WHAT CAN YOU RECOGNIZE IN A BOLUS?

Explore bolus items and their origins

Winged Ambassadors Lesson 4

Supplementary Material- Digital Version

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WHAT CAN YOU RECOGNIZE IN A BOLUS?

WHAT IS IT? A NURDLE!
This very small plastic pellet serves as raw material in the manufacture of plastic products. **Nurdles harm animals** that accidentally eat them. Nurdles are toxic and can cause digestive issues and starvation.

**Collect nurdles you find on the beach!**
Also, bean bag chairs are full of nurdles! Make sure they do not escape!

WHAT IS IT? OYSTER SPACER!
1.5 to 20 cm long pipe cylinders used for suspension-type oyster farming to maintain intervals between the shells

What is an alternative material to plastic that can be used in oyster farming?

WHAT IS IT? BROKEN PLASTIC!
When plastics are discarded and enter the ocean, they are broken down by the sun and waves. Eventually they return to nurdle size, but never totally disappear. Consider using metal baskets or canvas bags when doing laundry!
WHAT CAN YOU RECOGNIZE IN A BOLUS?

WHAT IS IT? SQUID BEAKS AND EYE LENSES!
Indigestible parts of squid-beaks made from chitin, and lens made of crystallin (protein)

WHAT IS IT? FISHING LINE!
Fishing line is usually made of nylon or PET/PETE plastic. When fishing line is discarded and continues to trap or harm animals, it is called “ghost fishing”.

WHAT IS IT? PLASTIC FRAGMENTS!
Plastic fragments come from larger plastic debris that degrades into smaller pieces.

We cannot tell what these fragments originally were, but they could be from something you use every day. Think of 3 plastic items you commonly use. What would an alternative material be?

Flying fish eggs attach to floating seaweed and fishing line, and are eaten by albatross.
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WHAT IS IT? FOAM!

Foam is a form of expanded plastic, and can be flexible or rigid. Foam is lightweight and floats. It photodegrades, or breaks down in sunlight, and is mistaken for food by marine animals. Foam structure can vary, and you can see many forms in this bolus.

Foam is made by blowing gas bubbles into plastic mixture, and is used to manufacture a range of products. From shoe soles to food containers, fishing buoys to refrigerator insulation, these products get into the marine ecosystem and the food chain. Think of a few foam products you use that alternative materials are available for!

WHAT IS IT? PLASTIC SHEET!

Sheet plastic is a common item that you have probably used today! Sheet plastic includes plastic bags, food wrap, balloons, or packaging. Thin plastic easily escapes into the environment.

Reduce your waste with bulk buying and using reusable bags, containers or beeswax cloth instead of plastic bags and wrap.
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WHAT IS IT? SQUID BEAKS!
There are many squid beaks in this bolus, but each one looks different. Why? Here are four reasons:

1. Beaks have 2 parts
   an upper and a lower mandible, held together with tissue that gets digested.
   Can you find both parts in this bolus?

2. Beak size gets larger as the squid grows

3. Beak shape is different between squid species
   How many distinct shapes do you see?

4. Beaks are fragile so disintegrate easily
   You may see many fragments amongst the complete beaks

Scientists use calipers and microscopes to measure and identify different shapes.

The size and species of squids that birds eat tells us about the biomass present in the marine ecosystem!
WHAT CAN YOU RECOGNIZE IN A BOLUS?

Flying fish naturally lay eggs on seaweed, but floating marine debris like fishing line and foam work for the fish as well. Albatross parents feed on the fish eggs, consuming the plastic that the eggs were laid on, and feed it all to their chicks. Instead of being digested like seaweed would, the line takes up precious food space in the chick's stomach.

Care for and reuse your plastic items for as long as possible - avoid their disposal in the marine environment!
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WHAT IS IT? BOTTLE CAPS!

In 1933, two British inventors first created polyethylene plastic that is widely used today. Plastic is a synthetic polymer, made by combining many small molecules into a chain. Different molecule types and combination methods are used to create various types of plastic.

While single-use bottles are made from polyethylene #1 plastic, the caps are made from a different type of plastic called polypropylene #5. This hard, durable plastic is not recycled as commonly as #1.

Nearly 30% of all plastics produced are used just in packaging. Before thinking about recycling, think about reducing and reusing! Eliminating single-use plastics like water bottles can be easy! Get a reusable bottle and fill up from the tap or drinking fountains.

If you get a plastic bottle, reuse it! Get creative!

Create a self-watering planter with a bottle, or checkers pieces out of bottle caps!
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WHAT IS IT?

FOAM?
Sometimes it can be hard to tell what things are in photos, but this could be a small piece of foam, used as a freshness seal in packaged foods.

A PEN CAP!
Like bottle tops, pen caps often get separated from the pen too. Albatross parents sometimes eat the entire pen, and feed it to their chick!

A TOY TIRE!
Toys are made of tiny plastic parts that break apart in the sun. Tires get separated from their machines, and end up floating alone in the ocean.

A REFLECTOR!
Safety reflectors are commonly used on bicycles.

This bolus is a perfect example that shows ANYTHING can end up in the ocean!