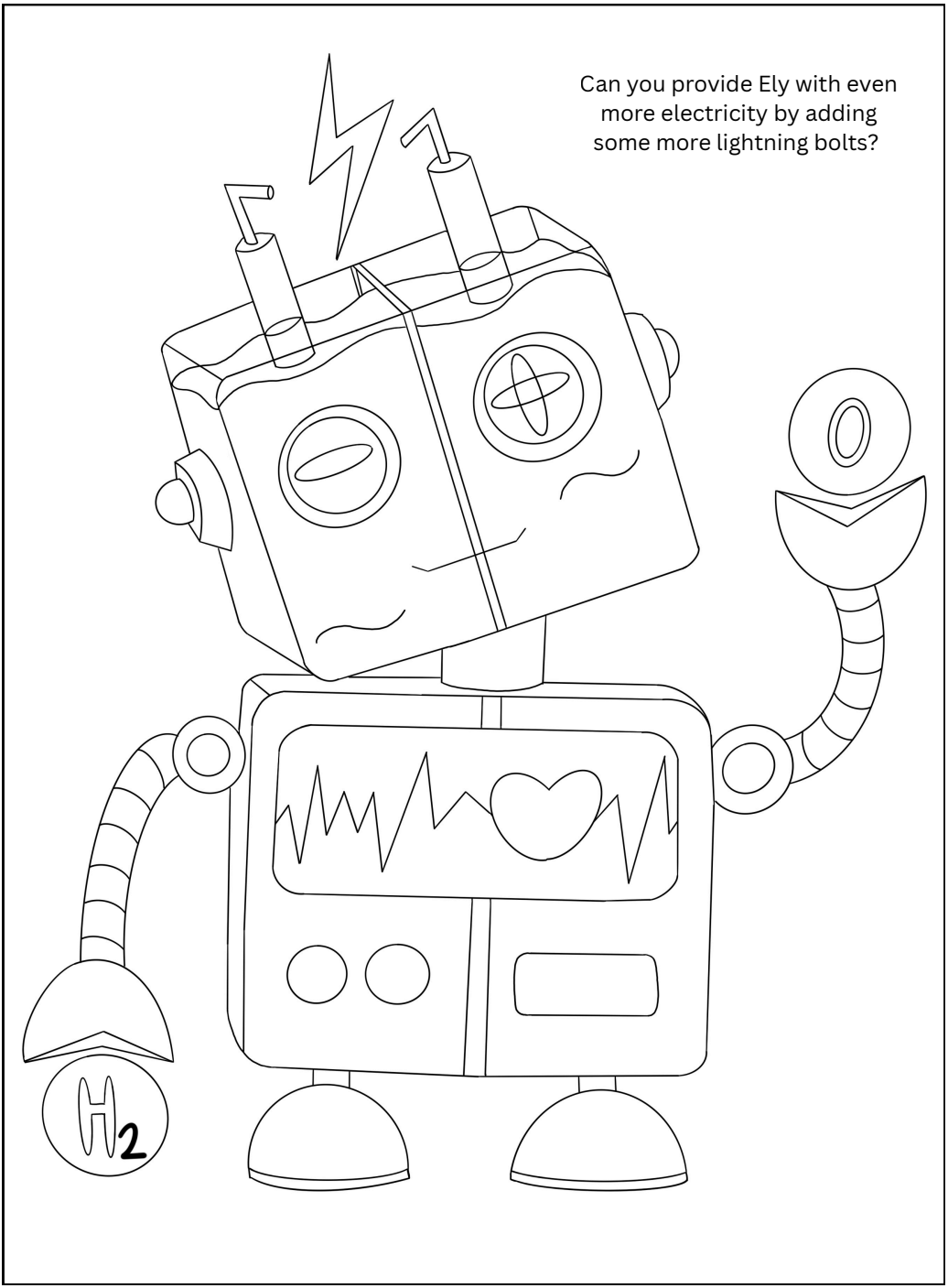
DECARBONISING OUR FUTURE

Colouring book

With Ely

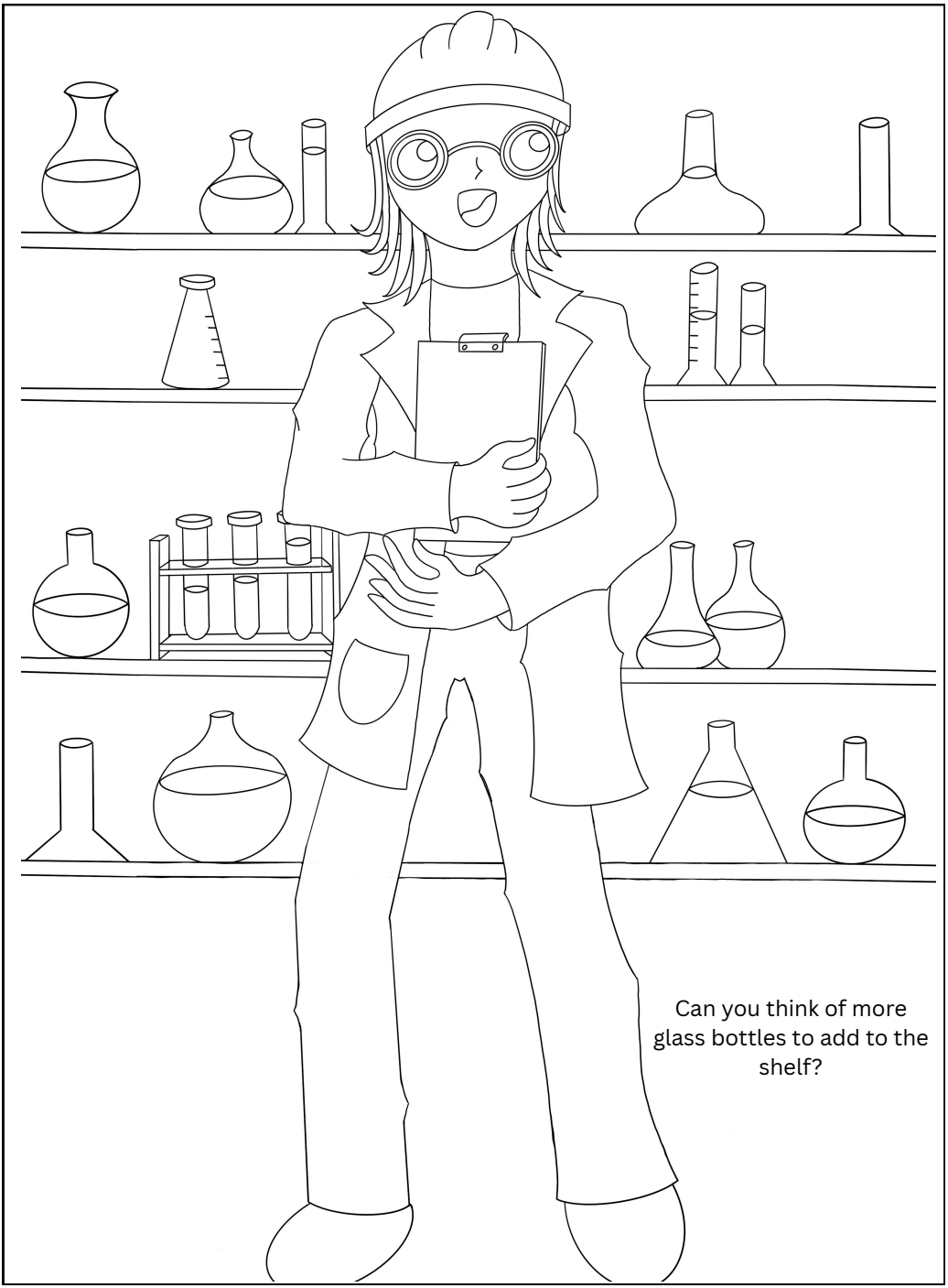
H2GLASS
DECARBONISING OUR FUTURE

Co-funded by
the European Union

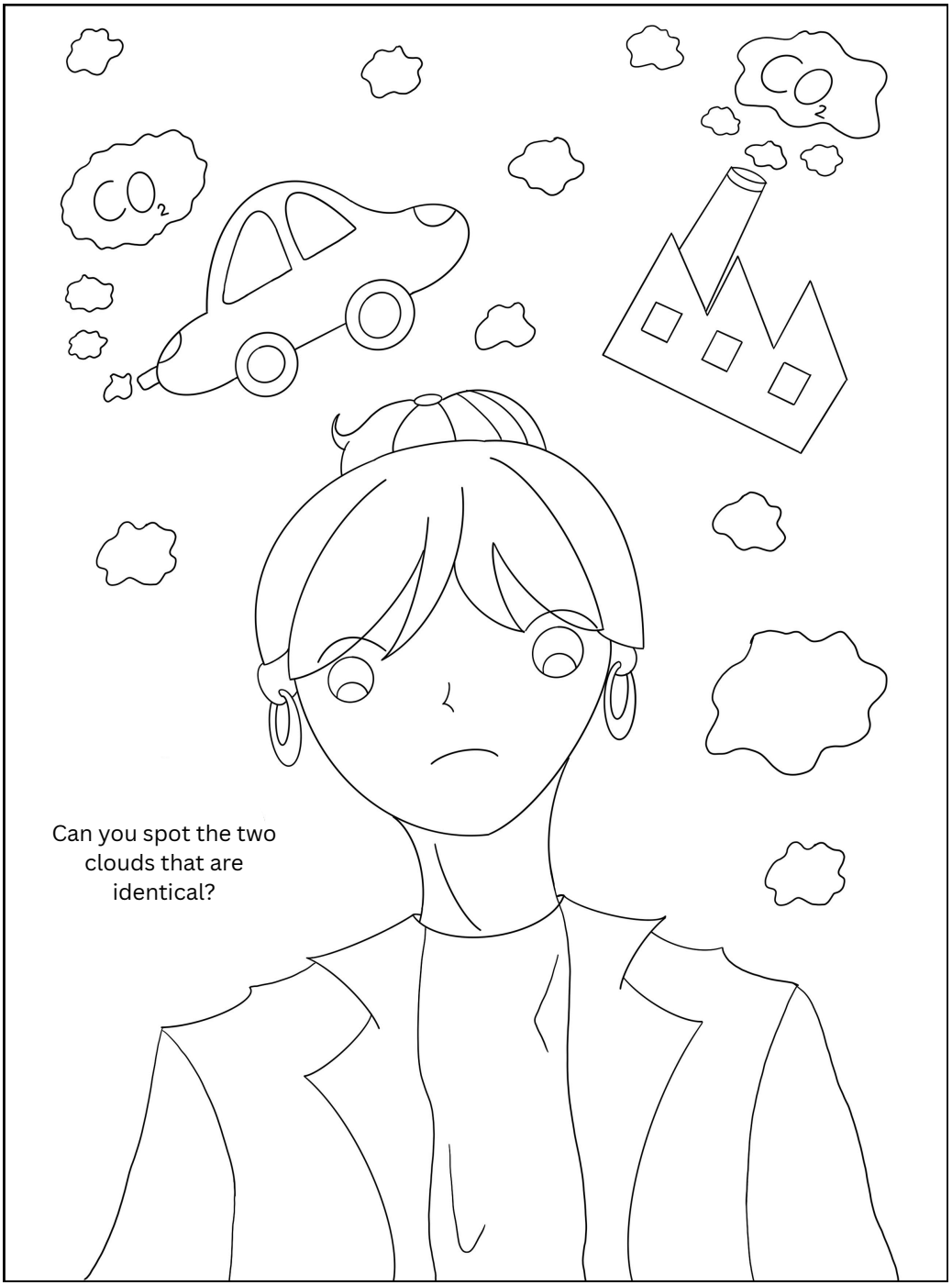


This is Ely, the electrolyser. Ely can produce hydrogen and is eager to start the journey.

This is Chiara. She is very clever and resourceful. Together with likeminded Europeans, she develops new solutions to protect our planet and its environment.

