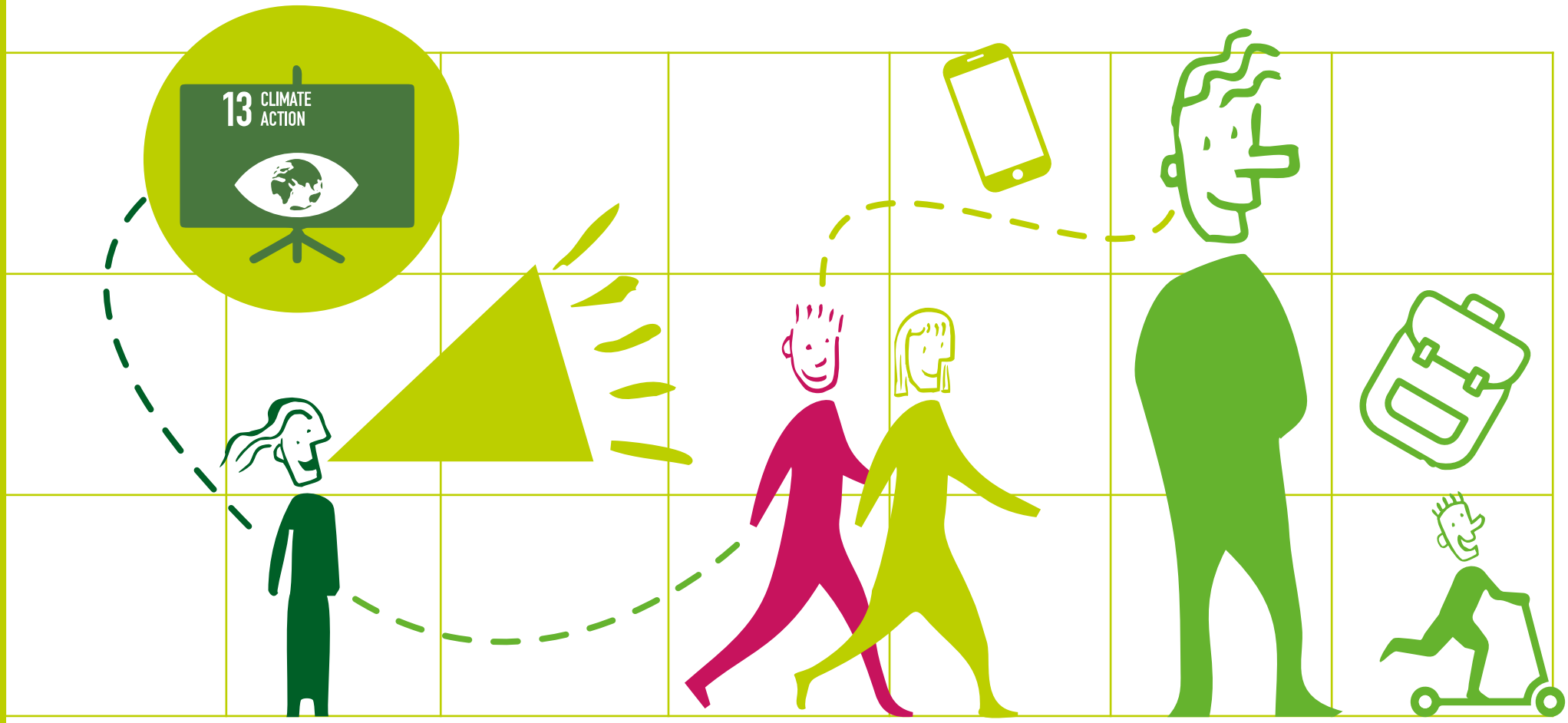

#nudgeforclimate

EUROPEAN CLIMATE PACT

#MyWorldOurPlanet
#EUClimatePact

Instructions for applying nudges in schools in order to fight climate change

Dedicated to
David Sassoli

foreword

One of the European Commission's main goals is to make Europe the world's first climate-neutral continent. However, in order to achieve this, we need to transform our economy and societies. This will create new opportunities for innovation, investment and employment, while reducing emissions, creating jobs and fostering growth. The European Green Deal set the blueprint for this transformational change, but it is up to individuals to make it happen.

Everyone needs to be aware of how they can contribute to achieving the desired results. This responsibility starts with taking small steps and adopting good habits and virtuous behaviour in our everyday lives. A good way to start is to cycle instead of taking the car, or to walk if you do not have to go too far. Changing our eating habits so that we eat less meat from intensive livestock farms, which account for around 14% of global greenhouse gas emissions, is an individual choice that can make a substantial contribution.

Using existing incentives to renovate buildings to make them greener is not only forward-looking, but also cost-effective. Abiding by rules for the separate collection of waste may sometimes seem unnecessary, but it greatly facilitates the recycling of materials and the circular economy. And spreading these good practices by nudging those around us, even those who are less well informed, can make a huge contribution to building a more sustainable Europe.

At the very beginning of 2022, the European Commission published a proposal for a Council Recommendation on learning for environmental sustainability. The aim of the proposal is to support Member States, schools, higher education institutions, non-governmental organisations and all education providers in equipping learners with understanding and skills on sustainability, climate change and the environment.

In the words of the late David Sassoli (President of the European Parliament), to whom this guide is dedicated, we must never forget that Europe started as a common endeavour based on solidarity and shared values and fundamental principles. And climate change is a crucial challenge which everyone should help to fight.

#NudgeForClimate certainly makes a concrete contribution to this challenge.

Vito Borrelli
Deputy Head of the European Commission Representation in Italy

introduction

By issuing this guide, EuCliPa[1] , the Community of European Climate Pact[2] Ambassadors in Italy, is helping to engage civil society in actively promoting climate-friendly behaviour and policies, with actions specifically targeting schools.

#NudgeForClimate is a guide on how to apply nudges. They can be applied by students, teachers and school staff to make a number of small or large behavioural changes that can have a decisive impact on tackling climate change.

This is a practical guide with concrete examples of nudges. The examples provided describe some of the things that can be done in schools to change people's behaviour so as to improve the impact of their actions in combating climate change, without affecting the choices available to them. They are *nudges*, but *gentle ones*. This guide is, however, also a working method that can be used to involve students so that they themselves become 'choice architects' and, in doing so, gain awareness about their choices and behaviour, including the online behaviour. The nudge approach emerged in the scientific field of behavioural economics with the work of scholars Richard Thaler (2017 Nobel Prize for Economics) and Cass R. Sunstein. This approach, aimed at encouraging behavioural change, has rapidly gained popularity and is being used by more and more authorities and governments to 'nudge' individuals into making choices that contribute to collective well-being [3].

1 Euclipa https://www.euclipa.it/

2 The European Climate Pact is a European Commission initiative bringing together various stakeholders and civil society to take action on the climate and to promote the European Green Deal, namely the emissions reduction plan to achieve carbon neutrality by 2050. It provides people and organisations with ways to learn about climate change, develop and implement solutions, and connect with others to increase the impact of those solutions (European Climate Pact europa.eu)

3 In 2010, the United Kingdom was the first nation to establish a 'Nudge Unit' (Behavioural Insights Team) to assist the government. Similar bodies were established not long afterwards in Australia, the USA, Germany and Austria. The Italian Behavioural Insights Team (https://performance.gov.it/IBIT) has been established in Italy, focusing in particular on public administration, while a nudge unit has been established at European level, dealing with various topics including climate change and sustainability (https://knowledge4policy.ec.europa.eu/behavioural-insights_en).

introduction

This guide started with the idea that a new generation of young nudge architects could contribute to the great global push that youth movements like #FridaysForFuture have already set in motion.

The adaptability of nudges means that any member of the school community can plan an action and implement it. The head teacher could support the ecological transition by promoting sustainable behaviour at all levels in the school, while teachers of civic education could encourage their students to think up nudges with the help of this guide.

Groups of students could, for example, nudge the communities around the school (pubs, gyms, coffee bars, other businesses, meeting-places, associations, etc.) into taking climate action by getting their families involved. Last but not least, the school's administrative and technical staff could also support students in implementing nudges.

With **#NudgeForClimate**, we, the European Climate Pact Ambassadors, are contributing to Goal 13 of the 2030 Agenda, knowing that many goals are interlinked through a dense network of systemic and interdependent relationships[4].

In particular, schools, through Goal 4 'Quality Education', play a central role and can have a multiplier effect that makes it possible to achieve all the other goals of the 2030 Agenda.

4 Pedercini, M., Arquitt, S., & Chan, D. (2020). Integrated simulation for the 2030 agenda. System Dynamics Review, 36(3), 333-357.

credits

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For information on EuCliPa's activities:
https://www.euclipa.it/
Become a European Climate Pact Ambassador:
https://climate-pact.europa.eu/ambassadors/become-ambassador-or-friend-pact_en
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Identity and infographic design:

ICASTIC DESIGN

#nudgeforclimate

what are nudges?

Nudges are actions aimed at changing people's behaviour in order to improve their own well-being or the well-being of society as a whole, without affecting the choices available to them.

Nudges originate from the observation that, although rationally we ought to choose the preferred option from among those available, in reality our decisions are often the result of emotional impulses and other factors that prevent us from making the best choice. Very common examples that highlight this type of behaviour are New Year's resolutions to lose weight or stop smoking that we never really stick to, or planning to do summer homework regularly during the holidays but ending up having to do it all in the final weeks.

Nudges help us overcome these small moments of irrationality and encourage us to adopt the best behaviour for us and for society, while at the same time helping us to understand and accept the reasons why such behaviour is necessary, thanks to a new, more systemic, thinking approach. Thaler and Sunstein define a nudge as 'any aspect of the choice architecture that alters people's behaviour in a predictable way without forbidding any options or significantly changing their economic incentives' (Thaler and Sunstein, 2009).

