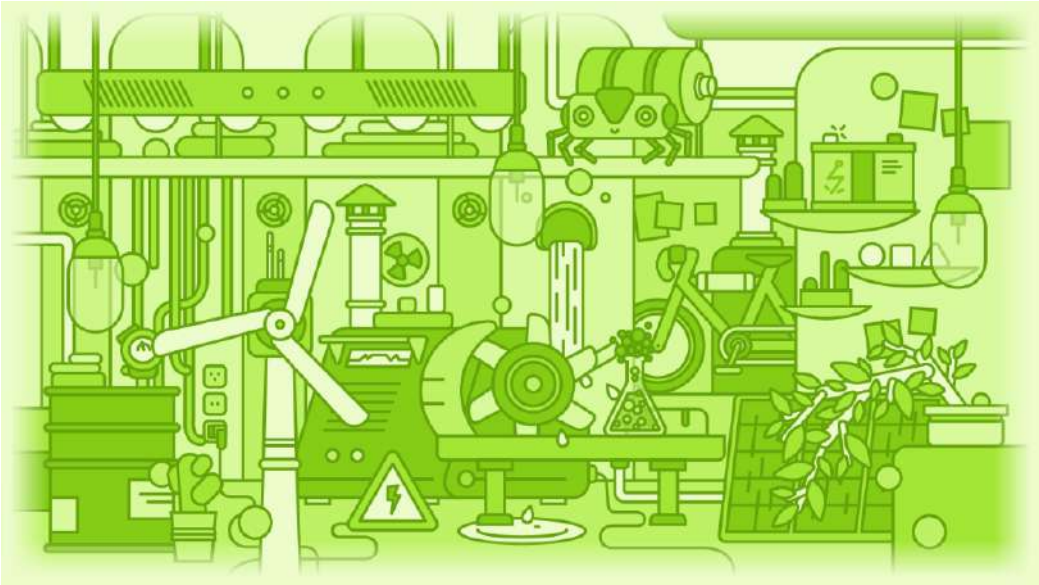
Eddy's Secret : Power source

1. Online game : room contents

The robot needs a source of electrical energy but this must come from somewhere. What ways are electricity made, and how can it be stored? Explore this here!



The different clickable elements as well as the text displayed in the game:

This socket delivers electricity. It does not generate electricity and can only carry it. Don't ever put your fingers in it!

The wind causes the turbine to turn. Wind can be a source of energy, for example when flying a kite or to turn the rotor blades of a wind turbine to generate electricity.

This plant is entirely green. It uses the energy of the sun. It uses the sun's rays to produce its own food through photosynthesis. Humans use solar panels to generate electricity.

Chemical reactions can also produce energy. This is how batteries work! The energy stored in batteries is released little by little through a chemical reaction.

To generate electricity, we can use oil or coal which have been buried in the ground for millions of years. Unfortunately, they are highly polluting and reserves are finite!

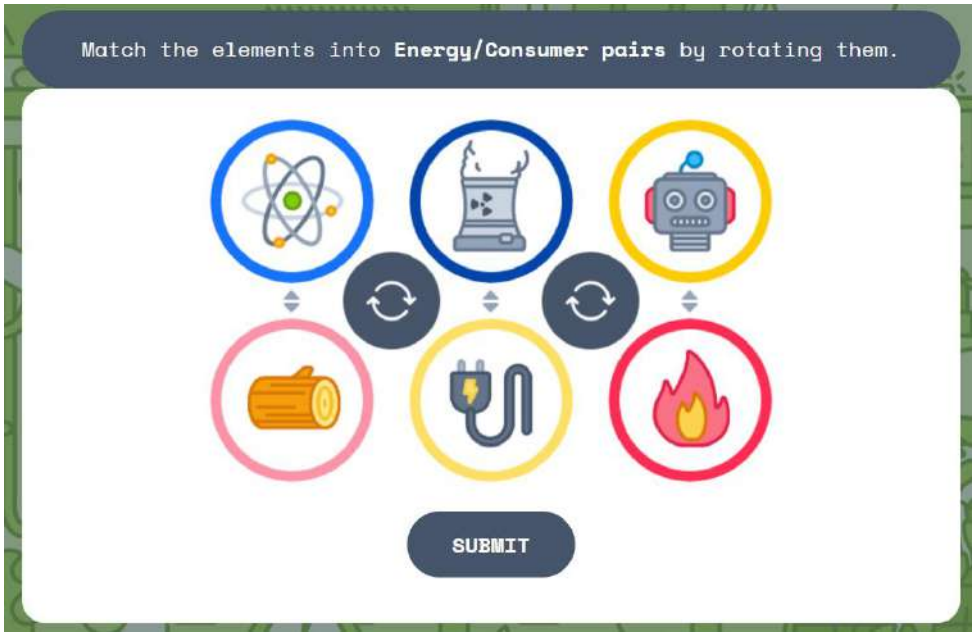
Electricity can be generated using the enormous energy contained in the nucleus of atoms and this is called nuclear energy. However, extracting it can be dangerous!

