



Baylab

Packaging Pandemic!

Packaging is everywhere, sometimes there is too much of it and often it is difficult to know what to do with it when you are finished with the product!

Baylab have put together a suite of modular activities and resources that will allow groups of students to explore the problems surrounding packaging and encourage them to think how packaging can be both useful and sustainable.

WHO IS IT FOR?



The packaging pandemic modules are designed to develop the skills of 9 to 13-year-olds working both individually and in small groups or teams. They may also be suitable outside this age range.

The resources could be used in a classroom situation, but we would envisage them being more useful in school clubs (Science or D&T) or other groups of young people as the investigations and project will stretch over more than one session.

// Observation // Presentation // Data processing // Recording

HOW DO WE GET INVOLVED?

There are several resources from investigations to presentations and quizzes to a group project. You can do as many or as few of these as you feel suitable for your students as they can all work independently.

There will be opportunities for you to share your students work online via the Bayer  [BayerUKI](#) and  [@ukBayer](#) accounts using the hashtags #baylab #packagingpandemic

It would be great to post your student's work around the time of WRAP recycle week on 19-25 September.

INVESTIGATIONS:

There are three investigations which will take some time to complete. They are all optional but it is hoped that the results would feed into the final Packaging Design project.

'Rotten Packaging' – An experiment for the students to design, seeing how packaging decomposes and degrades over time. (Recommended 2 month duration).

'Pack it in' – A chance for your students to explore the variety of packaging and associated labelling.

'Shelf Life' – An experiment designed to show the effect that good packaging can have and another opportunity for your students to consider how to present their results. (Recommended 3-week duration)

PRESENTATIONS:

Two presentations to be used when you want but we suggest the first as an introduction before the investigations and the second before the project.

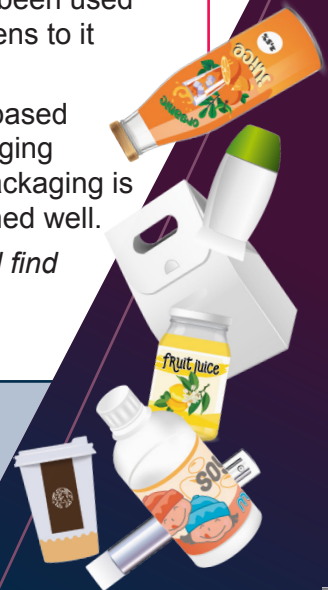
'The Problem with Packaging' – A PowerPoint presentation and quiz highlighting some of the problems with how packaging has been used and misconceptions on what happens to it after use.

'Packing it properly' – A module based around a video made by the packaging experts at Bayer explaining why packaging is important and how it can be designed well.

Later in this teacher's pack you will find a commentary for each slide in the presentations

PROJECT:

'Pack it up - Packaging design project' – a final project for the students to follow the packaging production process and decide on the best packaging for a new product!





SKILLS DEVELOPED IN PACKAGING PANDEMIC:

- // Awareness of issues around sustainable packaging
- // Teamwork
- // Design
- // Scientific method
- // Observation
- // Presentation
- // Data processing
- // Recording

LINKS TO NATIONAL CURRICULUM:

SCIENCE	KS3	Experimental Skills and Investigations: Ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience. Select, plan and carry out the most appropriate types of scientific enquiries make and record observations and measurements using a range of methods	KS2	Asking simple questions and recognising that they can be answered in different ways observing closely, using simple equipment and performing simple tests
		Analysis and Evaluation: Present observations and data using appropriate methods, including tables and graphs. Interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions		Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
DESIGN & TECHNOLOGY	KS3	Identify and solve their own design problems and understand how to reformulate problems given to them	KS2	They (students) should work in a range of relevant contexts [for example, industry and the wider environment].
		Test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups		
ENGLISH	KS3	Summarising and organising material, and supporting ideas and arguments with any necessary factual detail	KS2	Retrieve, record and present information from non-fiction
		Writing for a wide range of purposes and audiences, including well-structured formal expository		





Notes for Packaging Pandemic



AIM: This Presentation is to introduce the topic of packaging as both a necessary and useful part of the supply chain but also the problems that it can and does create

SETUP: Bayer would envisage using this as an interactive presentation with a group of students with plenty of time to elicit student experiences and ask their opinions. There is also a sizeable 'quiz' section to the presentation which we would envisage being delivered in a fairly informal and conversational way.

NEXT STEPS: Students could be introduced to any or all of the three investigations, **'Pack it in'**, **'Shelf Life'**, **'Rotten Packaging'** or you could decide to proceed directly to the design project using the **'Packing it Properly'** presentation as stimulus.