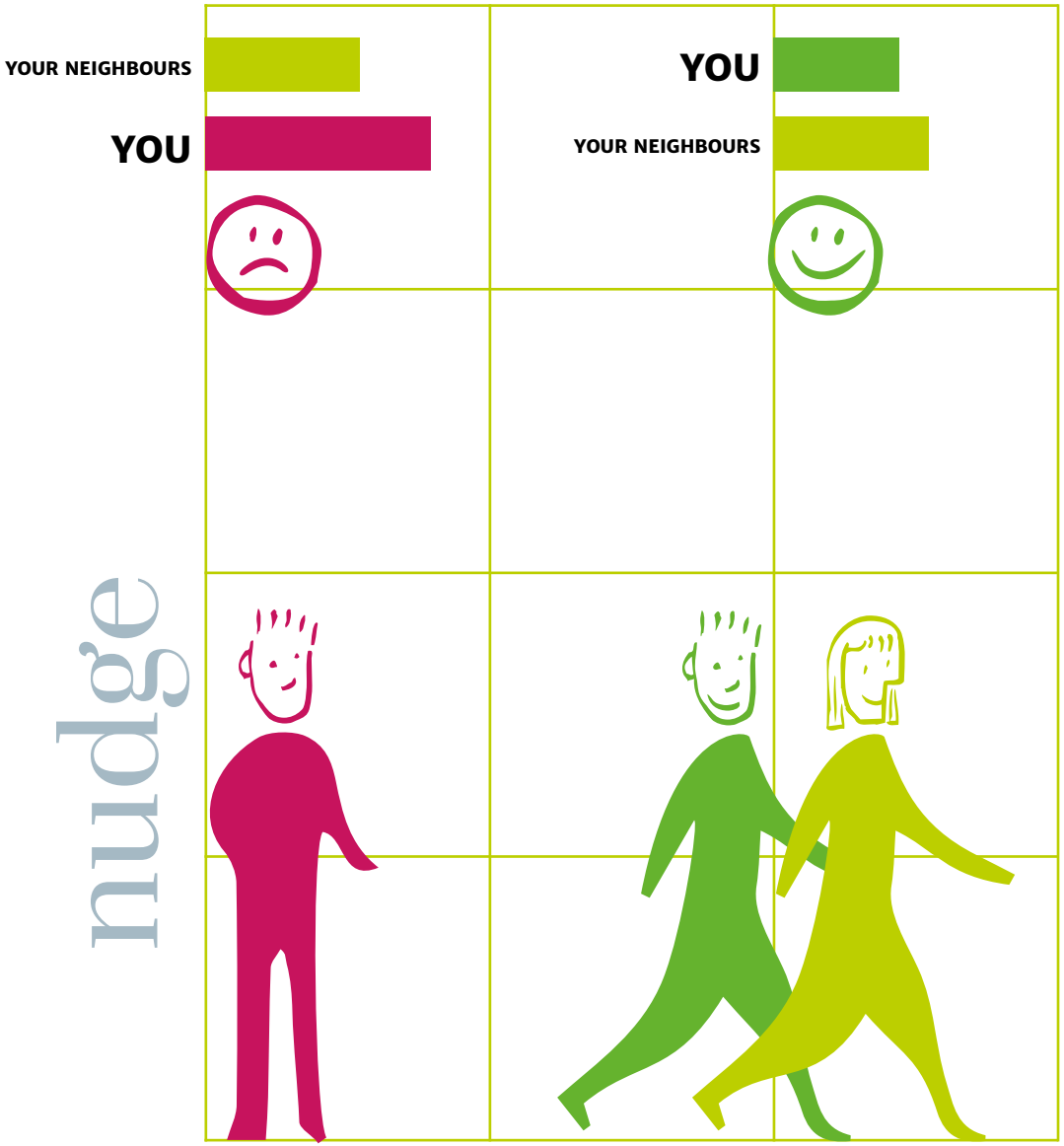
The environmental challenge requires momentous changes in thinking and behaviour in order to limit the temperature increase of the Earth to below 2°C, as required by the Paris Agreement[5].. Schools are places where social behaviour is learned and organised and are thus perfect places for devising, creating and using nudges to achieve climate goals.

There are different types of nudge depending both on the context and, especially, on the psychological aspect that is to be influenced. Below are some of the types of nudge which have proven to be effective in changing people's behaviour and which can be used as inspiration when planning nudges in schools.

5 https://www.consilium.europa.eu/it/infographics/paris-agreement-eu/

01. social norms

Are you doing it?
I'll do it too!



nudge

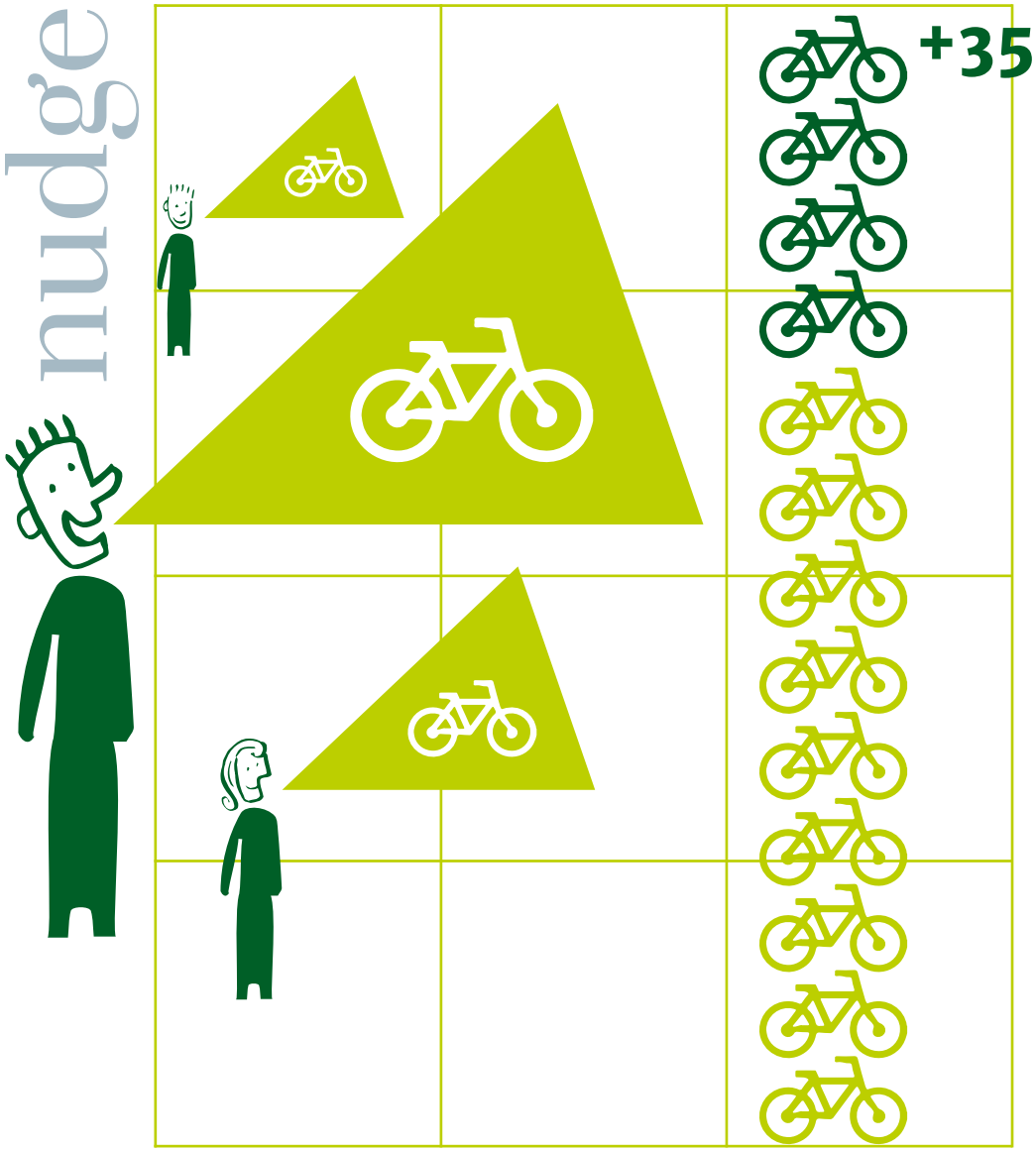
Humans are a supremely social species. Many of the things we do depend directly on what other people are doing. Multiple research findings have shown that a person is more likely to carry out a certain action if they know that people in their reference group are also doing the same.

For example, in a famous experiment on electricity use (Schultz et al., 2007), customers were sent a comparison between their own consumption and their neighbours' consumption with their electricity bill. This comparison had a smiley face emoji if customers had used less than their neighbours and a frowning face emoji if they had used more. The research showed that those who had consumed more reduced their consumption after receiving the message with their bill.

Thus, in order to bring about behavioural change, a good choice architect provides information about the virtuous behaviour of others.

02. pledges

nudge



The power of intentions

It has been shown that if people publicly disclose their intentions with regard to a certain behaviour, they will be much more likely to actually adopt that behaviour, even if no punishment or reward is involved.

A study showed that asking a sample of people if they intended to buy a bicycle increased purchase rates by 35%. Other research has shown that the power of intentions is even stronger if the intention is expressed publicly[6].