This is a turbine. Turbines are used in dams and generate electricity using water pressure. Turbines are environmentally friendly and water resources are renewable thanks to the rain and snow!

Pedalling a bicycle is a pollution-free source of energy! But it does not produce electricity… Generating electricity with the least possible pollution is extremely important to protect our planet. We can already do it, but it is not yet efficient enough, and many researchers continue to work on it!

The main puzzle starts when you click on the large battery containing the room symbol.

In this puzzle, you have to associate each type of energy with the one that consumes it. By pressing the arrows, the elements are rotated in relation to each other. The aim is to put the right pairs back in the right order. The code to find is 1859.



2. Additional puzzles on paper

Activity 1: Electrical quiz

Difficulty: ★★☆

Fill in the missing words in the cloze sentences based on the main concepts seen in the exploration of the room (different types of energy and ways of making electricity). When all the words are found, use the letters to find the secret code.

Objectives: Recognise some ways to make electricity
Recall information from the online game

Activity 2: Transformations

Difficulty: ★★★

In our daily lives, we often see transformations from one type of energy to another between: electrical, mechanical (movement), chemical (reactions between molecules), radiant (light radiation) and thermal (heat) energy. Cut out the different elements that transform energy, and then place them below with the correct starting and ending energy. Then you will find the letters of the secret code.

Objectives: Understand energy can be transformed from one type to another
Recognise different types of energy

Material : Scissors

Activity 3: Who consumes what? - GAME (no code)

Difficulty: ★☆☆

Energy occurs in many different contexts and can take many different forms. In this memorisation game, you will discover different elements that consume energy, and what form this energy takes, i.e. what fuel these elements consume. Cut out the cards and play the game like a classic memory game with a friend. It is up to you to find the right pairs with the help of the drawings!

Objectives: Understand energy can take different forms, and to know some of them
Correlate each element with its fuel

Material: Scissors

3. Answer to the additional puzzles

Electrical quiz

The force of the wind is used by _wind turbines_ (1) to make electricity and by _kites_ (2) to fly.

I eat different things every day to get energy. Plants, however, are satisfied with the same menu every day : _sunlight_ (3). Moreover, they make the _oxygen_(4) that we breathe.

Many researchers are trying to develop hydrogen-powered car engines, to replace petrol made from _oil_ (5). This would be much less polluting.

Can an electric _plug_ (6) make electricity? No, only transmit it!

In Switzerland, many dams have been built in the mountains to produce electricity thanks to the power of the _water_ (7): This is hydroelectric energy.

If we could store the huge amount of electricity contained in lightning during thunderstorms in a _battery_ (8), we would not need to find other ways to make electricity!

Huge power plants with large chimneys that use the energy contained in the atoms, that is _nuclear_(9) energy.

