

Patterns are everywhere! How can we create patterns with code? In this coding challenge, use loops and Repeat Blocks to code unique patterns called shape wheels with the Root[®] Coding Robot!

Getting Started

1. Visit code.irobot.com or the iRobot[®] Coding App on an **Android** or **iOS** device.
2. Tap on the + icon to open a new coding project.

With Coders

1. Drag in a Marker Block.
2. Model how to code the Root Coding Robot to draw a square.
3. Drag in another Repeat Block after the Marker Block. Move all other code blocks inside this Repeat Block. You now have a loop within a loop. This is called a **nested loop**.
4. Encourage coders to try coding their own shape wheel. Work in small groups or individually to experiment with Move and Turn Blocks.



Subject(s):
Coding, Robotics

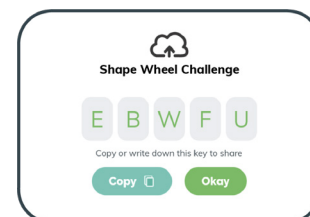
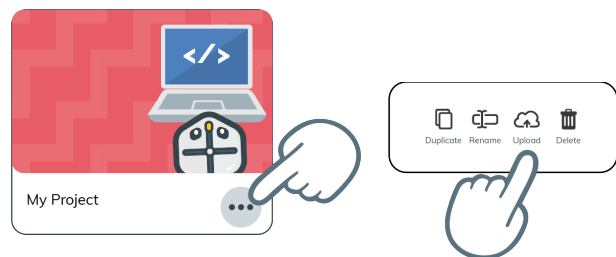
Experience Level:
Beginner

Time:
30-45 minutes

Group Size:
1-3

Share Your Projects

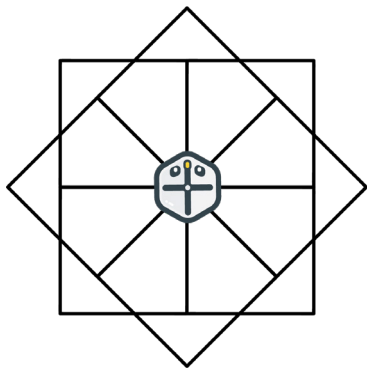
1. Click the three dots on your coding project
2. Rename your project. Tap the Upload Icon
3. Copy your Project ID
4. Share your Project ID on social media and tag us @iRobotEducation! Post a picture as well!
5. Have fun!



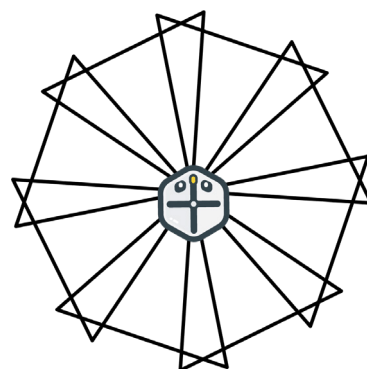
Shape Wheel Reference Guide (Level 1)

Here are some Level 1 Shape Wheel examples.