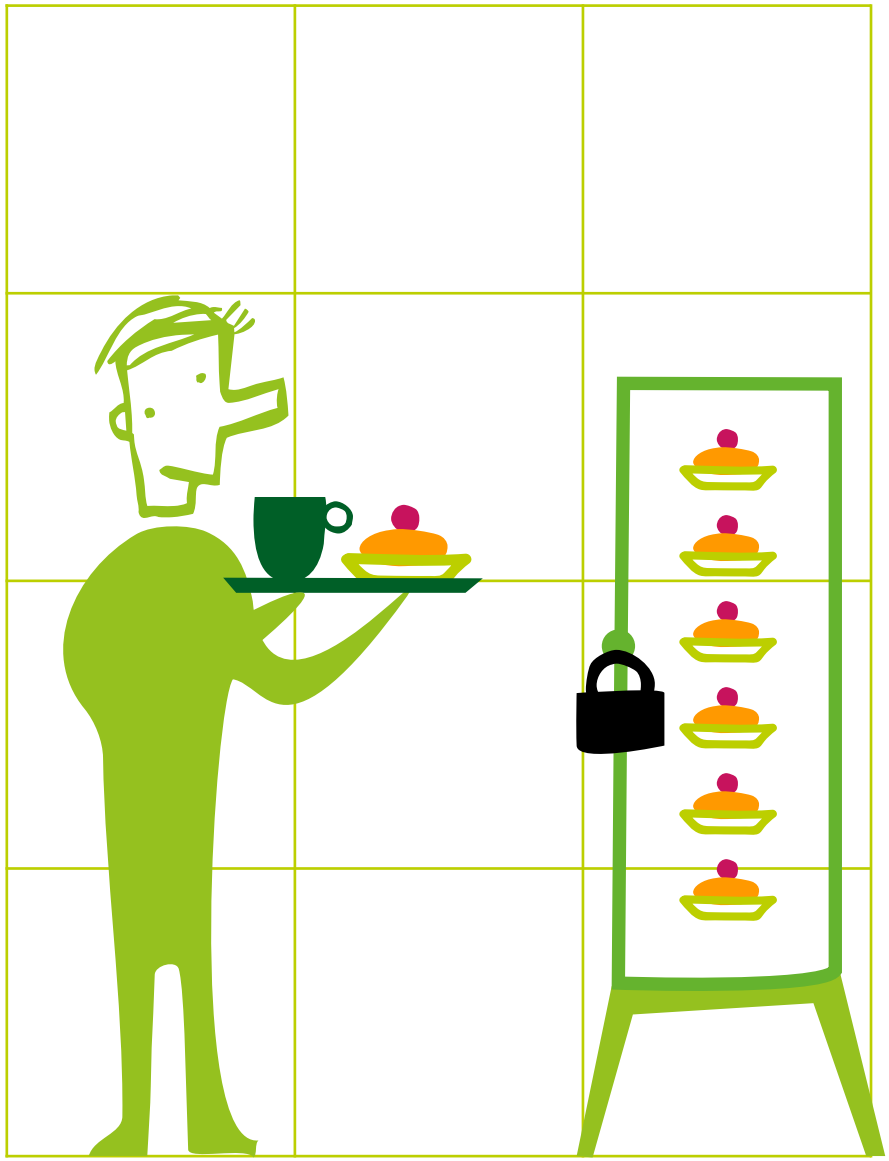
A good choice architect will ask how many people want to engage in virtuous behaviour and even make them state their intentions in public.

6 Nyer and Dellande (2010); Bibliografia: Prashanth U. Nyer and Stephanie Dellande. 2010. "Public Commitment as a Motivator for Weight Loss." Psychology & Marketing 27(1): 1–12

nudge

03. commitment

Setting yourself limits in the future



As is the case with weight-loss diets, we are better at planning to resist temptation if it happens in the future rather than in the present.

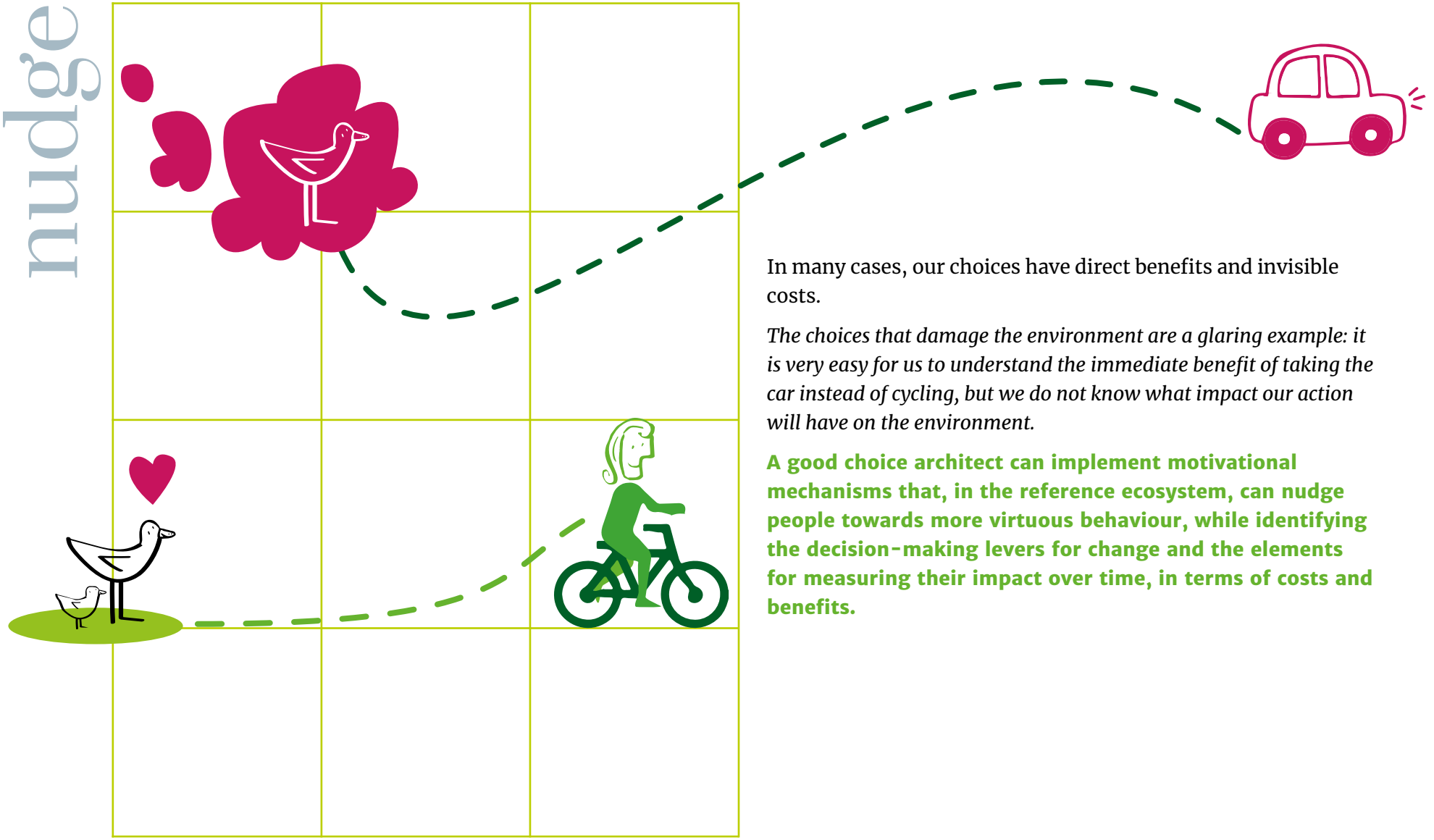
Consider the example of Odysseus and the Sirens. Odysseus knows that he will not be able to resist the song of the Sirens, so he orders his crew to tie him to the ship's mast and not to untie him even if he orders them to.

This shows how when we are in a 'warm' emotional state (temptation, greed, excitement) we act differently to how we would have wanted to act in our 'cold' state. To avoid this, we can use mechanisms to limit our power of choice when in a 'warm' state. An example concerning expenditure management is the spending ceilings we can put on our credit cards to limit impulse buys. (Kahnemann, 2012)

A good choice architect is able to create a system where people can self-regulate by setting limits on their future behaviour.

04. feedback

nudge



The impact of our daily actions

In many cases, our choices have direct benefits and invisible costs.

The choices that damage the environment are a glaring example: it is very easy for us to understand the immediate benefit of taking the car instead of cycling, but we do not know what impact our action will have on the environment.

A good choice architect can implement motivational mechanisms that, in the reference ecosystem, can nudge people towards more virtuous behaviour, while identifying the decision-making levers for change and the elements for measuring their impact over time, in terms of costs and benefits.

05. gamification

We learn – and change – through play

nudge

Most of our choices happen automatically. We make decisions based on habit and we do not reflect on or pay attention to the characteristics of the choice. This happens because our brain is a system that tries to save energy as much as possible and automatic choices require much less energy than well-considered ones.

One way of increasing attention and ensuring that choices are well considered without needing to engage our minds in complicated reasoning is to include elements of play in the choice architecture.

