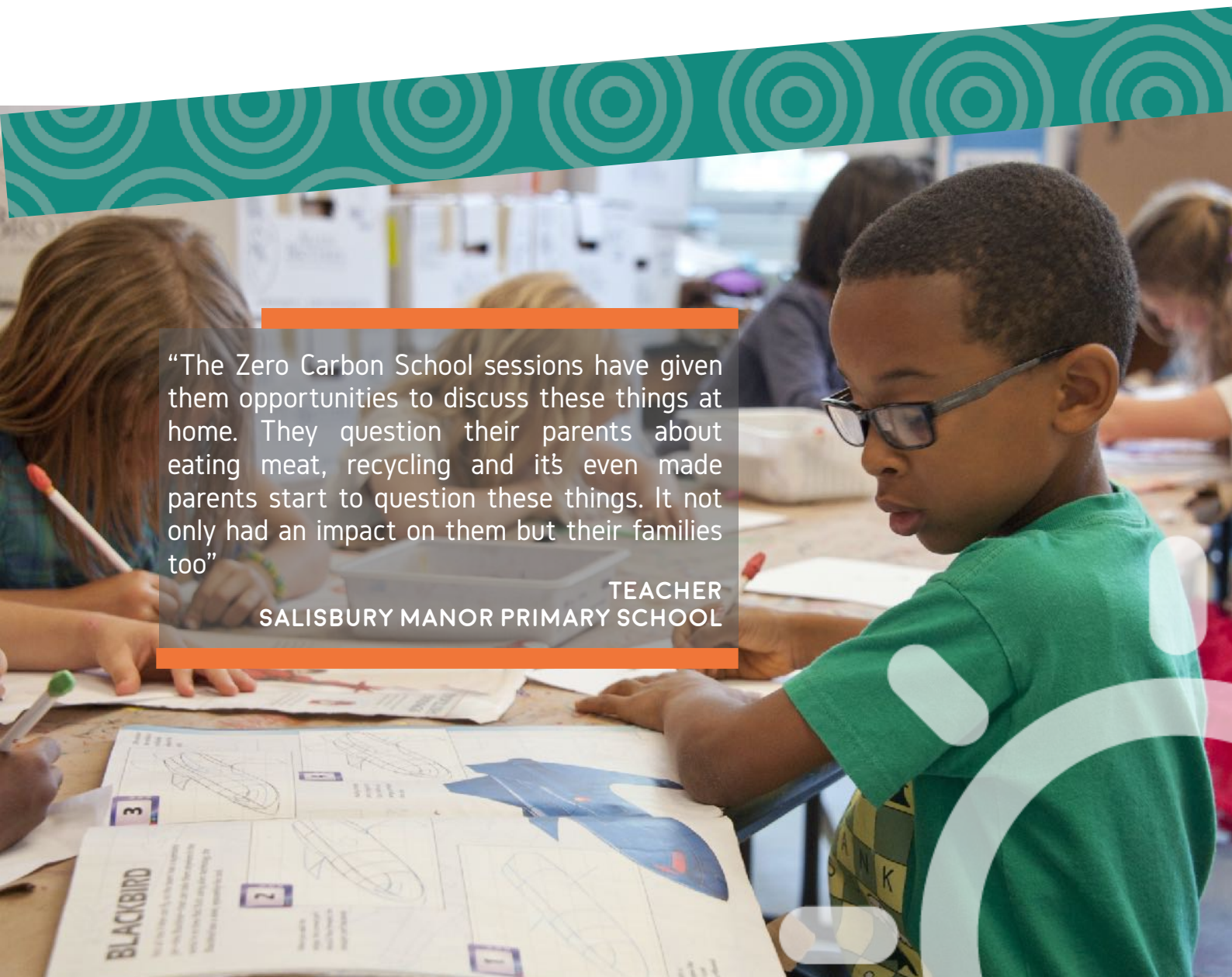
**TEACHER AT GEORGE MITCHELL SCHOOL**

"Finding out the exact amount of carbon was a good way to drive us to do something. it motivated us."

