

SPHERO INDI CARD CHALLENGE

OVERALL TIME 50- to 60-minute lesson

GROUPS Two to three kids per indi

Next Generation Science Standards

K-2-ETS1-1

Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.

OBJECTIVE

Kids will solve algorithm puzzles using the indi robot. Kids will identify the outcome of each combination or sequence of color tiles.

MATERIALS

- indi
- Color tiles
- **Beginner's Programming Challenge Cards (cards are numbered)**

VOCABULARY

- backward
- forward
- go
- left
- right
- stop
- turn

PREPARATION

1. Create partners or groups ahead of time.
2. Make sure that the indi is charged and ready for use.

3. Clear a large open space for groups to be able to spread out to use the indi.
4. Use chart paper or technology (smartboard, document camera) to enlarge one of the challenge cards from the kit to use as a model.

LAUNCH 5 to 10 minutes

Explain to kids that today they will be using the indi robot to solve algorithm puzzles. Display the challenge card model and point out the path sequence's missing step. Then, have the class predict the movements the indi will need to take to complete the path. Next, lay down the tiles from the challenge card on the floor, ensuring that each color tile is one tile length apart. Show students how to use one of the other tiles to measure a tile length apart. Then, place the indi on the path to test the groups' prediction.

Ask kids, was our prediction correct? Choose one or two kids to share with the group. Encourage kids to use directional language to explain the path the indi traveled; for example, the indi first moved forward from green and then stopped on red.

EXPLORATION 20 to 30 minutes

Assign each group a challenge card that they will be responsible for sharing the missing step(s) during the closing. The challenge cards are numbered. Once the group has identified the sequence on their challenge card, have them try to solve as many of the other challenge cards that time will allow. Take this time to walk around and observe.

CLOSING *10 to 15 minutes*

Have each group share the answer to their assigned challenge card. Encourage language that uses directional words to describe how the indi traveled.

CLEAN-UP *(5 min.)*

Allow time to make sure materials are safely put away.

CHALLENGE CARD