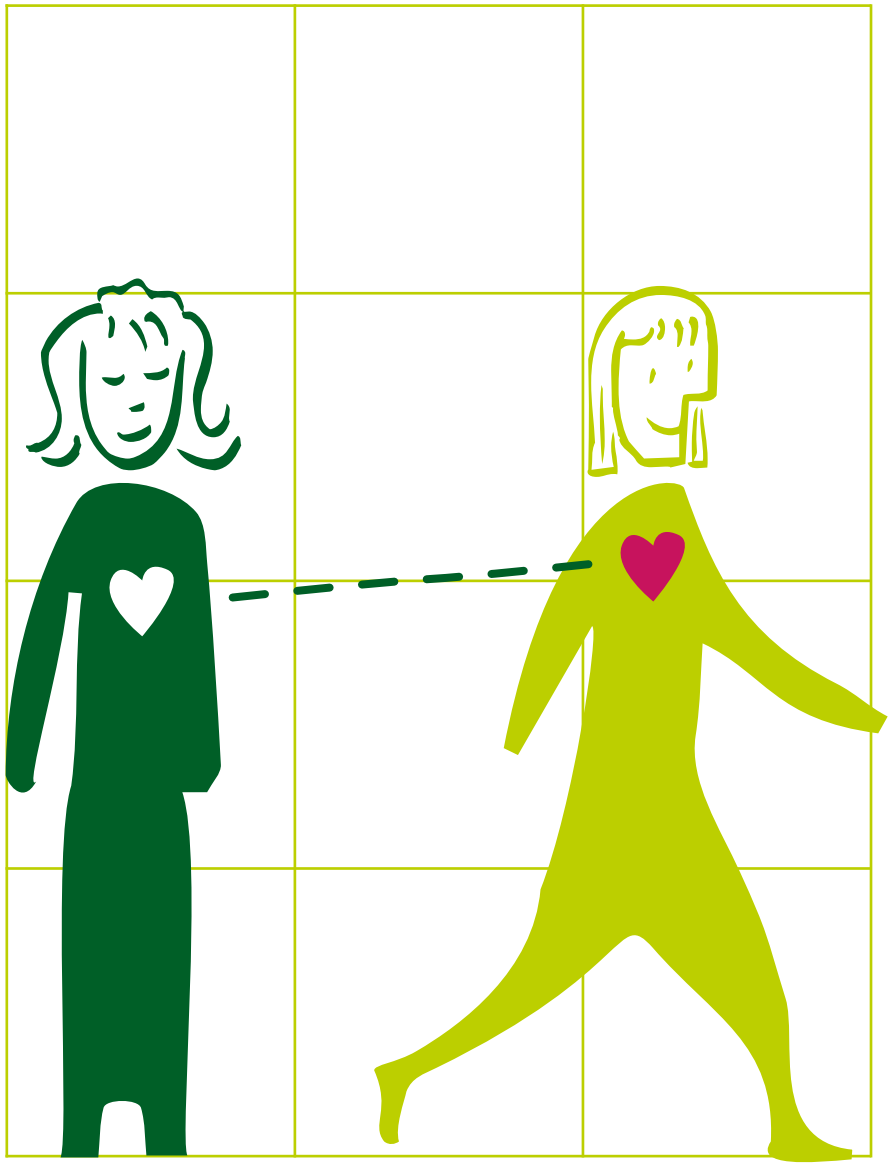
A famous example is the initiative in Amsterdam airport (subsequently replicated in various airports and stations) where images of flies were etched in the men's urinals. The image of the fly reduced cleaning costs significantly because the game of trying to 'hit' the fly prompted toilet users to take better aim [7].

A good choice architect can create games that draw people in and make them reflect on the best choices for society.

7 https://www.washingtonpost.com/news/wonk/wp/2017/10/09/whats-a-urinal-fly-and-what-does-it-have-to-with-winning-a-nobel-prize/

nudge

06. default



The best choice for the environment as a default

A default is an option that is automatically implemented if the decision-maker does not make a decision.

Consider, for example, trial subscriptions for pay-TV channels (Amazon Prime, Netflix, etc.). When the trial month ends, we automatically start paying the monthly subscription (default) unless we remember to unsubscribe.

Decades of research have shown that people tend not to change defaults even though they prefer the non-default option. Examples of this are for example in the area of organ donation, where between 70% and 80% of the population say they are in favour of donation, but a much lower percentage changes the default from 'non-donation' to 'donation'.

Prompted by this empirical evidence, some countries have made donation the default option. (Johnson and Goldstein, 2003).

Given that there is always a default option in most choices, a good choice architect will make the preferred option for the well-being of society as a whole the default choice.

why

Why use nudges in schools to help the climate?

The first question to be asked is whether it makes sense to use nudges in schools. According to research on student nutrition and well-being quoted by Thaler and Sunstein[8], 'children, like adults, can be greatly influenced by small changes in context'. A researcher in charge of the canteen service in a large US city rearranged some of the foods in the canteen without changing the menu and noted that this increased or decreased the consumption of certain foods by as much as 25%. Healthy eating contributes to the fight against climate change. Eating more vegetables and less meat has a direct impact on the release of harmful gases into the atmosphere, as well as on the health of the children themselves and on their future lifestyle. This nudge brought about a major change with a minimum of organisational effort, i.e. it was most likely to be effective and least likely to be harmful.[9]

This and other nudges suggested in this guide can affect the behaviour of students, teachers and the wider school community. But that is not all: using nudges in schools is a new form of learning that includes cognitive, empathetic and behavioural aspects.

The second question is **why use nudges, of all things, to combat climate change.** Climate change is an invisible phenomenon[10], and a complex one from an environmental, social and economic point of view, **which has multiple causes and requires, on the one hand, the adoption of a systemic approach**[11] to understand the complexity of the phenomenon and, on the other hand, a range of available mitigation and adaptation actions. The aim of mitigation measures is to reduce the amount of greenhouse gases in the atmosphere, which we know to be one of the main drivers of climate change, whereas the aim of adaptation measures is to reduce the impact of climate change on the well-being of individuals. Nudges are essentially mitigation measures.

Although many people are aware of the climate issue, it is precisely the invisibility of the phenomenon that makes it difficult for people to adopt virtuous behaviour. This is precisely why nudges, although seemingly 'invisible', can have a big impact when they involve schools, the largest community in Italy.

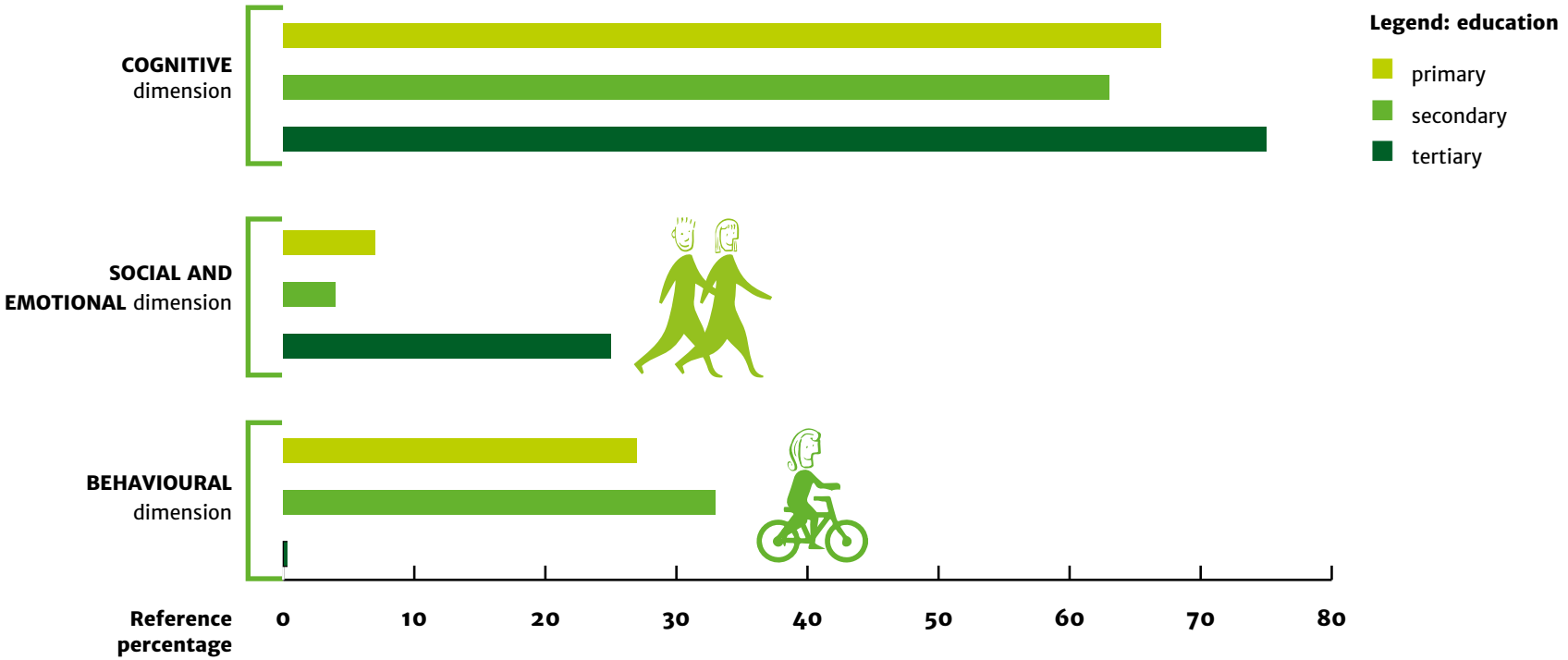
UNESCO research (2020)[12] focused specifically on climate change education in educational systems showed that in climate change education 'cognitive' learning was applied more than twice as much as 'behavioural' learning, which in turn was applied more than twice as much as social and emotional learning, across all types of education from primary school to university. (Figure 1)

8 Thaler & Sunstein, 2008, p. 7
9 Thaler & Sunstein, 2008, p. 82

10 Schreiner et al., 2002
11 Meadows D. H., (2019). Pensare per Sistemi - Interpretare il presente, orientare il futuro verso uno sviluppo sostenibile. Milano, IT:Guerini Next, ISBN: 9788868961114
12 UNESCO (2020) Country progress on climate change education, training and public awareness: an analysis of country submissions under the United Nations Framework Convention on Climate Change https://unesdoc.unesco.org/ark:/48223/pf0000372164

why

However, the research suggested that it would be useful to include both emotional and behavioural learning in a more meaningful way.



