



Great British

BEACH

CLEAN

SOURCETO SEA

Education Pack

ABOUT THE PROJECT

Welcome to the Great British Beach Clean Source to Sea Litter Quest, it's great to have you on board. This year, we're taking the learning local, inland and online so you can get involved, recording and collecting litter, even if you live far from the coast. Whether you represent a school, a youth group, or are home educating, this resource contains all you need to get involved.

There's a range of activities for ages 5-18 years, including online lessons and the Litter Quest itself, running between 21st and 25th September 2020, and follow up activities for different age groups are provided. We're also offering follow up virtual lessons to participating groups who would like support to continue their marine conservation journey.



WHY GET INVOLVED?

Great British Beach Clean (GBBC) is one of the UK's largest Citizen Science programmes and data collected is submitted to the International Coastal Clean Up which provides a global overview of marine litter. Whether you are beach cleaning or taking part in our Source to Sea Litter Quest, the litter you record on your local clean-up will help us to create a better picture of the litter that is plaguing our environment, including new single-use items such as PPE.

GBBC is a great way to help your school or group reach its sustainability goals and takes advantage of outdoor spaces for learning – a welcome change for young people from the various regulations required in school at the moment. Connecting to our environment by spending time outdoors can be beneficial for mental health too and, by improving their local environment, young people will develop a sense of social responsibility and awareness of how to take personal action.

CURRICULUM LINKS

This project links to learning in: **Geography, Science, Social Science, English, I.T., PSHCE and Maths.**



It's a great opportunity to run an innovative cross-curriculum project across several weeks with help from the Marine Conservation Society along the way. There are many possibilities to include this project across the school subject areas, building on knowledge and skills at each stage. In secondary school, for example, pupils could start by gaining subject knowledge in geography, survey techniques could be written and evaluated in science, data presented in IT and data analysed in maths. The project could then culminate in a citizenship class with a discussion and debate on ways societal behaviour and political movement could make a positive change to our environment.

Further curriculum links can be found on pages 5-8.

To keep you as safe as possible when you're out and about, health and safety guidance and a risk assessment are included. Please do check and follow the government, and local rules, where you are.

WHAT'S HAPPENING?

When	What	Focus
Monday 21st Sept	Source to Sea Launch Lesson	There will be a live 30 minute lesson (9:30am Primary, 11:30am Secondary) to launch the Source to Sea Litter Quest. The live sessions will be recorded and hosted at bit.ly/coolseasplaylist for anyone who can't make the live times. The session will give the background to why litter is such an issue, look at what we typically find on beaches, how it gets there and why the quest is so important. To attend the live lesson, please follow the links to register at www.mcsuk.org/coolseaswebinars .
21-25th Sept	Source to Sea	During the week, complete the Source to Sea Litter Quest or beach clean and submit your data to us using the instructions on the quest card or survey form. Take photos of your group and use #litterquest on Social to spread the word. Be sure to share your group's work with us, at bit.ly/litterquest , so we can celebrate your achievements in the live lesson on Friday. We'll send a Source to Sea Certificate to everyone who completes the online form.
Friday 25th Sept	Source to Sea Celebration Live Lesson	On Friday there will be a 30 minute live celebration and sharing of the learning that's happened over the week (1:30pm Primary, 2:30 pm Secondary). We'll share the results so far, look at some of your work and introduce the follow up activities to your group. The sessions will be recorded and hosted at bit.ly/coolseasplaylist as well. To attend the live lesson, please follow the links to register at www.mcsuk.org/coolseaswebinars .
Anytime after your Litter Quest or Beach Clean	Follow Up Activities	To build on the learning from the week, there's a range of activity suggestions, including data based activities for Upper Primary and Secondary, that you could complete, on pages 5-8.
25th Sept onwards	Online lesson	If your group would like to discuss their learning and any of the issues they have encountered further, or explore next steps for taking action for ocean health, you can register for an online lesson with us at www.mcsuk.org/coolseas/coolseas_tour.php - just use the Beach Clean option and add 'GBBC follow up lesson' to the notes and we'll be in touch.