**PUPIL AT GEORGE MITCHELL SCHOOL**

"At home, I always try to speak to my parents and brothers about what we can do to help."

**PUPIL AT SELWYN PRIMARY SCHOOL**



"The Zero Carbon School sessions have given them opportunities to discuss these things at home. They question their parents about eating meat, recycling and it's even made parents start to question these things. It not only had an impact on them but their families too"

**TEACHER  
SALISBURY MANOR PRIMARY SCHOOL**



## INTENDED OUTCOME 2: MORE TEACHERS HAVE PRACTICAL IDEAS ABOUT HOW TO INCLUDE CLIMATE AND NATURE IN LESSONS

It was difficult to deliver teacher training sessions due to covid restrictions. School CPD sessions at the start of the year were taken up with training on pupil and staff wellbeing and mental health, remote learning provision and logistical arrangements to operate under covid guidelines. In the summer term, three of the four schools decided that it would be better to hold the staff training the following year when there would be more time to consider and implement any changes.

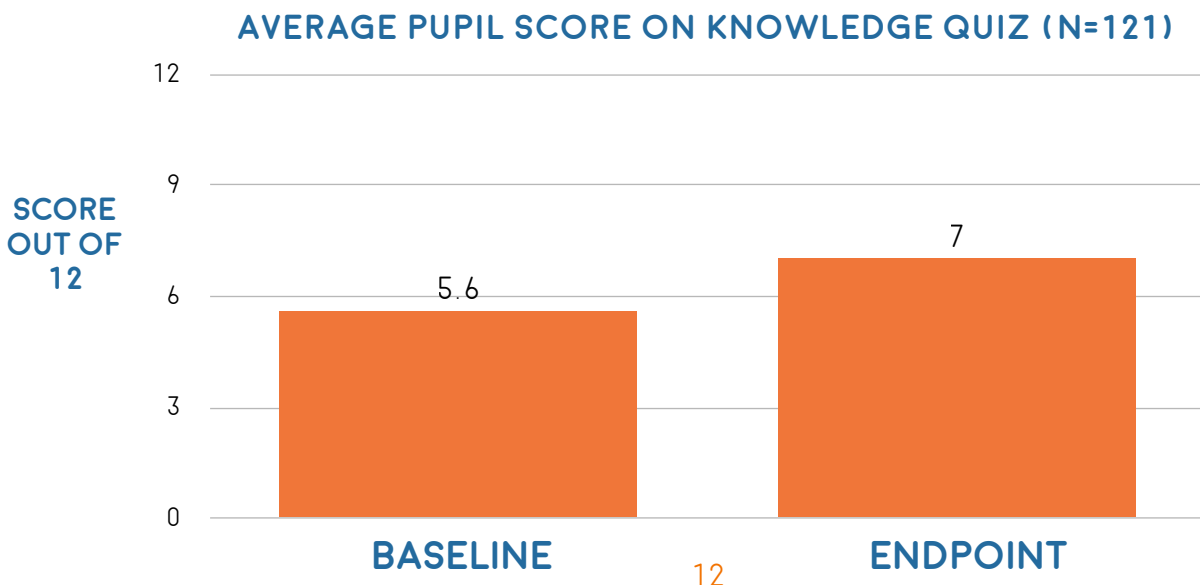
However, we did hold a 'Climate Reality and Response' teacher training session at Salisbury Manor Primary School, and a short feedback form demonstrated positive results. 100% of teachers (n=12) said that they found the session useful, well organised and understood more about the climate crisis. At the end of the session all teachers also reported that they understood better how to communicate the situation to pupils and agreed that they wanted to help the school to play its part in tackling the climate crisis.

