Morphology and Semantics Project

By Marie-Nansie Victor

CLIMATE CHANGE AND YOU

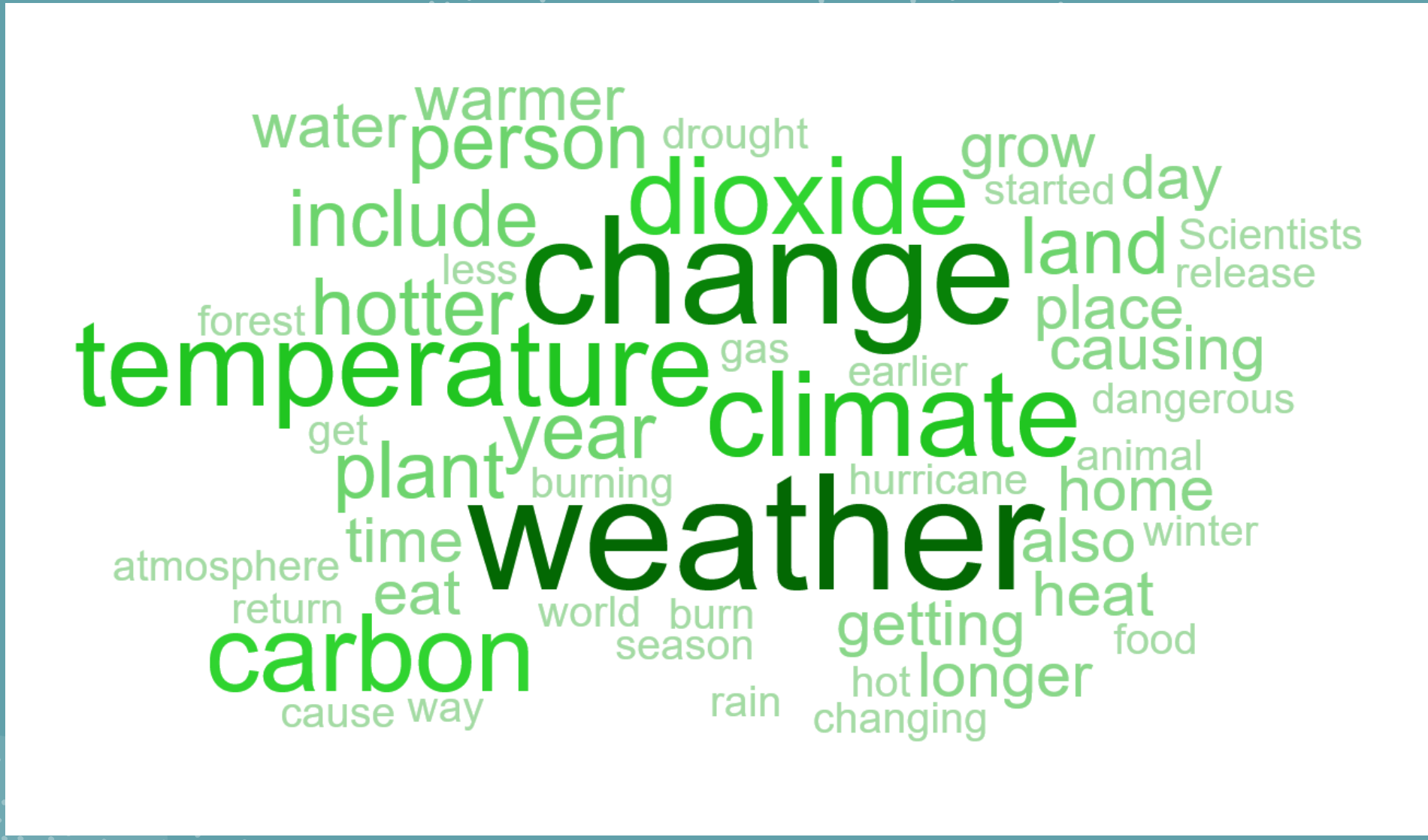
HOW CLIMATE CHANGE AFFECTS YOUR LIFE

by Emily Raij

What Causes Climate Change?