RUNNING A BEACH CLEAN

If you are local to a beach and able to lead a clean for your group within local Covid regulations, all the information and resources you need are available at www.mcsuk.org/beachwatch, including an organisers' guide and risk assessment. There's also some additional guidance on leading a clean with groups and schools at www.mcsuk.org/beachwatch/groups-and-schools. If you have any questions about leading a beach clean, please contact beachwatch@mcsuk.org.

If you have any questions, or need any help and support with Source to Sea, please email education@mcsuk.org.



THE LITTER QUEST

If you can, head out with the Litter Quest Card on page 10 on a quest to spot (and pick up!) common beach litter items in your local area – school grounds or a local park are ideal places. The plastic bottles, cans and face masks spotted in your parks and streets can and do end up on the beach and they are much easier to remove from the land than they are once they reach the ocean!

Not only that, the data you collect will help us identify and create a picture of the litter that plagues our environment, including new single-use items such as PPE.

To keep you as safe as possible when you're out and about, there's some health and safety guidance below and an example safety briefing and risk assessment can be found at bit.ly/GBBCSafety. Please check and follow the government, and local rules, in your area.

If you're unable to take part in the litter quest, the Litter Quest card could be used to discuss items that have been seen recently as litter, those which young people have in their homes, or those found as waste. Discussion could then centre around which items are 'new' types of litter (e.g. Covid related items), how items become littered and which items could be recycled or not used at all. Older groups could debate whether single-use items should be allowed.



BEFORE

- Choose the location for your Litter Quest to suit the age and ability of your group, working away from roads and with direct adult supervision for younger groups.
- Make sure you're well prepared for your Litter Quest. Everyone should wear sturdy shoes and bring strong gloves - ideally gardening style gloves. For the youngest groups this may be tricky and it may be necessary for the children to spot the litter and an adult wearing gloves to pick it up, unless you have litter pickers available. Metal tongs which are thoroughly sanitised after use make good improvised pickers. Make sure you have bin bags for the litter, hand sanitiser, waterproofs or sunscreen – whichever is needed - and cover up any cuts.
- Check and update your risk assessment on the day and run through the safety guidelines and set clear expectations for behaviour. Have a rule regarding alerting an adult if anything sharp, dangerous or nasty is found.

DURING

- Use the Source to Sea Litter Quest card to spot common beach litter inland - run through this with your group first.
- Ensure gloves are worn for the duration.
- Abide by local social distancing rules for your school or group.
- Do not touch your face when litter picking, and use your hand sanitiser often.
- Put any sharp items in a separate bucket or container and not in your bin bag whilst litter picking.
- Make sure you take photos and share them with us using #LitterQuest or by emailing education@mcsuk.org, including your group name and where you are from.

AFTER

- Wash your hands with soap for 20 seconds, as soon as possible.
- Clean your litter picking kit thoroughly with household disinfectant.
- Snap a photo of your Source to Sea Litter Quest card and post it on social media using the hashtag #litterquest or share with us by uploading via the website www.mcsuk.org/campaigns/sourcetosea-home.

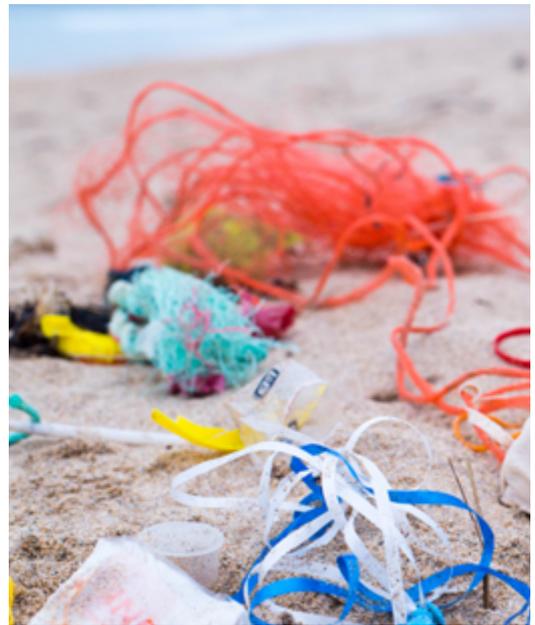
SHARING YOUR WORK

- We'd love to see how you got on and be able to celebrate your group's achievements in the live lesson on Friday. If you'd like your group to be featured, be sure to complete this form bit.ly/litterquest by 5pm on Thursday 24th September.
- If you'd like to share photos with us, please use #litterquest or email education@mcsuk.org.
- **Don't worry if you don't make this deadline though**, we'd still love to hear from you and will send a certificate to every group who submits evidence to us.
- Please note MCS may use work submitted as evidence for current or future funders or promotion of education work.