One teacher explained: "At the CPD session, we got to speak about how environmentally friendly the school is, what changes we can make as teachers or how we can educate the children" – Teacher at Salisbury Manor Primary School

To achieve this outcome next year, we plan to deliver teacher training sessions at all the schools we work with on our in-person delivery programme. We will also provide resources and materials for schools to hold two CPD sessions during the year on our remote programme.

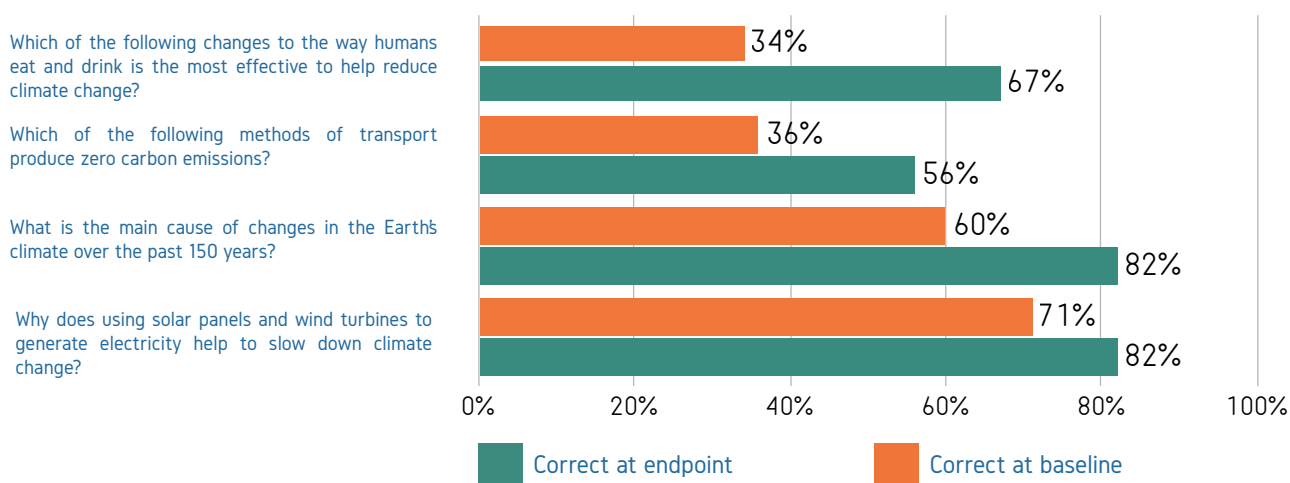
## INTENDED OUTCOME 3: YOUNG PEOPLE BETTER UNDERSTAND THE SEVERITY OF THE CLIMATE AND ECOLOGICAL CRISIS

Overall, pupils' knowledge about the climate and ecological crisis improved after taking part in the programme. This is demonstrated by the scores achieved by 121 pupils who took a knowledge quiz about climate change at the start and the end of the programme. At baseline, pupils achieved an average score of 5.6 out of 12, at endpoint, this increased to 7 out of 12. Overall, 73% of pupils improved their score in the endpoint quiz in comparison to the baseline.



The following chart provides an example of four of the questions in the quiz and the proportion of pupils answering correctly at baseline and endpoint.

### PROPORTION OF CORRECT RESPONSES AT BASELINE AND ENDPOINT (N=122)



The questions for which pupils improved their scores the most were about food and travel, and these were the project topics that most chose to tackle. This may suggest that working on a practical project helps pupils develop and later recall knowledge.

This is supported by pupils and teachers in their focus groups and interviews.

"I think they had good attitudes about helping the world, but they didn't necessarily understand what was happening with climate change. Now that they understand and they know what the issues are, they've been much more conscientious about the environment."

**TEACHER. SELWYN PRIMARY SCHOOL**

"Year 5 pupils have been speaking to younger students about not wasting food, being wiser with using paper. They've taken responsibility for educating the younger year groups about how their generation can make a change."