- Today you plashed in puddles on the way to the bus stop. The day before you needed a hat and sunblock. It was hot and sunny. What changed? The weather!
- Weather changes day to day and season to season. Weather includes wind, rain, and snow. It also includes temperature. Temperature tells us how hot or cold something is. The weather is what's happening in the atmosphere at a certain time and place.
- We expect the weather to change. We can even plan for it. But what about when the climate changes? Climate is the average weather in a place over a longer time period. Earth's climate has always been changing. But now it's becoming harder to predict and more dangerous.
- Scientists know people are causing climate change in a big way. People started burning coal, oil, and natural gas 200 years ago. These fossils fuels are taken out of the ground. Factories, homes, and cars burn them. This releases a gas called carbon dioxide. Burning forests to clear land for farms and buildings does too. Garbage rotting in landfills also releases carbon dioxide.
- Scientists have been measuring the carbon dioxide put in the atmosphere. As the number of people in the world has grown, so has the amount of carbon dioxide. This causes hotter temperatures because carbon dioxide absorbs heat given off by the earth. The layer of carbon dioxide and other greenhouse gasses is getting too thick and ,as a result, heat cannot get out. This global warming is just one part of climate change. The hotter temperatures on land and in water are changing weather patterns around the world. Examples of these changes are that some places are getting much less rain while others are getting more.
- Climate change is causing more dangerous weather than in the past. This extreme weather includes strong storms such as hurricanes. It also includes floods, heat waves, and wildfires. Hotter temperatures cause more droughts. When land and plants get too dry, it is easier for fires to start, which can burn down forests and homes.
- Droughts and warmer weather can change the time of year that plants and crops grow. If food doesn't grow well or at all, some people will not have enough to eat. Farmers must move to find land with available water.
- Living things are affected by hotter temperatures. Climate change is making winters shorter and warmer while spring is starting earlier in the year. Plants may grow before the animals that eat them return north from their winter homes. When those animals do return, the plants are no longer in bloom. This leaves less food.
- Some birds have started laying eggs and nesting earlier in the year. This happened because they sense the warmer weather. Then these birds are being born before the bugs they need to eat have hatched.
- Higher temperatures are melting glaciers, causing the sea levels to rise. That changes ocean currents as more ocean water is evaporating. As a result, hurricanes last longer and are stronger

What causes climate change?