FOLLOW UP ACTIVITIES

INFANTS

- If you are able to, gather some examples from home of the items you found on the Litter Quest – **be sure they are fully sanitised**. If you aren't able to bring items in, children could use the photos from the Litter Quest card for this activity instead. Start by discussing the litter they found and how children feel about it.
- Group the items into those that can be recycled and those that have to be binned, getting the children to tell you which group each item belongs to. **Do not let children touch the items!** Discuss which of the items you could recycle or perhaps do without and those which are 'new' litter items due to Covid, like gloves and masks.
- Ask for children's ideas of how litter can be a problem and what causes litter. Discuss the longevity of plastic and how it breaks into micro-plastics which travel throughout our environment and into our food chain. Use children's responses to discuss how important it is to refuse, reduce, reuse and recycle.
- Use an online map to develop knowledge of location and track how litter could get from you to the sea via streams and rivers. Explain that plastic litter is a particular problem as it lasts for a very long time, possibly permanently. It's strong and light so it can travel great distances and is more difficult to collect once it reaches the sea.
- By collecting the litter and recording it on the quest form, your group has helped us to know more about the litter that is out there so we can try to find ways to stop rubbish reaching our environment. We'll collect everyone's results and then analyse the data to see which items are the biggest problem and then we'll run campaigns to raise awareness of the problem.



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OLDER INFANTS?

Older groups could use the Waste Hierarchy Pyramid on pages 11 & 12 to discuss making good choices, match up the definitions to the terms and then create digital or hand drawn posters to get people to use a bin and/or reduce their waste. These could be shared with your school community via social media, using #litterquest.

FOLLOW UP ACTIVITIES

JUNIORS AND SECONDARY

(includes differentiated activity)

- Explain that the data you collected will be analysed and used to inform our litter work. Explore our Great British Beach Clean 2019 report at bit.ly/GBBCReport2019 and compare the findings around the UK to the litter you collected. Particularly highlight the results for any gloves and masks, and discuss why these aren't usually so frequently littered, relating their presence to Covid.



- Graphs, tables and charts could be produced to analyse your data at your group's age and ability level. These could then be used to share your work and raise awareness of the impacts of littering within your wider community.
- Discuss possible routes for litter from your local area to the ocean. Use a map to find local streams and rivers and follow these to your nearest beach. Explain that 80% of the litter that we find on beaches comes from inland – so most of our beach litter is ours, not from overseas. It's much harder to collect litter once it reaches the ocean, which is why the work they did on the litter quest is so important.
- Discuss the longevity of plastics and their pervading nature once they break into micro-plastics.
- Encourage young people to identify ways we can stop litter reaching the beach – it's important to emphasise that waste can become litter unintentionally and reducing the amount of waste we produce is key.

You could then use our downloadable beach litter datasets to delve even deeper into the litter issue.

MCS has been collecting beach clean data from around the UK as part of Beachwatch for nearly 30 years. We use the data to identify overall patterns in litter and use this to work to reduce its impact, through campaigns, work with manufacturers or through our Government. Our data was, for example, instrumental in bringing in the plastic carrier bag charge.

JUNIORS & LOWER SECONDARY

We've created a dataset showing the top 10 litter items found on beaches in 2019 for each UK country (see page 13). Young people could explore the data and compare findings where they live to other areas of the UK. They could then produce charts and graphs to share the data with others and set up a campaign to reduce littering. They could write letters to manufacturers, retailers and their local MP and get the local community involved.

SECONDARY

For older secondary, we've collated 10 years worth of data for areas around the UK for young people to explore. We've organised the data a little and standardised the results to show average per 100m (because in some cases our surveys are conducted over more than the standard 100m in our survey protocol). To compare results, they must therefore be standardised. This should make the data a bit easier to interpret and manipulate, but you could also tailor this further depending on your current curriculum focus and the age of your group.

If a raw dataset is preferred please contact education@mcsuk.org.

