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| Stories |
| Dawn Geatches |
| Where does carbon dioxide come from? |
| Elements and compounds |
| Elements and compounds (part 2) |
| Bottle cars |
| Elements and compounds (part 3) |

1. What is Dawn’s job?
2. What does she use to do it?
3. What do we use oxygen in the air for?
4. Carbon in our food combines with oxygen we breathe in to create what?
5. What element is the ‘lead’ in a pencil?
6. Name three other elements mentioned in the story.
7. Which two elements make up most of a car?
8. Elements combine to form what?
9. What did the man who invented the fizzy drinks bottle suggest we could make from them?
10. What would you make with the car body at the end of its life?
11. Compounds are always very different to what?
12. Which elements combine to make water?
13. Which elements combine to make salt?
14. What does sodium do in water?
15. The compound you get when two or more elements combine is completely --------- from the elements that made it.

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| Stories |
| Rusty |
| Smallest part of an element |
| Smallest part of an element (part 2) |
| Smallest part of an element (part 3) |
| The big idea |

1. Which two elements combine to form rust?
2. Why doesn’t the chemical reaction stop when the outer layer has turned to rust?
3. Elements are the building blocks of what?
4. What is the smallest part of an element called?
5. Each element is made of a --------- type of atom.
6. What is the element sodium made of?
7. What does the writer say you might imagine?
8. In this strange universe what would the element Dusteron be made of?
9. But in our world the smallest parts of each element are quite -------.
10. But small differences in atoms make ---- different in elements.
11. State two things wrong with the image of an atom as little balls around a bigger ball.
12. Despite this, the image is quite a good ----- to have in mind.
13. An atom is made of a nucleus and a number of ---------.
14. Chemistry has this one big ----.
15. Without this big idea chemistry is a bunch of random ----- you have to remember.
16. What is the name of the big idea?

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| Stories |
| The Periodic Table |
| The Periodic Table (part 2) |
| The Periodic Table (part 3) |
| Alkali metals |
| Halogens |

1. Most Periodic Tables are shaded with fancy -------.
2. The Periodic Table is a list of the --------.
3. The elements are numbered from 1 to what?
4. The number of an element is called what?
5. What is the single biggest idea in all of chemistry?
6. We can figure out quite a lot about an element we’ve never heard of just from what?
7. What’s the name for gases like helium, neon, argon and krypton?
8. What kind of compounds do they form?
9. Elements in the ---- column of the Periodic Table have similar chemical properties.
10. Columns of the Periodic Table have the same colour to show they have similar ----------.
11. What do noble gases not like to do?
12. Why are none of the halogens found on Earth as separate elements?
13. How are they found?
14. Elements in the first column in the Periodic Table are always found as what?
15. Why is that?
16. The elements in column 1 are called what?
17. What is the common compound of sodium, often found on a dinner table?
18. How many of those elements do you recognise?
19. Why are compounds made of fluorine added to water?
20. Why is chlorine added to swimming pools?

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| Stories |
| Elements around us |
| Top 10 chemicals - No 1 |
| You’re a star! |
| It is all around you |
| Halogens (part 2) |

1. Everything around us is made from -------- in the Periodic Table.
2. Name two elements that exist in the air as elements.
3. What can you tell about carbon dioxide just from its name?
4. Water is a compound of hydrogen and what other element?
5. Name three other elements found as elements in the world.
6. Pick one and say where you'd most likely find it.
7. Most things we see around us are not elements; they are --------.
8. Which chemical does the world make most of?
9. What is it most commonly used for?
10. State two other uses for it.
11. Lots of the atoms that make up your body were created at the heart of what?
12. How did the elements get out of these?
13. So most of your body is over 13 ------- years old.
14. What's the word for something that's all around you?
15. Name three parts of a car that are created by chemistry.
16. What is bromine used for?
17. If elements appear in a vertical line in the Periodic Table, what does that tell you?
18. The halogens form compounds readily and even -----------.
19. Chlorine combined with sodium gives us what?
20. What does the word halogen mean?

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| Stories |
| The hydrogen atom |
| Electron shells |
| Electron shells (part 2) |
| Chemistry at last |
| Chemistry at last (part 2) |

1. Which element has the smallest atom?
2. What force stops the electron from flying off?
3. If you move from one box of the Periodic Table to the next right what happens to the atomic number? (Hint: look at the picture.)
4. So what happens to the number of electrons around the atom?
5. How many more electrons has Silicon than Aluminium?
6. Electrons fill up the seats ------- to the nucleus first.
7. In the sodium atom how many electrons are in the front stalls?
8. Chemist don't talk about cinema seats; what do they talk about?
9. How many electrons are in the outermost shell of the sodium atom?
10. How many electrons are in the outermost shell of the chlorine atom?
11. If the sodium atom gives one electron to the chlorine atom how many electrons are in chlorine's outermost shell?
12. How many electrons are in sodium outermost shell (which is now the next one in)?
13. So both outer shells are ----.
14. What is chemistry all about?
15. Why are both atoms now happy?
16. At the start, sodium had the same number of electrons as positive charges in its –-----.
17. But after giving an electron away, the sodium atom has a -------- electric charge.
18. The chlorine atom has gained an electron, so it has a -------- electric charge.
19. So the sodium and chlorine stick together to form ------ --------.
20. What is the name for an atom that has lost or gained one or more electrons?