SCIENTIFIC VOCABULARY IN ALPHABETICAL ORDER

also animal atmosphere burn burning carbon cause causing

change changing climate dangerous day

dioxide drought earlier eat food forest gas get getting grow

heat home hot hotter hurricane include land less longer

person place plant rain release return Scientists season started

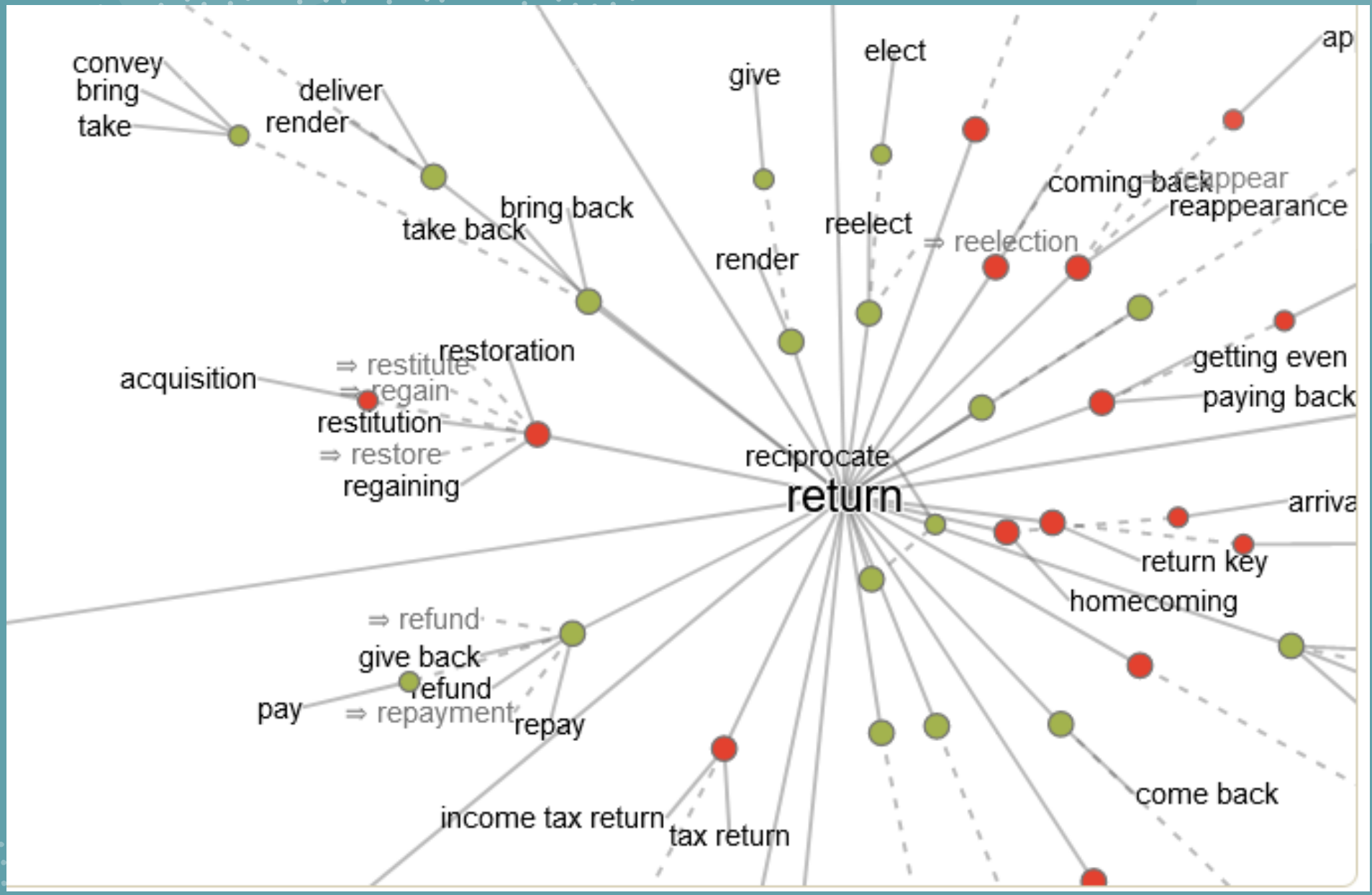
temperature time warmer water way

weather winter world year

ANALYZING THE DATA

- The words, that I choose, are very different from one another; few of them have prefixes or suffixes, but all have Latin, Greek, Germanic or French origins. For example:
- Return: the prefix “re” means ‘back’ or ‘again’ is attached to the ‘root’ or ‘stem’ “turn”, meaning ‘come back again’. From the “Wordsift” visualization board I can see that it can be a verb (green dots): ‘The children return from the library’, or a noun (red dots): ‘The return of the children’. It has its origin from French ‘retourner’ which has it from Latin ‘tornare’.