(1) W I N D T U R B I N E S

(2) K I T E S

(3) S U N L I G H T

(4) O X Y G E N

(5) O I L

(6) P L U G

(7) W A T E R

(8) B A T T E R Y

(9) N U C L E A R

Secret code: R E D P L A N E T

Transformations

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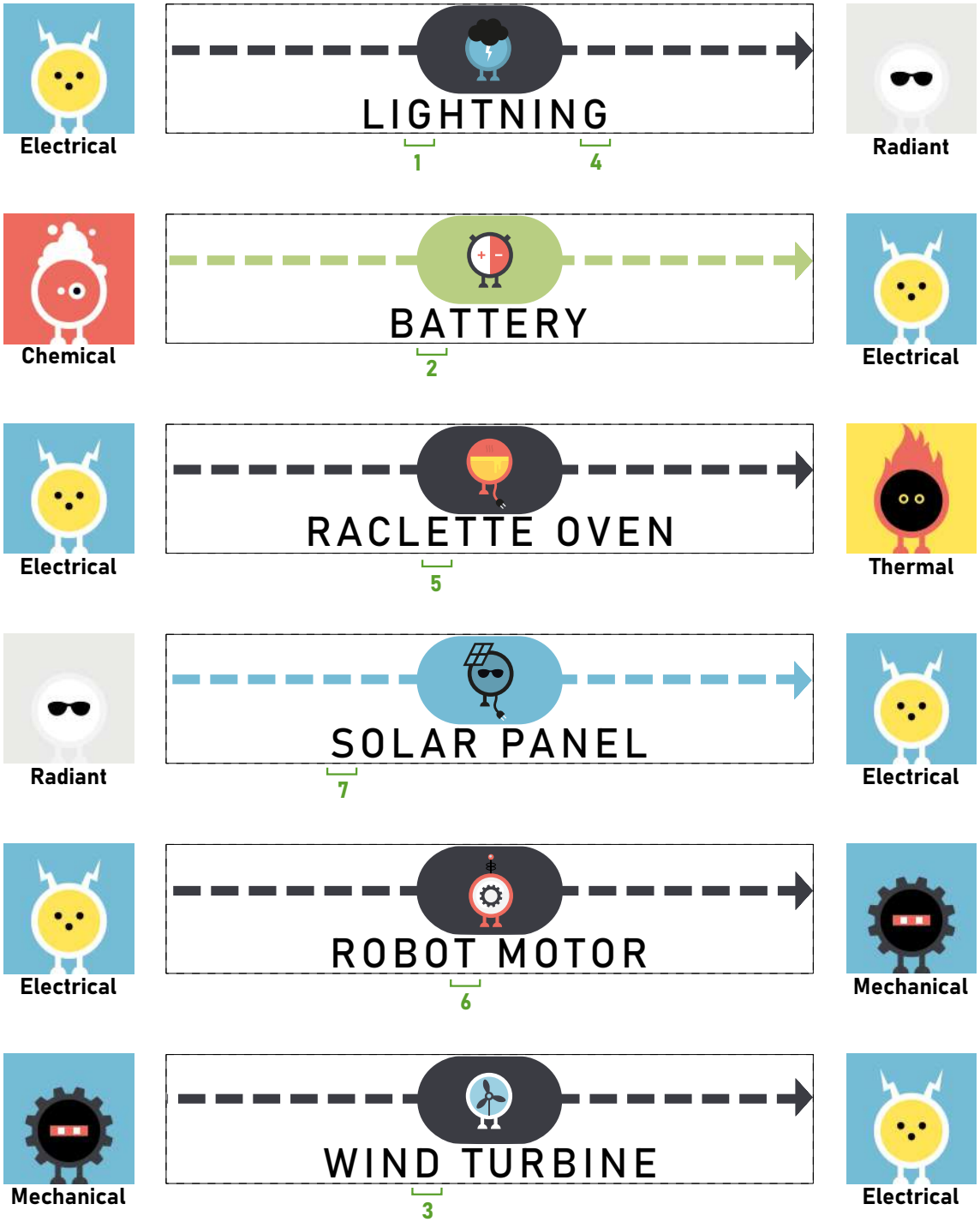


Secret code: G A D G E T S

Electrical quiz

The force of the wind is used by _____ (1) to make electricity and by _____ (2) to fly.

I eat different things every day to get energy. Plants, however, are satisfied with the same menu every day: _____ (3). Moreover, they make the _____(4) that we breathe.

Many researchers are trying to develop hydrogen-powered car engines, to replace petrol made from _____ (5). This would be much less polluting.

Can an electric _____ (6) make electricity? No, only transmit it!

In Switzerland, many dams have been built in the mountains to produce electricity thanks to the power of the _____ (7): This is hydroelectric energy.

If we could store the huge amount of electricity contained in lightning during thunderstorms in a _____ (8), we would not need to find other ways to make electricity!

Huge power plants with large chimneys that use the energy contained in the atoms, that is _____(9) energy.

(1) 

(2) 

(3) 

(4) 

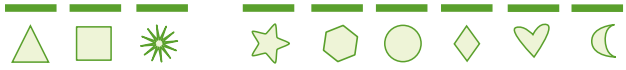
(5) 

(6) 

(7) 

(8) 

(9) 

Secret code: 