**TEACHER. SALISBURY MANOR PRIMARY SCHOOL**

"We've been learning about the effect of climate change on the earth and ways that everyone can stop climate change from permanently affecting our world"

**PUPIL AT SELWYN PRIMARY SCHOOL**

"Before, we all did this climate change project, I just thought climate change wasn't really a thing. I don't really watch the news that often. Now that I know this, I really want to help make a change."

**PUPIL AT GREENLEAF PRIMARY SCHOOL**



## INTENDED OUTCOME 4: YOUNG PEOPLE CARRY OUT MORE ACTIONS THAT TACKLE THE CLIMATE AND ECOLOGICAL CRISIS

After taking part in the programme, pupils generally carried out more actions to tackle the climate and ecological crisis than they had before starting the programme.

Once they had calculated their schools carbon footprint in four key areas (food, energy, travel and purchasing), they decided which area they wanted to focus on.

Year 5 pupils at Greenleaf Primary School focused on food. Pupils:

- Carried out a survey on what dishes children liked and disliked.
- Collated the findings and made conclusions which they presented to the Waltham Forest Catering Operations Manager.

Pupils' recommendations included not using the word 'vegetable' in dishes as that made children less likely to choose them, and to serve Quorn sausages instead of meat ones as the children surveyed liked them just as much.

At Salisbury Manor Primary School, Year 5 pupils carried out projects in three areas:

1. Food: pupils held a competition for children to bring in healthy and low carbon packed lunches, they monitored the amount of food wasted, and planned a low carbon international food day.
2. Energy: pupils encouraged all classes to have pupil energy monitors.
3. Travel: pupils organised a pupil and staff walk to school week.

At George Mitchell School:

- Year 7 pupils focused on energy – they gave a presentation to the Headteacher, Business Manager and Site Manager on why the school should install solar panels and made plans for a low energy day in the Autumn term.
- Year 8 pupils spoke to catering staff about stopping using single use plates and cutlery which they were assured would happen from September.

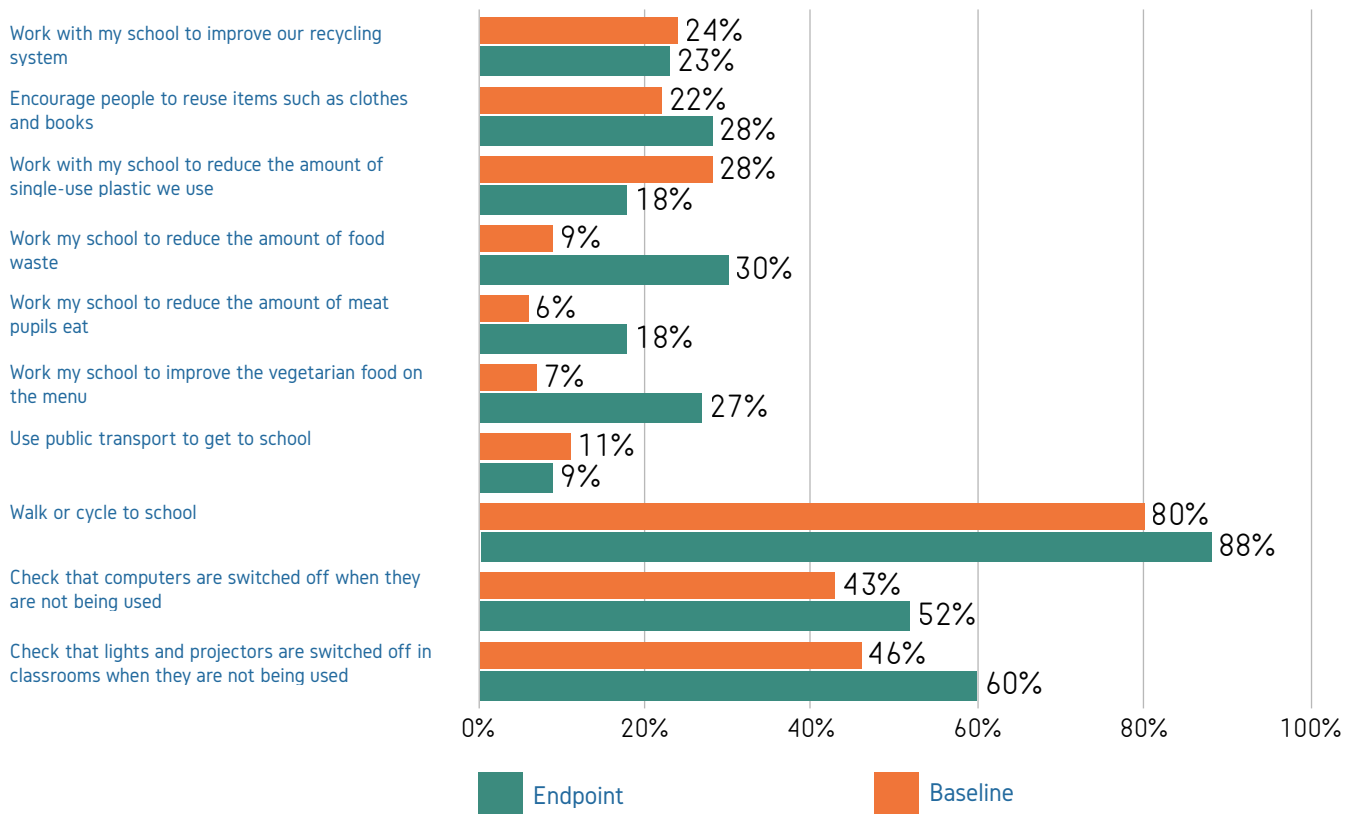
At Selwyn Primary School, three classes focused on a topic each – food, energy, and travel. They made plans and wrote items for the school newsletter to spread awareness, but due to starting the programme in March they did not have enough time to fully carry out their actions and will continue with them next year.