Fonte: UNESCO (2020) Country progress on climate change education, training and public awareness: an analysis of country submissions under the United Nations Framework Convention on Climate Change https://unesdoc.unesco.org/ark:/48223/pf0000372164

Scale of use of the various learning dimensions

In relation to climate change education, cognitive learning has been more commonly applied than social and emotional or behavioural learning, regardless of the education level.

why

Learning in formal education

Thus, in order to bring about real change, the climate knowledge conveyed via the various school subjects is not enough. A concrete and 'systemic' approach, i.e. with a full understanding of how the reference system actually works, is also needed for everyone to change their behaviour based on positive feelings rather than just in reaction to feelings of shock, anger and despair[13] . Such feelings cause distress, or 'eco-anxiety' to use the current neologism, to both young people and adults and they do not help bring about radical change, but rather lead to emotional separation, sadness, inactivity and even solastalgia[14].

13 Lombardi & Sinatra, 2013

14The concept of solastalgia is a neologism coined in 2003 by Australian philosopher Glenn Albrecht to describe the feeling of homesickness you have when you are still at home and that home is being ravaged by the wrath of nature.

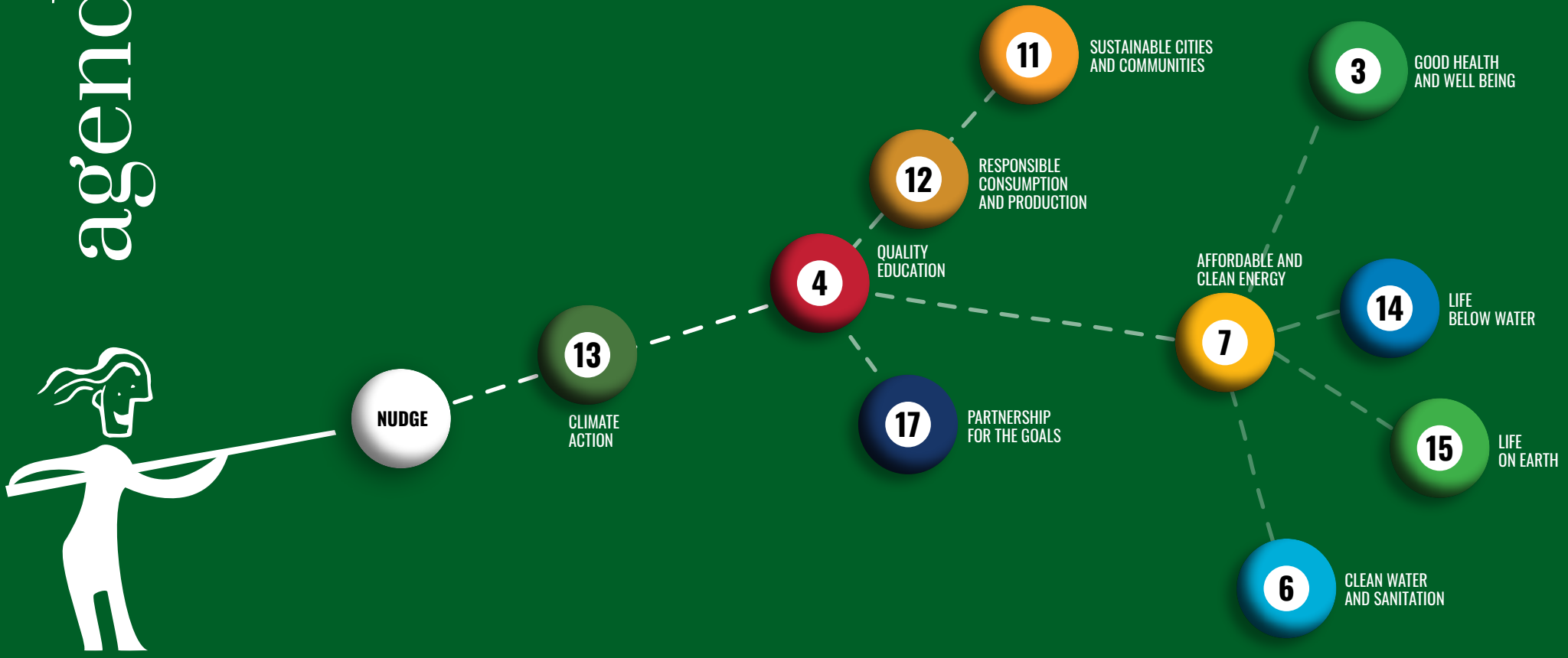
The human race has spent more than 99.9% of its time in nature; the connection to nature has been very strong until now but has weakened in recent years and younger generations are losing it (Pyle and Louv, 2011 in de Maurissens and Mansion, 2022).

With this in mind, applying nudges to effect behavioural change means bringing together the three fields of learning (cognitive, emotional and behavioural) and can help generate positive emotions by using creativity and solidarity with the community to help nature.

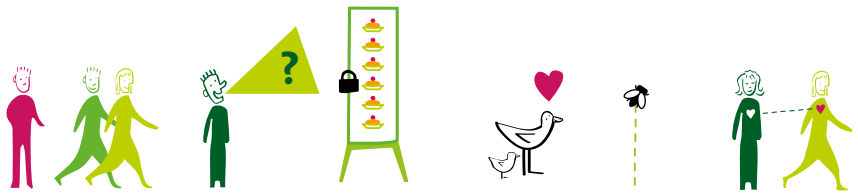
agenda 2030

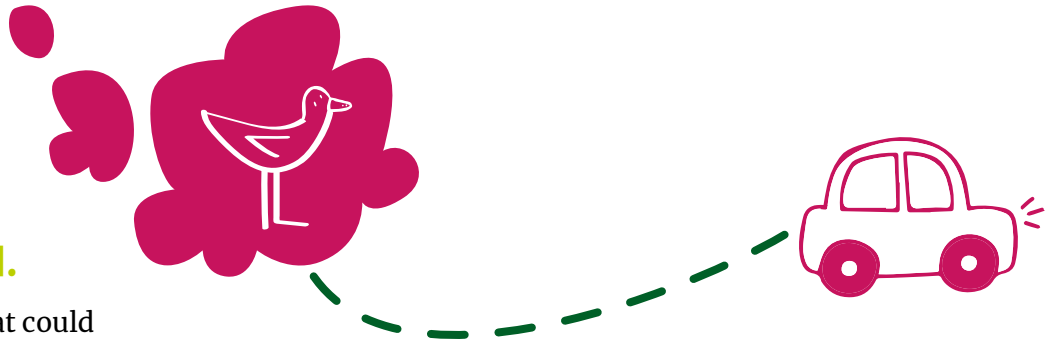
The spirit of #NudgeForClimate is fully in line with the paradigm of interdependence that underpins the goals and targets of the 2030 Agenda, which can be indivisible, reinforcing, empowering, independent, limiting, conflicting and even incompatible (Giovannini, 2018).

The aim of the guide is to amplify the impact: nudge actions carried out under Goals 4 and 13 also have a broader impact, in particular on Goals 3, 6, 7, 11, 12, 14, 15 and 17.



Four steps to becoming nudge architects





steps

1

Identify the behaviour to be changed.

The first step is to analyse what is being done and what could be done better. Understanding which types of behaviour have an impact on the environment is the first step towards understanding where action can be taken to reduce that impact. In order to do that, it is important to consider all behaviour connected to schools and not just behaviour adopted on school grounds.

A major example is transport. Even though transport happens outside school, whether students travel to school by car or bike has a very big impact on the climate. For this purpose, individuals can also use online resources to assess their ecological footprint based on their behaviour (e.g. **www.footprintcalculator.org**) or to understand which types of behaviour have the biggest impact (e.g. **www.count-us-in.org/en-gb/16-steps/**).

At school community level, the ecological footprint of life at school can be calculated using the EduFootprint Plus tool (**https://edufootprint.interreg-med.eu/**).

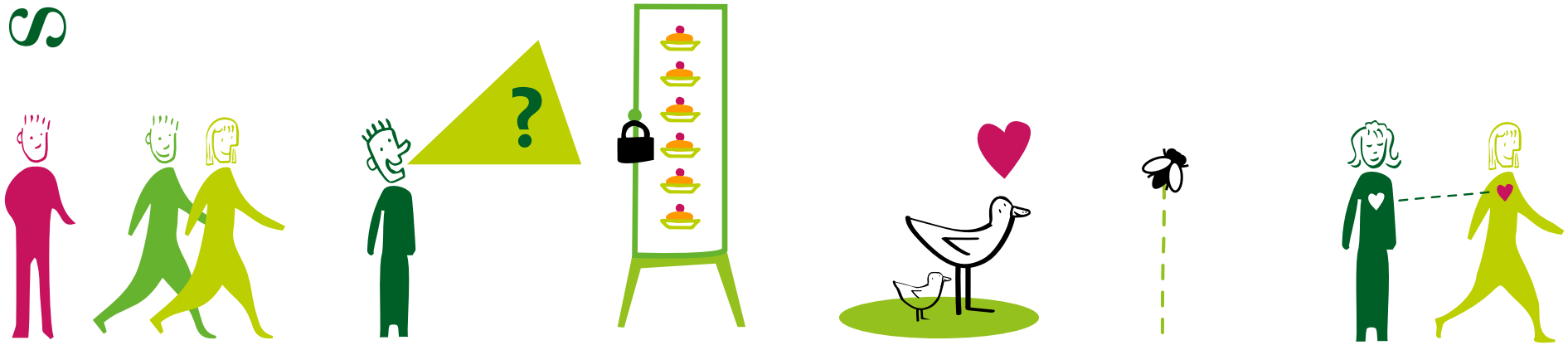
Once you have identified the behaviour you want to change, you need to work out what the starting point is. For example, how many people travel to school by car, how many by public transport, how many on foot and how many by bike, etc. After recording people's habits for a while, you can take action by designing a nudge to change their behaviour. It is important to measure habits when no nudges are in place, as this will allow them to be reassessed once the nudge has been introduced to see whether it has been effective.

