

U2-2.2a Change it up: Teach Edison to count to 9

Have you ever looked at how old digital signs and clocks display numbers? The numbers are displayed using lines which make up a rectangle-shaped grid. Each number, from 0 up to 9, can be displayed by using some combination of the lines in that grid.

Digital display numbers don't have curves or diagonal lines. They only have straight lines and right angles. That makes them perfect patterns for Edison to drive!

Task 1: Teach Edison a number

Look at activity sheets U2-4, U2-5, U2-6 and U2-7. Choose one of the activity sheets to use.

Write a program for Edison so that the robot can trace over the digital display number you chose. Start the robot off of the digital display number and drive so that the robot traces over every segment of the number.

1. Which digital display number did you use?

Sample student answer: 2

2. What does your program look like? Which blocks does it use, in which order? Write your program below. Be sure to include the input parameters you used.



3. Look at the distance input parameter in the blocks in your program. What do you notice about the inputs you used? How could this help you plan out a program for a different digital display number?

Sample student answer: The distance input parameter for the first drive block is slightly longer than all the others. All of the other blocks use the same number for the distance input parameter. I think this means that any digital display number will only need one of the two distance input parameters.

Task 2: Teach Edison a different number

Choose a different digital display number activity sheet. Use what you learned about the distance input parameter from your last number and write a program for Edison so that the robot can trace over your new digital display number.

