

Name: _____ Date: _____

Aerogel Worksheet

1. What is the difference between transparent, translucent and opaque?
Explain and give examples of each.
2. Explain what it means for light waves to be absorbed, reflected or transmitted.
Also explain how this relates to transparency.
3. What is a “composite” aerogel? What advantage might composite aerogels have over basic silica aerogels?
4. Why is the sky blue?
5. Design an application that takes advantage of at least two properties of aerogels or composite aerogels: high surface area, low density, low thermal conductivity, mechanical robustness, transparency, hydrophobicity, etc. *Open your mind to the possibilities!*
Write the design specifications and provide a sketch of your design. Include details such as estimated price and/or weight, targeted consumer audience, and which aerogel properties are being exploited. If it is a novel invention, include the research that may still need to be done before the product is ready for the marketplace.