

## Unit Name: Robotics: Code-a-pillar®

**What are we doing?** We will be learning about coding in a sequence to get an object to move where we want it to go. Children will learn how to put together the Code-a-pillar to move in a certain path by arranging its pieces in a particular order.

**Purpose/Why?** Children will be working on critical thinking skills, sequencing, reasoning, cause and effect, and problem solving while playing with the code-a-pillar. All these skills are needed for Kindergarten Readiness.

### Learning Pathways in Numeracy:

**Spatial relationships/Structuring** falls under Geometry. Children will be working on simple directions related to proximity as they put the pieces of the Code-a-pillar together. In addition, they will be working on being able to identify positions of objects in space by using words like beside, next to, above, below and under.

**Measurement and Data:** Children will be working on sequencing and using ordinal numbers such as first, second, third as they put together their Code-a-pillar. They will also be working on creating a pattern with the Code-a-pillar using trial and error.

**Kindergarten Readiness/Early Learning Guidelines:** During this play time, children will be working on critical thinking skills and problem solving. How do they react to working out the problem of making the Code-a-pillar move where they want it to go? Can they work through the process without getting frustrated? Are they willing to try again if it doesn't work the first time? This is also working on social emotional skills. In addition, putting together the Code-a-pillar works on fine motor skills.

**Materials provided:** Code-a-pillar, batteries

**Materials you will need to provide:** Space for the Code-a-pillar to move on a hard flat surface.

### Books:

"And the Robot Went..." by Michelle Robinson

"Gus's Garage" by Leo Timmers

"The Most Magnificent Thing" by Ashley Spires

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MATH



**Vocabulary Builder:** Sequence, Order, First, Second, Third, Fourth, Fifth, Sixth, Seventh, Eighth, forward, right, left, straight, experiment, under, around, beside, above, below



**Ask A Question:** How will you put the Code-a-pillar together? What will come next? Why didn't it go the way you wanted it to go? How will you fix it? Show me how you did that?



**Quick Start:** Start by showing the child the different pieces and what each one will do. Point out the symbols on the top of each piece and tell the child what they mean. There should be 3 pieces that move forward, 2 that turn right 90 degrees, 2 that turn left 90 degrees, one that makes sounds, and the head. Then put them together and see which way it goes. Let them experiment with different ways to make the Code-a-pillar go.



**Deeper Dive:** Use the targets to have the child set up a sequence that gets the Code-a-pillar from one target to another.



**Ask a Question:** What order do you need to put them in to make them go where you need them to? How do you know? What would happen if you did...? Show me how you will make it go from one target to the other target?



**Deeper Dive:** Turn your room into an obstacle course! Figure out how to rearrange the Code-a-pillar to send him under a table or around a chair. Or, draw a map and see if you can arrange the pieces so you can get the Code-a-pillar to follow it.

ENGINEERING

TECHNOLOGY

SCIENCE

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**Show Me; Show a Friend:** Have the child show you or a friend how to put the Code-a-pillar together. Then have them explain the path the Code-a-pillar will take based on the order of the parts they used.

### Hints for using the Code-a-pillar:

1. Use the Code-a-pillar on a hard flat surface. Fisher Price does not recommend using it on carpets.
2. If a segment piece does not light up when it is attached to the Code-a-pillar, it may not be fully connected. Push the piece to make sure it's connected.
3. If the code-a-pillar moves slowly, the wheels may be dirty. Wipe them with a clean cloth.
4. Oops! The Code-a-pillar ran into something. Clear the path for it and/or press the Go! button. He will continue on the same path where he left off.
5. Code-a-pillar segment pieces are what makes him go! If there are no pieces connected and you press the Go! button, his eyes blink and he will make a sound.
6. Connect the segment pieces to the Code-a-pillar any way you want and watch it go! Then, take all the pieces apart and connect it in a different order to see where the Code-a-pillar will go next.