FOLLOW UP ACTIVITIES

- Data could be used to: explore patterns in a particular litter item over time, identify patterns in litter sources or look at frequency of different materials.
- Pivot tables are useful to help compare various elements of data and are a key tool we use in our analysis. There's a great demonstration of how they can be used at bit.ly/UsingPivotTables.
- After a walkthrough of the data and how to sort it, young people could then work to interrogate the data, in collaborative groups (if possible), to identify a particular issue with an item, source or material, and then develop an action plan to reduce the issue.
- To provide contextual information our survey methodology can be found at bit.ly/GBBCsurveymethod and we've also provided an annotated data set bit.ly/annotateddata.
- Access the secondary level datasets at:

bit.ly/UKdataset

bit.ly/WalesData

bit.ly/EnglandDataset

bit.ly/NorthernIrelandData

bit.ly/ScotlandData

bit.ly/ChannellIslandsData



Please note that by downloading our data you are agreeing to our terms and conditions, namely that you will only use any data as part of Source to Sea and for no other purposes. Full T&Cs can be found at bit.ly/GBBCDataTerms.

FURTHER ACTIVITY IDEAS

PRIMARY

GEOGRAPHY

- Use maps to understand the area local to you, looking into how local factors could contribute to the amount of litter found in the Litter Quest.

MATHS

- Using the Litter Quest data is a great way of practicing simple manipulation of numbers on a real life data set. Simple manipulation could include: addition, subtraction, multiplication and division, fraction and, percentages.

IT

- Learn about online content by navigating www.mcsuk.org/coolseas/explorecentre to enhance students' learning on the subject.
- Use computer software to present data through creating simple bar charts and tables.

ENGLISH

- Develop and enhance reading skills by reading a story with an environmental moral. A great book to read as a class is [Tuamor the Turtle](#) by Jo Earlam.
- Explore and develop creative writing skills using the knowledge learnt around the topic of marine litter to create a short story or poem.

CITIZENSHIP

- Encourage pupils to develop and share their own opinions around the topic of marine litter in the natural environment.
- Pupils could create ideas of one simple change they could personally make to reduce litter in the natural environment and share their ideas with the class.
- Take part in active class discussions and work as a group to develop an idea for a positive change the whole group, class or school could make to reduce the amount of litter entering our seas.

FURTHER ACTIVITY IDEAS

SECONDARY

GEOGRAPHY

- To understand the concept of source to sea follow a local river on its journey to the coast, this is a great way of connecting the topics of rivers and place. Pupils could use online maps, like Google Earth, to locate the nearest river, estimate miles from the sea and look into physical and human factors along the river which influence the amount of litter entering the water course and is subsequently carried to the sea.
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SCIENCE

- The Source to Sea Litter Quest is a great research project to develop and enhance students scientific report writing skills. The data collection method could be written up, with students evaluating the methods and discussing opportunities to build on the data collection techniques used.
 - Students could design their own scientific experiment on marine litter to build on what they have learnt. For example, a degradation study looking at how long it takes various forms of litter to begin to degrade in landfill conditions and in salt water conditions.
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IT

- Using the 10-year beach clean data set provided by MCS along with data collected during the week, students could use software to input, analyse and manipulate data in a spreadsheet. Students could select appropriate graphs (pie chart, line chart, bar/column chart) and format these accordingly.
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MATHS

- Use the 10-year beach clean data set along with Litter Quest data to construct and interpret tables, charts and diagrams such as line graphs, pictograms and box plots and statistically analyse and evaluate the data.
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CITIZENSHIP

- Discuss the findings of the Litter Quest survey. Encourage students to add their personal views on what the data suggests and debate the wider topical issue of marine litter.
 - Students could use this project as a case study to research how citizens can make a difference in society. Students should think creatively suggesting problem solving ideas, and developing a campaign to highlight issues of litter in their local community.
-

SOCIOLOGY

- Explore the societal behaviours that have led to the problem of plastic pollution in our environment. For example, students could look into how product choice, consumerism culture and a throwaway society have had a negative impact on the environment. Discuss opportunities to influence personal and societal behaviours and to create positive social change.
-

POLITICS

- Use knowledge gained through both taking part in the Source to Sea Litter Quest and subsequent research in other subjects, to discuss and debate the political opportunities to reduce the impact of marine litter in the environment. Use MCS as a case study to research how our past and current campaigns aim to bring about political change, what methods are used and what influence these campaigns have.
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WHAT NEXT WITH MCS?