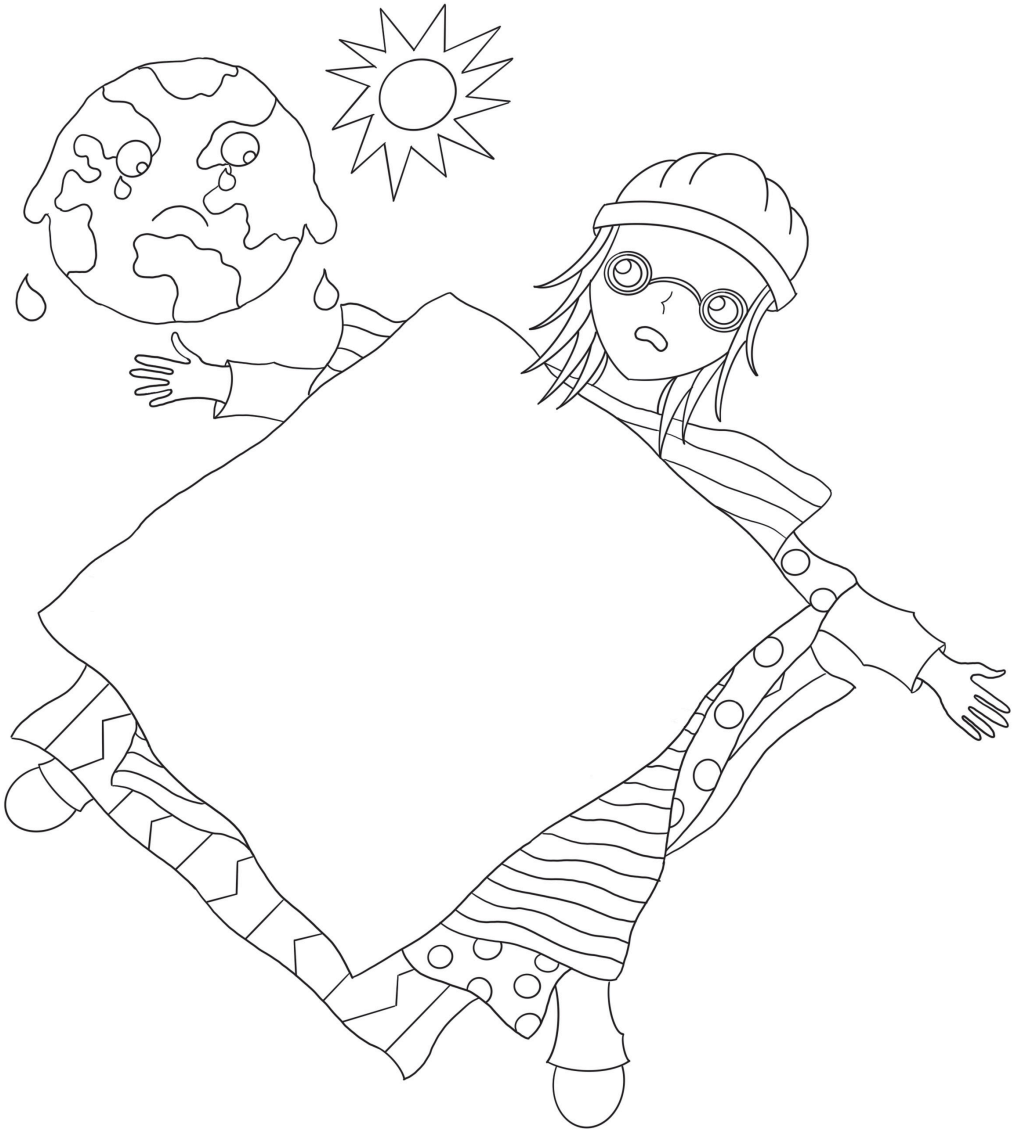


This is Marta. She is very smart and likes to calculate and analyse things with her computer. Her job is to ensure that everything is organised and safe.

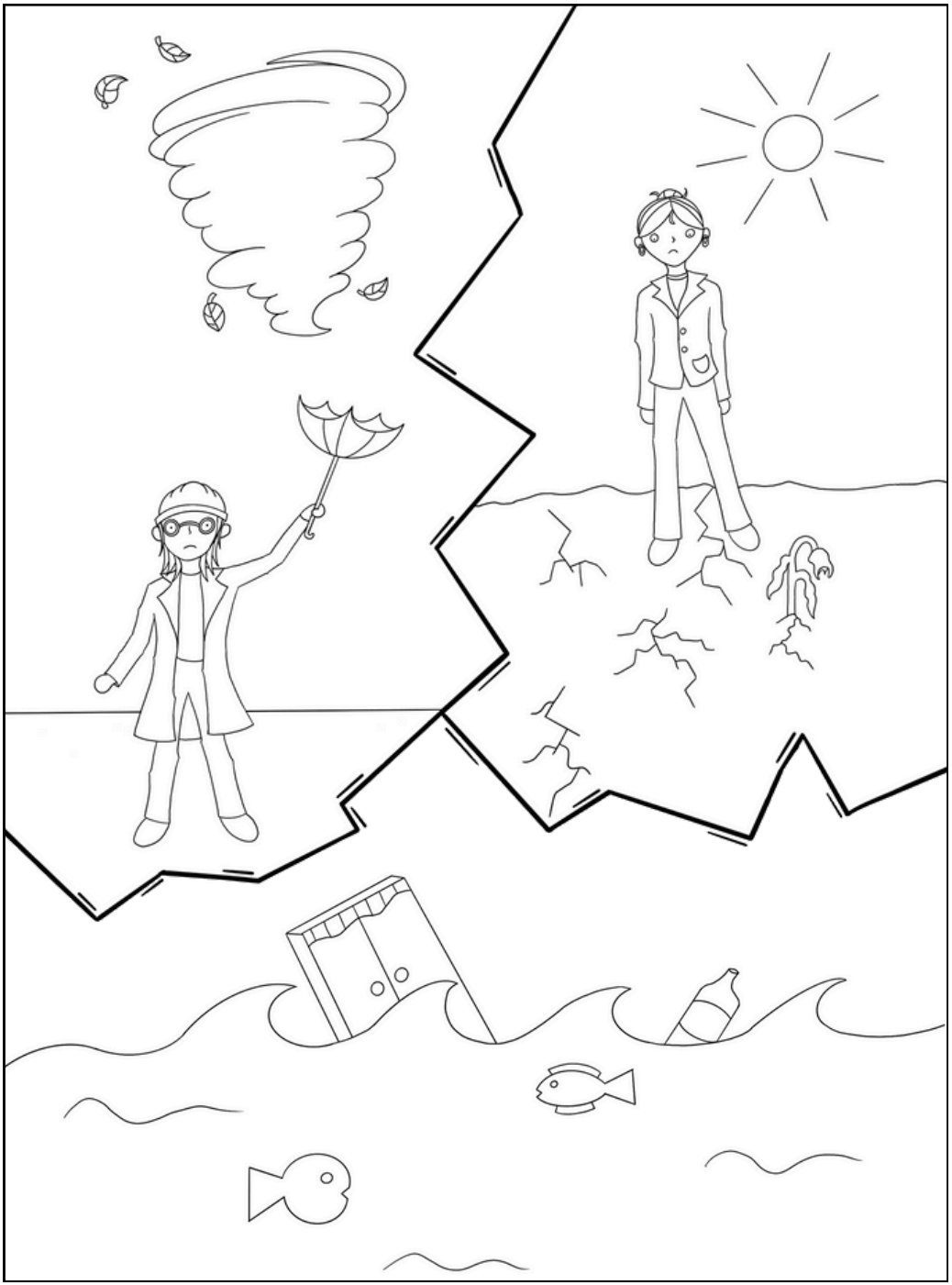


Chiara learned that a lot of CO2 (carbon dioxide) is produced by cars, factories and other things. This is not good for our planet...

