Physical and Chemical Changes

Matter can \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Some changes to matter are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. During a physical change, the substance remains \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

For instance, you can change paper by cutting it, but it is still paper. When you freeze water, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are still water; nothing changed. Every \_\_\_\_\_\_\_\_\_\_\_\_ change -- from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and vice-versa - is a physical change.  
  
A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, on the other hand, occur when atoms rearrange and come together to form one or more new \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ with new \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. During a chemical change, there is also a change in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, such as the production of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

\_\_\_\_\_\_\_\_\_\_\_ also faces many chemical changes. And not just from forest fires... \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, for instance, have a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that usually ends in death and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The thing to keep in mind is, even though the substances' atoms \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, the atoms themselves are \_\_\_\_\_\_\_\_\_\_\_\_\_. The majority of the atoms in the Earth have been there for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (with exception of some meteors). A \_\_\_\_\_\_\_\_\_\_\_\_\_ atom inside you today may be inside a tree in a hundred years; the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the water you drink today was around since before the time of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and was probably inside several different types of animals before.

Many people since the beginning of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, including \_\_\_\_\_\_\_\_\_\_\_\_\_\_, observed \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in their environment. Through \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, they learned how they could use chemical changes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  
  
They saw, for instance, how the \_\_\_\_\_\_\_\_\_\_\_ of an animal changed when \_\_\_\_\_\_\_\_\_\_\_\_\_ the Sun, and slowly developed a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ involving scraping, stretching and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, to make it last a long time and become \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and resistant to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

In our \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ modern lives, so detached from \_\_\_\_\_\_\_\_\_\_\_\_, we have somewhat lost the ability to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ around us and understand what they mean. This has proven to be a very serious issue, one that may become \_\_\_\_\_\_\_\_\_\_ for us as a species. Our \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to nature and our \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to see changes and understand their significance has caused the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, the water crisis and all that we are facing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are happening inside \_\_\_\_\_\_\_\_\_\_\_\_\_\_ all of the time; when we \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, when we \_\_\_\_\_\_\_\_\_\_\_\_, and even inside the cells, when the \_\_\_\_\_\_\_\_\_\_\_\_\_ produces energy for us to live.  
  
Some chemical changes can be \_\_\_\_\_\_\_\_\_\_\_\_ to our bodies. On our teeth, for instance, the \_\_\_\_\_\_\_\_\_\_\_ that live in our mouths feeds on pieces of food and eliminates \_\_\_\_\_\_\_\_\_\_\_, which dissolves the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Cavities are a result of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ changes. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is another chemical change created as your body tries to make a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to protect you from the Sun's harmful rays.  
  
Do you think that getting your ears pierced is a physical or a chemical change?  
  
How about dying your hair? Physical or chemical?

The final takeaway of this unit is, the matter in this Earth is \_\_\_\_\_\_\_\_\_\_\_\_. Every \_\_\_\_\_\_\_\_\_\_\_\_\_ that you see today has always been there in one form or another, combined with other atoms to form different \_\_\_\_\_\_\_\_\_\_\_\_\_\_, in an infinite ballet of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

This has implications for how we \_\_\_\_\_\_\_\_\_ this matter. For instance, if we \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ drinking water, then those \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of H2O will be \_\_\_\_\_\_\_\_\_\_\_\_\_\_ until they evaporate; this often takes longer if the molecules are stuck with pollution or wasted.  
  
What we do with matter affects \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ it will be before we can use it again. How might we change how we use materials to become a more \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ planet? Consider how a more Earth-conscious existence might benefit future generations.