

# Zero Waste Kids – Teaching Resources for KS2



*Zero Waste Kids* is full of achievable challenges for children to reduce, reuse and recycle their way to help save planet Earth. This is the fun, kid-friendly guide to taking action and living more sustainably.

## About the book

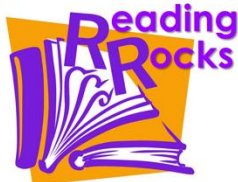
Our planet is in danger! It's time to make a difference to ensure its future by taking up the zero-waste challenge.

*Zero Waste Kids* is full of fun ways to help you make sustainable choices to save planet Earth. Become informed about the crisis we're in but also, more importantly, take action through the 30 achievable child-friendly challenges to reduce waste, including craft activities and lifestyle changes to reduce, reuse and recycle your way to a better future.

Filled with facts about the state of our planet, the environmental impact of over-consuming and the waste we produce and where it goes.

Written by US author Kathryn Kellogg, a leading voice in the zero-waste movement, author of the adult book *101 Ways to Go Zero Waste*, and founder of the *Going Zero Waste* blog. She has been featured in publications such as *National Geographic*, *The Times*, *the Guardian*, *CNN*.

Resources  
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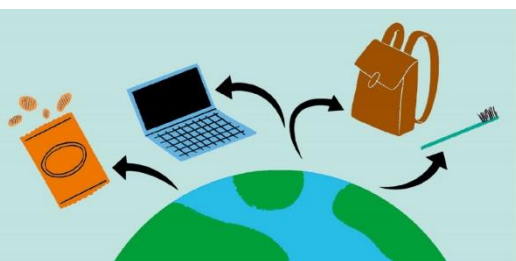


## Resource pack contents

Lesson 1: Equivalents, Persuasive writing

Lesson 2: Data collection

Lesson 3: Save the world one button at a time



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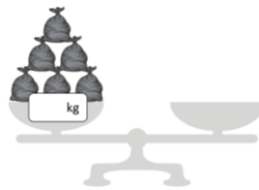
## Lesson 1:

### *Equivalents:*

- Look at page 4 together.
- Discuss the average amount of waste a person throws away a day. You may like to have some weights out to allow children to 'feel' how much 2kg is.
- Show some items that are 1kg, such as a bag of flour or sugar. This way, children can can a real sense of the amount.
- Discuss the idea of equivalents. This may link to your, maths learning on fractions. You can link in here the use of  $<$   $>$   $=$  symbols.
- Look at the examples on page 4. A year's waste as 1215 litres of ice cream or 4 full sized reindeers.
- Model calculating a week's worth of waste by multiplying 2kg by 7 days. Then, try to balance the scales. What could you use? You could use a supermarket website for food masses, to do food equivalents. Or try an animal nonfiction book or website for animal equivalents.

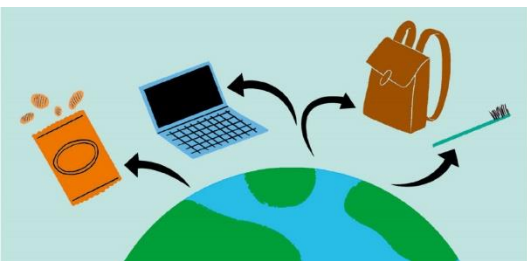
### How much rubbish do you throw away?

The average person throws away 2kg of rubbish a day. How much is that a WEEK? Can you find an equivalent mass?



Put your working out here:

- You will need to model and discuss the various problem solving approaches – dividing the rubbish mass by the food or animal mass; trial and error addition or grouping/chunking by noting easy multiples of the food animal (x2, x10, x15, 100). Which strategy is the most effective and efficient?
- Children can then work in pairs or individually to find weekly, monthly, yearly and their age average amounts of rubbish and equivalents using the sheet provided.
- Conclude the session by asking if children have a better understanding of how much rubbish we throw away now? Pose the question – is it ok to throw this much away?