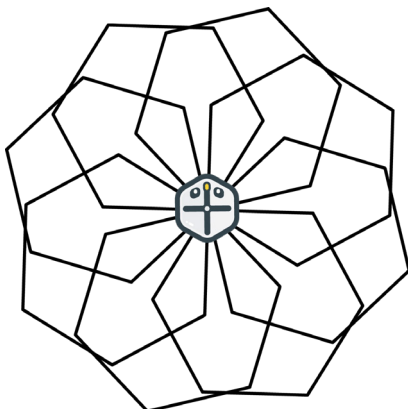
Square



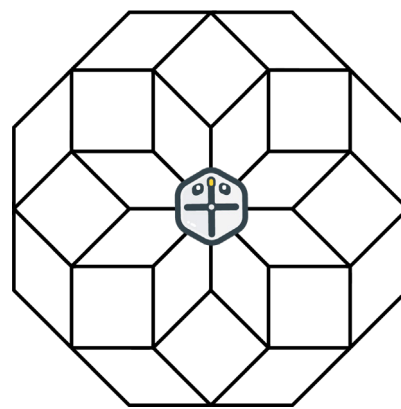
Triangle



Hexagon



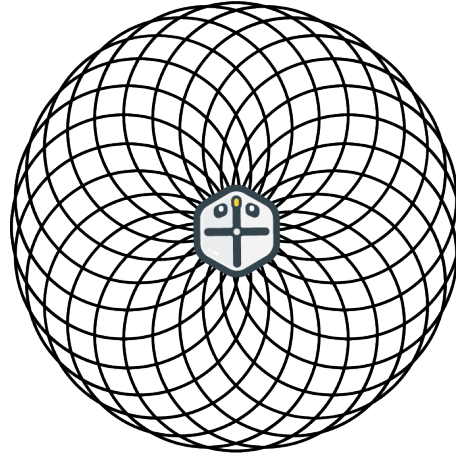
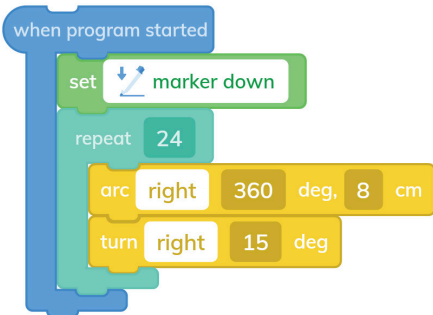
Octagon



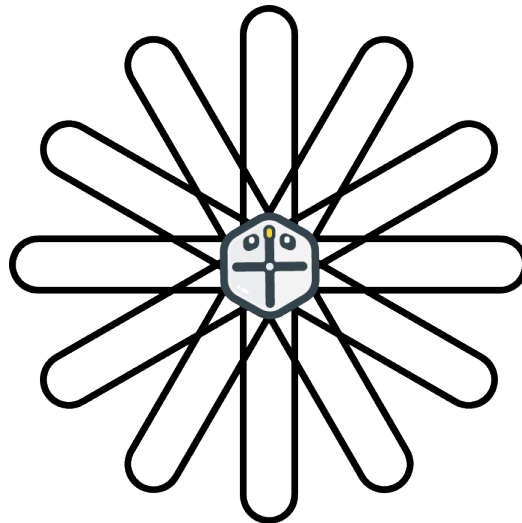
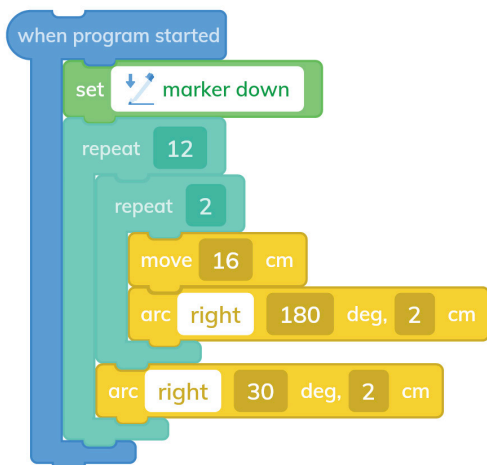
Shape Wheel Reference Guide (Level 2)

Here are some more complex Shape Wheels to build with code in Level 2.

Shape Wheel 1

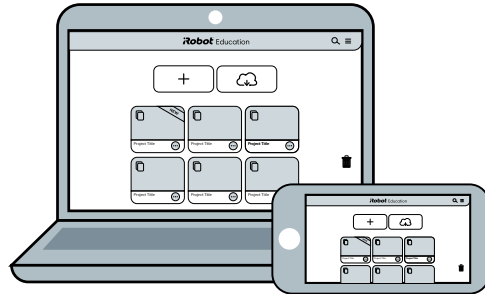


Shape Wheel 2



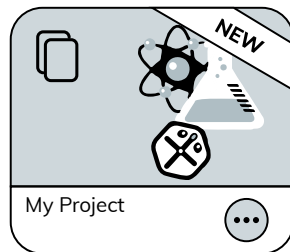
Uploading Projects

Step 1:



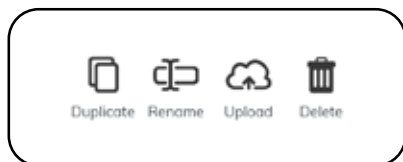
Visit **code.irobot.com**
or the **iRobot™ Coding App**.

Step 2:



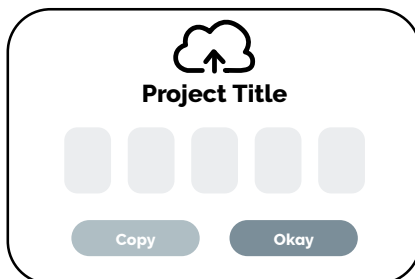
Select the project. Click on the
three dots.

Step 3:



Click on the **Upload Icon**.

Step 4:



Copy the project code to
share with your friends!

Name _____

Date _____

Shape Wheels: Coding Reflection

Share about your experience coding your project!

1. Rename your project and save it.

Enter your project code here:



2. Circle your coding style.



I coded on
my own.



I coded with
others.

3. Describe a pattern in your life.

4. Did your coding project turn out exactly how you planned? Why or why not?

5. How would you describe your Shape Wheel coding project to a friend?