4. Which digital display number did you use?

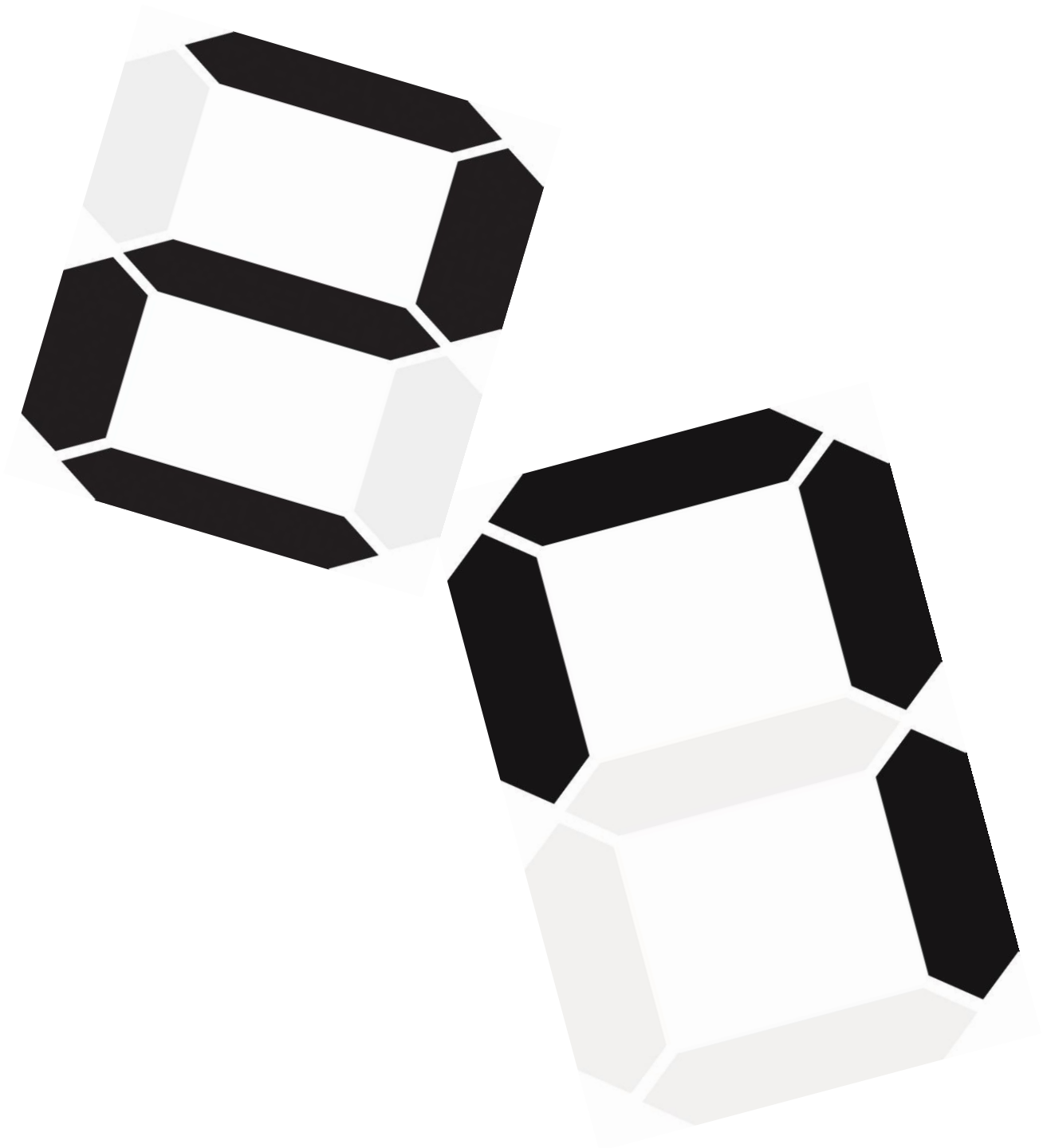
Sample student answer: 7

5. What does your program look like? Which blocks does it use, in which order? Write your program below. Be sure to include the input parameters you used.



6. Compare your two programs. Are there any patterns you notice that are similar in both? What are they?

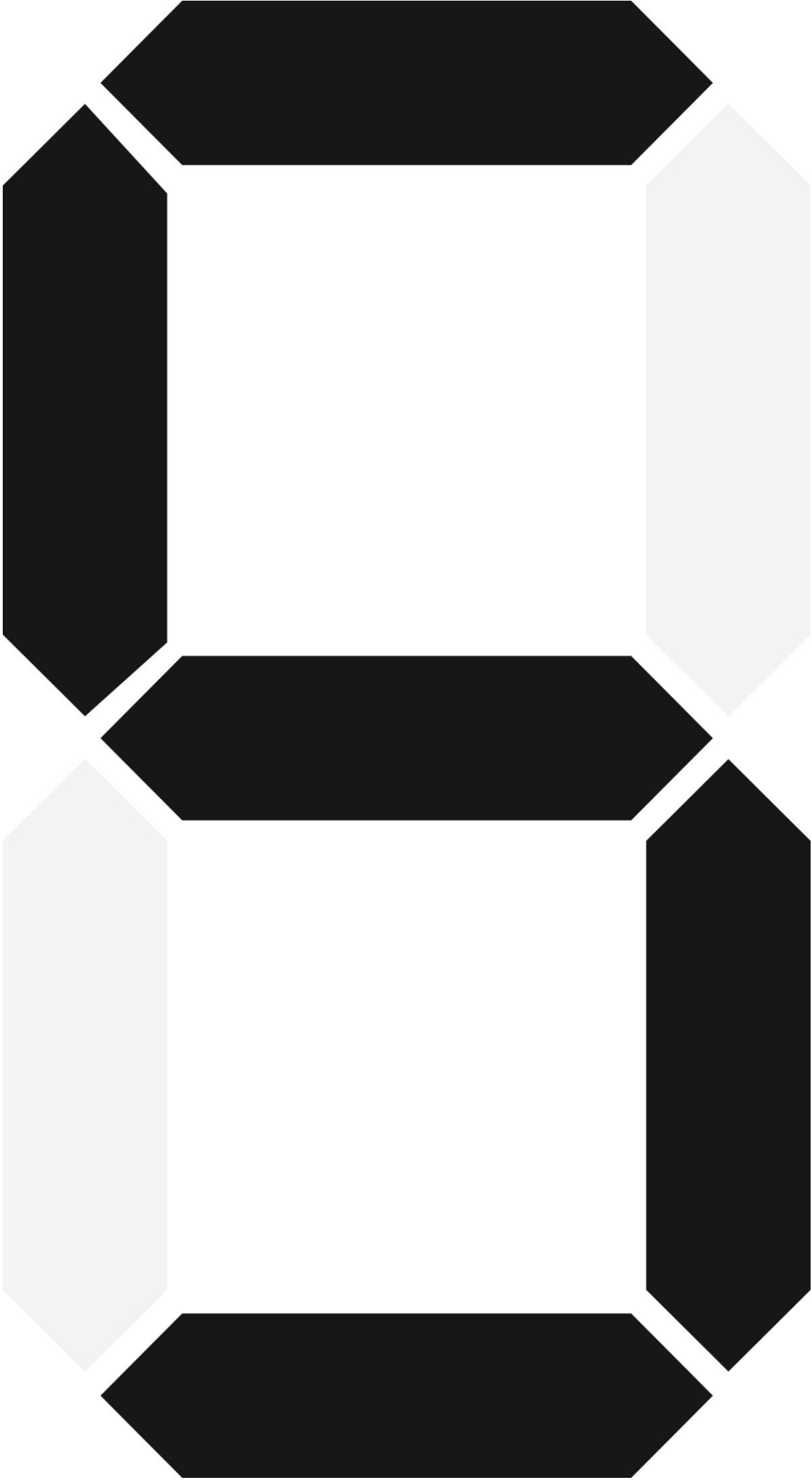
Sample student answer: The distance input parameter for the first drive block, which is straight, is the same in both programs. Any drive blocks following a turn are shorter, but the same as each other. The distance input parameter in the turns is always the same. The last block of the program for '7' is the same as the first drive block in each program.