RETURN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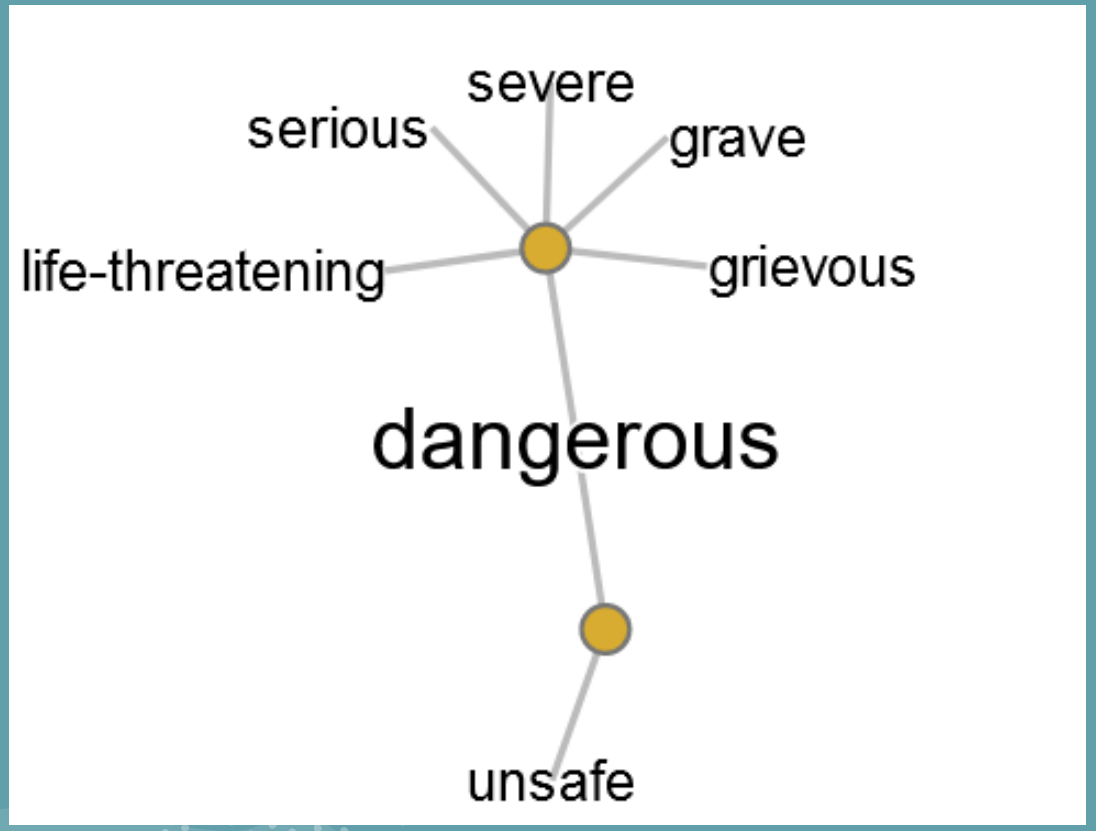
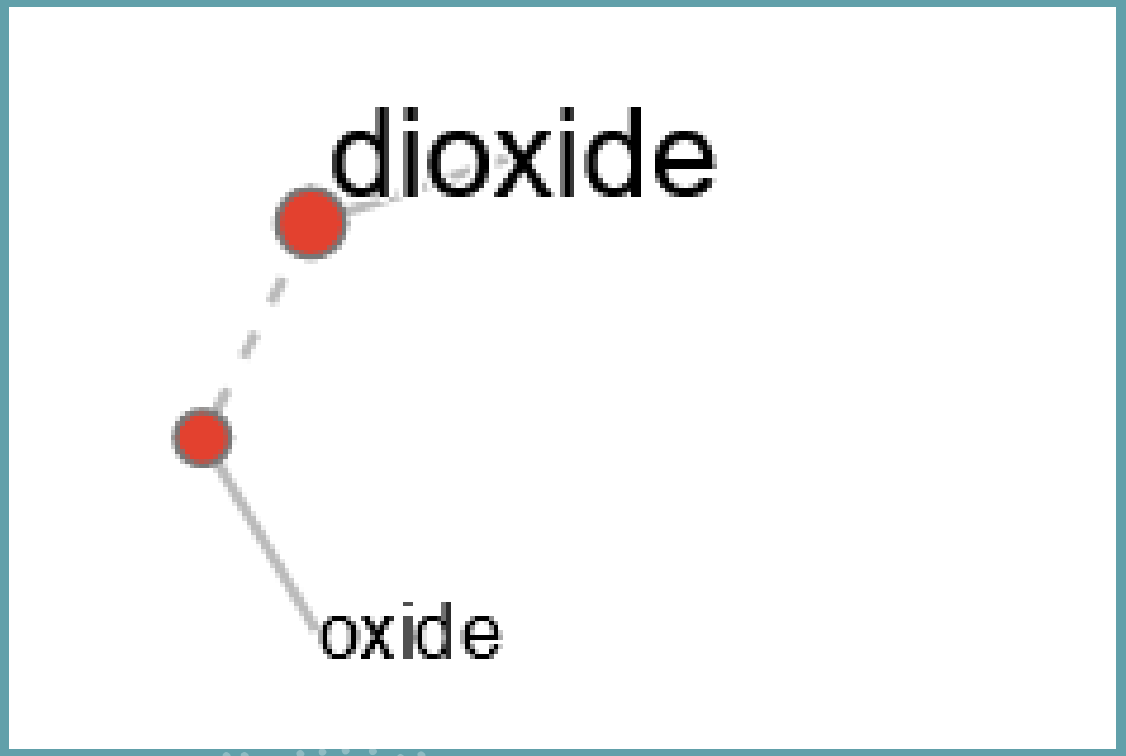
DANGEROUS



