

## Notes of intent to carry out these activities

Dear Sir or Madam,

These two activities have been designed to allow you to raise awareness among young people about the inclusion of people living with a disability or a rare disease. They aim to explain the difference, the biological origin of rare diseases and to encourage tolerance. Throughout these exercises, your young people will be able to manipulate DNA and understand these fundamental notions of biology. We hope that you will enjoy these activities as much as the children.

Do these activities first and contact us if you have any questions: [www.fondation-ipsen.org/contact](http://www.fondation-ipsen.org/contact)

### Activity 1: Explain the difference in the world

The goals of this activity are:

- To help understand the concept of difference: we are unique like any other human being.
- To understand what is behind this: our DNA, which is 99.9% similar between each human being.
- To understand how DNA works and how it is decoded to make proteins. The reading is done 3 constituents by 3 constituents (A, G, T or C). These triplets correspond to an amino acid, thus making it possible to manufacture a protein. In this activity, the amino acids are replaced by ingredients to make a recipe.

### Activity 2: Explain rare diseases

The goals of this activity are:

- To reflect on the notion of rare and non-rare diseases and to integrate the fact that, as there are more than 6000 rare diseases, all of these pathologies are not rare: 300 million people in the world live with a rare disease.
- To continue with the decoding of DNA: learn how to detect a mutation or change like a geneticist.
- To understand the impact of a mutation: here, only protein #3 cannot fit into the red protein, which will affect the strength of the bones. The n°2 form, although shorter, remains functional, which shows that changes in the DNA are not necessarily serious.