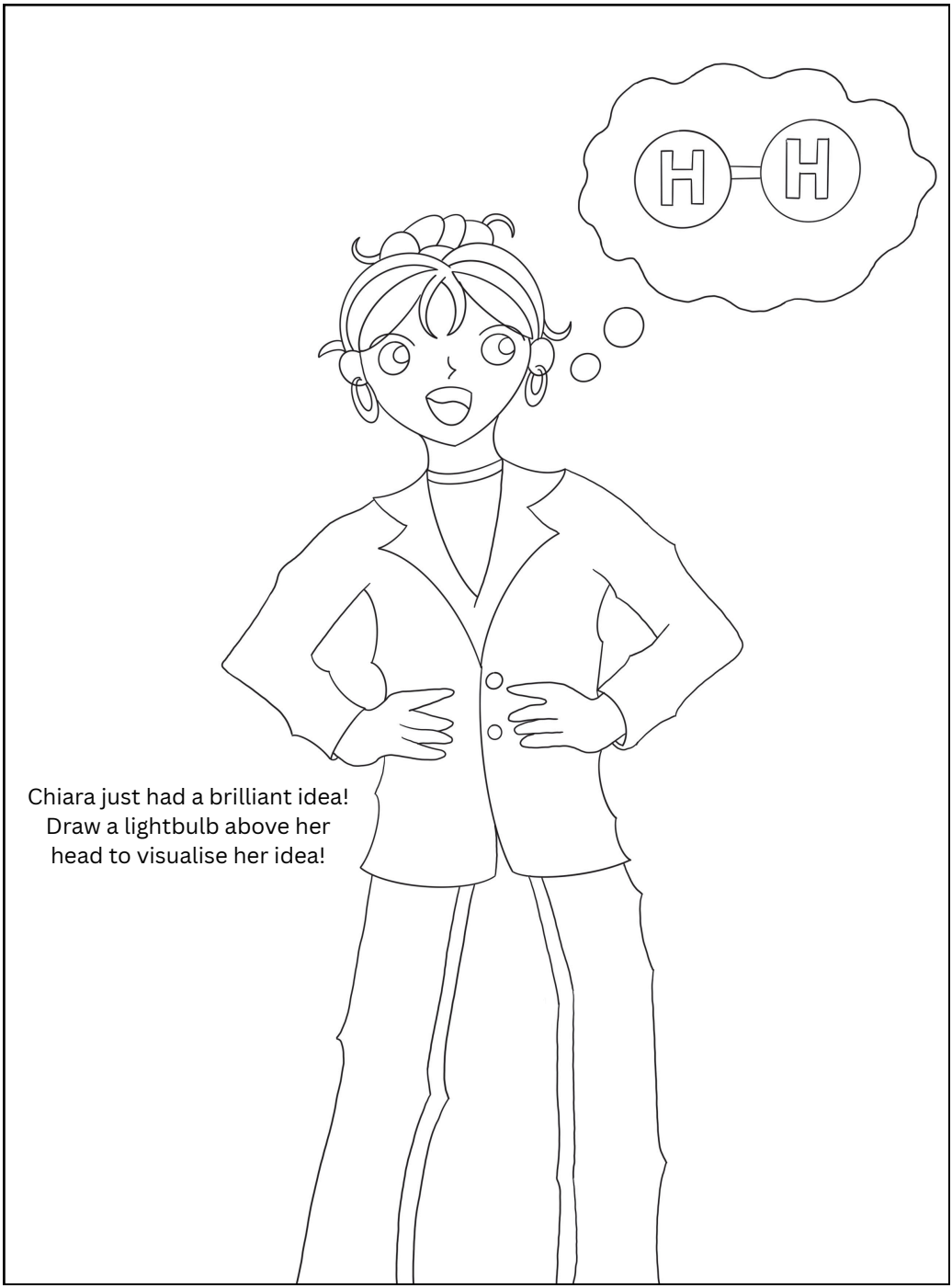
Can you think of a fun pattern for the top blanket?



Too much CO_2 makes our planet hot and exhausted, like being trapped under too many blankets.

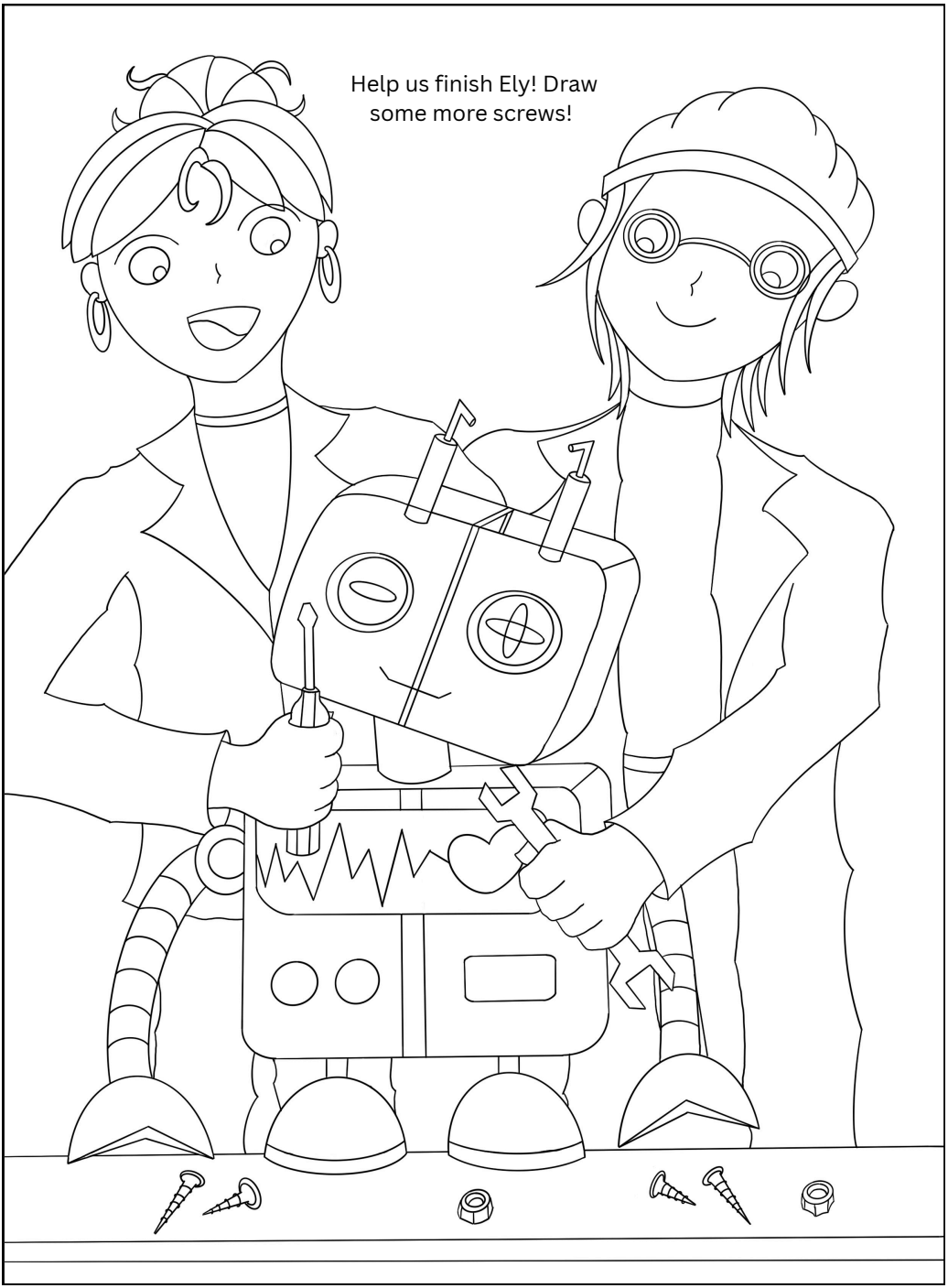


But this is not the only consequence for our planet. Many other things are affected by global warming and climate change. Sea levels will rise, droughts and extreme weather like heat waves and heavy storms will increase.

