



Baylab

Packaging Pandemic!

ROTTEN PACKAGING

One of the main problems with packaging that cannot be collected and reused or recycled is that it hangs around in the environment and can be dangerous and toxic to plant and animal life. The way it breaks down and how long it takes to do this will affect how much of a problem it is and whether it can be described as biodegradable or compostable.

INVESTIGATION 1

How do different packaging materials degrade?

WHAT WILL YOU NEED?

- // Between 2 and 4 types of packaging (plastic, card, foil etc.)
- // Up to 3 different test conditions (e.g. soil, compost, sand, water).
- // Between 4 and 9 containers for each test conditions.

WHAT FACTORS (INDEPENDENT VARIABLES) MAY AFFECT HOW MATERIALS BREAK DOWN?

Here are some in anagram form to get you started

// MITE

// MOTU RISE

// TEMPURA TREE

What others can you think of?

You will need to think about how to control (keep constant) the factors that you are not investigating.

HOW WILL YOU MEASURE THE AMOUNT OF DEGRADATION?

In your team you will need to come up with one or more tests or observations to measure any changes that have taken place in the test material. These are your DEPENDENT variables.

Some common tests are:

Appearance: Have either the transparency or the thickness of the packaging changed? Have any holes appeared (even microscopic ones)? If so, how many, and how big?

Strength: How could you measure the strength of a piece of material? When should you test it?

HOW SHOULD WE PRESENT OUR PLAN?

You can use the template on the next page or use a standard form at your school/club etc. Fill in all the sections on the template as completely as possible.

HOW LONG WILL THE INVESTIGATION TAKE?

Although time is one of the independent variables, we would suggest that you allow each test container the same amount of time to degrade.

This should be **at least three months**.

HOW SHOULD WE PRESENT OUR RESULTS?

The standard way of presenting results would be a scientific paper or poster, but you should not feel limited by this and ANY form of presentation is great as long as it communicates **what you did** and **what you found out**.

Please do let us see what you have produced on social media using



#Packagingpandemic



@BayerUKI

Anagrams: TIME, MOISTURE, TEMPERATURE





PLANNING TEMPLATE

Test Materials:

Material 1

Material 3

Material 2

Material 4

Conditions:

(each material will need samples to be placed in each condition)

Condition 1

Condition 2

Length of experiment:

Start Time/Date:

End Time/Date:

Any intermediate test dates:

Observations/Measurements to be taken:

Dependent Variable 1:

Dependent Variable 2:

Replicates:

(how many times will each material be tested in each condition?)

Number of groups repeating the experiment:



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