In a survey completed at the start and the end of the programme, pupils were asked what actions they took at school. By the end of the programme, more pupils took part in positive environmental actions compared to at the start of the programme.

This was particularly seen with food – the most popular choice of project, and one which few pupils had considered previously. This suggests that the increase was caused by participation in the programme.



## PERCENTAGE OF PUPILS REPORTING THAT THEY TOOK CERTAIN ACTIONS AT THE START AND THE END OF THE PROGRAMME (N=144)



Quotes from teachers and pupils support the suggestion that learning more about climate change and carrying out practical projects have encouraged pupils to consider the environment in their daily activities.

"As individuals, children are being conscientious, I am noticing simple things such as when I leave the classroom, they are turning off the lights to reduce electricity use. More children are telling me they are walking to school"

**TEACHER AT SELWYN PRIMARY SCHOOL**

"They loved doing their presentation to the Waltham Forest catering team. Having a focus for the end of the project with a potential impact on the whole borough really motivated them"

**TEACHER AT GREENLEAF PRIMARY SCHOOL**

"I feel like it's driven me to help the planet in other ways too.... I started up-cycling and I also try not to waste food"

**PUPIL AT SELWYN PRIMARY SCHOOL**

"I love eating chicken but now I've heard that some foods have really high carbon emissions, my mum always used to cook me them, and now she cooks me vegetables and I feel better now. I know that I'm helping the planet"

**PUPIL AT GREENLEAF PRIMARY SCHOOL**

## INTENDED OUTCOME 5: YOUNG PEOPLE DEVELOP THE SKILLS AND VALUES NEEDED TO SUCCESSFULLY TACKLE THE CLIMATE AND ECOLOGICAL CRISIS