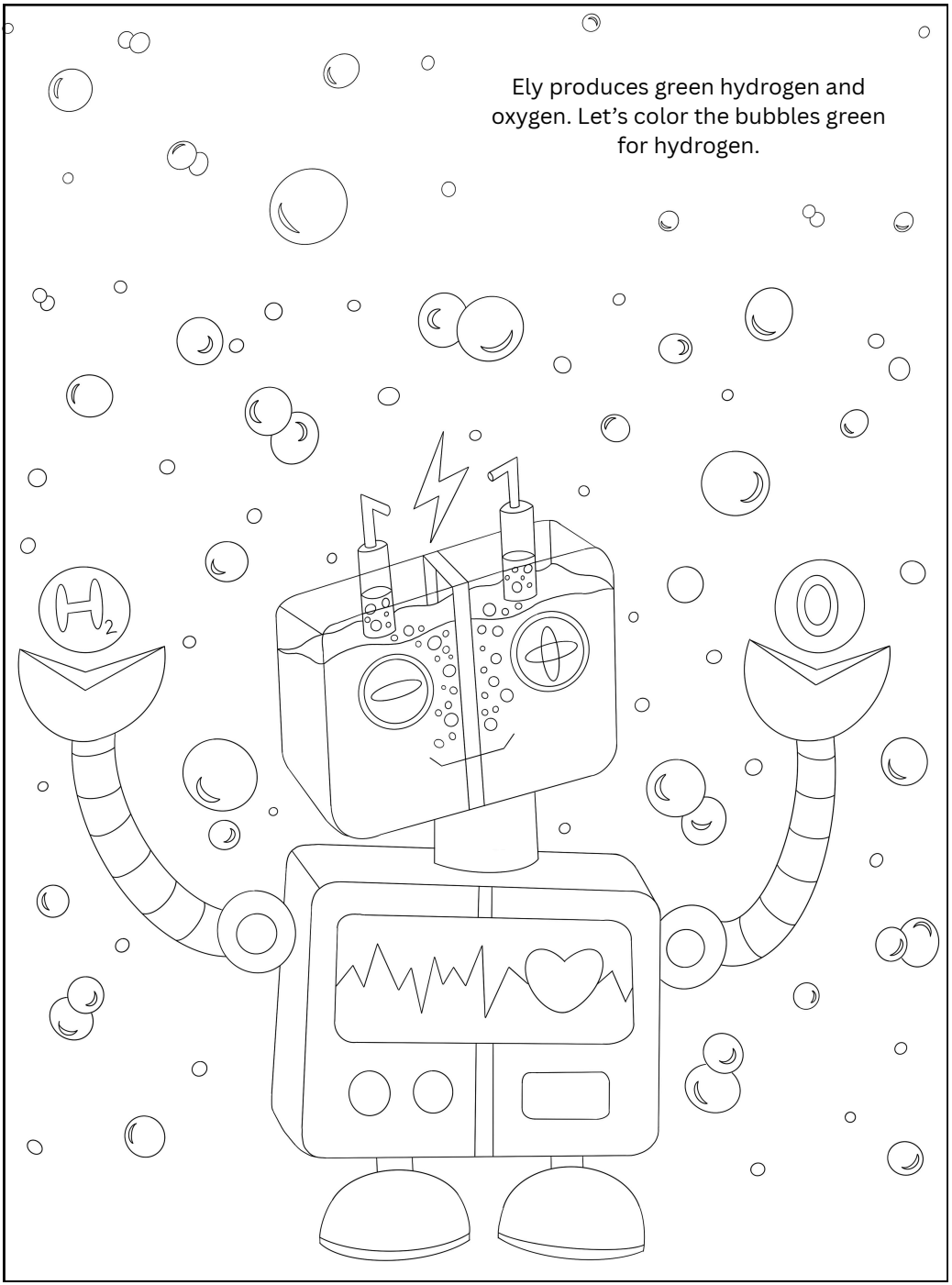


Chiara had a brilliant idea! She wants to replace fossil fuels with a gas called hydrogen for melting glass. This reduces CO_2 production in this energy-intensive industry.

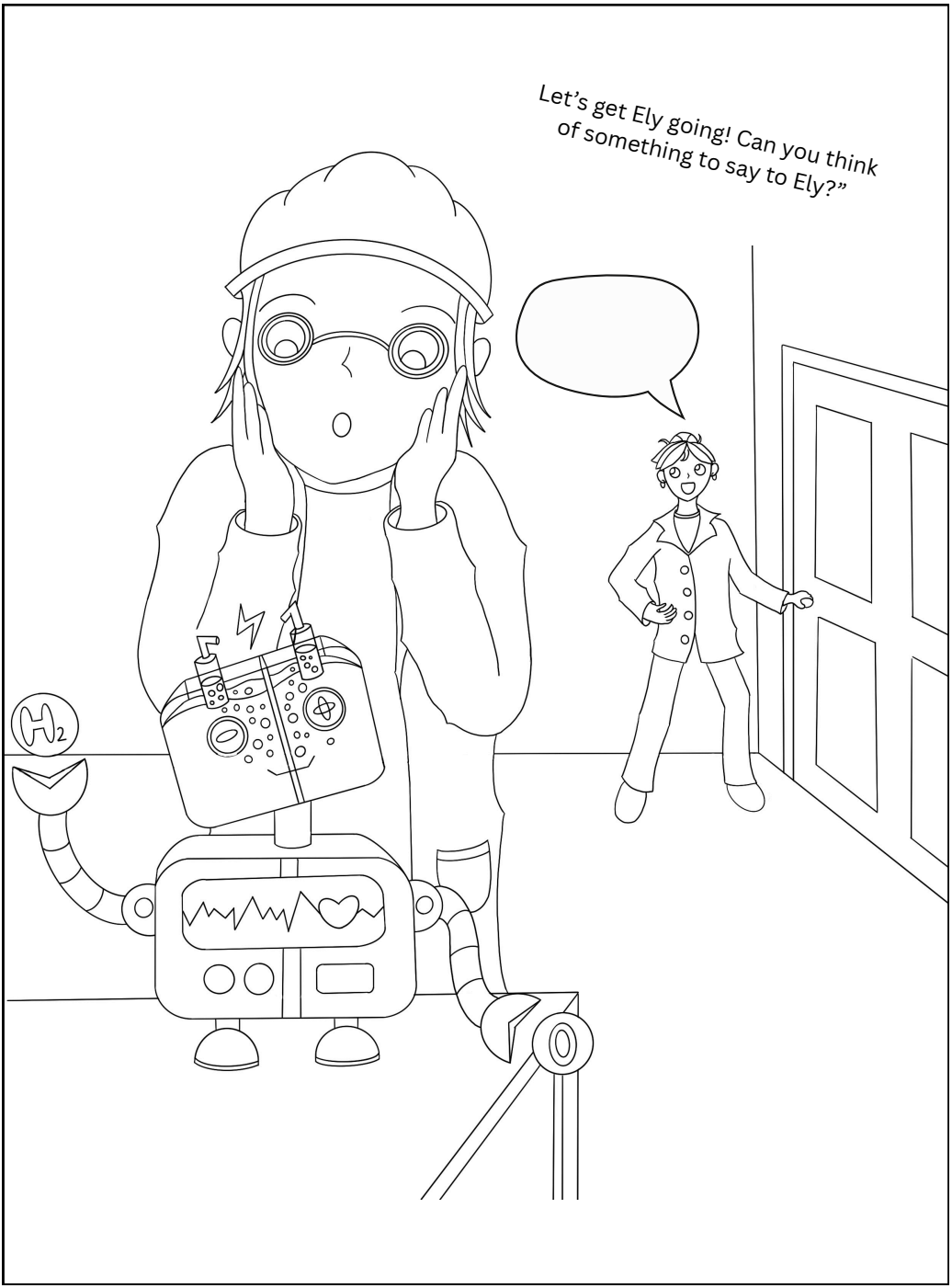
Marta really likes Chiaras idea and is already thinking of a safe way to do this.
But they realise that they need support.



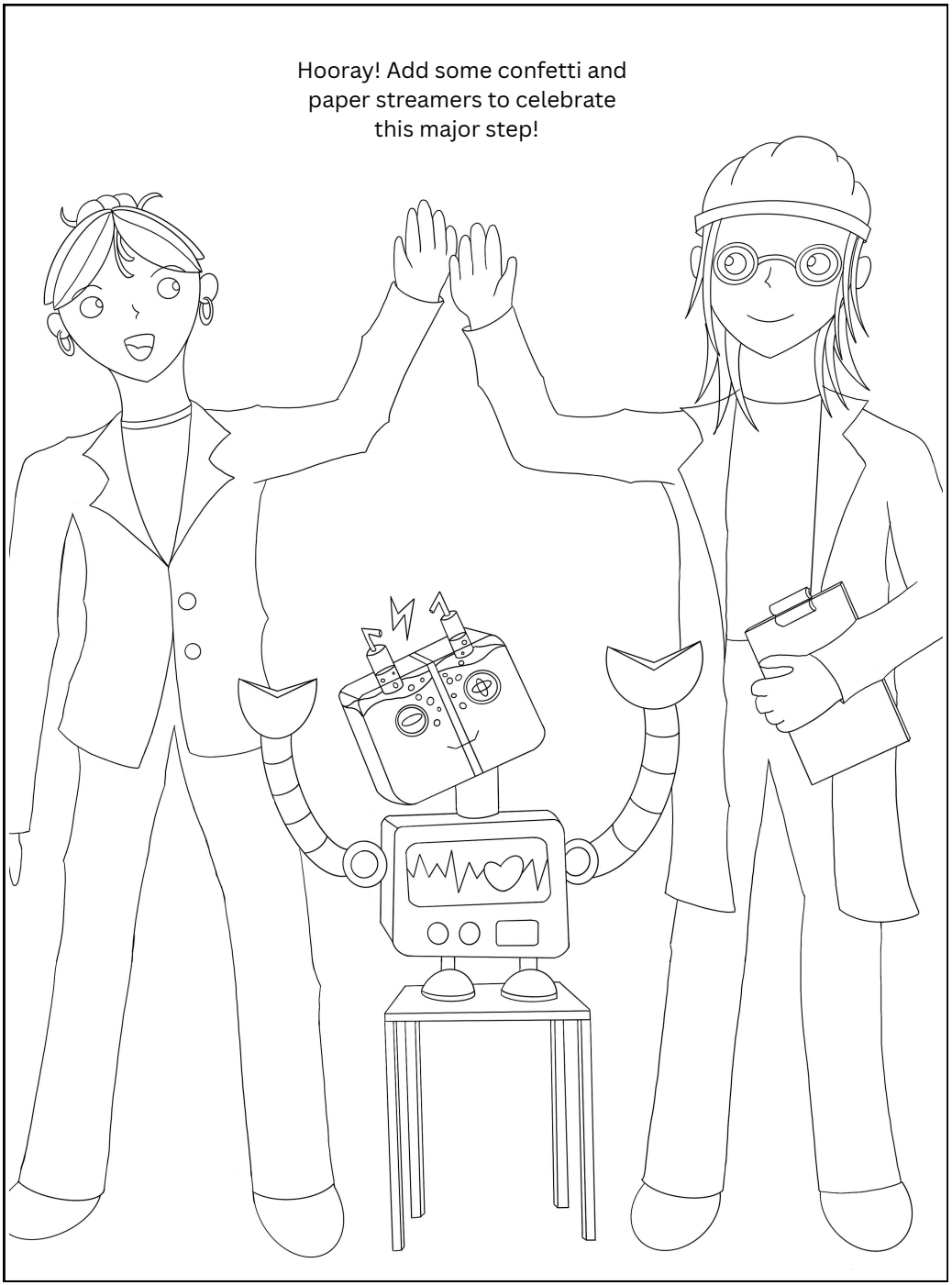
They build a special machine called Ely, the electrolyser.