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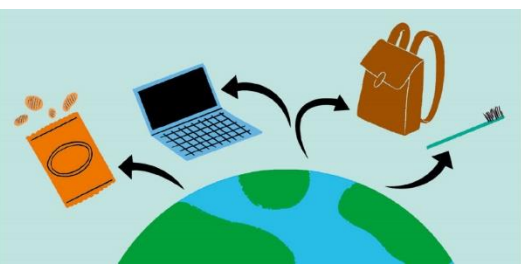
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### Extension activity:

#### *Persuasive Writing:*

- Read pages 4-7 together.
- Explain to children that they will be sharing the message about ZERO WASTE to others by a poster and advert.
- Discuss persuasive tools you have used in previous writing lessons: questions, statistics, anecdotes, rhetoric, imperative verbs etc..
- Use the equivalent facts as the basis for poster/advert design coupled with a rhetorical question – such as ‘Do you know how much you throw away?’. Try using repetition to support the point – such as ‘Every day..... Every week..... Every month.....’
- Use computing skills to create duplicates of images, like the scales on the sheet. Use a self-drawn image in Paint, or a copyright-free image, then use COPY and PASTE skills to show the equivalents.
- These images can be used on a poster or used as a ‘green-screen’ background for a video recorded advert.
- Ensure children include a solution as a call to action so the audience not only understands the problem, but has a real way to solve it.



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## Lesson 2:

### *Data Collection:*

- Check out the challenge on page 7 – Waste Audit
- Discuss the word AUDIT. You may wish to put the definition up on your word wall or in children's vocabulary books. Talk about when the word may be used, such as an audit of accounts, a traffic audit.
- Use the tally chart sheets to collect waste data for your school. You could ask your pupils to distribute them around school, one to each class, asking them to collect data for a week. This will give a bigger picture, but if you cannot, just doing it for your class will give data to work with.

Class: ..... Date:.....

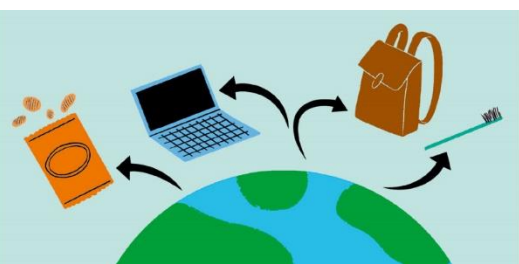
### Waste Audit: School

Each time you put something in the bin, note it in this tally chart. At the end of the week, count the tallies and find the totals. Which item are you throwing away most in your class?

Item	Tally	Total

Conclusion:

- You could even ask the school office, caretaker, headteacher or kitchen staff to join in, if you really want to know what your school throws away!
- After a week, collect the tally charts and total the tallies. This information can be put into graph form.
- Make a conclusion for each class. This may be that they throw away a lot of glue sticks, or maybe old pens.
- Look for trends across the school. Is the same item the most thrown away in each class, key stage?

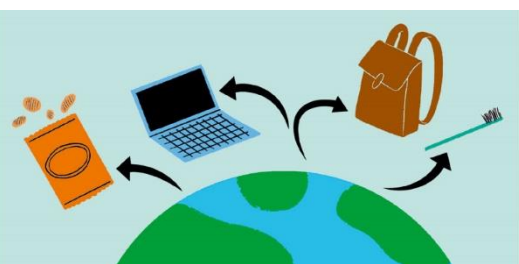


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- From the conclusions, decide on a first step of change to make. If glue sticks are the issue, focus on finding a solution for that problem. Is there a less wasteful alternative to glue sticks? Are there recyclable glue sticks available? Does work always need to be stuck in? If pens are the issue, can they be recycled? Are re-fillable pens available? Allow pupils to research solutions.
- Now is time for action. Ask pupils to write to the headteacher, presenting their findings, highlighting the problem and most importantly suggesting reasonable solutions that can be acted on.
- FOLLOW ON – after changes are made, you may wish to carry out the waste audit again. Compare the data for each time. Has there been any change?