MCS Education Resources

- There is a wealth of free primary teaching resources on a range of marine topics, including marine litter, available at bit.ly/CoolSeasLessons. You can search by topic, age range or key word.

Beach Cleaning

- To find out more about beach cleaning with your group, visit www.mcsuk.org/beachwatch. You can register as an organiser and lead a clean for your own group at a time that suits you.

Workshops

- All of our workshops are free to schools, youth and Home Ed groups. At the moment, due to Covid, we are not running face to face sessions, but do check our session information and booking form at www.mcsuk.org/coolseas/coolseas_tour.php. We hope to be back running sessions in the new year so do check back.



Webinars

- We host regular live lessons on key marine themes and topics for 5-18 years. We'll be launching our new series shortly at www.mcsuk.org/coolseaswebinars and you can access our previous sessions at bit.ly/coolseasplaylist.

MCS Campaigns

- Our campaigns aim to connect people with science to raise awareness of marine issues and may target the public, manufacturers, retailers and/or Government, depending on the key issue. You can find out about how to get involved in our current campaigns at www.mcsuk.org/campaigns.

Fundraising

- As a charity, we rely on grants, donations and memberships for our work. If you have the opportunity, please do consider us to be the recipient of any fundraising activities. However big or small your donation, the money will go directly to actions which help to save our seas. Find out more about fundraising for MCS at www.mcsuk.org/coolseas/coolseas_fundraising.php.

HOW DID IT GO?

We are always looking to improve and develop our projects so would really value your feedback on what worked, what wasn't so successful and what we should be doing more of. If you haven't already, please spend a few minutes adding your thoughts to this quick online form bit.ly/litterquest so that we can best meet young people's needs in our work.

Great British BEACH CLEAN

Source to Sea Litter Quest

Total participants

Weight of litter

Number of bags

 kg

Weirdest item found?

Where did you clean? (please circle)

Town | Countryside | Park | Street | River

Playground | Grounds of the office | Other

School group?

Age range:

Youth group?

First half of
your postcode:

80% of the litter we find in our ocean comes from inland. Help us stop ocean pollution in its tracks! Spot the litter, tick what you found, then pick it up.

<p>Paper cups and lids</p> 	<p>Drink cups for cold drinks e.g. Smoothies/milkshakes</p> 	<p>Metal drink cans and tops</p> 	<p>Plastic drink bottles and tops</p> 
<p>Glass bottles</p> 	<p>Single-use plastic bag</p> 	<p>Plastic bag for life</p> 	<p>Polystyrene fast food containers</p> 
<p>Polystyrene cups</p> 	<p>Single-use plastic gloves</p> 	<p>Single-use face mask</p> 	<p>Balloons</p> 

The litter you record on your local clean-up will help us identify and create a snapshot of the litter that is still plaguing our environment, including new single-use items such as PPE.

#LITTERQUEST

Snap a photo of your Source to Sea Litter Quest card and post it on social media using this hashtag

Or share with us by uploading via the website:
[MCSUK.ORG/CAMPAIGNS/SOURCETOSEA](https://www.mcsuk.org/campaigns/sourcetosea)





WASTE FUNNEL

Reducing our waste means less landfill/ incineration and less litter



RETHINK

REFUSE

REDUCE

REPAIR

REUSE

RECYCLE

ROT/
BURN

TO
LANDFILL/
INCINERATOR



Cut boxes along dotted lines

RETHINK

By recycling products whenever possible something new can be made from the materials and you stop them going to landfill.

REFUSE

Cut down on the things you buy and the energy you use. By using less, we can cut down the amount of waste sent to landfill and stop it from becoming litter.

REDUCE

When something breaks see if it can be repaired and used again instead of buying a new one. This stops the old item becoming waste and means energy and resources don't need to be used to make a new one. Win, win.

REPAIR

Identify single-use items that you can refuse, like straws and water bottles. Keep looking for new items to refuse.

REUSE

If you can't repair, reuse or recycle the item, use a bin. Depending on where you live, this may then be sent to landfill or incinerated. Plastic, remember, will never rot away.