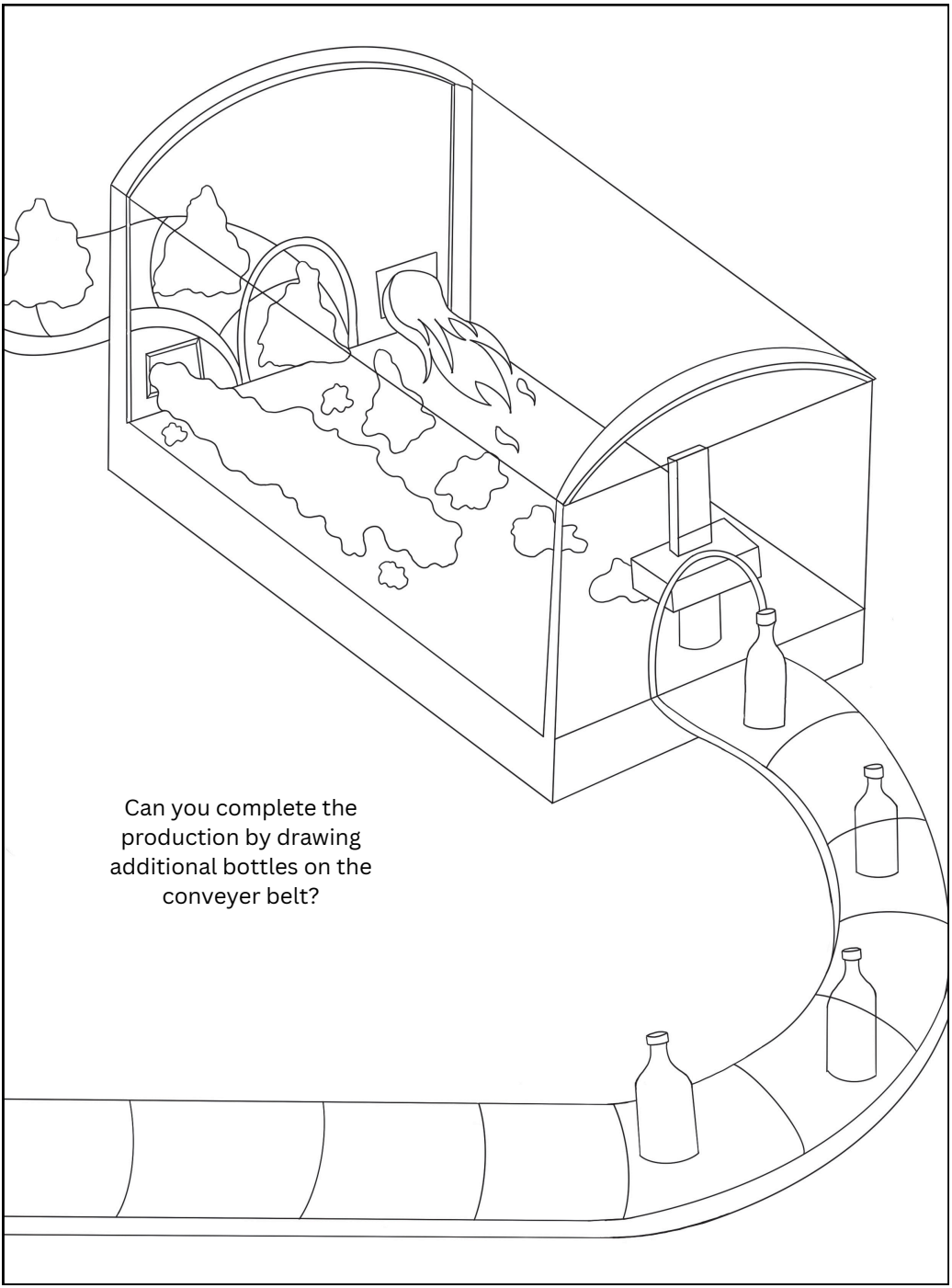
This is Ely, the electrolyser. Ely can produce hydrogen by using water and electricity. Through renewable electricity, Ely can produce so called green hydrogen. During this, Ely also releases oxygen, just like a tree does.



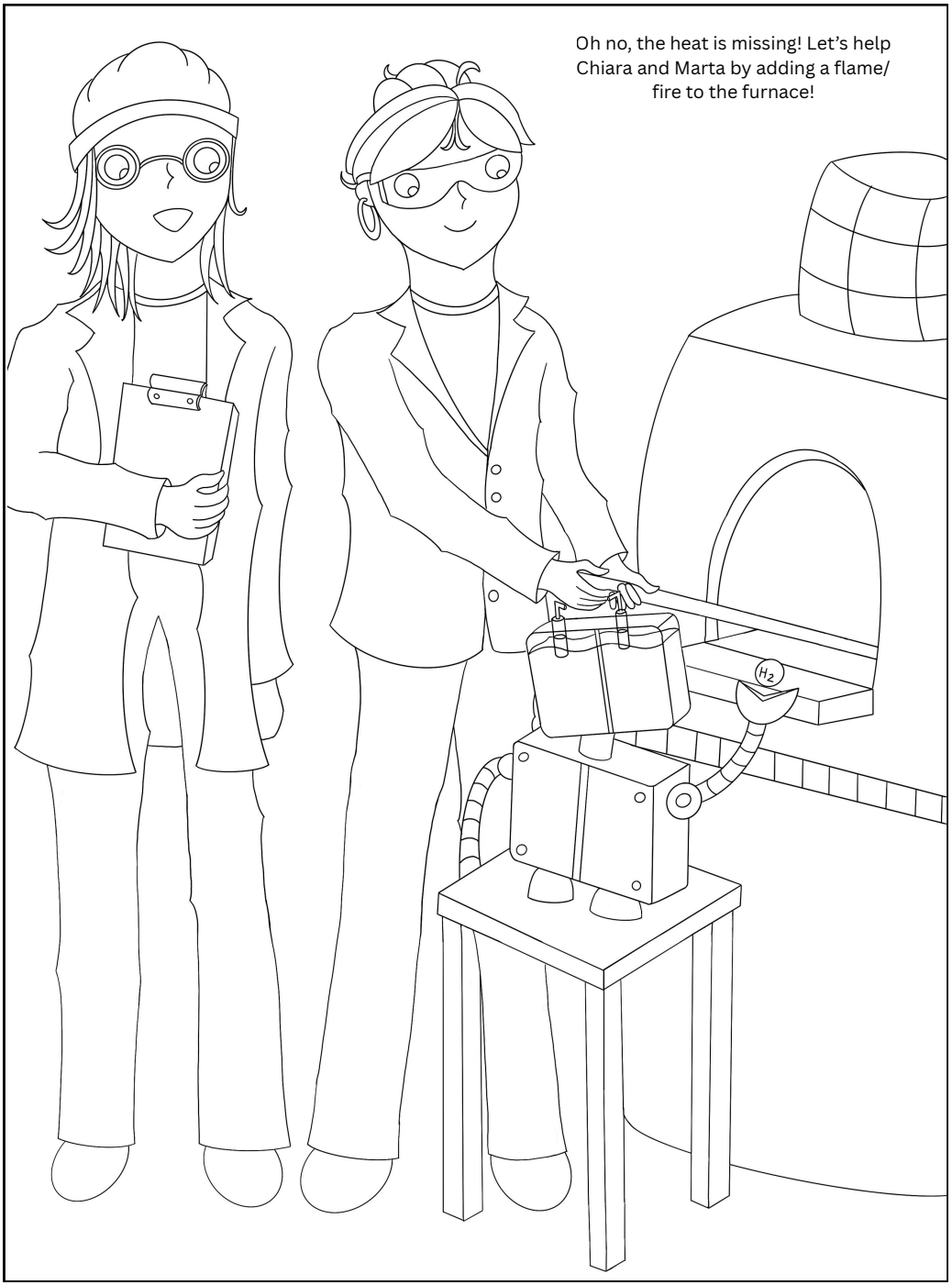
Chiara and Marta are ready to go save the planet together with Ely!
They start an EU-project called H2GLASS together with other partners from industry and science from all over Europe. The aim is to replace fossil fuels with green hydrogen.



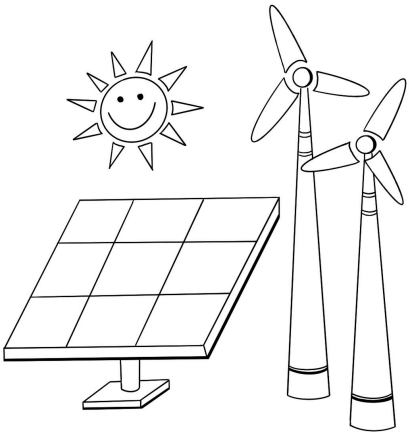
Chiara and Marta did it!
They are celebrating this major milestone!



Glass is made by melting sand and other ingredients in a furnace at very high temperatures. This is often achieved by burning natural gas, which is a fossil fuel. But this causes high CO2 emissions.



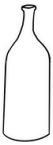
Chiara and Marta ask Ely for help to produce hydrogen to replace fossil fuel in the glass factories. When hydrogen is burnt in the furnace, it does not emit CO2. This can make all glass factories in Europe cleaner!



