PCS edventures!™

Experts in Hands-On STEM Education

Rockin' Robots

Grades 1-3

CURRICULUM SAMPLE

STEAM ENRICHMENT

edventures.com

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(800) 429-3110

STEAM ENRICHMENT

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Experts in Hands-On STEM Education

Rockin' Robots

GRADES: 1-3

STUDENTS	TIME
Up to 30	12, one-hour lessons

SUBJECTS

- Technology
- Robotics & Coding
- Art/STEAM
- English Language Arts Connections

SETTINGS

- Summer Camps
- Classrooms
- Before & After-School Programs
- Libraries and Makerspaces
- Classroom STEM Stations
- Robotics Clubs
- Out-of-School

FULL KIT

PRINT MATERIALS

STUDENT PHOTO

Take the Sphero indi on a tour through a STEAMtastic fusion of music and robotics. Explore songs, craft instruments, investigate sound effects and design a melodic coding challenge!

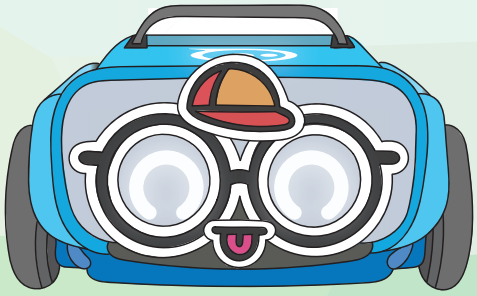
refill kit available

TECH REQUIREMENTS / PREREQUISITES

- Tablet or Chromebook with Sphero Edu Jr app downloaded (6)

PRICING OPTIONS

- Complete Program: $2,445^{00}
- Curriculum Print & Digital: $395^{00}
- Refill Kit: $215^{00}



Scan or Click QR Code for:

PRODUCT ORIENTATION | FULL MATERIALS LIST | STANDARDS & ALIGNMENT

CONTACT US:
Call: **(800) 429-3110**
Email: **sales@edventures.com**
Web: **edventures.com**

Rev: 11/22/23

Practice Music Courses

SCHEDULE

- Introduction to the Music Courses (5 min)
- Activity 1: Practice Music Courses (50 min)
- Wrap-up & Reflection (5 min)

MATERIALS

- **Practice Course Example Handout** (1 set per group)
- **6 Tablets with Sphero Edu Jr App** (1 per group)
- **6 Sphero indis** (1 per group)
- **Sphero Coding Tiles** (1 set per group)
- ***Rockin' Robots* Daily Slides** (optional but recommended)

DAILY PREP

- Make sure robots and tablets are charged
- If you have time, assemble and test one or two practice courses

OBJECTIVE

Put coding and troubleshooting skills to the test by navigating musical courses.

STEAM CONNECTIONS

Technology: Computational Thinking

ALIGNED STANDARDS

International Society for Technology in Education (ISTE)

- ISTE 1.5.c Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.

21ST CENTURY SKILLS

- Information, Media, and Technology Literacy
- Critical Thinking and Problem Solving

HABITS OF MIND

- Persisting
- Striving for Accuracy
- Thinking about Thinking (Metacognition)

BACKGROUND INFORMATION

This activity is designed to give campers some examples of music courses before they begin creating their own.

Each color tile should already be coded with the following notes:

Yellow Star tile - C (low)

Red Hexagon tile - D

Purple Square tile - E

Pink Heart tile - F

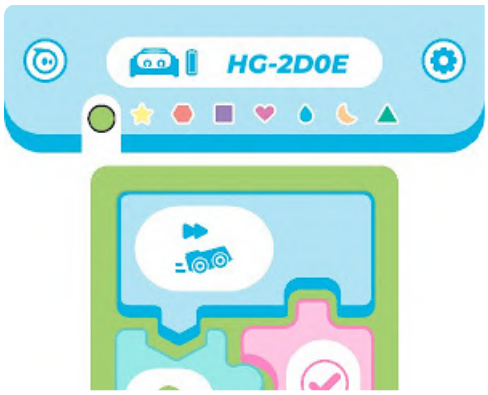
Blue Drop tile - G

Orange Moon tile - A

Teal Triangle tile - B

Green Circle tile - C (high)

Campers will primarily be switching between the color tiles and changing the blue command puzzle pieces.



