**« 13 Scientific Explanations For Everyday Life » [[1]](#footnote-1)**

Science holds our lives together. In his new book *Atoms Under the Floorboards*, writer Chris Woodford lays out the abstract science that underlies the everyday world. Here are some of the things we learned about the world through his eyes:

\_ **Post-it notes** feature a plastic adhesive that is spread out in blobs across the paper. When you slap a Post-it onto your bulletin board, only some of these blobs touch the surface to keep the note stuck there. Thus, you can unstick it, and when you go to attach it to something else, the unused blobs of glue can take over the adhesive role. Eventually, all the capsules of glue get used up or clogged with dirt, and the sticky note doesn’t stick anymore.

\_ Because **water molecules** are triangular - made of two hydrogen atoms stuck to one oxygen atom – they have slightly different charges on their different sides. The hydrogen end of the molecule is slightly positive, and the oxygen side is slightly negative. This makes water excellent at sticking to other molecules. When you wash away dirt, the water molecules stick to the dirt and pull it away from whatever surface it was on.

\_ Unlike other solid materials like metals, **glass** is made up of amorphous, loosely packed atoms arranged randomly. They can’t absorb or dissipate energy from something like a bullet. The atoms can’t rearrange themselves quickly to retain the glass structure, so it collapses and shatters fragments everywhere.

**13 scientific explanations**

**A/ Work on vocabulary and grammar to better understand the text**

**1/ Introduction – replace the verbs with the following synonyms:** *is at the basis of / unites / presents*

Science unites every aspect of our lives. In his new book *Atoms Under the Floorboards*, writer Chris Woodford presents the abstract science that is at the basis of the everyday world.

**2/ Post-it notes**

a/ Match the following expressions to their meaning in French:

|  |  |
| --- | --- |
| feature (v.) | Comporter |
| is spread out | est étalé |
| blobs | gouttes |
| Slap (v.) | Ici: accrocher |
| bulletin board | tableau d’affichage |
| keep the note stuck | maintenir le post it collé |
| unstick | décoller |
| unused | Inutilisé |
| glue (n.) | colle |
| take over the adhesive role | Reprendre le role de l’adhésif= coller à leur tour |
| eventually | À la fin |
| used up | Consommé, terminé, épuisé |
| clogged | Obstrué, rempli, encrassé |
| dirt | saleté |
| sticky | Ici: adhésif |

b/ In the phrase “to keep the note stuck there”, what does “there” refer to?

Bulletin board

c/ Now work with your partner and explain in French what you understand.

**3/ Water molecules**

a/ Match the following expressions to their meaning in French:

|  |  |
| --- | --- |
| made of | ici : accroché, attaché à |
| stuck to | constitué de |
| slightly | laver (nettoyer avec de l’eau) |
| wash away | légèrement |
| pull away from | n'importe lequel/laquelle |
| whatever | retirer de |

b/ In the phrase “and pull it away from whatever surface it was on”, what do the 2 pronouns “it” refer to?

Dirt

c/ Translate the expression “and pull it away from whatever surface it was on”.

Et la retire de la surface où elle était.

d/ Now work with your partner and explain in French what you understand.

**4/ Glass**

a/ Match the following expressions to their meaning in French:

|  |  |
| --- | --- |
| unlike | rangé, organisé, disposé (d’une certaine manière) |
| glass | s’écrouler, se détruire |
| made up of | ici : le verre |
| loosely-packed | assemblé sans être serré |
| arranged | constitué de |
| randomly | au hasard |
| rearrange [oneself] | ici : se réorganiser, se redisposer |
| retain | maintenir, conserver (en place) |
| collapse (v.) | ici : faire éclater, envoyer dans toutes les directions |
| shatter | contrairement à |

b/ In the phrase “They can’t absorb or dissipate energy”, what does the pronoun “they” refer to?

The atoms

c/ In the phrase “so it collapses and shatters fragments everywhere”, what does the pronoun “it” refer to?

The glass structure

d/ Now work with your partner and explain in French what you understand.

**5/ In the text (start at “Post-it notes”), find the words/expressions corresponding to the following synonyms (the synonyms appear in the order of the text):**

are made of = feature

bubbles = blobs

filled up with = clogged

attached to, bound to = stuck to

adhere to = stick to

remove from = pull away from

disconnectedly = lossely packed

irregularly, in all directions =randomly

maintain, hold together = retain

fall apart, break down = collapse

smash = shatters

**6/ Identify the verbs & past participles used to build sentences in the passive voice.**

§2: is spread out – used – unused – clogged – stuck

§3: made – stuck

§4: made – packed – arranged

**7/ Explain why there are so many verbs & past participles in the passive.**

Concentrating to objects

Use passive form for concentrate to the main subject

**8/ Improve the following extracts of the text using the passive voice:**

When you slap a Post-it onto your bulletin board… à

when a post-it is slapped onto your bulletin board

Thus, you can unstick it, and when you go to attach it to something else … à

Thus, it can be unstuck, and when is attached it to something else.

When you wash away dirt, … à

When dirt is washed away

**B/ Now answer the following questions to help you recap - please reuse everything you have learned: synonyms and the passive.**

1/ Why can a Post-it note be re-used two or three times?

A post-it can be re-used two or three times because the unused blobs of glue can take over the adhesive role.

2/ Why are there fragments of glass everywhere when a flower vase is broken, whereas a piece of wood will not break?

We have fragments of glass everywhere when is broken, because it's made with packed atoms so they can't dissipate energy.

3/ Why do I need water to wash away orange juice, whereas I only need kitchen paper to dry spilled water?

We need water to wash away orange juice because water is made of 2 hydrogen atoms and 1 oxygen atom, so water can stick to the other particles easily

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**C/ Think about the topic of this semester: *What is the role of Science in everyday life?* How does this document illustrate it?**

This document illustrates the role of science in everyday life by offering familiar examples for everybody, like the post-it uses

1. Adapted from <http://mentalfloss.com/article/66086/13-scientific-explanations-everyday-life> (July 14, 2015) [↑](#footnote-ref-1)