Transformations

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Electrical

1 4

Radiant

Chemical

2

Electrical

Electrical

5

Thermal

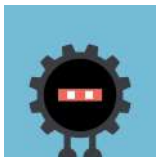
Radiant

7

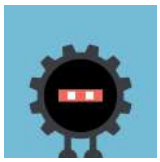
Electrical

Electrical

6



Mechanical

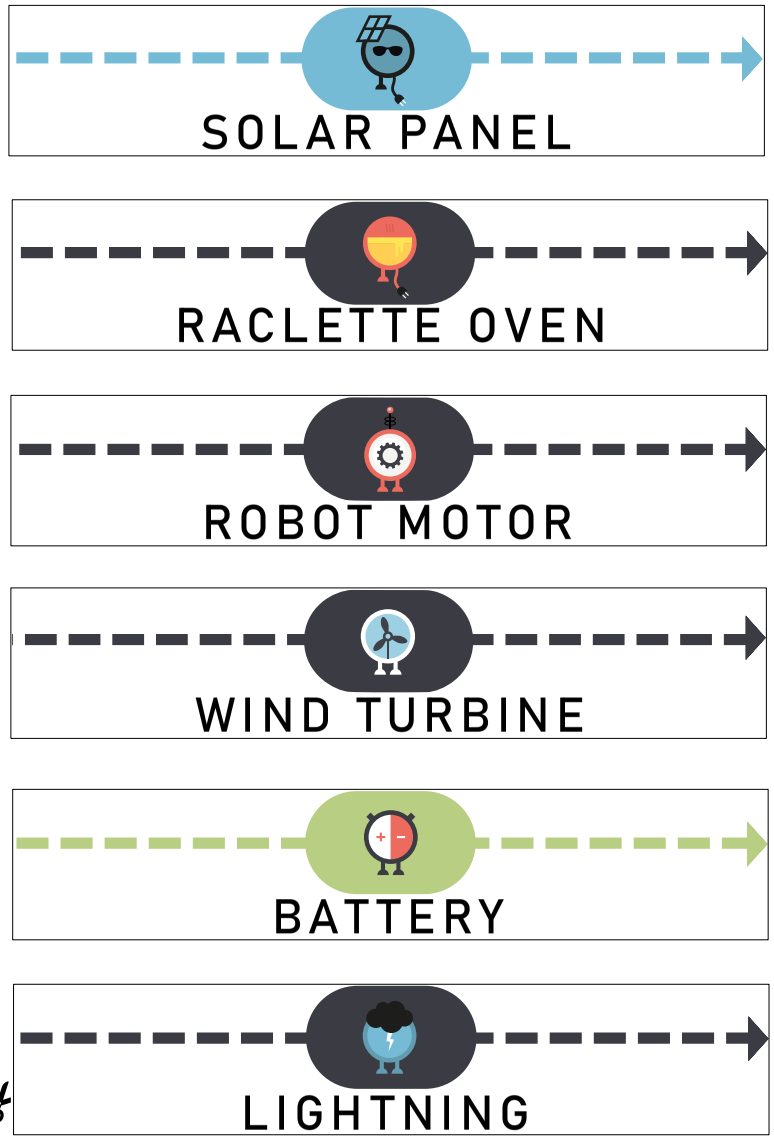


Mechanical

3

Electrical

Secret code: _ _ _ _ _ _ _


SOLAR PANEL
RACLETTE OVEN
ROBOT MOTOR
WIND TURBINE
BATTERY
LIGHTNING

Who consumes what ?

Energy occurs in many different contexts and can take many different forms. In this memorisation game, you will discover different elements that consume energy, and what form this energy takes, i.e. what fuel these elements consume.
Cut out the cards and play the game like a classic memory game with a friend. It is up to you to find the right pairs with the help of the drawings!

Qui consomme quoi?
Fire
consumes...


Espace des inventions

Qui consomme quoi?
... sunlight


Espace des inventions

Qui consomme quoi?
Plants
consume...


Espace des inventions

Qui consomme quoi?
Hot air balloons
consume...


Espace des inventions

Qui consomme quoi?
... gas


Espace des inventions

Qui consomme quoi?
... wood


Espace des inventions

Qui consomme quoi?

... uranium

Espace des inventions

Qui consomme quoi?

Cars

consume...

Espace des inventions

Qui consomme quoi?

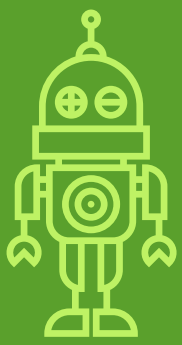
... oil

Espace des inventions

Qui consomme quoi?

Robots

consume...



Espace des inventions

Qui consomme quoi?

... electricity

Espace des inventions

Qui consomme quoi?

Kites

consume...

Espace des inventions

Qui consomme quoi?

Human beings

consume...

Espace des inventions

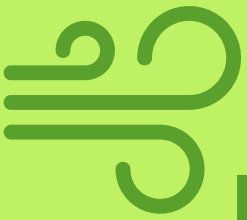
Qui consomme quoi?

... cake

Espace des inventions

Qui consomme quoi?

... wind



Espace des inventions

Qui consomme quoi?

Nuclear reactors

consume...

Espace des inventions

Qui consomme quoi?

... human energy (muscles)

Espace des inventions

Qui consomme quoi?

Bicycles

consume...

Espace des inventions