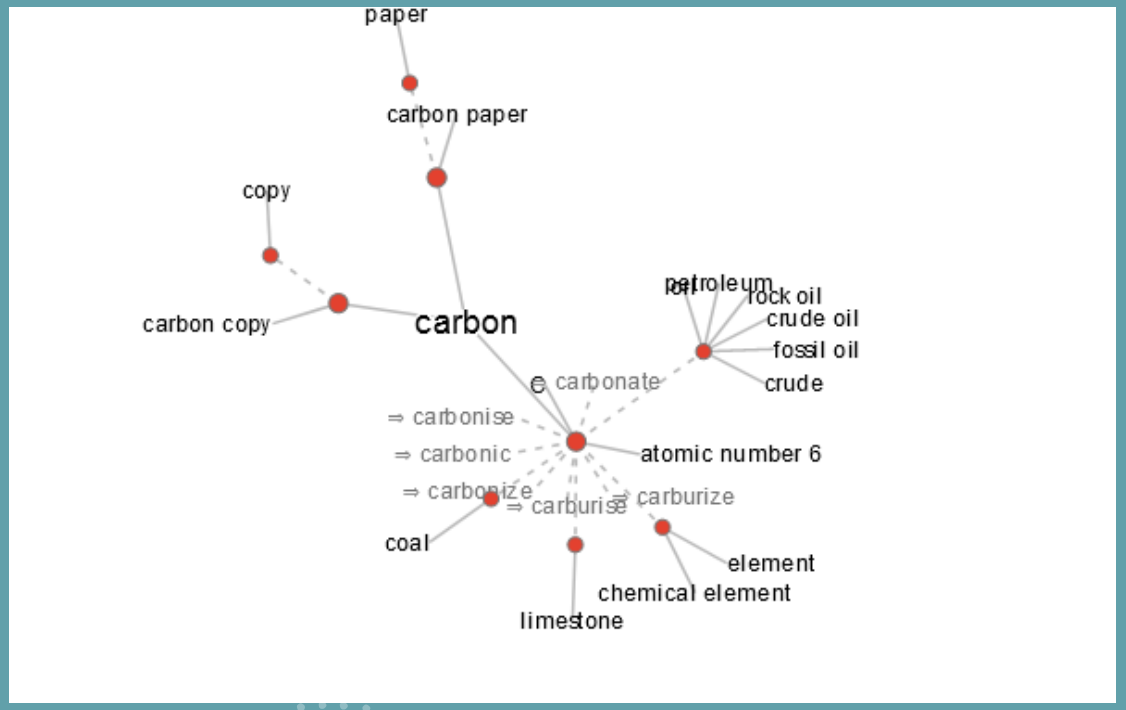
- Dangerous (yellow dots) is an adjective, from the French word ‘danger’ and the suffix ‘ous’ meaning ‘having, full of’. So, the word dangerous means ‘able or likely to cause harm or injury’.