2 steps

Choose one of the types of nudge.

Of course, not all nudges fall into the six proposed categories, so you can go wild creating new ones. However, if you find it difficult, using the proposed categories is helpful because most nudges are based on those categories. The first thing we need to ask ourselves is: why is sustainable behaviour not happening?

It is partly because we have psychological barriers that prevent us from adopting it. Each type of nudge is suited to overcoming a specific psychological barrier. They are listed below:



Type of nudge	Social norms	Pledges	Commitment	Feedback	Gamification	Default
Psychological barriers to sustainable behaviour	Sustainable behaviour is not happening because people think that few other people are adopting it	Sustainable behaviour is not happening because no commitment has been made to other people	Sustainable behaviour is not happening because the possible alternative options are more tempting	Sustainable behaviour is not happening due to ignorance about the environmental costs	Sustainable behaviour is not happening due to a lack of attention	Sustainable behaviour is not happening due to distraction or procrastination

3 steps

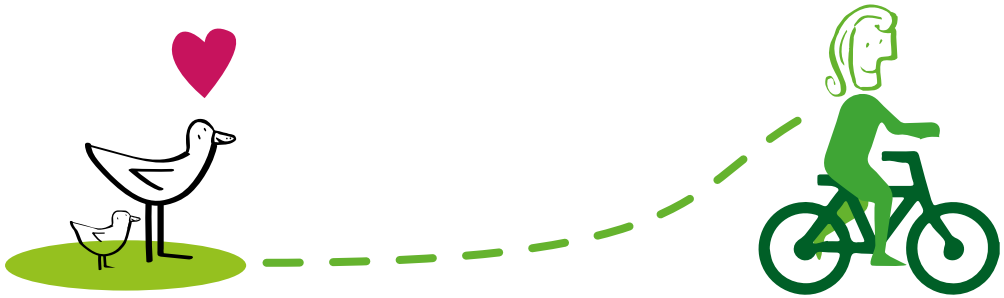
Plan and implement the nudge

- Analyse, from a systemic point of view, the aspects which have a strong leverage effect for change and assess how the nudge can utilise these in order to have the most impact on the target environment and the people in it.
- Choose carefully the group you want to work with. Is it better to have a group of peers or a heterogeneous group? Many studies into group dynamics show that heterogeneous groups (in terms of age, gender, socio-cultural characteristics) work better.
- Be creative in planning the nudge and ask yourself if it will influence the psychological barrier you want to overcome.
- Apply the nudge with as much help as possible from other people, both inside and outside the school. Use social media to share the initiative using the l'hashtag **#nudgeforclimate**.

4

Assess the effectiveness of the nudge

Measure people's habits after the introduction of the nudge and compare the results with the measurements you took before the introduction. Did their behaviour change? If not, ask yourself what did not work. The data you collect at this stage will help you plan the next nudge.



examples

Based on the four steps and the types of nudge, below are a number of examples that can be used and that help to understand nudges in more practical terms.

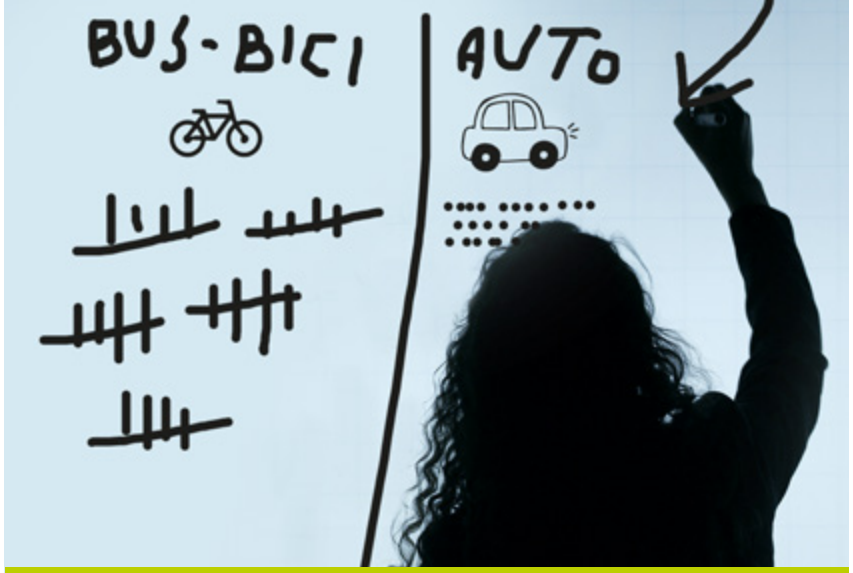
SOCIAL NORMS

A nudge connected to social norms is a piece of information about how many people adopt a certain behaviour. The higher the number of people who behave in a certain way, the more we tend to copy that behaviour.

A famous example

As mentioned above in the section on social norms, a group of researchers working with the company OPower in the USA sent households personalised bills containing information on their consumption compared with that of their neighbours. If they had consumed more than their neighbours, a frowning face was added; if they had consumed less, a smiley face. The researchers observed that those who received a bill saying they had consumed more than their neighbours decreased their consumption the following month (Schultz et al., 2007; Allcott, 2011). Over time, the OPower programme saved 11 TWh of electricity, which is equivalent in environmental terms to 1.6 million cars being taken off the road.[15]

15 https://www.businesswire.com/news/home/20160610005486/en/Opower%E2%80%99s-Utility-Partners-Save-11-Terawatt-Hours-of-Energy



AN EXAMPLE FOR SCHOOLS

Travel in a sustainable way

Behaviour to be changed: reduce car use.

A good reason for doing so: road transport accounts for 12% of global CO_2 emissions.[16]

Plan and implement the nudge: by distinguishing between those who come to school in a sustainable way (on foot/by bike/by train/by bus/by scooter) and those arriving by car, we can generate a social norm encouraging people to travel in a sustainable way. How? Put a board at the entrance to the school and record the number of people who arrive using an environmentally-friendly mode of transport. Can this number be increased?

Assess effectiveness: record over time whether more people come to school using more sustainable modes of transport.

Nudge architects
Students
Teachers
Head teacher
Technical and administrative staff

Targets
Families
School staff

16 https://ourworldindata.org/emissions-by-sector

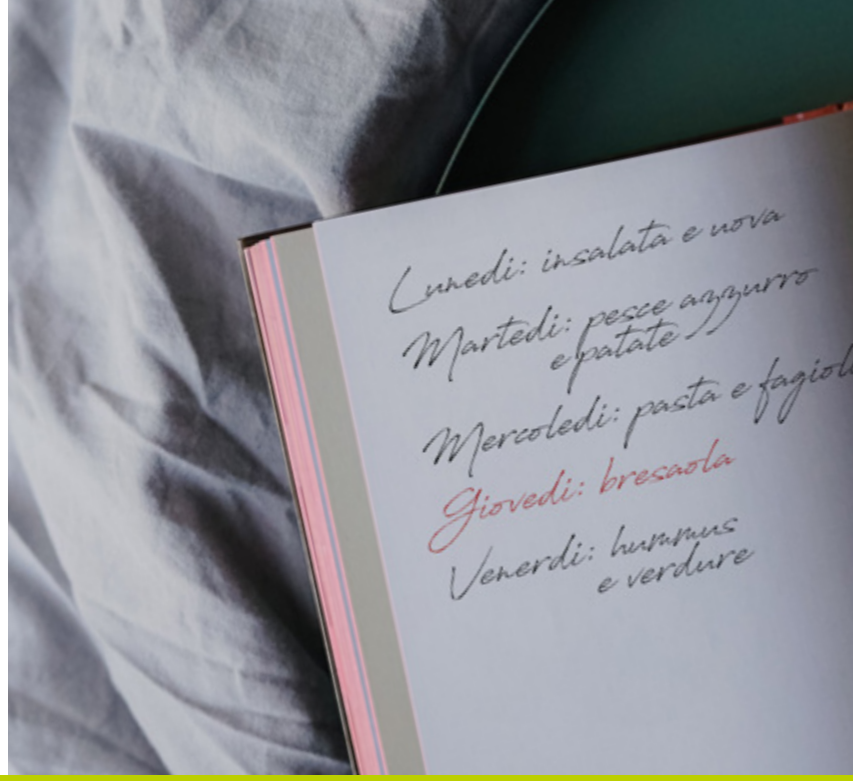
examples

PLEDGES

A pledge is a public promise to change one's behaviour.

A famous example

A group of researchers working with the Swiss tax authorities were able to get individuals to make promises to pay their taxes on time. It was observed that people who had typically paid more taxes in the years prior to the experiment were more likely to promise to pay on time than those who had been less compliant in the years prior to the experiment. Furthermore, the researchers found that the promises increased the tax payments that were on time, especially if keeping the promise was associated with a reward, even only a token one (Koessler et al., 2019).



AN EXAMPLE FOR SCHOOLS

Register of sustainable actions

Behaviour to be changed: Any type of behaviour inside or outside of school life that is harmful to the environment.