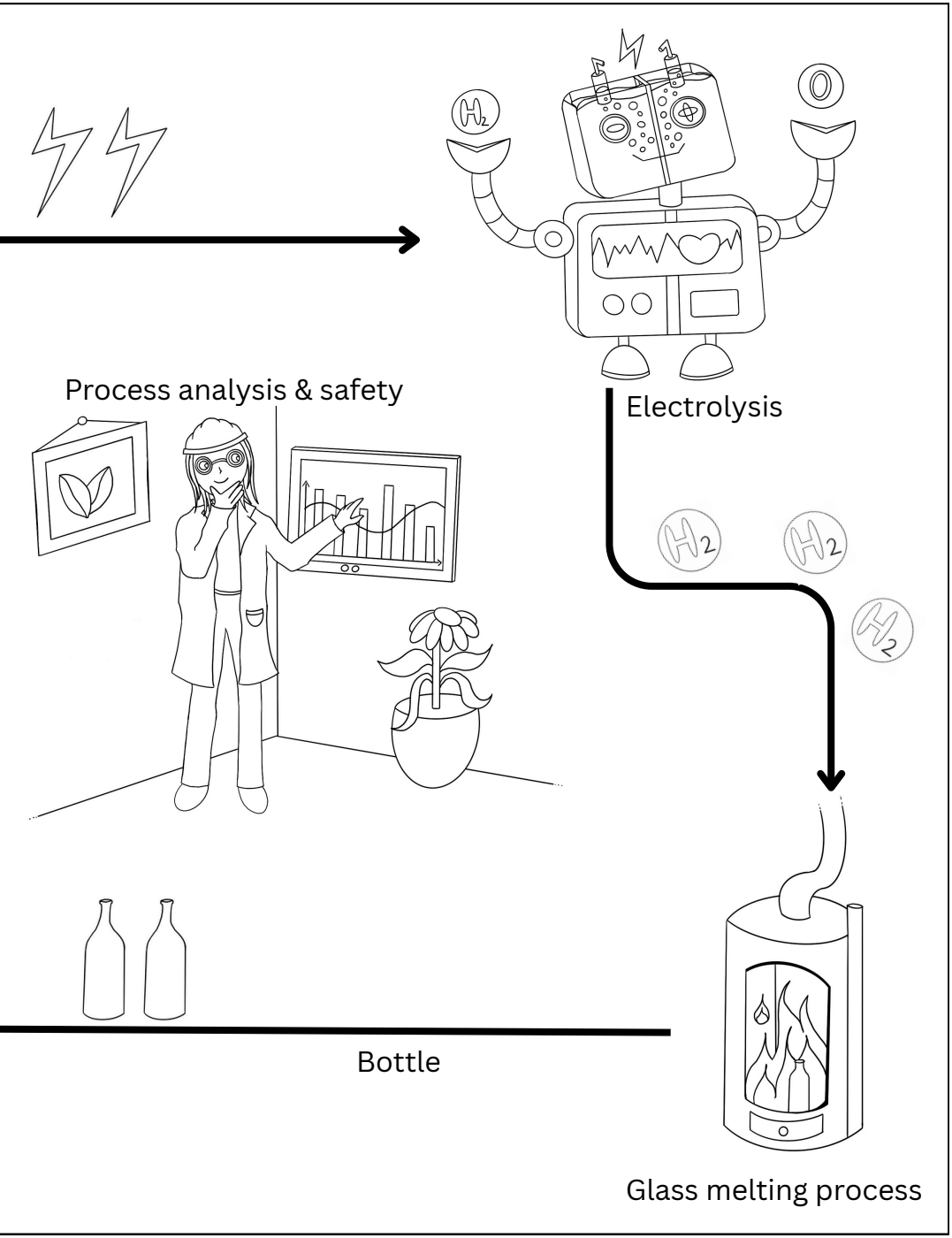
Renewable energy

Electricity

Sustainable glass products

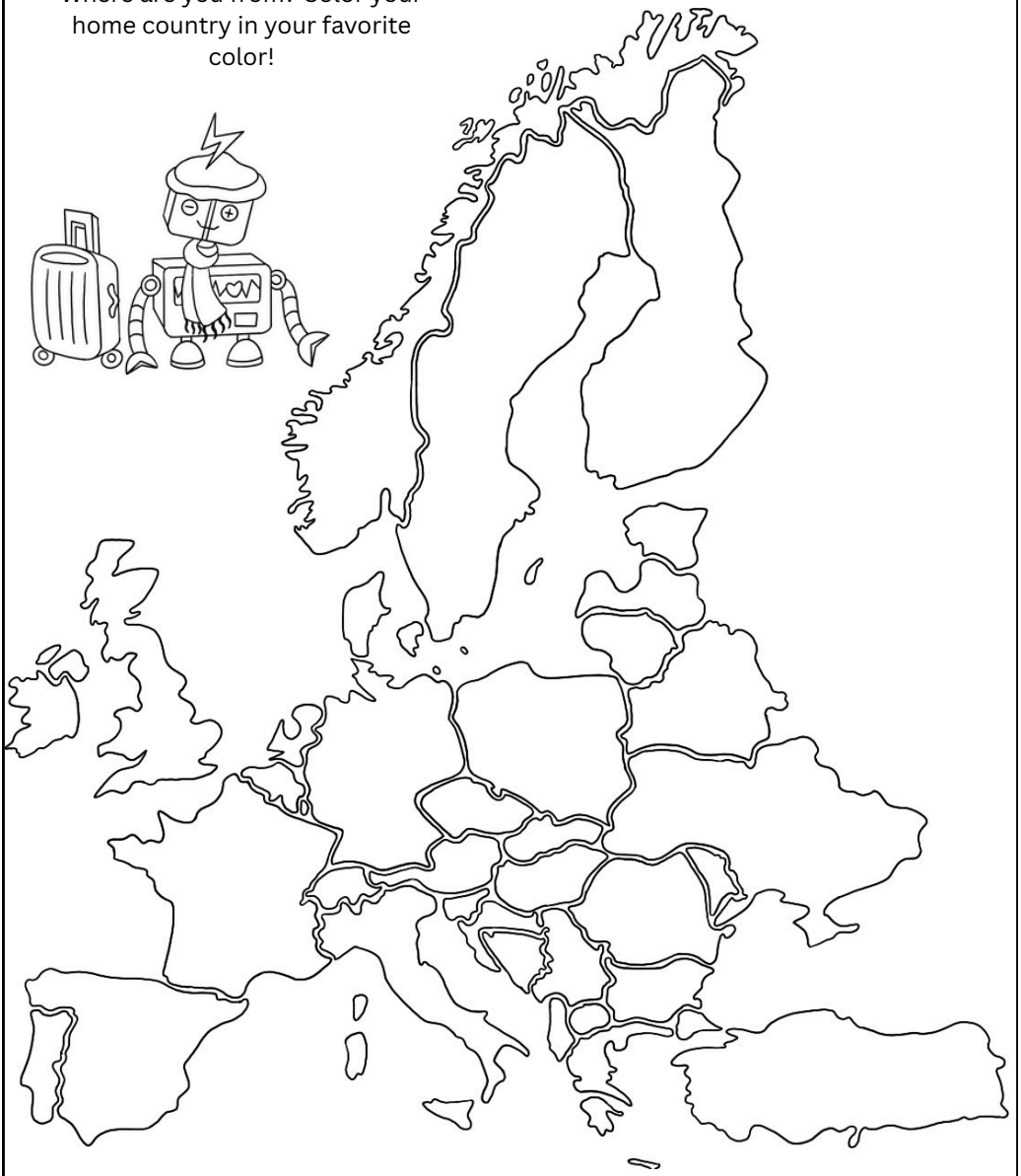


Let’s take a look at the entire process:
First renewable energy sources are used to generate electricity. This electricity is used to produce hydrogen. The hydrogen is then burnt during the glass melting process.

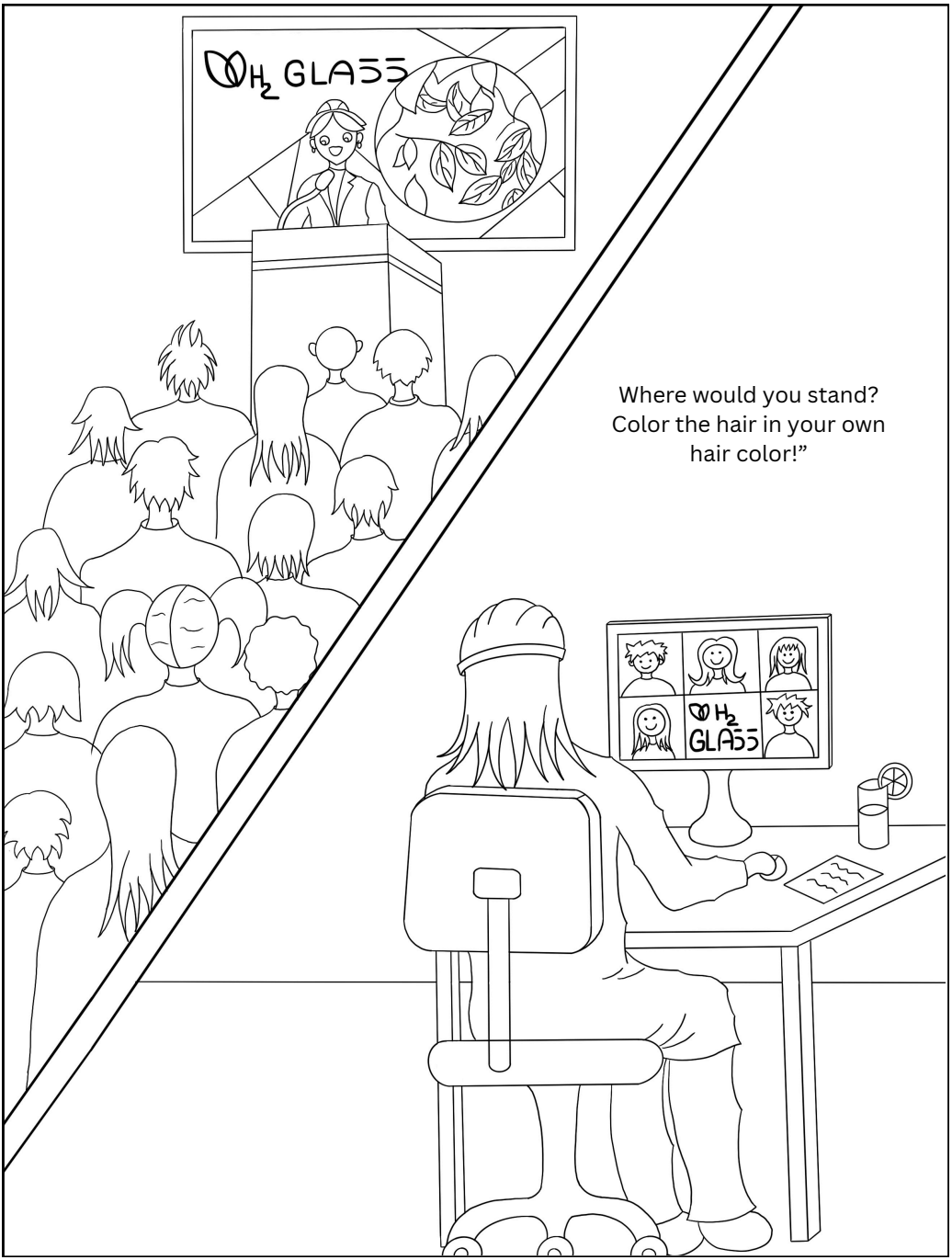


The entire process is controlled and checked by experts like Marta to ensure safety and quality of the glass. The finished glass products are now ready to be used.