DIOXIDE



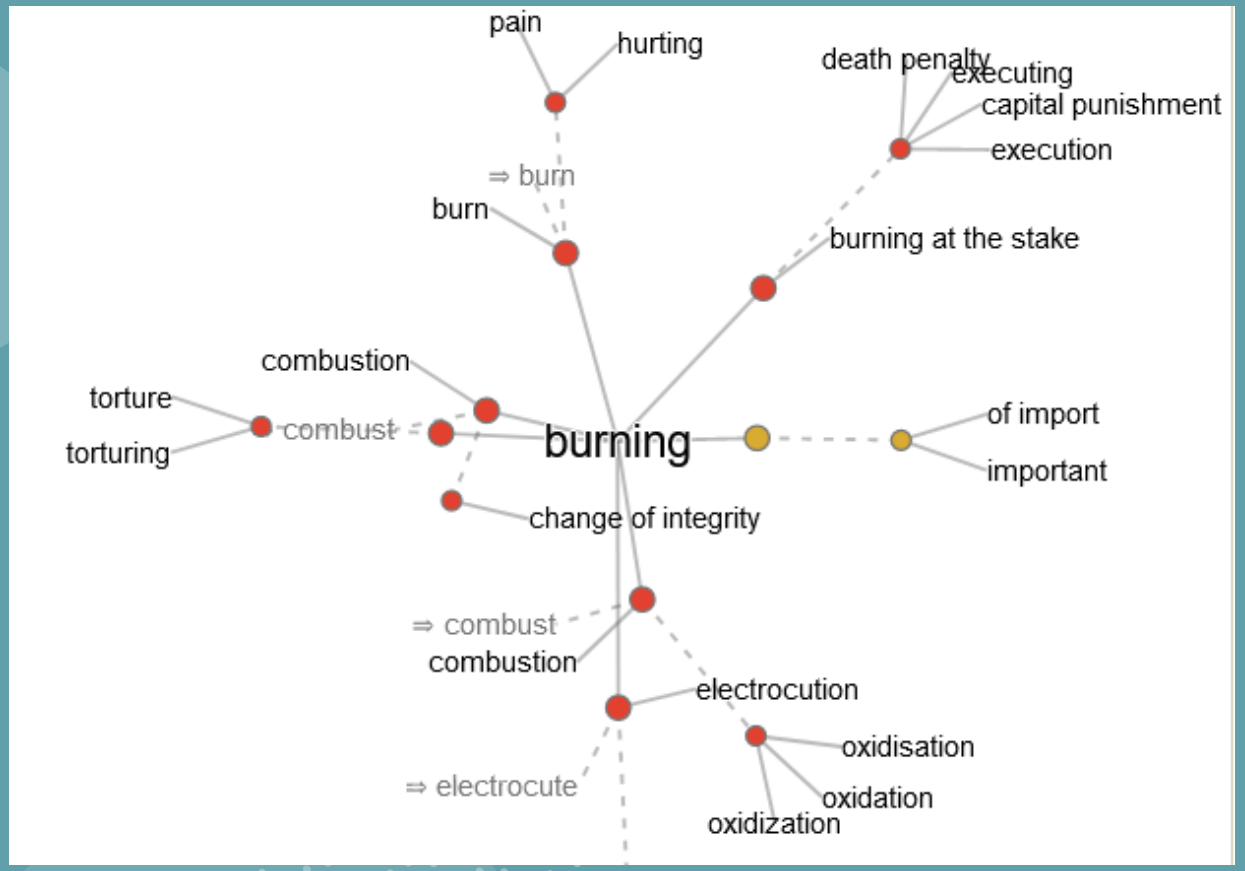
- The prefix ‘di’ from French, meaning two, and the root “oxide” for ‘oxygen’, a gas with no color nor odor that we breathe in. Dioxide means two (atoms) parts of oxygen.

