KIDS BUILD THEIR KNOWLEDGE AND SKILLS ABOUT THE WORLD THROUGH STEAM

Topic: Coding Letters

Resources: Large green baseplates, instruction cards 485, 486 and the corresponding construction material, two letter bricks, four 2x2 bricks and three 2x4 bricks in one color, four 2x2 and three 2x4 in another color, two activity cards J- 6-1, two pencils.

J-6

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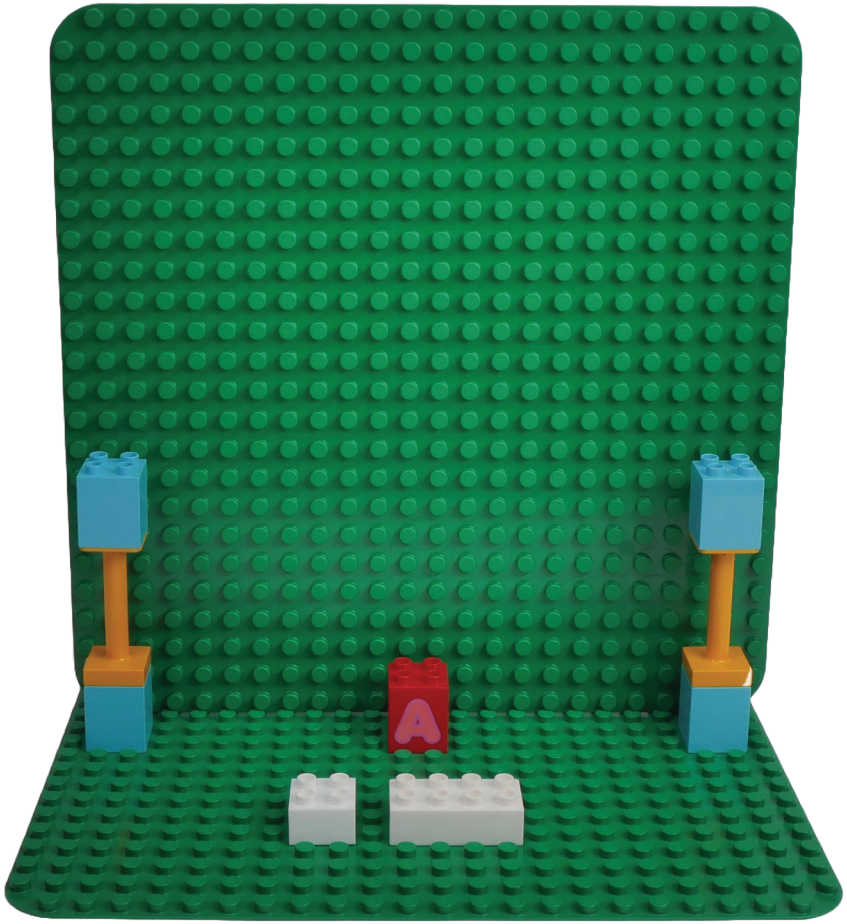
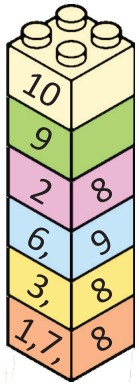
Sequence of activities:

1. The teacher explains that people have created different systems for encoding information. One of the oldest is Morse code. With it, people use only two characters - a dot and a dash. With these, any letter can be encoded using a reference table. The teacher divides the children into teams of two and gives each child an activity card, explaining that in the table they can see which letter of the Latin alphabet is coded with what sequence of dots and dashes. The 2x2 brick will be used to encode a dot, and the 2x4 block a dash.
2. The teacher gives each team resources for the topic and asks each child in the team to choose the color they will work with. Then each child is told to code letter A on the green plate using bricks in their color.
3. When they are ready, the children show their code and the teacher evaluates the accuracy of their work.
4. The teacher asks the teams to build the partition. When it is built, the teacher places a letter brick with on both sides of the partition so that the letter is not visible. He then asks the children to turn the letter block towards them and code the letter using the activity card.



5. The teacher asks the children to construct the box on instruction card 486 and then to hide the letter brick in it.
6. The model is rotated 180 degrees so the children can see their partner's code. Each child must work out which letter is coded by their partner. To record it they circle the letter in the left column of the code matching table on the activity card.
7. When the children are ready, they check by opening the boxes with the letters hidden in them. The children, with their teacher, count the number of successfully coded letters, and where they were not, the teacher finds out the reason.
8. The teacher asks the teams to create a code for a syllable that consists of two (three) letters, noting that each letter is written on a separate line, reminding them that this is how the coded the double numeral. The teacher asks: "Which syllables can you say?". The task must be completed by the team on the green plate that was used as a barrier. The two letter bricks are to be hidden in the two boxes.
9. When the team has finished doing this, they pass to another team the plate with the code to decode the syllable. The other team decodes the syllable and marks in the right table of one of the two activity cards the corresponding two (three) letters. One child from the team passes the sheet to a child from the team from whom they received the code, and together they check whether they have succeeded. The children, with their teacher, count how many codes were successful, and where not successful, the teacher finds out why.
10. The children, with their teacher, conclude that the Morse code can be used to encode text, by following precisely the rule for encoding each letter of the words.