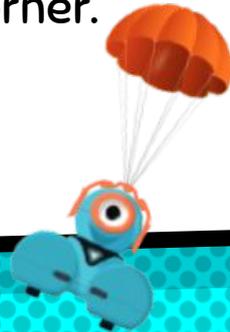


#1 DASH SAVES THE DAY!

1. Dash's friends, Sammy the Koala and his mom, need to be rescued from Big Bad Pig (ok, so he really isn't big or bad, but I don't have my usual monster with me!)
2. Using the Blockly App and the 1.3 Sequences STEM Card, program Dash to save the day.
3. You may have to connect Dash to the iPad by using the green plus sign in the upper right hand corner.
4. [STEM Cards](#)



#2 SECURE THE PERIMETER!

Using the Sphero EDU app, click programs, and then:

1. Click the plus sign to create and name a new program.
2. Tap on *MOVEMENTS* and drag a *ROLL* block to the canvas.
3. Add 4 seconds value to duration on the roll block.
4. Add *SPEED 50* on the roll block.
5. Add 0 degrees (straight ahead) to the roll block.
6. Add 3 more *ROLL* blocks w/the same 4 sec duration as the first block.
7. The second roll block will be 90 degrees to the right.
8. The third roll block 180 degrees.
9. The fourth roll block 270 degrees.
10. Place R2 on one of the corners and click start.
11. Does R2 secure the perimeter or do you need to make Adjustments to your code?



#3 CODE-A-PILLAR C & A

Use the cause & effect lesson sheet for instructions.



#4 HOP TO IT!

Use the Code Hopper to design an active game for your students.

This would be an easy way to bring coding to recess or PE!

This would also be an easy one to DIY!



#5 DRONE MOUNTAIN RESCUE



1. Using the Tynker App, program the drone to take the stranded mountain explorer to the hospital.
2. Start the drone on Fuchsia Mountain with the stranded explorer.
3. Program the drone to take off, fly to the hospital, and then land.

OVERVIEW

The Fisher-Price® Code-a-pillar™ is excited to meet your students and introduce them to the concept of **coding!** Code-a-pillar is a programmable toy that encourages experimentation and inspires curiosity and play while developing coding, sequencing and critical thinking skills in young children. Coding is the skill of giving a set of commands to a device so that it will respond in sequence.

Children will be given the opportunity to interact with Code-a-pillar in small groups and explore how the toy works through open-ended, child-directed play. Additional expansion packs of segments will be provided and included in lesson plans to build upon coding combinations to make Code-a-pillar move! Children can configure the segments so that Code-a-pillar can reach set targets throughout the classroom.

Key Concepts

(Links to the Four Cs)

- **Creativity:** children often express their imagination through play, especially when interacting with peers.
- **Communication:** children listen to each other and follow simple directions given by a peer.
- **Collaboration:** turn-taking is an important part of working in a group and encourages positive social interaction.

Lesson Objectives

Students will:

- be introduced to the meaning of the word “code.”
- experiment and play with the Code-a-pillar in small groups.
- be encouraged to work together (e.g., take turns) to make the Code-a-pillar go.

Materials

Code-a-pillar toys (1 for each group of 3–4 children)

poster board

marker



getting started  (10 minutes)

- Introduce children to Code-a-pillar™.
 - Place Code-a-pillar (with a few segments attached) on the floor and ask children how they think you make it go.
 - Allow children to observe Code-a-pillar move and let them know they will soon have a chance to explore how Code-a-pillar works.
- Ask your students what they think the toy looks like (i.e., a caterpillar). Highlight the word “code” in the name of the toy. Ask your students if they have heard the word “code” before, and if so, what they think it means.
- Explain that a **code** is a list or sequence of steps.
- Provide a brief demonstration of how the Code-a-pillar works and then encourage children to engage in free play.
 - Limit your instruction to:
 - › where the on and off switch is.
 - › how to push the blue button to make it go.

RESEARCH HIGHLIGHT:
 Avoiding direct instruction can make children more curious and more likely to discover new information

activity  (15 minutes)

- Divide children into groups of 3-4 and give each group a Code-a-pillar.
- Encourage children to take turns pressing the “go” button.
- Allow children to engage in free-play exploring how to make Code-a-pillar move in different directions.

wrap up  (10 minutes)

- Ask children to share what they liked most and least about Code-a-pillar.
- Ask children what they think the symbols represent on each segment.
- Ask children what they noticed as each segment lit up.
- Record what children share on a large piece of poster board for reference as the lessons progress.
- End the lesson with a reminder of what the word “code” means.

OVERVIEW

A key concept in coding is **sequencing** — a specific order of objects or actions. In this lesson, children will first observe how a specific sequence of Code-a-pillar™ segments affects its movements, and then they will be asked to act out a sequence of moves themselves.