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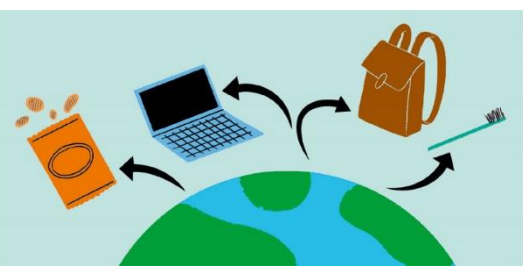
### Lesson 3:

*Save the world one button at a time:*

- Read pages 30-33 together.
- Discuss how many times children get new clothes. You could challenge them to count how many T shirts they have at home. As a teacher, you could share how many you own first. It may be a surprise to you all how many you own! (Be mindful of those in your class who may not have a lot).
- Teach your children how to sew on a button. They could watch a YouTube 'how to..' video to help practise at home, or ask an adult to help them.
- Now they know how to do it, task them with creating a set of instructions to help other 'make-do' in this way. It may be helpful to get children to draw a flowchart of steps, or to photograph and annotate each step to help structure their instructions.
- Ensure their instructions are clear and concise so they are easy to follow. Encourage them to include time fronted adverbials to link instructions together, followed by precise imperative verbs. They can also use adverbs and expanded noun phrases to give clarity.
- The instructions can first be done as a written set, which can later be turned into their own YouTube video. It would be great to share on a school site to encourage the school community to be more mindful of getting rid of clothes.

Extra ideas:

- Organise a class/school clothes swap event (see page 33). Try collecting all the donated items first and giving children a token for each item. It is a good idea to make it clear in a letter (or other parent communication) what makes items acceptable for this activity. Then, children can use the tokens to 'buy' the new-to-them items. You never know – it may become a regular school event!
- Try designing and making re-useable shopping bags (challenge 22, page 47). If children bring in a fairly plain T-shirt to upcycle, they can follow a Design Technology process to make. Challenge children to design a suitable slogan to support the ZERO WASTE campaign. This can be added to the bags with either fabric pens/paint, or sewing on scraps of fabric in the desired shapes and patterns.



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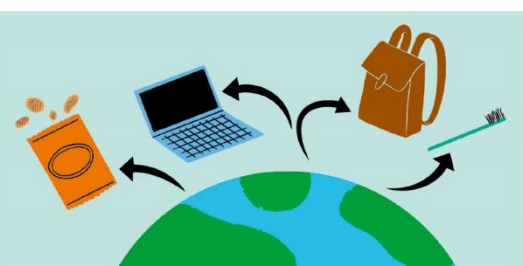
## Lesson 4:

### *The science of cleaning:*

- Read pages 38-39 together.
- Look closely at Challenge 16 and ask – what's the science? Discuss what happens to stains, dirt and grime when we spray them with cleaner. You may have learnt about dissolving and solutions before – re cap this knowledge.
- Set up an investigation to find out which stain is the trickiest to clean. In other words which is the hardest to dissolve?
- For the investigation, you will need to make up the homemade cleaner. Encourage children to bring in old cleaning bottles to re-use for this. Be sure they have been totally cleaned of other products before children use them.
- Allow children to set up the investigation on a table or tray. To keep the test fair, they must make stains as identical in size as possible. This can be done by measuring the amount of 'stainer' with a spoon or drawing a test square to spread the 'stain' to the same area. You may like to have both versions going on in the classroom and discuss which is fairer.
- Stains could include coffee, tomato ketchup, ink, pesto etc... It may be good to set up before lunchtime, so stains have time to dry out.
- To keep the test fair, the same amount of cleaning spray should be used. Ask children to think about how best to do this. Count sprays? Measure out with a measuring cylinder? They must give each stain the same amount of time, too.
- Scientific observations will need to be made to judge which stain is easiest to most difficult to clean. Ask children to think of what they could observe. Time to dissolve, number of wipes needed to remove the stain, the look of it... or their own ideas.

### Further investigations:

- Do a comparison test against other cleaners (be aware of toxic/hazardous cleaning products!!)
- Time whether the stain dissolves quicker with or without bicarbonate of soda.
- Design a label for the bottles including the ZERO WASTE message and an observation form the investigation e.g. cleans tomato ketchup stains in less than 30 seconds!!



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