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| Stories |
| Metals in the Periodic Table |
| What makes a metal? |
| What makes a metal? (part 2) |
| What makes a metal? (part 3) |
| Metal compounds |

1. Surprisingly, almost all elements in the Periodic Table are –----?
2. Look around you – how many different metals can you see?
3. There are 118 elements in the Periodic Table; at least – of them are metals.
4. State three properties of metals.
5. Metals conduct heat and what else very well?
6. If we want to learn more about an element where do we look first?
7. Metals are those elements that readily let go of some of their ---------.
8. What makes metals good conductors of heat and electricity?
9. How many electrons do the alkali metals have in their outer shell?
10. How many electrons are in the outer shell of the elements in the next column to the right?
11. Do the noble gases have electrons they are happy to release?
12. Why are the halogens poor conductors of heat and electricity?
13. Why do metals combine readily with non-metals?
14. When magnesium burns with a bright white flame, which element in the air is it combining with?
15. As it does so, each atom of magnesium is giving –- electrons to an atom of oxygen.
16. This leaves both the magnesium atom and the oxygen atom with a -------- outer shell.

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| Stories |
| Metal compounds (part 2) |
| Highly reactive (part 2) |
| The chemistry of everything |
| No more gold and silver |
| Some things don't change |
| Dawn of solar cells |

1. Non-metals have ------ in their outer shell.
2. So they're keen to ------ electrons to fill those spaces.
3. Sodium has only --- electron in its outer shell.
4. To combine with oxygen, --- atoms of sodium each give an electron to the same oxygen atom.
5. What does Derek compare atoms to?
6. What does he say is the most important atom for us?
7. Why do animals and plants all look so different?
8. Derek mentions two applications of chemistry; state one of them.
9. Chemistry is the science of what, according to Derek?
10. Name two elements that were known in ancient times.
11. How many elements do we know of in the world around us?
12. Where do the others up to Element 118 come from?
13. Name on of the four made most recently.
14. Some things don’t change across -----.
15. What holds on every planet in the universe?
16. Which kind of chemical is Dawn looking at to make new kinds of solar cell?

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| Stories |
| Crude oil |
| Atomic number |
| Highly reactive |
| Halogens (part 2) |
| Narrow squeak |
| Made in Nihon |

1. Name two fuels that are produced from crude oil.
2. What kind of chemical is crude oil?
3. What is the simplest hydrocarbon?
4. When methane burns it combines with oxygen to give carbon dioxide and -----.
5. When any fuel made of hydrocarbons burns you get carbon dioxide, water and lots of what?
6. What is the second element in the Periodic Table?
7. The atomic number of an element is the number of ---------it has around its atom.
8. So how many electrons has an atom of iron?
9. What does highly reactive mean?
10. Why are alkali metals highly reactive?
11. Why are halogens highly reactive?
12. Helium is a vital part of which piece of hospital equipment?
13. Where do we get all the helium we use?
14. What did one doctor suggest to stop wasting helium?
15. Where was the huge new underground supply discovered?
16. How were the four new elements created?
17. What have the Japanese team called their new element?

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| Stories |
| Some mum |
| Dawn at Daresbury |
| Fun and games |
| Highly reactive (part 3) |
| No cat names |
| Products by design |
| Buried treasure |

1. Who discovered the Periodic Table?
2. How did his Mum help?
3. What kind of computer does Dawn use to do chemistry?
4. What does the software contain the equations for?
5. What does she use it to explore?
6. What is chemistry all about?
7. At the heart of computer games is a powerful computer doing -----------.
8. Dawn uses supercomputers to simulate what kind of experiments?
9. If this improves our understanding of how oil was made, how could that knowledge be applied?
10. The most reactive halogen is where?
11. The most reactive alkali metal is where?
12. Electric forces are much what at closer range?
13. Use this to explain why the most reactive halogen is at the top of its column in the Periodic Table.
14. Name three of the five things that a new element can be named after.
15. What does ‘stable under a variety of conditions’ mean?
16. State three advantages of using a computer to design new materials.
17. What was the Soddy Box built to hold?
18. What is an isotope?