RECYCLE

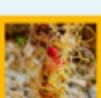
Can the product be used again for another purpose? By reusing what you already have or finding a new use for it, like using a tin can as a pencil pot, you stop the item becoming waste. It also means you don't have to buy something new.

ROT

Always question the choices you make. Could you do things differently in your life so that you use less resources and create less waste?

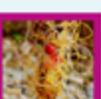
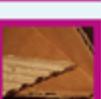
What did we find?

Average number of items per 100m

1		Plastic/polystyrene (0-50cm)	143 /100m	▼
2		Cigarette stubs	42.6 /100m	▲
3		Glass	33.4 /100m	▼
4		String	32.6 /100m	▲
5		Packets (crisp, sweet, lolly, sandwich)	30.9 /100m	▼
6		Fishing net (small)	21.3 /100m	▲
7		Caps/lids	20.4 /100m	▼
8		Wet wipes	19.2 /100m	▲
9		Fishing line	18.8 /100m	▲
10		Other Plastic/polystyrene	16 /100m	▲

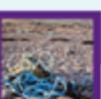
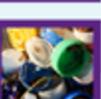
What did we find in England?

Average number of items per 100m

1		Plastic/polystyrene (0-50cm)	178.7 /100m	▼
2		Cigarette stubs	62.6 /100m	▲
3		Packets (crisp, sweet, lolly, sandwich)	38.1 /100m	▼
4		Glass	35.1 /100m	▼
5		String	30.4 /100m	▲
6		Fishing net (small)	25.7 /100m	▲
7		Caps/lids	24.3 /100m	▼
8		Fishing Line	23.8 /100m	▲
9		Wet wipes	11.3 /100m	▲
10		Cardboard	10.7 /100m	▲

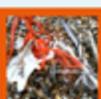
What did we find in Scotland?

Average number of items per 100m

1		Plastic/polystyrene (0-50cm)	99.8 /100m	▼
2		String	39.5 /100m	▼
3		Glass	38.5 /100m	▼
4		Wet Wipes	36.7 /100m	▼
5		Other Plastic/polystyrene	32.9 /100m	▲
6		Packets (crisp, sweet, lolly, sandwich)	23.3 /100m	▼
7		Rope	16.1 /100m	▲
8		Cigarette stubs	15.5 /100m	▲
9		Cotton bud sticks	15 /100m	▼
10		Caps/lids	14.6 /100m	▼

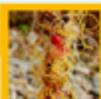
What did we find in Wales?

Average number of items per 100m

1		Plastic/polystyrene (0-50cm) 162.4 /100m ▲
2		Fishing net (small) 40.9 /100m ▲
3		Cigarette stubs 32.6 /100m ▼
4		Fishing line 27.3 /100m ▲
5		Packets (crisp, sweet, lolly, sandwich) 20.9 /100m ▼
6		String 19.3 /100m ▲
7		Metal (50cm+) 15.5 /100m ▲
8		Caps/lids 14.8 /100m ▼
9		Metal wire/mesh/barbed wire 14 /100m ▲
10		Glass 10 /100m ▼

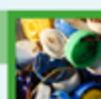
What did we find in Northern Ireland?

Average number of items per 100m

1		Plastic/polystyrene (0-50cm) 69.6 /100m ▼
2		Caps/lids 52.3 /100m ▲
3		String 48.9 /100m ▲
4		Fishing line 26.8 /100m ▼
5		Packets (crisp, sweet, lolly, sandwich) 20.6 /100m ▼
6		Plastic Drinks Bottles 20.1 /100m ▲
7		Shotgun Cartridges 17.6 /100m ▲
8		Cloth 15.9 /100m ▼
9		Glass 13.8 /100m ▼
10		Rubber 12.8 /100m ▲

What did we find in the Channel Islands?

Average number of items per 100m

1		Plastic/polystyrene (0-50cm) 29.9 /100m ▼
2		Cigarette stubs 11.9 /100m ▼
3		String 9.7 /100m ▼
4		Packets (crisp, sweet, lolly, sandwich) 4.3 /100m ▼
5		Wood (0-50cm) 3.2 /100m ▲
6		Wood (Lolly stick/chip forks) 3.1 /100m ▼
7		Caps/lids 2.7 /100m ▼
8		Cloth 2.7 /100m ▼
9		Rubber 2.3 /100m ▼
10		Fishing net (small) 2.1 /100m ▼