FREE

Year 6 Practical Science

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The Weird Fish Lady

YEAR 6 - Experiments to Test

"Decomposition Time in the Ocean"

Design *a scientific experiment to show the decomposition times of different materials in the Ocean.*

Facts you need to know:

1. Ocean Water is salty. There is about 35g of salt in every 1 litre of ocean water.
2. Different materials break down and dissolve over different timescales.

Choose which equipment you want to use in your experiment.

A supply of 'ocean' water.

A science beaker or glass jar

A plastic straw

A Cardboard box

A newspaper

Apple core

Pieces of Aluminium can (! Careful the pieces might have sharp edges !)

How would you do your experiment?

Can you draw a diagram to show what you want to do?

How would you make it a fair test?

How could evaporation spoil your experiment?

Can you predict what the result will be from your experiment?

How do you think the Decomposition Time Chart was worked out?

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Pollution in the Oceans
Decomposition Time

Rubbish	Time before decomposed
Apple Core	2 months
Wool Socks	1-5 years
Styrofoam cup	50 years
Foam buoy	50 years
Fishing Line	600 years
Newspaper	6 weeks
Waxed carton	3 months
Tin can	50 years
Plastic Bottle	450 years
Plastic Grocery Bag	10-20 years
cardboard box	2 months
Plywood	1-3 years
Photo degradable drink holder	6 months
Plastic drink holder	400 years
Disposable nappy	450 years
Glass bottle	unknown
Paper towel	2-4 weeks
Cigarette butt	1-5 years
Aluminium can	200 years
Cotton Shirt	2-5 months
Source National Oceanic and Atmosphere Administration (NOAA): Woods Hole, USA	

Teachers Notes – Planning a Decomposition Experiment

Your pupils will not be doing this experiment (obvious reason !) but are going to PLAN how they would do it. Ask pupils to think of themselves as the scientists who discovered the data on Decomposition Times.

You are looking for answers similar to below:

How would you do your experiment?

1. *Take samples of:*

   Plastic straw, cardboard box, newspaper, apple core and aluminium can.
2. *Place them in a solution of salty water in the science beaker or jar.*
3. *Cover them in salty water*
4. *Leave until they have 'disappeared'.*

Can you draw a diagram to show what you want to do?

Can they draw a diagram? Use a ruler? Label the jars?

How would you make it a fair test?

The pieces should weigh the same. All be put into the same amount of salty water, and left for the same time. The only difference should be the material from which they are made.

How could evaporation spoil your experiment?

The water would evaporate from the beaker due to heat in the room. Probably best to empty all the water every few days and top up with 'salty water'. When the water evaporates from the beaker, the salt would remain behind, so just adding water would make it difficult to know if you had the correct amount of saltiness. If you topped up with plain water, you would need to stir the water equally in each pot to ensure they all had the same amount of saltiness - but it is unlikely this could be done accurately.

Can you predict what the result will be from your experiment?

(See data from 'Decomposition Times sheet.) Can your pupils link the materials to the results and predict which materials will decompose first and last?

How do you think the Decomposition Time Chart was worked out?

Scientists could do this experiment due to long times involved (450 years), so they probably weighed the materials daily or monthly, and used maths to estimate the results.