Introducing

VEX 123

Robotics Education & Competition Foundation
Reaching School STEM Learning Goal with the VEX Continuum

Grades Pre-K+

Grades 3+

Grades 6+

Grades 9+

Grades 9+

VEX.123

VEX GO

VEX IQ

VEX V5

VEX V5 WORKCELL

ROBOTICS EDUCATION & COMPETITION FOUNDATION
Inspiring students, one robot at a time.

2021 VIRTUAL REC FOUNDATION SUMMIT
Why Robotics in Elementary?
Empower Your Elementary Students by Building a Robot within Minutes

The **VEX GO Challenges** provide elementary teachers with the tools to:

- Build confidence, perseverance, and enthusiasm for learning
- Increase student engagement
- Offer hands-on, project based learning
- Incorporate STEM learning with science, language arts, and mathematics instruction
- Develop spatial reasoning skills
- Establish computational thinking skills
- Promote teamwork and communication skills
VEX 123
Grades Pre-K-2nd

Interactive

Programmable robot

Computer Science and Computational Thinking

No Devices Needed

Powered by Scratch Blocks: VEXcode Blocks available for tablets, chromebooks, mac and windows
VEX 123 Robot
Mobile Coder and Game Field
VEX 123
STEM Starts Early

Coding by Touch
VEX 123

STEM Starts Early

Coding with Coder Cards
VEX 123
STEM Starts Early

Coding with VEXcode 123
VEX 123 Kit Options
STEM Starts Early

VEX 123 Robot

Mobile Coder w/cards

Art Ring

$99.99
VEX 123 Game Field

STEM Starts Early

$24.99
VEX 123 Classroom Bundles
STEM Starts Early

SMALL
$749.00

MIDDLE
$1,498.00

LARGE
$2,247.00
# VEX 123 Classroom Bundles

STEM Starts Early

<table>
<thead>
<tr>
<th>Bundle Size</th>
<th>Small Classroom</th>
<th>Classroom</th>
<th>Large Classroom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Students</td>
<td>12</td>
<td>24</td>
<td>36</td>
</tr>
<tr>
<td>Robots (equal color distribution)</td>
<td>6</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>Coders with Batteries</td>
<td>6</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>Coder Cards (50-pack)</td>
<td>7</td>
<td>14</td>
<td>21</td>
</tr>
<tr>
<td>Fields (4 tiles, 8 walls)</td>
<td>3</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Carrying Cases for everything</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Charging Stations, AC Adapters</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Coder Card Storage Boxes</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Robot Arts Rings</td>
<td>6</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>Coding Posters</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
VEX 123 Kit Features
STEM Starts Early

VEX 123 Coder Cards Poster
VEX 123 Kit Features

Art Ring
Teacher Resources

Knowledge Base
Troubleshooting tips and product-specific information is available for you in our library of resources.

VEX Blog
Helpful tips and relatable quips, our blog is here to share some fun teaching insight.

VEX YouTube
Subscribe to the VEX YouTube Channel for our latest videos!

STEM Labs
Plug-in lessons that are up to standard... plus they are 100% free!

Educator Certifications
Professional development with VEX Certs is the way to level up your career.

VEXcode
VEXcode is a coding environment with an intuitive layout that allows students at any level to easily start coding.

This is A-Mazing! #vex123
VEX 123 is an interactive, programmable robot that takes Computer Science and Computational Thinking off of the screen and brings them to life for Pre-K through 3rd grade students. The 123 Robot is programmable without a computer, so young students can learn programming away from screens. The VEX Coder and Coder cards give students a tangible way to build projects, share ideas, and learn coding concepts in fun and engaging ways.

Use this page as a guide to getting started with your own VEX 123 materials. Each section offers helpful links that will help you get organized, plan lessons, and be prepared to teach with VEX 123 in your setting.
Meet Your Robot

2 Labs

Meet your 123 Robot through a story-based lab that introduces vocabulary, functions, and features of the 123 Robot.

Open Unit Overview

Lab 1

Hello, 123!

Total Time: 40 minutes

Learn about the features of the 123 Robot through interactive story and activities.

Role Play Robot

2 Labs

Test out how the 123 Robot acts out certain emotions and create the code for a new emotion!

Open Unit Overview

Lab 2

Robot Rules

Total Time: 40 minutes

Explore best practices for interacting with the 123 Robot and create a set of Robot Rules for your classroom.

Lab 1

Act Happy

Lab 2

Match the Feeling

2021 VIRTUAL REC FOUNDATION SUMMIT

ROBOTICS EDUCATION & COMPETITION FOUNDATION
Inspiring students, one robot at a time.
Activities Series
Meet Your Robot!

hello!

nice to meet you!
Meet Your Robot!
Teacher’s Guide

- Introduces Characters
- Working as a team
- Simple Building Activity
- Questioning Prompts
- Extension Activities

Page 3

- Feature - Introduction
- Share: What are some robots that you have heard of?
Little Red Robot

2 Labs

Code the 123 Robot to become Little Red Robot and drive to Grandmother’s house!

Open Unit Overview >
Print Unit Overview >
Print Unit Overview + All Labs >
Print Student Certificate >
< Return to Units
Let’s Explore...

**Lab 1**

**Drive to Grandmother's**

*Total Time: 40 minutes*

Create a project where the Little Red Robot drives to Grandmother's house!

[Open] [Print]

---

**Lab 2**

**Watch out for the Wolf!**

*Total Time: 40 minutes*

Create a project using the Eye Sensor to drive to Grandmother's house and scare away the Wolf!

[Open] [Print]
Engage...

Outline

Lab 4 - Robot Job Fair

Goals and Standards

Summary

Engage

Play

Share

Engage

Begin the lab by engaging with the students.

