COURSE PLANS

UNIT 4

1. BASIS

The second term of the course is devoted to the study of human beings and general issues related to health and scientific advances. The interaction function is covered two units. In Unit 4 pupils study the neuron and the senses. There are three projects with activities about the sense of smell, touch and taste.

Through the activities studied in this unit, pupils will acquire the following knowledge:

- The interaction function: detecting stimuli, generating orders, responding to orders, nerve impulses and neurons.
- The anatomy and function of the organs of the senses (sight, hearing, smell, taste and touch).
- Protection of the senses.
- Perceptual experiences.

January  February 

2. METHODOLOGY

As pupils study this unit, they will be able to define the interaction function, understand the processes involved in it and identify the parts of the neuron; recognise the structures of organs and describe their role in of each of the senses; understand how to protect the sense organs and adopt their own basic hygiene routines; understand perception through examples of optical illusions. They will be able to use various strategies and resources to understand information, acquire vocabulary and express their knowledge both orally and in writing.

CONTENTS	EVALUATION CRITERIA	LEARNING STANDARDS
• The interaction function and the processes involved: detecting stimuli, generating orders and responding to orders. • The neuron: parts and functions. • Nerves. Production and transmission of nerve impulses. • The sense of sight. Parts of the eye and how it works. How we see. • The sense of hearing. Parts of the ear and how it works. How we hear. • Balance. • The sense of smell. The olfactory nerve. How we smell. • The sense of taste Taste buds. How we taste. • The sense of touch. Touch receptor cells in the skin. How we touch. • Description of how nerve impulses are transmitted using visual aids. • Protection and hygiene of the sense organs. • Performing experiments of perception and measurement of optical illusions. • Understanding information, learning vocabulary, using	1. Learn about the interaction function in humans and understand the processes involved in it, the structure of the neuron and its function of transmitting nerve impulses.	1.1. Define the interaction function and the processes involved. 1.2. Define neuron, nerve and nerve impulses. Identify the parts of the neuron and describe how they transmit nerve impulses.
	2. Understand the anatomy and function of the structures of the sense organs.	2.1. Identify and name the parts of the eye and describe the functions they perform. Describe the sense of sight, from the detection of stimuli to the perception of images and distances in the brain. 2.2. Identify and name the parts of the ear. Describe the functions that their parts perform and describe the sense of hearing, from the detection of stimuli to the perception of sound in the brain, and locate the organs of balance and postural control. 2.3. Identify, name and locate the olfactory nerve and taste buds as organs of smell and taste, and describe the process of perception of smells and flavours. 2.4. Find out about the existence of skin cells, specialised in detecting stimuli and describe the process of the sensation of touch.
	3. Develop guidelines and strategies to maintain hygiene and health of the organs involved in the interaction function.	3.1. Understand actions that harm or improve the health of the sense organs and find out how to care for and maintain their hygiene.
	4. Perform experiments about optical	4.1. Participate actively in the experiments proposed and

language as a tool for communication and keeping a positive attitude towards reading. • Knowledge of and use of mathematical operations and mathematical strategies to resolve problems. • Understanding social reality and being responsible citizens, showing respect and solidarity to nature. • Knowledge and responsible use of ICT to investigate the interaction function in humans. • Using strategies to process information and applying it to different contexts. • Initiative and perseverance in tackling problems and defending opinions, developing attitudes of respect and collaboration when working together.	perception and develop measurement strategies to identify illusions.	apply mathematical methods for detecting the optical illusion perceived.
	5. Understand information, acquire vocabulary about the sense organs, express knowledge and opinions both orally and in writing and show interest in reading texts about the interaction function in humans.	5.1. Understand information, acquire vocabulary about the sense organs, express knowledge and opinions both orally and in writing and show interest in reading texts about the interaction function in humans.
	6. Understand and apply mathematical elements, operations and strategies to solve problems about the size of the eyeball.	6.1. Understand and apply mathematical elements, operations and strategies to solve problems about the size of the eyeball.
	7. Know and use ICT in a responsible way and use strategies to process information and apply it to different contexts, actively participating in their own learning process.	7.1. Obtain and organise information, working with the unit structure, and using digital resources with interest and responsibility.
	8. Show initiative and perseverance in tackling problems and defending opinions, developing attitudes of respect and collaboration when working together in a group.	8.1. Show initiative, accepts mistakes when doing self-evaluation, perseveres in reinforcement tasks and actively participates in cooperative learning exercises.

3. COMPETENCIES

COMPETENCIES	CONTENTS AND ACTIVITIES BY COMPETENCY
Linguistic competency.	Using knowledge of language structure, spelling and grammar rules to produce written texts. Being careful about your spelling and writing when writing a biography of Escher Reading the initial reading and the recommended texts in the reading plan
Mathematical competency and basic competencies in Science and Technology.	Applying rigorous scientific methods to improve understanding of the surrounding reality. Using basic scientific methods to perform the proposed tasks to understand the senses Developing and promoting a healthy lifestyle in terms of food and exercise. Explaining to their classmates what healthy habits they have adopted to take care of their sense organs
Digital competency.	Using digital tools to build knowledge. Naming ways of communicating with deaf people.
Learning to learn.	Generating strategies for learning in different learning contexts. Guessing the objects in a bag using the sense of touch. *Multiple Intelligences*: Using your own senses to learn about how the sense organs work, encouraging the development, particularly, of the bodily-kinaesthetic and musical intelligences
Social and Civic competencies.	Demonstrating concern for the underprivileged and respect for different potentials and ways of learning by naming the means that blind people have at their disposal to move about. *Values:* Respecting and empathising with people with sensory difficulties
Sense of initiative and entrepreneurial spirit.	Showing personal initiative to initiate or promote new action by proposing activities to encourage protection of the sense organs.
Cultural awareness and expression	Showing respect for the most important works of cultural heritage worldwide. Recognising the artistic contribution of Escher by using optical illusions in his prints.