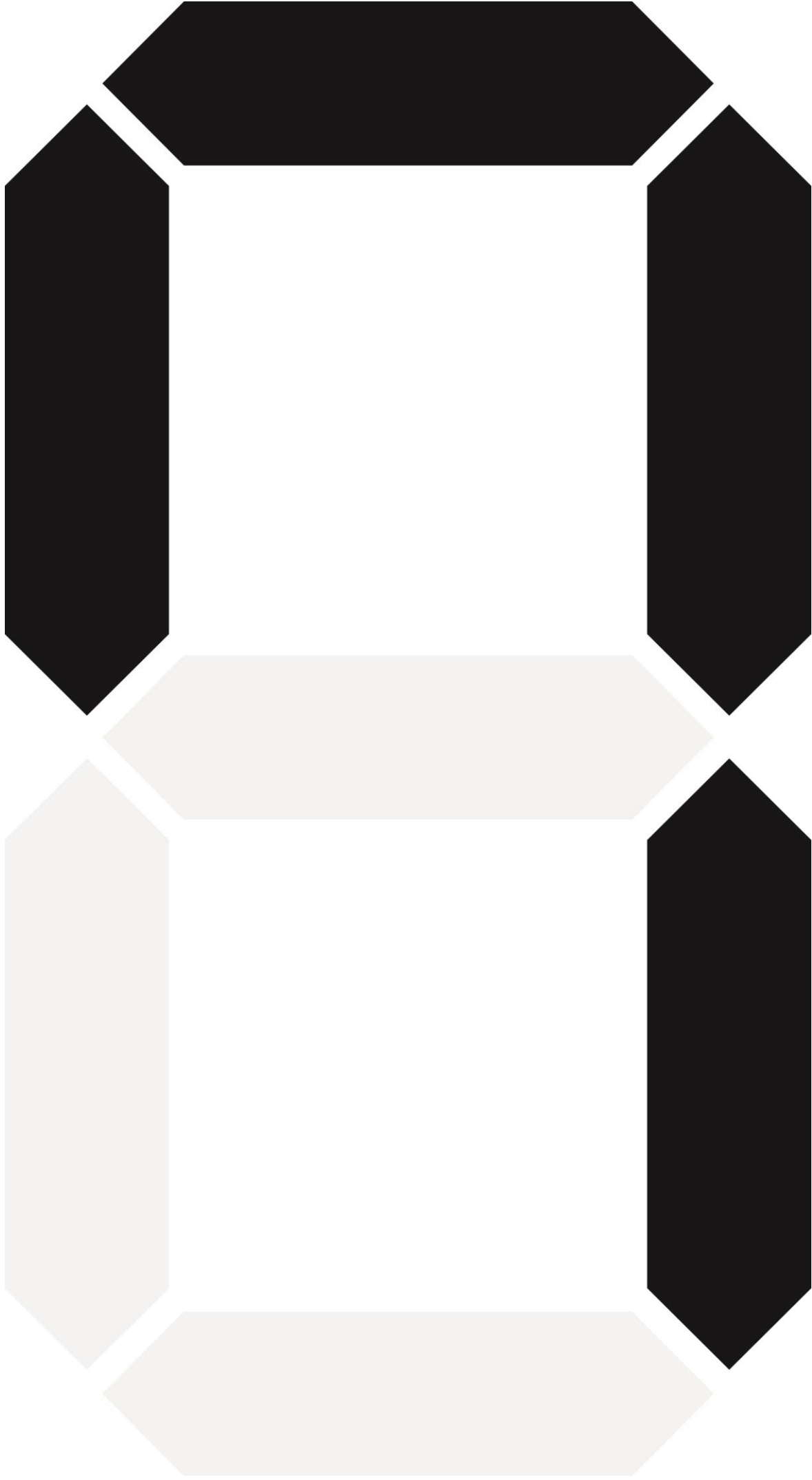
Activity sheet U2-4: Digital display 2



Activity sheet U2-5: Digital display 5



Activity sheet U2-6: Digital display 7



Activity sheet U2-7: Digital display 8