Hook

Who remembers the three types of jobs that robots complete?

Connect this STEM Lab to STEM Lab 1, where students learned that robots do jobs that are dirty, dull, or dangerous. Show examples of different job scenarios.

Note: If students are new to VEX GO, use the Get Ready...Get VEX...GO! PDF book and Teacher's Guide to introduce them to learning and building with VEX GO. Add an additional 10-15 minutes to your lesson time to accommodate this additional activity.

Leading Question

Now, we are going to choose a dirty, dull, or dangerous job scenario for our Code Base robot and plan our projects.

Build

Code Base robot.
Lab 2
Watch out for the Wolf!
Total Time: 40 minutes

Create a project using the Eye Sensor to drive to Grandmother’s house and scare away the Wolf!

Open > Print >

Outline

Lab 4 - Robot Job Fair
Goals and Standards

Summary
Engage

Play
Share

Play

Allow students to explore the concepts introduced.

Part 1
Students will choose a scenario and create a project plan using the Blueprint Worksheet. Students can include plans to build an addition to the Code Base robot using VEX GO pieces.

Mid-Play Break
Students will share their project plans in a class discussion.

Part 2
Students will create and start their projects. Students should identify what task their robots were asked to complete.
Lab 2

Watch out for the Wolf!

Total Time: 40 minutes

Create a project using the Eye Sensor to drive to Grandmother’s house and scare away the Wolf!

Share

Outline

Lab 4 - Robot Job Fair

Goals and Standards

Summary

Engage

Play

Share

Discussion Prompts

- If a Code Base needed to complete this task multiple times, what could you add to the project?
- What if you didn’t know the exact distance that the Code Base needed to move forward? What could you add?
- What if the Code Base was facing the wrong direction to begin the project? What could you add?
And so many extras...

- Making This Unit Fit Your Unique Classroom Needs
  - Implementing in less time
  - Reteaching Strategies
- Letter Home (Editable)
- Vocabulary Strategies
- Extending the Unit

Tips for Encouraging Vocabulary Usage

- **Act out Vocabulary** - Have students act out the vocabulary in this Unit, as part of a movement or “Brain Break.” Play a game to have students become the 123 Robot themselves. Students can walk around the room to “Drive until” they reach an object, “Detect” a particular item or color in the classroom, or point to their own “Eye Sensor.”
- **Word of the Day** - Choose a word to be the “Word of the Day” and set a goal for how many times the class can use it correctly in context during the day. Keep track of the usage on the board, and offer a reward for reaching or exceeding the goal to get students excited about it!
## Choice Board Examples & Strategies

<table>
<thead>
<tr>
<th>Choice Board</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Storyboard It</strong></td>
</tr>
<tr>
<td>Make a storyboard of the story of Little Red Riding Hood, with the 123 Robot as the main character.</td>
</tr>
<tr>
<td><strong>Detective</strong></td>
</tr>
<tr>
<td>Draw or write a list of things that you can detect, or look out for, so that you can safely walk around your school or neighborhood. What helps you to do this?</td>
</tr>
<tr>
<td><strong>Drive until Directions</strong></td>
</tr>
<tr>
<td>Think about the path you take from your classroom to the lunch room, or to the gym. Write or draw the path using Drive until directions, like Drive until Mr. Jackson’s room, then turn left.</td>
</tr>
<tr>
<td><strong>Flip it</strong></td>
</tr>
<tr>
<td>Retell the Little Red Riding Hood story from the Wolf’s point of view. How is the story similar or different?</td>
</tr>
<tr>
<td><strong>Add an Eye Sensor</strong></td>
</tr>
<tr>
<td>What is something in your house that would be more useful with an Eye Sensor? Draw the design and write how the added Eye Sensor will help you or your family.</td>
</tr>
<tr>
<td><strong>Robot Clothes</strong></td>
</tr>
<tr>
<td>What is something else your 123 Robot could “wear”? Make a new shirt, hat, or piece of clothing, that can be attached to the 123 Robot using the Art Ring.</td>
</tr>
</tbody>
</table>
VEX 123 Using the Classroom App
STEM Starts Early

Note: The Classroom App is **ONLY for TEACHER use!**

The VEX Classroom App is available on the following platforms:

- Apple App Store - iPads, iPhones, iPod Touches
- Google Play Store - **Android phones** and tablets
- Amazon Appstore - Amazon Fire tablets
VEX 123 Using the Classroom App

Step 1: Open the Classroom App

Step 2: Update Firmware (If Needed)

Step 3: Rename Brain

Step 4: Check Battery

Note: The Classroom App is ONLY for TEACHER use!
VEX 123 Educator Certification

STEM Starts Early

VEX Professional Learning Community
As a certified user, you now have access to the VEX Professional Learning Community. Continue to learn through sharing, collaborating, and connecting with the network of VEX certified users.

Coming Soon

VEX 123 Educator Certificate
Your updated profile will have your certification information. Remember to print your personal certificate from your profile by using the PDF link below.

Shelli Brasher’s Certificate
VEX 123 Educator Certification

STEM Starts Early

Presented to
Shelli Brasher

Granted on: 07/06/2021
Register Teams for FREE!

● Students set personal goals
● Earn Digital Badges
● Earn Achievement Awards
● Learn about future challenges
● Get invited to Showcase your Learning
● Receive monthly updates
● robotevents.com

Coming Soon!

● roboticseducation.org
  ○ Teams
    ■ VEX 123 Challenge
● “How to Register Teams” Step Sheet
● Intro to VEX 123 Workshops
● Digital Badges/Certificates
● Showcase Opportunities
For more information and assistance starting VEX 123 Teams at your schools, contact shelli_brasher@roboticseducation.org