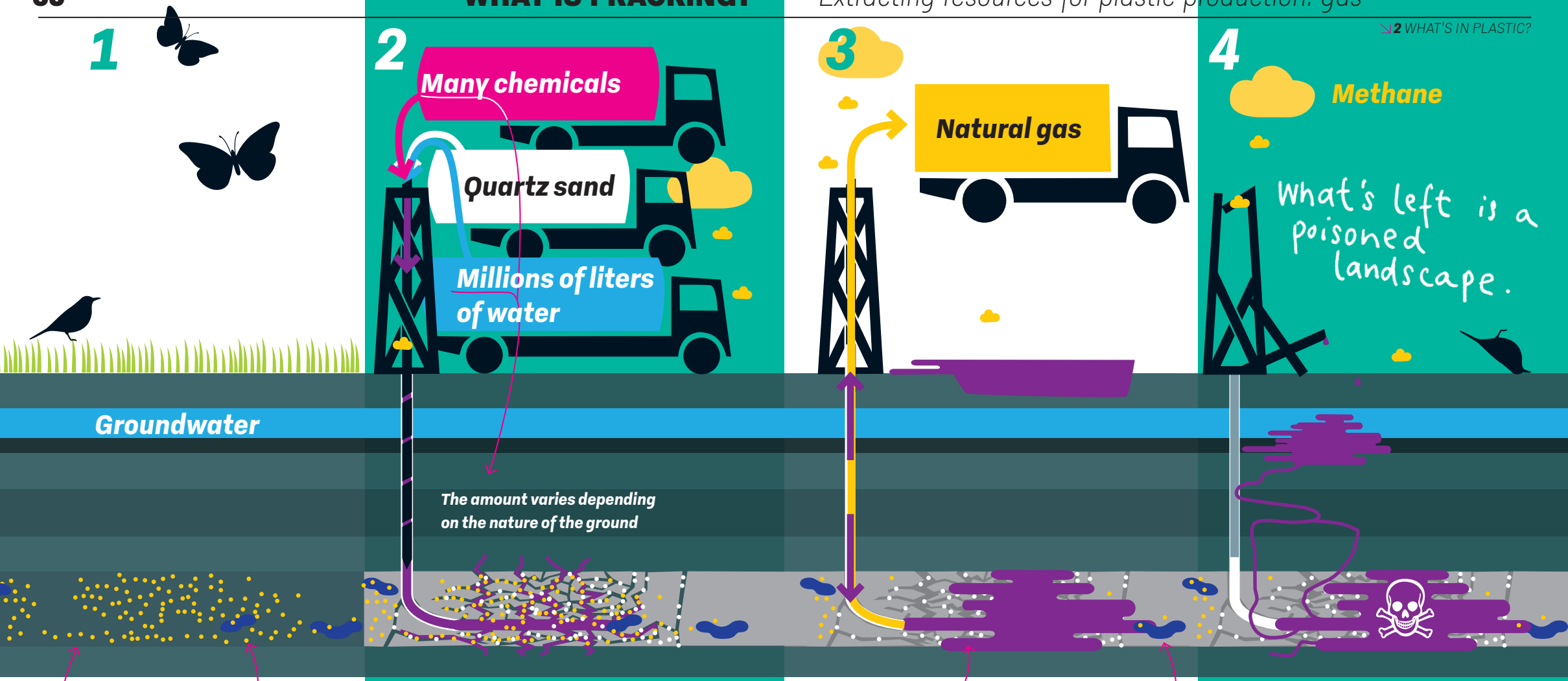
WHAT IS FRACKING?



1 Valuable bubbles of natural gas are trapped in a layer of shale deep below the surface of the earth. In most cases, this gas is ethane, butane, propane, or methane. Except for methane, these gases are used in the production of plastic. But how are the tiny bubbles – also known as an »unconventional resource« – extracted from the solid rock?

2 Like this: Hydraulic fracturing – known as fracking – is used to release and extract the gas from the rock at a depth of up to five kilometers. First, a deep well is drilled into the rock formations, vertically and then sometimes horizontally. Many millions tons of fluid are now injected at high pressure into the wellbore, which create cracks in the rock formations. Chemicals and quartz sand hold these cracks open.

3 The toxic compound further mixes with fluid trapped within the rock, which is known as formation water. Because of its unknown composition, this water is unpredictable, poisonous, and sometimes even radioactive. The mixture is pumped up to the surface and the gas is transported away.

4 The dangerous toxic mixture cannot be destroyed. Sometimes it's stored in reservoirs. The injected solution is also sometimes left behind underground. These injection wells can cause earthquakes, leaking toxins into the groundwater and releasing harmful gases such as methane.