Where are you from? Color your home country in your favorite color!

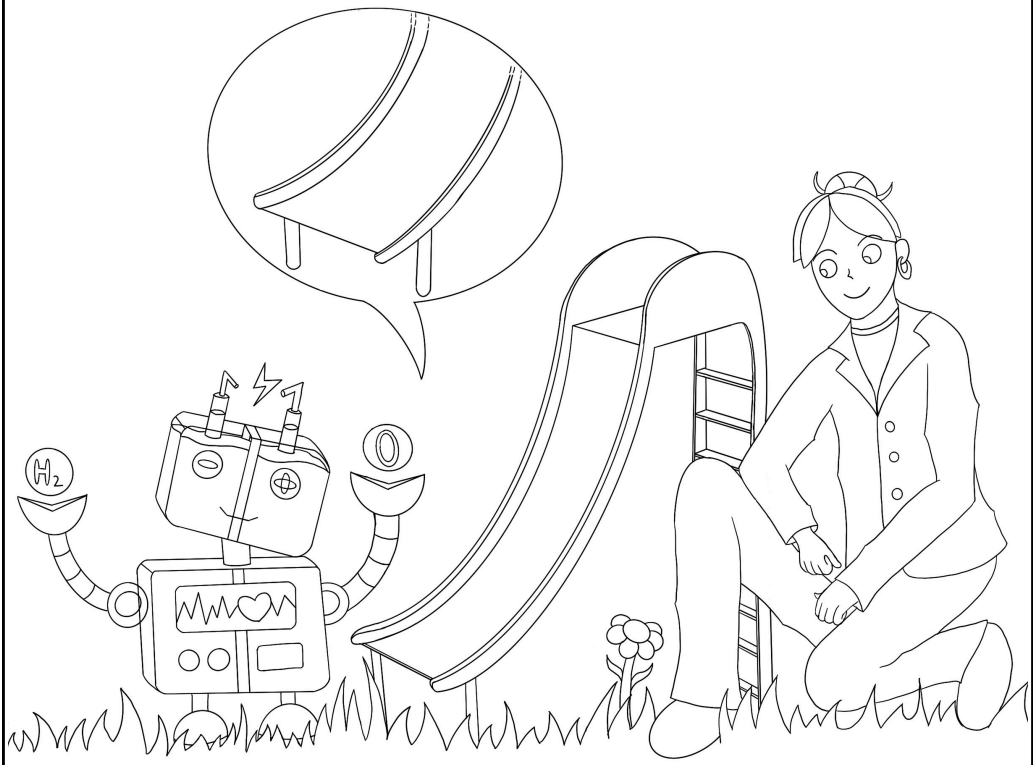


Ely will travel to 3 European countries to produce green hydrogen in 4 different glass factories. To test and improve the idea of H2GLASS, Ely will go on this long journey through Europe and visit the partners.



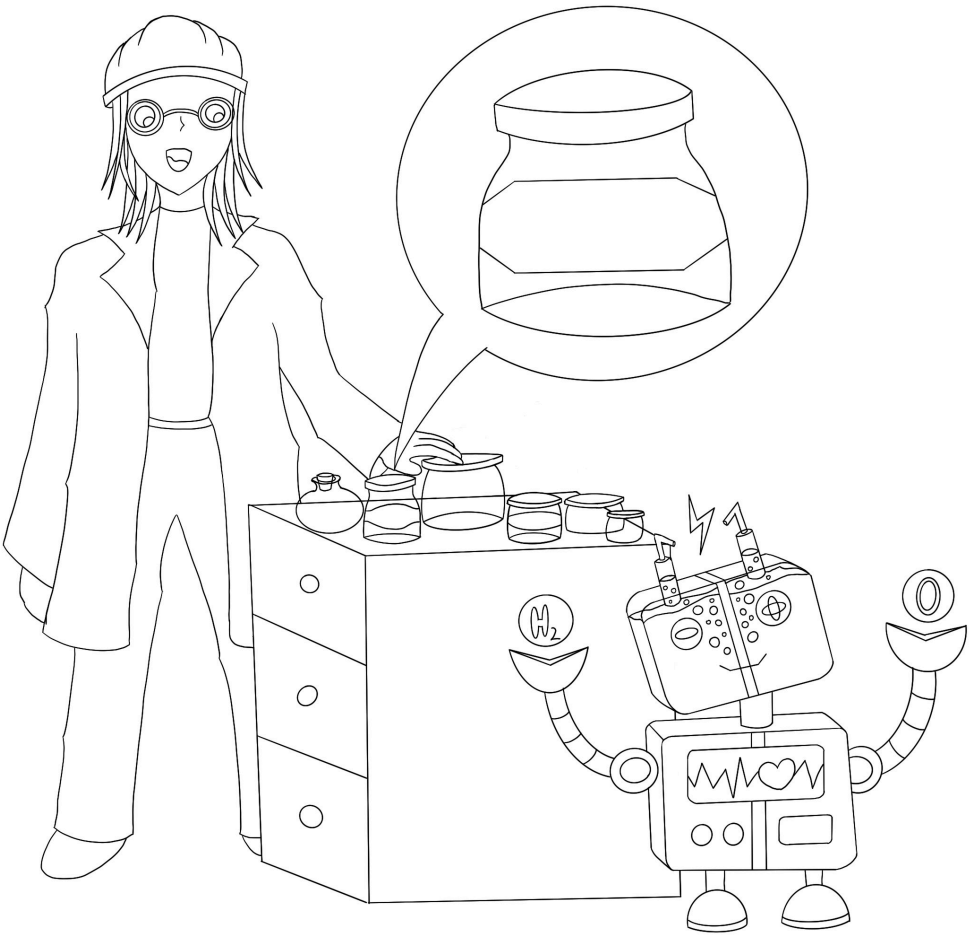
Chiara is coordinator of the H2GLASS project and makes sure that everything goes according to plan. In the meantime Marta has an overview of the technical developments with a focus on safety. All partners contribute their expertise to the project, work closely together and exchange regularly.

Ely is having so much fun sliding! Join her by drawing yourself on the slide!

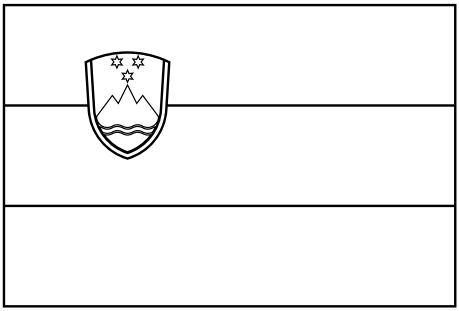


Ely starts the journey in L'Ardoise, France, where fiberglass is produced. Fiberglass is made of very fine fibers of glass and is used to reinforce plastic material in a lot of different everyday objects.

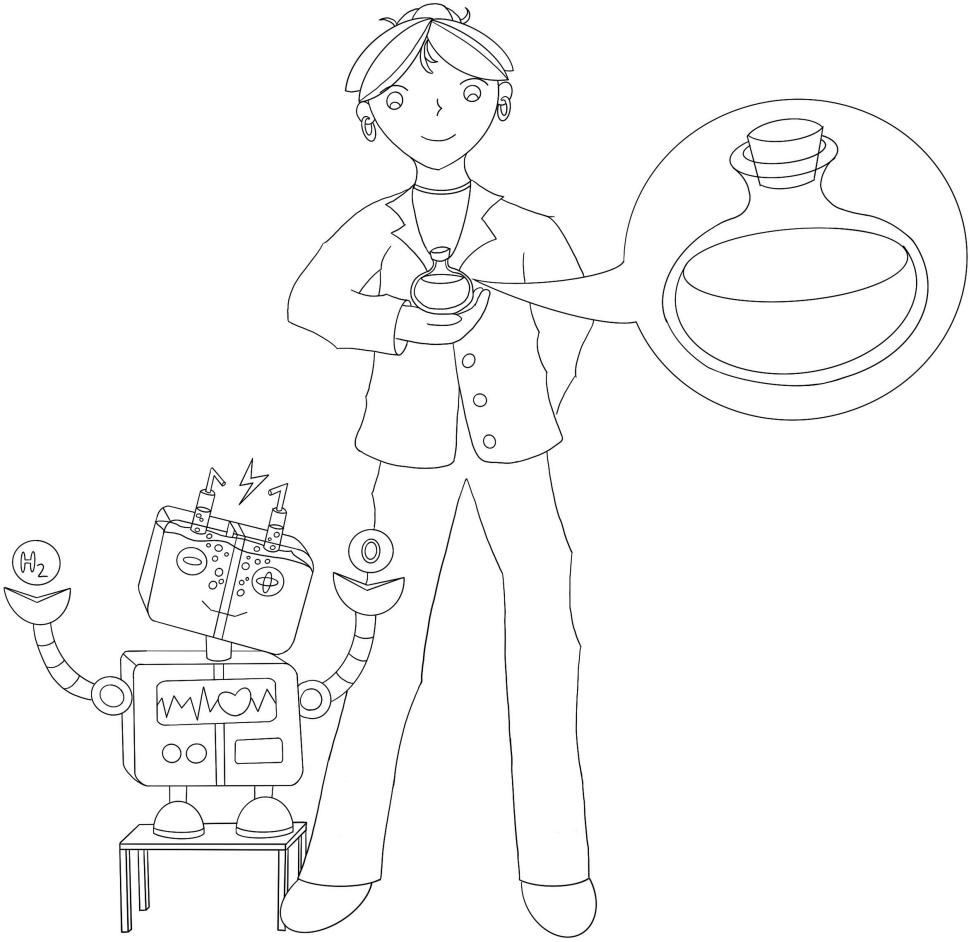
Can you think of other glass jars for make-up?