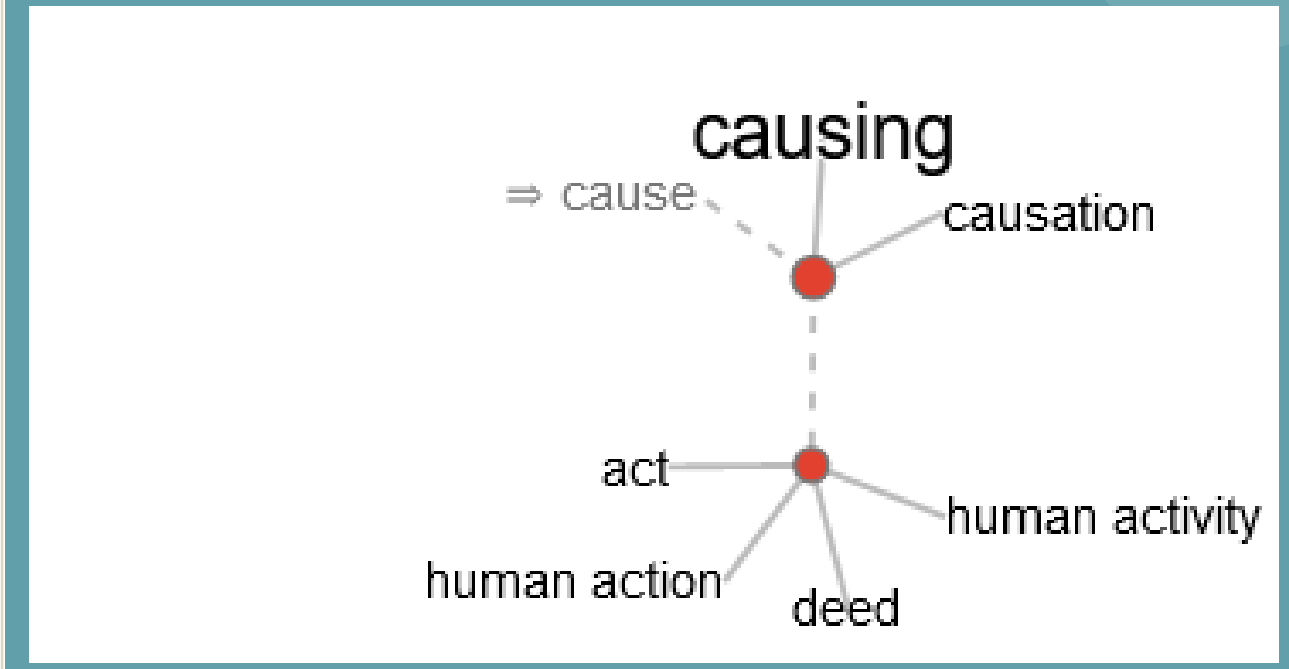
CARBON



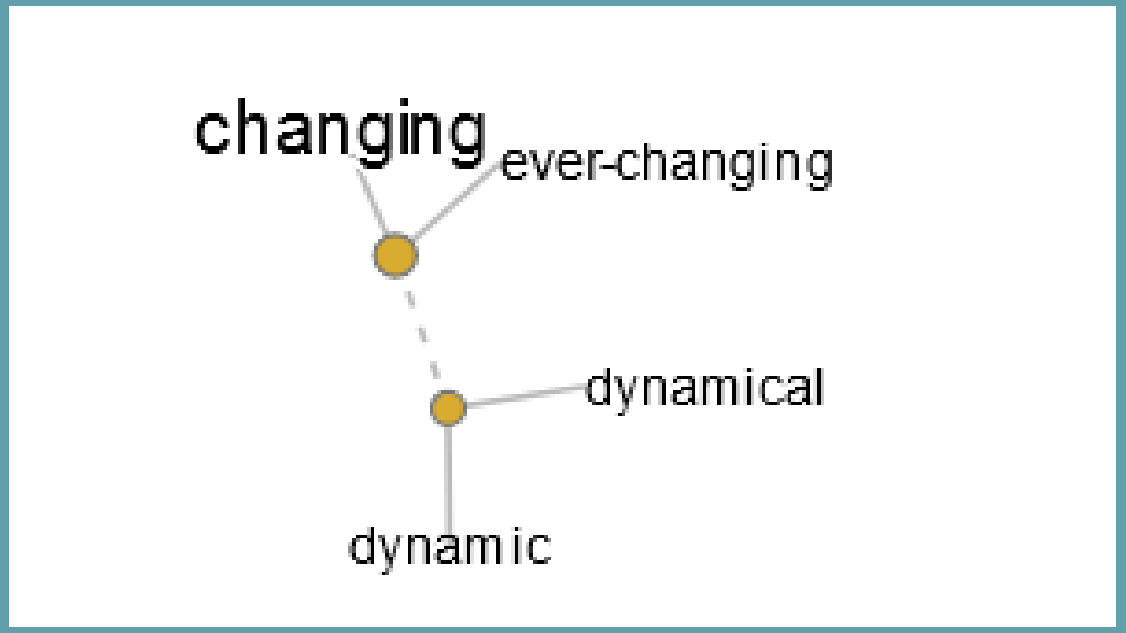
- From French ‘carbone’ and Latin ‘carbo/carbon’ meaning ‘coal’, it is a very common chemical element (pure substance) found in nature. It is the basis for life on Earth (respiration) as without it, humans would not exist. It is the material that’s used to make pencils and charcoal in the fire (grill, fireplace). When put together, ‘carbon dioxide’ is the gas we breathe out which is also the most responsible for climate change.