STEP-BY-STEP DIRECTIONS FOR INSTRUCTORS

Whole Group

INTRODUCTION

Welcome campers back to Rockin Robots. Get campers excited for the activities by letting them know that groups will have music coding challenges.

Note: Encourage campers to finish as many practice courses as they can, but it is okay if they do not get through them all. Additional challenge options include adding tiles to the courses or finishing them backwards for groups that finish quickly.

Group Discussion

ACTIVITY 1: Practice Music Courses

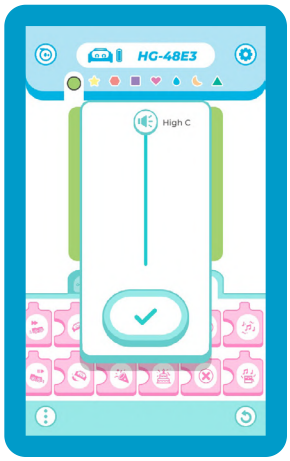
Explain that groups are going to be able to try out some music courses. Let them know that they will have some handouts that will show them how to code and construct each course. Remind campers to work together and to make sure that everyone gets to take turns with coding and setting out the tiles.

Small Groups

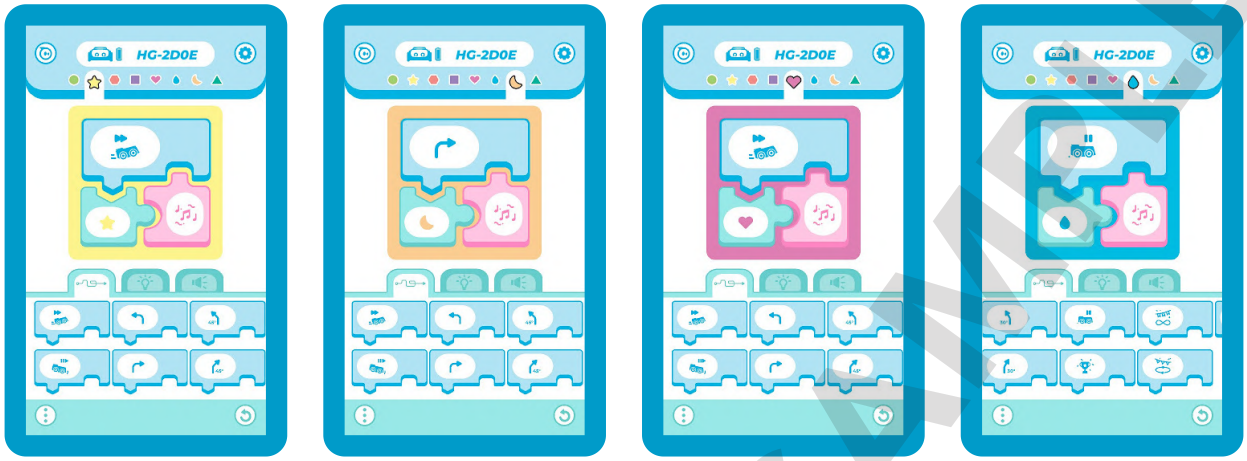
Pass out indis, tablets and Practice Music Course Example handouts to each group. Walk around the room to make sure that each group is able to connect indis.

Color tiles should already be coded to the following notes:

- Yellow Star tile = C (low)
- Red Hexagon tile = D
- Purple Square tile = E
- Pink Heart tile = F
- Blue Drop tile = G
- Orange Moon tile = A
- Teal Triangle tile = B
- Green Circle tile = C (high)

