Aerogel Project

Glass windows let out heat in different ways—if a window does not fit tightly in a frame, heat escapes through the glass (convection). Heat can also pass through the glass (radiation, conduction). Most new windows have insulation coating applied to them that helps keep the heat in, and, they are double paned. However, windows of many older houses do not have this coating and it can be expensive to apply or to replace those windows.

Aerogel windows are recent development, but Aerogel has been around since 1930. It was invented by Samuel Kistler made by using a specialized process to extract liquid from a gel. Making windows from aerogel would add one more application to the many ways it is already used. Aerogels have been added to the glass in skylights to increase insulation and to some paints and cosmetics as a thickener. Because it is nonflammable, aerogel is a very safe material to use in construction.

**Read “Aerogel Windows” p. 152 in your Textbook. Then, draw an advertisement for aerogel windows.**

**Include the following:**

* **What aerogel is and what it does.**
* **List all the benefits of using aerogel windows--include drawings or charts that visually display these benefits.**
* **Be creative in trying to offset the problem of non-translucent windows.**

Aerogel windows are the latest in a series of inventions that have developed out of research conducted by NASA. These inventions that have come to have a place in our everyday life are called NASA Spinoffs. Research more about this online.

**Answer the following: Why might aerogel windows be especially helpful on a space shuttle?**

Many other common products have come from the research and development at NASA.

**Go to spinoff.nasa.gov to NASA @ home and city and list 5 other everyday products that were created out of NASA research.**

1.

2.

3.

4.

5.