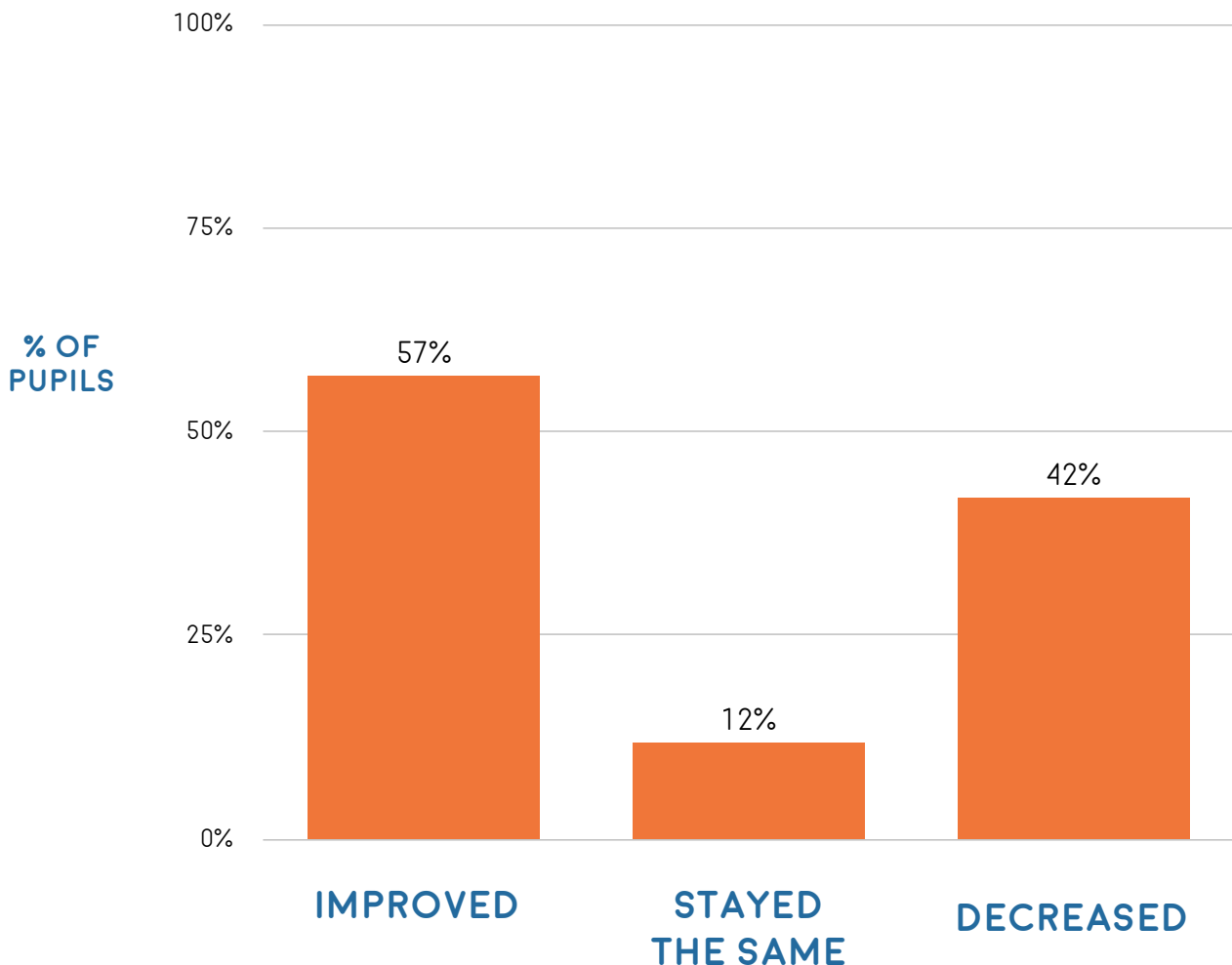


Overall, most pupils who took part in the programme developed skills and values for tackling the climate and ecological crisis. 76 pupils completed a baseline and endpoint survey, with 57% reporting an improvement in their skills and values. This was calculated by allocating a score to answers in a survey which asked them to agree or disagree with statements that assessed perceptions of their communication, teamwork, leadership and problem-solving skills and their values.