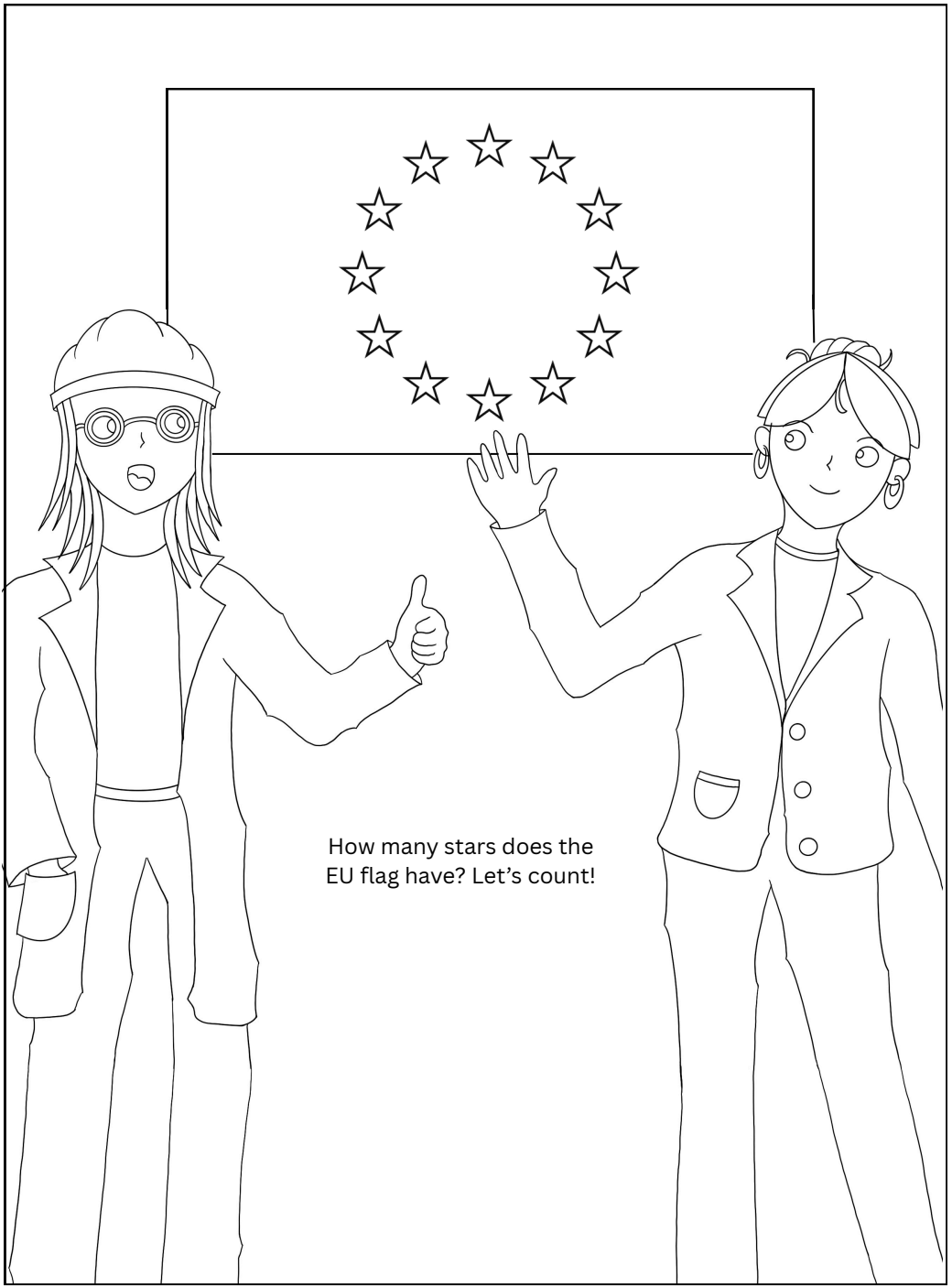
The next country is Italy, where Ely stops at two factories, one close to Venice (Fossalta di Portogruaro) and the other close to Milan (Sesto San Giovanni).
All sorts of glass packaging is produced here: bottles and jars for different purposes such as beverages, food, make-up or perfume.



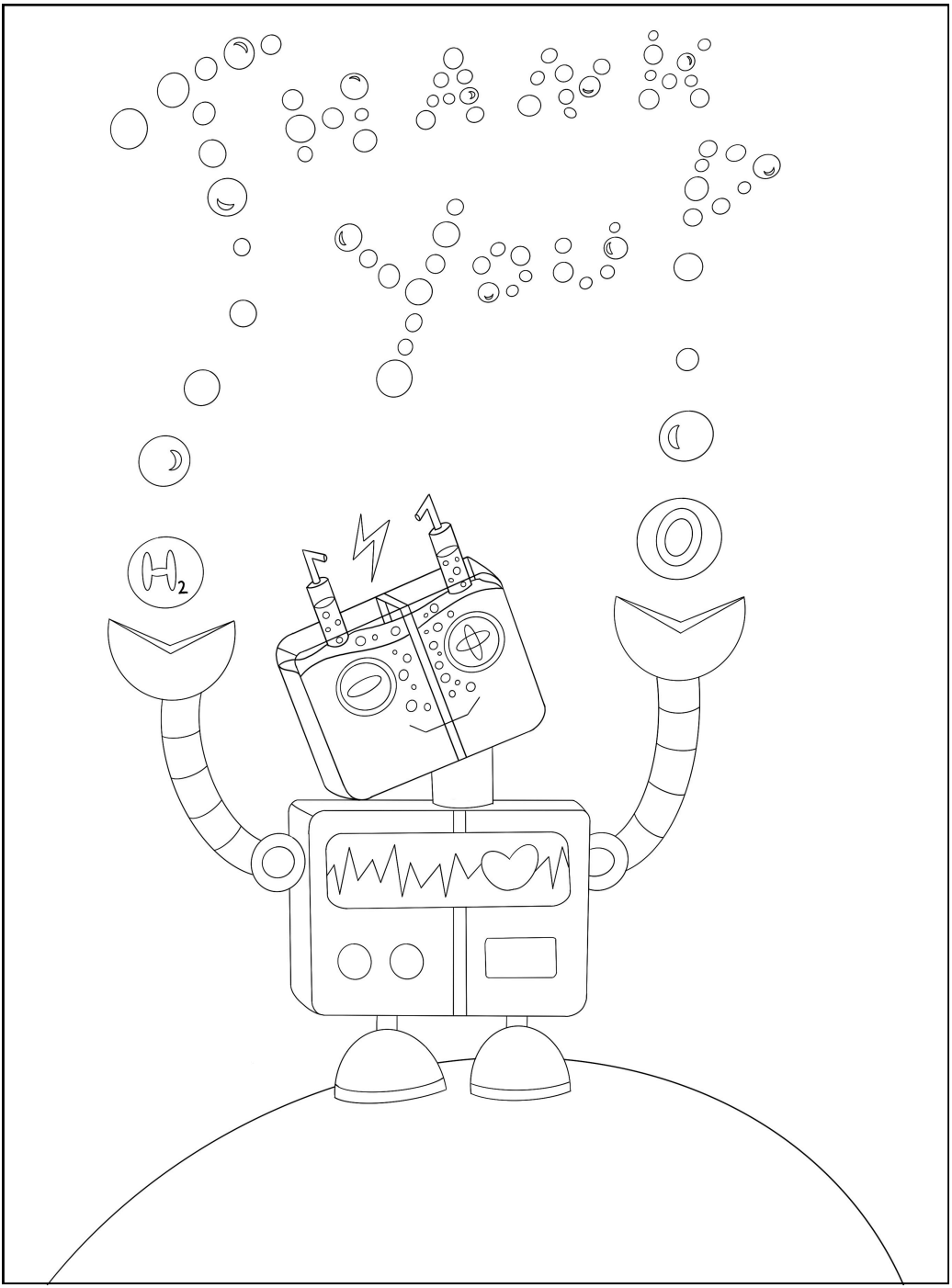
Can you think of other glass bottles for beverages?



Ely continues to Hrastnik in Slovenia. Here Ely helps to produce premium bottles for liquids, cosmetics and fragrances.



The H2GLASS project received a lot of money from the European Union so Ely can travel across Europe and optimise the furnaces and melting processes to the use of green hydrogen.



The H2GLASS project says “Thank you”!

Imprint

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H2GLASS is an EU-funded project.
It is committed to accelerating decarbonisation in the glass industry by developing and applying the technology stack needed to realise full H2 combustion in glass production facilities. The consortium is made up of six Industrial Demonstrators representing major players of the glass and aluminium industries, along with a group of highly qualified industrial and research institutions. Together, they will develop, test and validate the H2GLASS technologies and demonstrate their transferability to other hard to abate industries.

H2GLASS

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