Key Concepts

(Links to the Four Cs)

- **Critical Thinking:** having children make the connection between the way Code-a-pillar moves and moving themselves provides a great opportunity for perspective-taking and problem solving.
- **Collaboration:** turn-taking requires planning, self-control, and social cooperation — all important skills for successful collaboration.

Lesson Objectives

Students will:

- be introduced to the term “sequence.”
- become familiar with the individual Code-a-pillar segments and how the order of the segments affects how Code-a-pillar moves.

Materials

Code-a-pillar toys (1 toy for each group of 3–4 children)

left, right, and straight arrows cut out of construction paper (one for each child)

poster board

marker



getting started (5 minutes)

- Talk to children about the term “sequence.” Ask your students if they know what the word ‘sequence’ means.
- Explain that “sequence” means a specific order of objects or actions.
- Ask children to provide examples of sequences (e.g., getting ready for school, making PB&J sandwich, taking a bath).
- Bring out Code-a-pillar and remind your students that Code-a-pillar can be broken down into segments and put back together. Highlight that the segments have different arrow icons on them, representing different moves.
- Explain that today’s goal is to see how Code-a-pillar moves when its segments are put in a particular sequence.

**activity** (20 minutes)

- Divide children into groups of 3-4 and give each group a Code-a-pillar toy.
- Ask your students to help design a sequence for Code-a-pillar using 3 or more segments.
- Draw the segments in order on poster board, or provide each group with a drawing that depicts Code-a-pillar put together with its segments in the order designed by your students.
- Ask each group to put their Code-a-pillar together so that it matches the picture and watch how that sequence of segments makes it move.
- Next, give each child a different paper arrow.
- Ask them to line up and act out how they would move if they were Code-a-pillar.
- Ask two of the children to switch in the lineup and ask them to predict what will be different now that they changed order. Repeat a few times with different children switching places.

wrap up (5 minutes)

- Ask your students to suggest other sequences that Code-a-pillar segments could be used to form.
- Record what children share on a large piece of poster board for reference as the lesson progresses.
- End the lesson with a reminder of what the word “sequence” means.

OVERVIEW

In this lesson, children will be introduced to the concept of **cause and effect**. Additionally, the connection between the arrows on Code-a-pillar™ segments and the actions Code-a-pillar completes will be made explicit through discussion regarding what each arrow means in terms of cause and effect (e.g., if Code-a-pillar has a right arrow, it goes right!). Children will experiment with what each segment causes Code-a-pillar to do, and then, what happens as additional pieces are added.

Key Concepts

(Links to the Four Cs)

- **Collaboration:** having children work in small groups, sharing resources and taking turns, provides the opportunity to practice important social skills.
- **Critical thinking:** recognizing the connection between symbols and actions promotes problem solving and planning.

Lesson Objectives

Students will:

- be introduced to the terms “cause” and “effect.”
- be asked to consider what Code-a-pillar does, starting with a single piece.
- make connections between arrow symbols and movement (e.g., forward, right, left).

Materials

Code-a-pillar toys (1 toy for each group of 3–4 children)

Basic Expansion Packs (1 pack for each group of 3–4 children)

poster board

marker



getting started  (10 minutes)

- Introduce students to the concept of **cause and effect**.
 - When one event (cause) makes another event (effect) happen.
 - Provide some examples:
 - › Kate turned on the light switch (cause). The light came on (effect).
 - › Grace skipped breakfast (cause). She was hungry at lunch (effect).
 - › It rained (cause). Jack got wet (effect).
- Explain how the arrows on Code-a-pillar™ segments tell Code-a-pillar what to do (cause it to move a certain way).
- Break up Code-a-pillar into individual segments and highlight the words, “forward,” “right,” and “left” in association with the different arrow symbols.
- Ask your students to try to make connections between the arrow symbols and their general knowledge.
 - “Where have you seen arrows like this before?”
 - “What do arrows help your parents do when they are driving?”
- Explain to children that like arrows on stop lights that tell your parents where and when to go, the arrows on Code-a-pillar tell it where to go!

RESEARCH HIGHLIGHT:

Research suggests an important link between spatial talk and reasoning in young children and math achievement in later childhood.

activity  (15 minutes)

- Divide your students into groups of 3-4 children and give each group a Code-a-pillar and a Basic Expansion Pack.
- Ask children to begin with just one segment attached to Code-a-pillar. Have them test out what happens if Code-a-pillar has only one segment.
- Next, ask students to take turns adding more segments, one at a time, to discover what happens when new arrows are added to the Code-a-pillar body.
- For an additional challenge, ask children to predict what Code-a-pillar will do based on the arrows it has before pressing the “go” button.

wrap up  (5 minutes)

- Ask children how the process of adding segments to Code-a-pillar changed what happened to Code-a-pillar and how it moved.
- Record what children share on a large piece of poster board for reference as the lesson progresses.
- End the lesson by reminding students what “cause and effect” means and ask them to think about cause-and-effect events in their daily lives (e.g., “What happens when you don’t tie your shoes?”).