A good reason for doing so: individual behaviour, such as food consumption, has a significant impact on CO_2 emissions. For example, intensive livestock farms produce 14.5% of global emissions. In particular, beef production generates about 10 times the CO_2 equivalent of poultry for the same amount of meat produced.

Plan and implement the nudge: a register of climate actions is set up for each class. A teacher or student is responsible for keeping the register. At the beginning of every week, one hour is spent asking each student in the class to make a commitment for the coming week.

The commitment is recorded in the register. A commitment is defined as a measurable and verifiable quantitative goal covering a fixed period of time, such as 'I commit to eat meat only three times a week' or 'I commit to persuade my parents to take the car only 4 times a week'. Each student is asked to monitor their behaviour and measure what they have done during the week. At the end of the week, each student announces to the class whether they have reached their goal. As an alternative to the register, you can use these apps to record your behaviour:
https://site.aworld.org
https://oneactionaday.org

Assess effectiveness: record whether the students have reached their goals over time using the register or the apps.

Nudge Architects

Students
Teachers

Targets

Students

examples

AN EXAMPLE FOR SCHOOLS

Let's use our phones... later

Behaviour to be changed: limit the use of mobile phones to reduce electricity consumption.

A good reason for doing so: energy use in buildings accounts for 17% of global emissions. Constantly checking your mobile phone uses up the battery and forces you to charge it often, thus using more electricity.

Plan and implement the nudge: make safe boxes for each class; put mobile phones in them at the beginning of the lesson and take them back at the end.

Assess effectiveness: the teacher or a student can monitor the number of mobile phones placed in the box each day, thus keeping a record of how many students in the class have contributed to reducing the impact of mobile phones on electricity consumption.

Nudge Architects
Students

Teachers
Technical and administrative staff

Parents

Targets
Students

COMMITMENT

We are constantly succumbing to temptations even though we don't really want to. Examples of this are eating junk food or constantly checking our phones. A commitment is a choice architecture that prevents us from behaving the way we are tempted to which we usually regret.

A famous example

A group of researchers, in agreement with a Philippine bank, offered the bank's customers a bank account that allowed the customers to put money in a separate account and restrict access to that money for as long as they wanted. This is a cost because it locks the money, meaning it cannot be accessed. Therefore, this choice can only be explained by the fact that customers want to commit to not spending too much.

Indeed, the results showed that the most impulsive consumers with the least self-control were the ones that chose this account. This account meant that they saved 80% more than they would have done had they not had the commitment option (Ashraf et al., 2006).

examples

FEEDBACK

Daily actions often have invisible environmental costs. Good feedback shows us the environmental cost of the things we do.

A famous example

A recent study has shown that installing a small device on the shower hose that measures the amount of water used can significantly reduce water consumption as it shows consumers the environmental cost of using the shower. The researchers demonstrated that consumption can be reduced by up to 22%, with savings of 1.2 kWh per day per household (Tiefenbeck et al., 2018)

AN EXAMPLE FOR SCHOOLS

How much energy does my school consume?

Behaviour to be changed: reduce energy waste at school.

A good reason for doing so: reducing wastage can have a big impact. A recent study based on consumption in the UK showed that turning down the heating in buildings by 1°C could save 1.18 million tonnes of CO_2 equivalent in one year.

Plan the nudge: put up a board that regularly reports the amount of energy used in terms of CO_2. Plan the savings goals.

Assess effectiveness: use the board to monitor whether your school is managing to achieve its goals and is improving over time.

Nudge Architects

Head Teacher

Targets
Students

examples

GAMIFICATION

Playing allows us to experience things with a more critical eye because it deactivates the habitual thought patterns our mind sometimes assumes. Using games to make people think about the environmental impact of their actions can make it easier to change behaviour.

A famous example

As mentioned above in the section on gamification, the authorities in Amsterdam's Schiphol airport etched an image of a black fly on each urinal in the men's toilets. Men do not usually pay much attention to where they aim, but if they see an target their attention increases and therefore so does their accuracy. The airport staff conducted a series of experiments and discovered that this game reduces spillage by 80% (Thaler and Sunstein, 2014).

AN EXAMPLE FOR SCHOOLS

Sustainable statistics

Behaviour to be changed: do not throw cigarette ends on the ground.

A good reason for doing so: cigarettes, in particular the filters, are extremely polluting. It takes 5 to 12 years to dispose of them.

Plan the nudge: build a box with two voting options to attract the attention of smokers, who will refrain from throwing cigarettes on the ground so that they can make a choice. See the example in the photograph, taken at Anglet beach near Biarritz on France's Atlantic coast. The nudge consisted in asking people to vote using cigarette ends (which were thus not left in the sand), the options being whether they preferred a beach with surfboards or parasols.

Assess effectiveness: count how many cigarettes have been put in the box and work out which pair of options garners the most cigarette votes. Give feedback to voters.

Nudge Architects

Students
Teachers

Targets
Everyone

examples

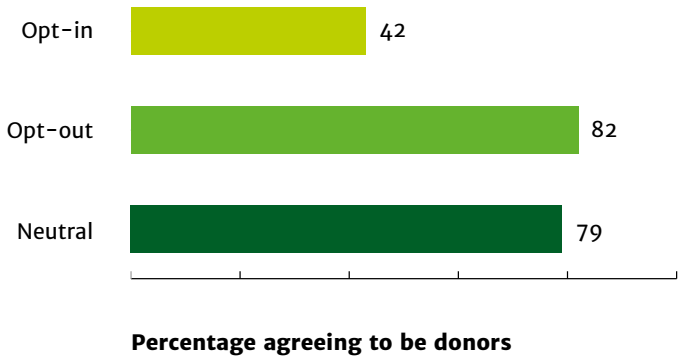
DEFAULTS

A default is an option that is automatically implemented if the decision-maker does not make a decision or take action to change it.

A famous example

Although sample surveys in the USA have shown that most people are in favour of donating their organs when they die, the majority do not change the default, which is not donating. However, if they are given the choice between being a donor or not, most choose to be a donor. Therefore, the best choice architecture is to make donation the default option, which corresponds both to the wishes of the majority and to greater social welfare. An online experiment showed that the percentage of people who choose to donate is close to 80% if donating is the default (opt-out) or there is no default and people have to make a choice, while it is lower when not donating is the default (opt-in).

Source: Johnson and Goldstein (2003)



Percentage agreeing to be donors

AN EXAMPLE FOR SCHOOLS

Our individual impact on climate

Behaviour to be changed: raise awareness of how individual behaviour can influence climate change.

A good reason for doing so: individual behaviour has a significant impact on CO_2 emissions. For example, it takes 2 700 litres of water to make a new T-shirt, which is the amount of water a person would drink in two years. The impact of the textiles and footwear sector in terms of CO_2 amounts to 10% of global emissions. So by avoiding buying new clothes when we don't need them or by buying second-hand clothes, we can greatly help the environment.

Plan the nudge: every school office sends thousands of emails per year, so why not send a climate message in every email as a default? Many parents use electronic tools to consult the electronic register, book meetings and interact with the school. Add a default message to all your emails, the electronic register and all online communications, or get one added. Create default nudges for climate actions that you feel are the most urgent for your school (e.g. reusing clothes or buying second-hand clothes). Otherwise, you can see the types of behaviour which have the highest impact at **www.count-us-in.org/en-gb/16-steps/**

Assess effectiveness: send an email with a small survey asking users whether they have changed their behaviour as a result of the introduction of the nudge.

Nudge Architects

Electronic register software house
Administrative staff
Head teacher
Parents

Targets
Students

examples

AN EXAMPLE FOR SCHOOLS

Park your bike

Behaviour to be changed: use bicycles instead of polluting cars.

A good reason for doing so: road transport accounts for 12% of global emissions[17].

Plan the nudge: get bicycle racks installed near the school to make car parking more difficult. This will make walking or cycling to school the default.

Assess effectiveness: conduct a survey before and after introducing the nudge to see how many people go to school by car and check if this number has decreased since the introduction of the nudge.