Pupils reported the biggest improvement in communication skills, with 59% increasing their communication skills score. This may reflect the impact of opportunities that pupils were given to present findings to senior staff and, in the case of Salisbury Manor, present an online assembly.

This element of the programme is to help pupils to develop skills that will help them in all aspects of their lives, especially in becoming active citizens, improving their own wellbeing by helping others and the world around them.

**PROPORTION OF PUPILS THAT INCREASED OR DECREASED THEIR SELF-ASSESSED SKILLS AND VALUES SCORE (N=76)**





During focus groups, pupils were able to express how their skill set had developed during the programme, with particular focus on confidence when communicating with others, sharing, supporting ideas in a team setting and embracing responsibility. This was backed up by teachers in their interviews.

"I have really seen a change in terms of their leadership and teamwork which will definitely benefit them next year."

#### TEACHER AT SALISBURY MANOR PRIMARY SCHOOL

"There's been a change in the children's perspective in that they want to be involved, they want to be doing more and they want to be accountable and hold other people accountable too."

#### TEACHER AT SELWYN PRIMARY SCHOOL

"Before, I wouldn't step out and say my ideas, I would let everyone else do it but now it's helped me. A few months back I would not have been confident enough so it's really helped me."

"That's another thing that's good about Green Schools Project, because of these projects we're doing it can help people gain their confidence in speaking."

"This was my first time as a leader and it's been a very good experience for me."

#### PUPILS AT SELWYN PRIMARY SCHOOL

"Since we started Zero Carbon Schools, we're all together, we're working as a team more... we have more responsibility."

"Basically, at home usually, I would always go on my computer or my iPad but now I play with my little brother."

#### PUPILS AT SALISBURY MANOR PRIMARY SCHOOL

"IN TEAMS. I JUST USUALLY DIDN' T SPEAK MUCH BUT NOW I SPEAK A LOT MORE AND STATE MORE FACTS AND USE PERSUASIVE TECHNIQUES"



# 3. CONCLUSIONS AND RECOMMENDATIONS FOR THE FUTURE



**THIS SECTION SETS OUT KEY CONCLUSIONS AND RECOMMENDATIONS FOR THE SECOND YEAR OF THE ZERO CARBON SCHOOLS PROGRAMME.**

## **1. MORE SCHOOL COMMUNITIES TAKE ACTION TO TACKLE THE CLIMATE AND ECOLOGICAL CRISIS.**

The four school communities all started to take more action to tackle the climate and ecological crisis. We supported them to do this by calculating their carbon footprint. This will be used as a baseline to show whether decreases in carbon emissions can be achieved in subsequent years. More community action should be possible this year in the absence of covid restrictions.

### **NEXT STEPS FOR 2021-22:**

4. Green Schools Project will help schools to repeat their carbon calculations to see if there has been an increase or decrease which would demonstrate progress towards each school's zero carbon goal.
5. In the absence of covid restrictions, Green Schools Project will ask schools participating in the Zero Carbon Schools programme to hold parent events to involve the wider school community, extending the impact beyond each individual school.

## **2. MORE TEACHERS HAVE PRACTICAL IDEAS ABOUT HOW TO INCLUDE CLIMATE AND NATURE IN LESSONS**

At one school, teachers developed ideas about bringing climate and nature into lessons, enabled by a training session. Feedback was unanimously positive, and it helped to involve teachers beyond the ones directly involved in the programme, encouraging them to bring ideas into their own classrooms.

However, due to covid, this was only possible at one school, so we need to ensure all schools can access this training.

#### NEXT STEPS FOR 2021-22:

1. Green Schools Project will ensure that all schools involved in the programme include two teacher training sessions during the year so that they can bring climate and nature into more lessons.

### 3. YOUNG PEOPLE BETTER UNDERSTAND THE SEVERITY OF THE CLIMATE AND ECOLOGICAL CRISIS

Pupils developed their knowledge of climate change, with the average score on the baseline knowledge quiz increasing from 5.6 out of 12 to 7 out of 12 in the endpoint knowledge quiz. This was achieved through sessions at the start of the programme, and through working on practical projects in their chosen areas.