Slide	Content
1	Holding Title slide
2	Packaging is often essential but also frequently creates problems, particularly for the environment and sustainability.
3	Starter activity in small groups to discuss the uses (functions) of packaging, it will help if the students are stimulated to think of some real-life examples.
4	Graphic to illustrate the four functions of packaging that were hopefully generated by discussion of slide 3.
5	Optional Video link to illustrate the problems that would occur if we didn't use packaging.
6	Some examples of current problems with attempts to recycle or deal with excess packaging
7	Problems particular to the proliferation of using plastic for packaging
8	Some illustrations of how public opinion is changing to reduce packaging in general and plastics in particular
9	General graphic illustration of current visibility of problem compared to the potential harm it is and will do to the planet. With any of the above 4 slides feel free to add your own experiences, factoids etc. PLUS ask the students of their experiences / knowledge.
10	An explanation of what 'sustainability' means, again probably worth finding out what the children think beforehand.
11	Introductory slide to an informal quiz around the terminology and symbols used when discussing sustainable packaging.
12	Packaging described as biodegradable may not be as environmentally friendly as the public perceive
13	Glass doesn't really decay but may not be that harmful to the environment
14	Compostable materials are certified to break down within a set time period



Notes for Packaging Pandemic (continued)

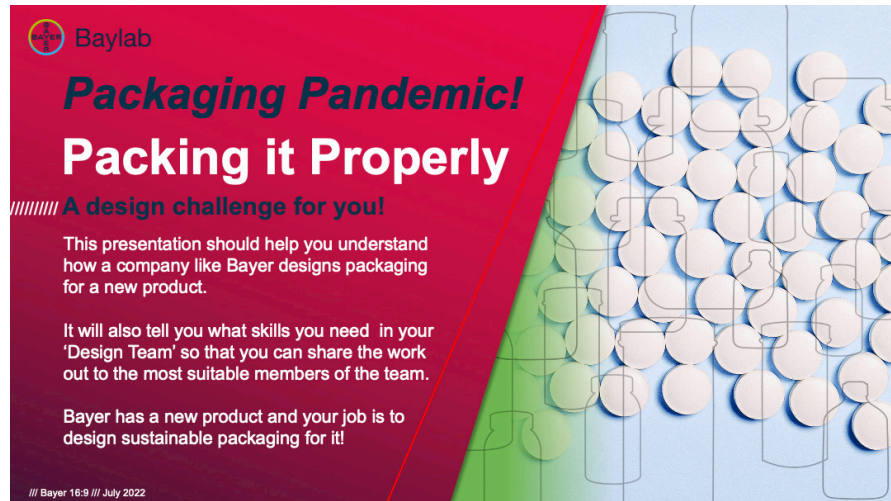


Slide	
15	There is a difference between RECYCLED and RECYCLABLE. Recycled plastics require no “virgin” petroleum to be sourced and divert recycled materials from ending up in a landfill, so they alleviate much of the environmental burden. There will be a limit to the number of times plastic can be recycled before its quality deteriorates too far.
16	However most compostable materials will need to be put in an industrial composter to meet these conditions
17	Six symbols that will probably be recognised by the students but not understood. For each symbol ask the group what they think it means then reveal the answer
18	Simpler version of the 4 R’s, worth making the point verbally that although Reduce, Reuse and Recycle are commonly accepted different groups may interpret the 4th R differently.
19	More involved version on slide 17 depending on your audience. The 4 R’s are becoming an increasingly common way of formulating solutions to problems of sustainability.
20	Optional slide illustrating that solutions to sustainability problems can often be complex and involve multiple factors. For example bioplastics may not use oil resources but may still be non-biodegradable. Conventional fossil fuel based, non-biodegradable plastics should generally be avoided or phased out.
21	Some examples of packaging reduction in yoghurts, recycling in plastic bottles and reuse in using the packaging of a T-shirt to provide it’s hanger.
22	Closing thankyou slide.



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Notes for Packing it Properly



AIM: This activity is for students to work in a small team to design sustainable packaging in response to a brief for a new product (the product is similar to Berocca but this is not explicitly stated).

DESIGN PROBLEMS: The product places a number of constraints on the design, mainly that it is a foodstuff so must not be able to be contaminated and that it must be kept dry. This explains why the current Berocca packaging is hard to recycle as it contains a desiccant in the lid of the tube).

PROJECT SETUP: How you organise your group(s) and how long you allow them to spend on the project is up to you but we would suggest groups of between 3 and 6 students with three or four sessions of around half an hour. They will need guidance and reinforcement of the challenge and what they are trying to produce.

An important function of this role playing is for students to appreciate that different people have different skills and work in different ways.

END RESULT: This is again very much up to you and the group(s) but suggestions would be a poster or short video of their resultant design (They do obviously not actually have to produce it). Please do let us see what you have produced on social media using [Twitter](#) #Packagingpandemic [Instagram](#) @BayerUKI

Slide	Content
1	Introductory slide to state that this is a design challenge and to outline the need for a design team. You may want to ask the students what roles they think are required at this stage to see how their ideas change after the presentation. The next slide will describe the product packaging needs to be designed for in more detail.
2	The Challenge – it is important the students understand the requirements, particularly protection from moisture. There is an embedded video link to the challenge set by Estelle Dessiaume a Bayer design head that mentions Berocca explicitly. You will need to check students understand the term 'Desiccant' or explain.
3	Optional slide to remind students of the four roles of packaging.
4	Obviously group sizes may vary so individuals could have more than one role or more than one person could choose or be allocated a role. You may consider showing the Process slide and video before the team finally decides on roles.
5	This is to outline the stages of a design process; the Image is a general process, the video shows a process more specific to packaging design at Bayer
6	This slide is a diagrammatic representation of the process described in the preceding video
7	Optional slide to remind students of the 4 R's of sustainability