Nudge Architects

Head teacher

Targets
Students
Families

17 https://ourworldindata.org/emissions-by-sector

Switch off lights

Talk about it with friends and colleagues

Drive an electric vehicle

Wear durable clothes

Get informed and take part

Walk more

Make our home more efficient

Reduce food waste

Repair and reuse

Eat less meat

Pedal more

Fly less

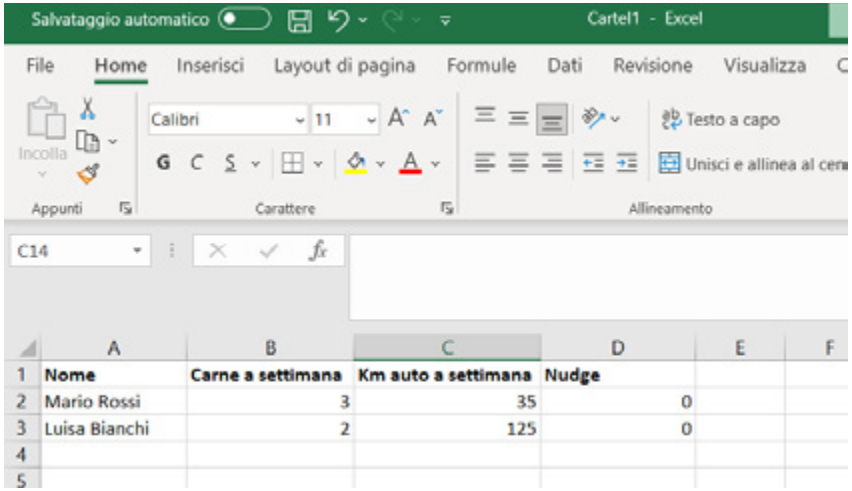
assessments

How to assess the effectiveness of a nudge

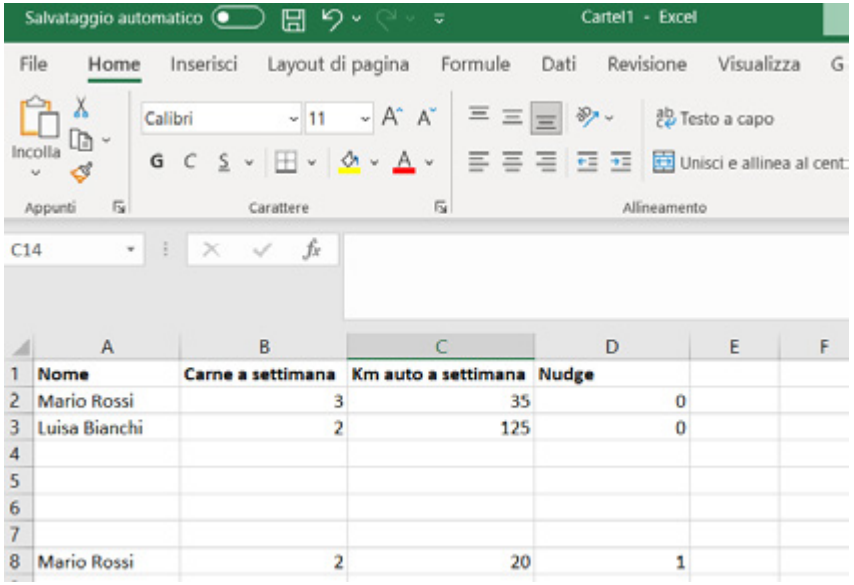
A key aspect of being a good choice architect is measuring the effects of the actions that are being put in place. Below are some instructions for measuring the effects of the nudge.

- Some time before introducing the nudge (at least one month), start to record behaviour related to the variable you are interested in. For example, if you want to set up a register of sustainable actions as described above, record the habits of the nudge participants on a spreadsheet, e.g. weekly meat consumption, car use, etc. Add a column for the nudge variable with a value of 0 to indicate that the nudge has not yet entered into operation.

- When nudging starts and you start keeping a register of people's public commitments, ask for information on behaviour once again and record it on the spreadsheet. This time change the nudge variable value from 0 to 1 to indicate that the public commitments nudge has started. To check if behaviour has actually changed, calculate the arithmetic mean of the values where nudge = 0 and compare with the nudge = 1 values. If the mean of the nudge = 1 values is lower than the nudge = 0 mean, the nudge has worked!



	A	B	C	D	E	F
1	Nome	Carne a settimana	Km auto a settimana	Nudge		
2	Mario Rossi	3	35	0		
3	Luisa Bianchi	2	125	0		
4						
5						



	A	B	C	D	E	F
1	Nome	Carne a settimana	Km auto a settimana	Nudge		
2	Mario Rossi	3	35	0		
3	Luisa Bianchi	2	125	0		
4						
5						
6						
7						
8	Mario Rossi	2	20	1		

conclusion

A nudge towards active teaching

Schools have long had to deal with the major topic of curriculum innovation in order to cope with complex circumstances. Climate change is one of the topics that best demonstrates this complexity because of the environmental, social and economic factors linked to it; it is also a topic that is very close to the hearts of young people, who have brought to the fore the urgent need to criticise behaviour and the decisions taken at local, national and international level, and take action. [18]

Students know that they need to learn about change, while teachers know that they have pledged to help train resilient learners. Education systems around the world are paying more and more attention to citizenship skills and soft life skills. In 2018, the OECD introduced the Global Competence Framework[19]. It defines the knowledge, attitudes, skills and values needed to 'take action for collective well-being and sustainable development' as one of the four main areas of competence. LifeComp[20], the new European framework for the personal, social and learning to learn competences, identifies nine key competences that everyone should develop in order to cope with a changing world. Learning how to become a choice architect in order to change people's behaviour so as to improve their well-being or social well-being and make informed choices strongly echoes the competences expressed in both these international frameworks.

Citizenship education means going beyond only the cognitive dimension of learning and involving also the socio-emotional and behavioural spheres. To do so, teachers and educators know that active and innovative teaching methods are needed.

18 YOUTHCLIMATE: DRIVING AMBITION ITALY 2021 https://www.mite.gov.it/sites/default/files/archivio_immagini/Y4C_COP-PRECOP/Italian%20Y4C%20-%20Key%20meessages.pdf
19 https://www.oecd.org/pisa/innovation/global-competence/
20 https://ec.europa.eu/jrc/en/lifecomp

The #**nudgeforclimate** guide is therefore also a method to help implement these.

#Nudgeforclimate can be applied at many levels, from the individual and the class to the whole school. In any case, the starting point is understanding and documenting aspects of behaviour and deciding which of these have the greatest impact on the environment and need to be changed. To this end, tools such as **Edu Footprint**[21], which calculates the environmental footprint of a school, can be used at school level to understand which areas have the greatest environmental impact (energy consumption, water consumption, product consumption, mobility, food, waste, etc.).

At educational level, on the other hand, other tools such as **En-Roads**[22] allow you to explore a simulation model based on the systems approach (System Dynamics)[23] and create your own scenarios for limiting global warming in the future. The En-ROADS simulator is also used as part of a group learning experience organised as a role playing game: Climate Action Simulation, in which participants are involved in a simulated emergency climate summit organised by the United Nations.

Another useful teaching tool is the Peer Parliaments Toolkit[24] which allows you to make your voice heard with regard to how to tackle climate change. It is organised around the key topics of sustainable mobility, sustainable consumption and sustainable energy.

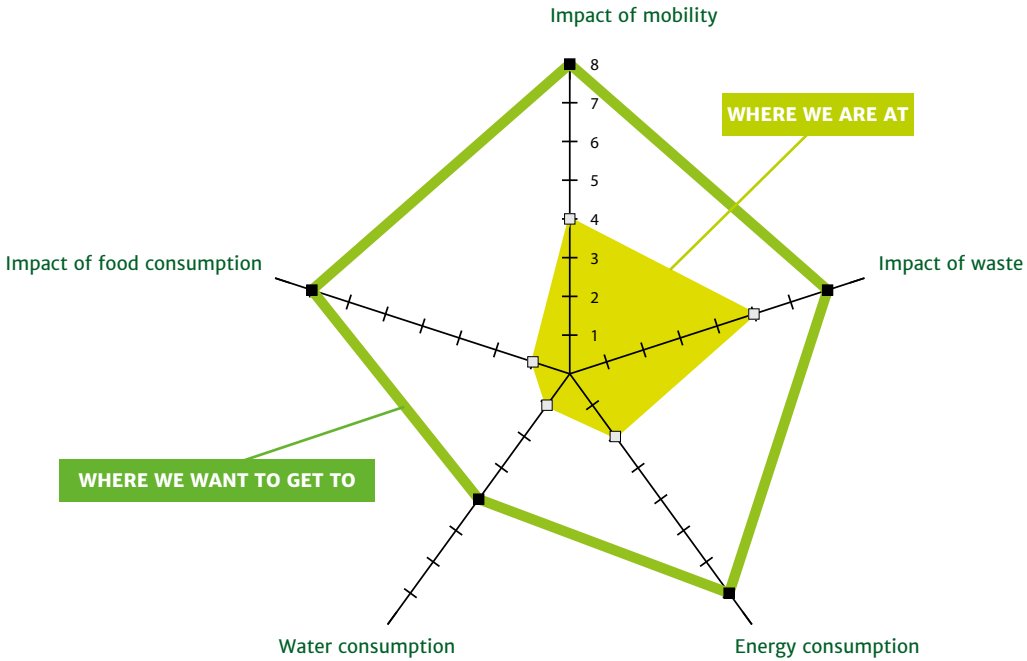
There is no need to reign in your imagination: other experiments in applying nudges may be reflected in and complement other local climate actions, such as the Covenant of Mayors for Climate and energy[25].

21 https://edufootprint.interreg-med.eu
22 En Road, https://en-roads.climateinteractive.org/scenario.html?v=21.7.1
23 https://www.systemdynamics.it/
24 https://europa.eu/climate-pact/resources/peer-parliaments-toolkit_en#files
25 https://www.pattodeisindaci.eu/

conclusion

#nudgeforclimate in Italy

In Italy too, informed and active citizenship in favour of sustainability became an explicit objective with the introduction of civic education by means of Law No 92/2019. Planning and applying a nudge at school is certainly an activity that can be carried out as part of this subject, which, like #nudgeforclimate itself, requires transversality and interdisciplinarity, or 'solidarity between disciplines' (Morin, 2000), but also openness and dialogue with the school's local community so that the educational reach of the school is extended to the wider community or town.



This activity by EuCliPa.it contributes to 'behavioural regeneration', one of the four pillars on which the school regeneration plan [26], launched by the Ministry of Education in June 2021, is based.

By 2050, there must be no net generation of greenhouse gas emissions, economic growth must be decoupled from resource use, and no person or place should be neglected. These are the major environmental, economic and social challenges that the European Union has set itself with the European Green Deal[27] to improve the health of individuals and future generations.

#nudgeforclimate is the proposal from the European Climate Pact Ambassadors in Italy to invite students, teachers and school staff to become key players in helping to make small and large behavioural changes that will make a difference in pursuing these historic challenges.

So let's start nudging.

26 MI, Piano Rigenerazione scuola https://eu-mayors.ec.europa.eu/it/home
27 https://www.consilium.europa.eu/it/policies/green-deal/

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#nudgeforclimate