

# CASE STUDY 1- APLERBECKER GRUNDSCHULE, GERMANY

**Objective:** The children recognize the difference in CO2 emissions when 28 children are taken to school by car separately in contrast to 28 children coming to school in one bus.

## Year 3 Long Term Curriculum Plan.

<b>Topic Title</b>	Calculating how much CO2 emissions are produced by 28 cars in contrast to one bus
<b>Lessons</b>	science, history, arts, maths
<b>Topic Summary</b>	<ol style="list-style-type: none"> <li>1) Questions to elicit prior knowledge:                         <ul style="list-style-type: none"> <li>o Which types of vehicles do you already know?</li> <li>o Which parts of vehicles do you already know?</li> </ul> </li> <li>2) History lesson: Having a look at the history of vehicles</li> <li>3) Taking a closer look at the components of a car and agreeing on technical terms (e.g. axis, wheels, ...)</li> <li>4) Collecting construction material for an own upcycled car</li> <li>5) Arts lessons: Upcycling – building the cars</li> <li>6) Inspection: Are the cars ready to go?</li> <li>7) Improvement of the cars</li> <li>8) Arts lesson: Painting on the schoolyard – 28 cars in contrast to one bus</li> <li>9) Maths lesson: Calculating how much CO2 emissions are produced by 28 cars in contrast to one bus</li> <li>10) Conclusion – thinking about consequences</li> </ol>
<b>Climate curriculum Learning Outcomes</b>	<ul style="list-style-type: none"> <li>• Pupils can identify a range of impacts of present climate change on the environment and people locally and across the world.</li> <li>• Pupils can name some of the things that they and others do that are responsible for climate change.</li> <li>• Pupils begin to explore alternatives to these activities which are less harmful.</li> <li>• Pupils understand that you can measure how much impact an activity has and know that different lifestyles have a greater or lesser impact.</li> <li>• Pupils can identify actions that they can take personally to reduce emissions.</li> <li>• Pupils can identify actions that can be taken at the level of their school.</li> </ul>

## LESSON CASE STUDY EVIDENCE

### **Challenges:**

*- Children noticed that different cars produce different amounts of CO<sub>2</sub> and wondered how to calculate with these different numbers and how to find out about different CO<sub>2</sub> emissions*

### **Strategies to cope with the challenges:**

*- We agreed to do some research on the internet in order to find a mean to calculate with*

### The lesson:

- 1) Introduction to the topic – silent stimulus: collecting thoughts
- 2) Question: What do vehicles have to do with the topic of climate change?
- 3) Finding a mean to calculate with (research on the internet: CO<sub>2</sub> emissions of car/ bus)
- 4) Calculation and comparison of the solutions
- 5) Talking about the solutions and thinking about consequences – especially for the children and their way to school.
- 6) What happens to the world if we don't start acting now?

### pictures



### **Quotes:**

“I'm shocked about our solutions – what a big number.” “I have to talk to my mum. Maybe she can buy a scooter for me instead of taking me to school by car.”

“I'm glad I come to school by bus every day.”

“When I grow up, I want to invent environmentally friendly cars.”

“What can we as children do now to make a difference?”

### **Next step:**

Generate ideas of what can be done now to make a change. Result: one week of everybody (children + staff) coming to school in an environmentally friendly way

Link to school's climate action:

Implementation of a regular walk-to-school-week!


# CASE STUDY 2- APLERBECKER GRUNDSCHULE, GERMANY

**Objective:** The children know about different weather phenomena and understand the connection between climate change and the weather, e.g. extreme weather situations. (year 2: children's age 7-8 years)

## Year 2 Long Term Curriculum Plan.

<p><b>Topic Title</b></p>	<p>Training interdisciplinary competencies (using media, designing posters and giving presentations)</p>
<p>Lesson</p>	<p>science</p>
<p>Topic Summary</p>	<p>1) Questions to elicit prior knowledge: What do you already know about the weather? o What would you like to know about it? (collecting questions)</p> <p>2) Giving a brief overview of different weather phenomena (e.g.: storm, thunder, rain, ...)</p> <p>3) Designing a poster as an example all together + teacher giving the presentation -&gt; dividing the class up into smaller groups</p> <p>4) Group work: each group working on their expert topic (internet research, reading texts, creating a poster, preparing a presentation)</p> <p>5) The groups give their presentations.</p> <p>6) Watching a (german) documentary for children about climate change (<a href="https://www.youtube.com/watch?v=4i7-h-ySBNI">https://www.youtube.com/watch?v=4i7-h-ySBNI</a>) Coming back to the documentary – discussion.</p> <p>7) Conclusion</p>
<p>Climate curriculum Learning Outcomes</p>	<ul style="list-style-type: none"> <li>• Pupils understand the impacts of our changing climate on some animals, plants and environments both in our locality and elsewhere.</li> <li>• Pupils understand that air pollution makes the world hotter.</li> <li>• Pupils know that some impacts of our changing climate are happening now and others will happen in the future. - Pupils can name some actions which would have a positive</li> <li>• Impact on the climate and some ways in which we can stop having a negative impact.</li> </ul>

## LESSON CASE STUDY EVIDENCE

<p><b>Challenges:</b></p> <ul style="list-style-type: none"><li>- Children had problems to understand the difference between climate change and weather.</li><li>- A lot of technical terms for some children.</li></ul> <p><b>Strategies to cope with the challenges:</b></p> <ul style="list-style-type: none"><li>- Visualizing terms on the wall</li><li>- Repetition of the words at the beginning of every lesson.</li><li>- Breaking down the difference between climate change and weather to its essence.</li></ul>	<p>The lesson:</p> <ol style="list-style-type: none"><li>1) Introduction to the topic – watching the video (mentioned above)</li><li>2) Questions: What is climate change? What is the difference between climate and weather? What impact does the climate change have on the weather? What can we do to slow down climate change? – time to exchange thoughts and ideas.</li><li>3) Considering what we are doing that is negatively impacting climate change. Thinking about possible consequences for us and about what we could do to slow climate change down.</li></ol>	<p>pictures</p> 
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### Quotes:

“Are you really sure that people are responsible for extreme weather phenomena? How can we be responsible for a flood?” “When I come home I will teach my family about what we have learned.”

“What can we do now to make a difference?”

### Next step:

Going on generating ideas of what can be done now to make a change. Planning to pick up the topic next school year and to go more into depth.