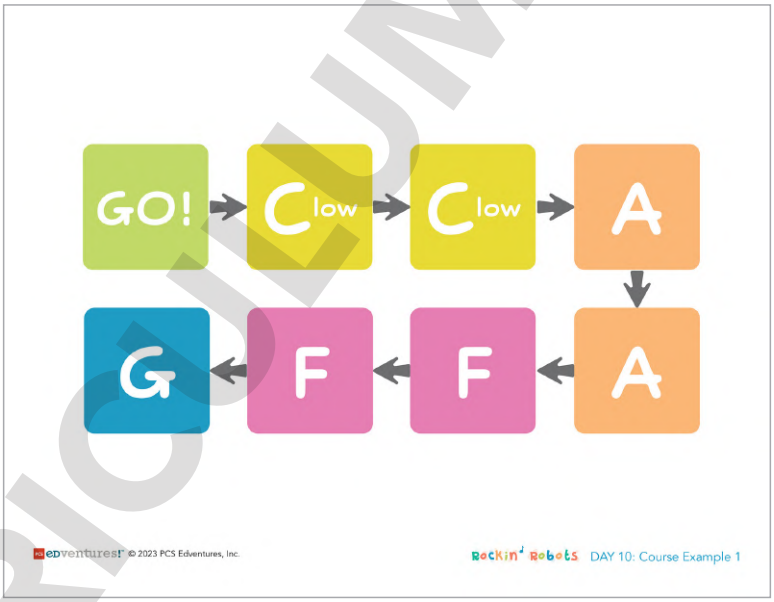


Have groups assemble the course examples like in the pictures below. You can also use the Rockin Robots Day 10 slides as a reference.



Tip: Challenge groups to code the courses backwards or add notes if they finish early.

Course Example 1:



**Coding Tip:* Indi always needs to start on a green tile. If campers code the green tile to something else, such as a right turn that plays the note "E", then indi will begin performing those commands the *second* time it rolls over a green tile.

Whole Group

WRAP-UP & REFLECTION

Ask campers to start putting their tiles away and charging their tablets and indis. If you have enough time, ask them to share things that went well and things they want to improve on for next time. You can also ask campers to share any strategies or tricks they found that were not covered in the lesson.

Get everyone excited for Day 11 by letting them know that they'll design their own music courses!

CHECK FOR UNDERSTANDING

1. Which puzzle piece changes the music note that indi plays?

a. 

b. 

c. 

2. Which puzzle piece will make the indi do a *right* turn?

a. 

b. 

c. 

3. Which puzzle piece will make the indi do a *left* turn?

a. 

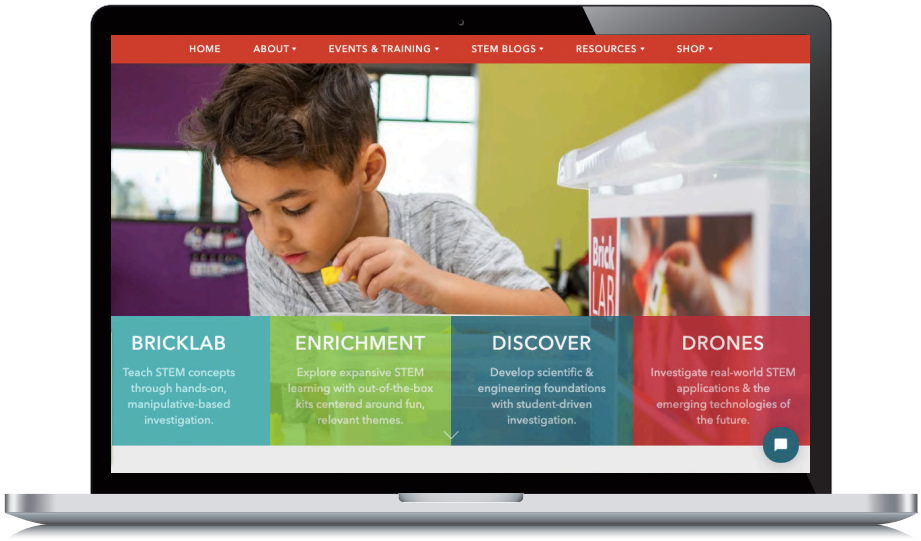
b. 

c. 

EXTENSIONS

Music Course Brainstorming

Campers use colored pencils and blank sheets of printer paper to begin brainstorming ideas for their own music courses.



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