#### NEXT STEPS FOR 2021-22:

1. Green Schools Project will develop more sessions at the start of the programme to incorporate areas such as climate justice, human impacts, and the impacts on the natural world to help pupils develop their knowledge further.
2. Green Schools Project will add sessions where pupils explain to others, such as celebrities and politicians, what they have achieved and try to persuade them to use their influence to bring about wider change. It is hoped that this will reinforce the knowledge developed during the programme.

### 4. YOUNG PEOPLE CARRY OUT MORE ACTIONS THAT TACKLE THE CLIMATE AND ECOLOGICAL CRISIS

Young people at all schools generally increased the number of actions that they took to tackle the climate and ecological crisis. This is seen in the projects that they undertook as part of the programme, and the pupil survey showed that it also increased other, unrelated positive environmental actions as well.

#### NEXT STEPS FOR 2021-22:

1. With a full, uninterrupted school year, pupils will have more time to develop and carry out their projects. Green Schools Project, therefore, plan to provide a period of 15 weeks to run them.
2. Green Schools Project will develop outdoor learning sessions to be incorporated into the programme. We hope that this will help pupils to take more of an interest in their local natural environment and encourage them to take more action to protect it.

### 5. YOUNG PEOPLE DEVELOP THE SKILLS AND VALUES NEEDED TO SUCCESSFULLY TACKLE THE CLIMATE AND ECOLOGICAL CRISIS

The programme enabled pupils to develop skills to help them tackle the climate crisis and values that will encourage these behaviours to persist in the long term. It provided pupils with the opportunity to speak to their peers and senior staff, developing their communication and leadership skills. It allowed them to work in teams to tackle problems such as how they were

going to reduce the school's carbon emissions. It also encouraged them to take a compassionate, community-minded approach, knowing that their actions would be helping others in their local community and around the world.

#### NEXT STEPS FOR 2021-22:

1. Green Schools Project will include links to specific skills in every session so that teachers and pupils are able to identify the key skills being practised. We hope that this will make pupils more aware of the skill acquisition that is taking place.
2. Green Schools Project will include sessions on values, and how developing compassionate values will help them to maintain the motivation to continue environmental and social action beyond the programme and throughout their lives.

THROUGH ZERO CARBON SCHOOLS, GREEN SCHOOLS PROJECT AIMS TO HAVE A MEANINGFUL IMPACT ON HOW THE EDUCATION SECTOR RESPONDS TO THE CLIMATE CRISIS. IN THE COMING YEARS, WE HOPE TO SUPPORT MORE YOUNG PEOPLE, SCHOOLS, AND COMMUNITIES TO LEAD THE WAY TO THE ZERO-CARBON FUTURE THAT IS REQUIRED FOR A SUSTAINABLE FUTURE FOR SOCIETY.



These final quotes from teacher interviews and pupil focus groups provide a snapshot of why we believe that this programme has had a considerable impact on each of the schools that we have worked with this year, and why we plan to scale the impact through working with more schools in the future.

"The Headteacher has committed to be as close to zero carbon by 2030."

**TEACHER AT GREENLEAF PRIMARY SCHOOL**

"If a school like us is being involved in such a special project, I feel like it can influence others."

**TEACHER AT SALISBURY MANOR PRIMARY SCHOOL**

"The programme encouraged pupils to go even further because they're proud of what they're doing, they got to see their project through. That's a massive difference from some things I've done with external providers."

**TEACHER AT GEORGE MITCHELL SCHOOL**

"I definitely think this helps the children to understand more about the real world... making changes themselves... they saw it come to life."

**TEACHER AT SELWYN PRIMARY SCHOOL**

"Before, I thought it was impossible, like no one can do it, but now I feel like it's possible."

**PUPIL AT SALISBURY MANOR PRIMARY SCHOOL**