

Exploring New Frontiers at Home- "Disposable Diaper Dissection"

Do you have a little brother or sister at home who occasionally wears disposable diapers? Disposable diapers are one example of a product that has been designed to meet specific consumer needs by using a variety of man-made and natural materials.

Materials

- One clean, unused disposable diaper. (Obtain a biodegradable variety if possible.)
- Paper cup or glass with 1/2 cup water
- Magnifying glass if available

Fill out the chart below. First list all of the "needs" that must be met by a disposable diaper. Examples might be "absorbing moisture" and "fitting tight around baby's waist." Try to list at least six key functions that a diaper might be designed to accommodate. Ask your parents to look over your list and add any ideas they may have.

Next, look closely at the whole disposable diaper. List all of the different materials you find both inside and outside. Your list might include "plastic outside layer ... elastic threads," etc.

Now, match each of the specific materials with one or more of the diaper functions listed in the first column. Are there any materials that are not needed in order for the diaper to work? Are there any diaper functions that are not provided for by the use of one or more of the materials?

After you've filled out the chart, pour the water onto the inside, soft part of the diaper. Carefully pull apart the fibers and see what happens to the water. Where did it go? Is there a "hidden" material that you couldn't see in the earlier dissection? What is this new material's "job"?

Write down any observations you make on the chart. Compare your results with a friend.

After you have finished with your diaper dissection, separate the various materials into "recyclable" and "non-recyclable." You should have materials in both categories.

Americans use about 18 billion disposable diapers per year. Because they are so bulky and can't be easily recycled once they have been used, they end up filling as much as 1% of our landfill space. Reusable diapers made from cotton can be washed at home or sent to a diaper-cleaning service and do not end up in a landfill. Can you think of a good way to redesign the disposable diaper so that it still does its "job" but doesn't cause such a problem for our environment? Share your ideas with your parents or with a friend.

Chart

List of Diaper Functions

1. _____
2. _____
3. _____
4. _____

List of Diaper Materials

1. _____
2. _____
3. _____
4. _____

What happens to the moisture in a disposable diaper? How would you redesign the disposable diaper to be a better product?