CAUSING, BURNING AND CHANGING





CAUSING, BURNING AND CHANGING



- From Latin ‘causa’ and French ‘cause’, the word causing is formed from the root ‘cause’ (dropping the ending ‘e’ before ‘ing’) and the suffix ‘ing’ indicating the present-participle. It means ‘producing an effect, giving a reason’.
- From the Germanic and related to the German ‘brennen’, the word burning has the root “burn” meaning ‘consume by fire’, and the suffix “ing” indicating he present-participle. It is also use in figurative sense as meaning ‘excitement’: ‘My heart is burning of joy’.
- From the Latin ‘cambire’ and French ‘changer’ meaning ‘to alter, exchange, to switch’, the word changing is made of the root ‘change’ (dropping the e before adding the ‘ing’) and the suffix ‘ing’.

Earlier, Hotter, Longer, Warmer.

- Earlier has the root ‘early’ (changed to i before) and the suffix ‘er’ which means ‘more’. So earlier is an adverb meaning ‘occurring before the usual or appointed time’.
- Hotter has the root ‘hot’ (a double t) and, also the suffix ‘er’. It is a comparative form of hot: “more hot/heat”.
- Longer is the stem ‘long’ meaning of great length, and the suffix ‘er’. So longer means a greater length or a greater amount of time.
- Warmer, like the other words, has the root ‘warm’ which is not too cold and not too hot, and the suffix ‘er’ (more).
- These words are of Germanic origin and are cognates with German words.

SCIENTISTS, STARTED

- From the French ‘science’ and the Latin ‘scientia’, the word scientists is formed of the root ‘science’(omitting the ‘ce’ which is replaced by the suffix ‘t’) meaning knowledge, and the suffix ‘ist’ (person who) and the grammatical function ‘s’ indicating the plural. So, scientists are people who have knowledge.
- Started is formed with the root ‘start’ meaning to begin an activity, and the suffix ‘ed’, a grammatical function indicating the past tense. Also, of Germanic origin, the beginning of a process. For example: The students started reading the book.

DIFFICULT WORDS FOR STUDENTS

- It is evident that the students already know certain familiar words like the most common ones: temperature, change, weather, and climate. I assume that other words such as carbon, dioxide, scientists, and drought might be difficult. So, I will check for prior knowledge by reviewing the four first words, using questioning. First, I will divide the class into four heterogeneous groups, and each group will discuss one of the words written on a different color card. Then a member of the group, most likely an ELL, will share with the class, while the other members will assist and support him/her. The teacher will write the definitions on chart paper.

Climate

Temperature

Change

Weather

CARBON, DIOXIDE, SCIENTISTS, DROUGHT

- For the four words above, the teacher will give each group a word card and ask the students to draw a picture (illustrate) of what they think it might mean, and then together we can discuss and write the meaning on the chart paper. Then, we will do a ‘Four corner vocabulary chart’ for each word with the picture in square 1, the definition in square 2, a sentence that they will pick from the reading in square 3, and the word in square 4. An example for scientist will be:

Four Corners Vocabulary Chart

Sentence (3)

Scientists have been measuring the carbon dioxide put in the atmosphere.

Definition (2)

Scientists are people, who are studying or has expert knowledge of one or more of the natural or physical sciences

Word (4)

Scientists

Vocabulary Expert Game

- After creating a graphic representation of all the vocabulary words, the teacher invites the students to play an interactive game: ‘’Who Wants to Be a Vocabulary Expert”. Students arranged in different groups will have to answer one question per group after discussing it together. Four choices will be given, and they must choose the best answer. If the group has some difficulties remembering, they will have the option of calling a friend or fifty/fifty.
- Children learn better through hands-on activities, active engagement, peer interactions, and playing. After all these motivations, they will master the vocabulary words hanging on the wall and are ready to start reading the book at the next science lesson.

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