Lección 2: Mi primer robot. Sentidos humanos y jugando con sensores y actuadores

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# Preparación de la lección.

El instructor principal llegara 20 minutos antes de la lección para preparar el material de la lección, las hojas de retroalimentación para sus ayudantes y checar que las instalaciones estén en orden y limpias para recibir a los participantes 5 minutos antes de la lección. La duración de la lección es de 60 minutos con 30 minutos extra en caso de que algunas actividades tomen unos minutos mas.

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| **Activity** | **Time** | **Material** | **Skill /competence** | **Development** |
| --- | --- | --- | --- | --- |
| True or false game  [TONO] | 5 min | Set of True/False questions\* | Critical Thinking | 1. Make a straight line using the chalk or the sticky tape. 2. Mark one side of the line as True and the other as False. Ask the children to stand on the line. 3. Ask a question – if the kids think it is true, they jump to the True side. Otherwise, they must jump to the False side. |
| Human senses & inputs and outputs [DIEGO] | 10 min |  | Better understanding of the 5 human senses and their correlation with a robot anatomy (inputs and outputs) | Explain briefly the 5 human senses and their correlation with robot’s anatomy.  Refer to What’s a robot can I build one? Slides  Extra activity with dogs and cats and others animals  Optional: Worksheet human senses (Appendix c) |
| B R E A K | | | | |
| Code [DONATO] | 10 min | Decoding worksheet\* | Understand what  code is | The teacher will explain what a code is, where and how you used it. For this activity they will also be introducing the use of blocks to code their robot.  Optional: Teacher will provide an example on how to work with the decodification worksheet |
| Code Game  Group activity  (Follow up) | 8 min |  | Have a better understanding of the words that we need to work on codification  Words:  turn: left - right  move: forward - backward /slow -fast  start - end  repeat | 1. The teacher will show what each word means by using movements. 2. Ask the children to follow the instructions:  * Move forward, stop * Move backward * turn left * Move slow * move fast  1. Repeat until the children have a good understanding of each what is the meaning of each word |
| Blindfold game | 12 min | Blindfolds  Obstacles (optional) | Develop collaborative working relationships and problem-solving skills | 1. Children will be divided in pairs. One child will be blindfolded (child A) 2. The child that doesn't have a blindfold (child B) will be “the eyes” of the other child. 3. Child B will guide Child A using only verbal instructions (i.e. walk 3 steps right, turn left, etc) 4. Each pair needs to arrive at the other side of the classroom. the teacher can add some simple obstacles to make it more difficult. 5. Have both children have a turn. |
| Algorithms & group activity  [TON~O y todos] | 10 min | Tangram puzzle Colour cardboard, scissors) | Sequential thinking | Robots and computers are programmed using  algorithms, which are a set of instructions that tell  you how to solve a problem or complete a task.  Algorithms are not just for computer programs. Every time that we use instructions or follow a certain sequence or pattern, we are following an algorithm.  Activity: A tangram puzzle   * Cut out the tangram pieces ahead of time to have them ready for the activity * Each child will have a set * The teacher will be the programmer * The programmer will choose an algorithm shape, do not show their card to the rest of their group. * The programmer will try to give everyone clear instructions of what shape they need to build (the algorithm)   For example   * Place a big triangle beside another big triangle * Place a small triangle to the left…   Once the programmer has finished explaining their algorithm, the instructor can show the final piece to the full class (It’s a cat!) |
| Basics of Coding  What is Blocky? | 10 min |  | Designing, building, and programming processes | Activity   * Show basic block of start, end, repeat and move * Show how to build a block diagram and unload your first program into the robot * Test different motions and speeds of the walking robot   Exercises   * Create a set of blocks to make the robot move forward 2 steps and backward 2 steps * Create new sets of blocks to make the robot move forward 2 steps and backward 2 steps using different speeds. * teach how the function of the blocks for LED mouth > mouth, Humanoid > Gesture with Logic > Repeat and show the difference of each sound, month expression and sound. * Create a set of blocks to make different mouth and gestures combinations. * Play with those functions and discover yourself |

# Cierre de la lección

| Clean up | 5 min |  | Create good habits | Clean Up Time |
| --- | --- | --- | --- | --- |
| Self -assessment | 3 min |  | Reflective thinking | TO BE COMPLETED |
| Closing | 2 min |  |  | Give some clues of the main topic you will cover next time. This helps to engage the children and look forward to coming to their next session. |