Teacher Guide: Learn to Code with Hot Wheels

https://www.tynker.com/hour-of-code/hotwheels

Time: 60 minutes
Grades: 3+
Difficulty: Beginner

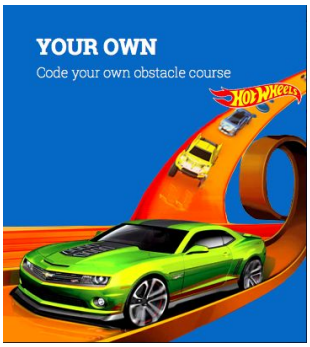
Students complete a set of 20 coding puzzles that introduce them to all the basic coding concepts they need to start building their own projects. Then they create and publish a racing game and that they can play with their friends.

Activity Requirements: This activity requires computers with a Web browser and an Internet connection. Headphones recommended.

Programming Activities

Obstacle Course (40 Minutes): Solve 20 Coding Puzzles

Students solve a set of 20 coding puzzles to navigate a Hot Wheels racecar through increasingly complex race tracks. The first puzzles are very simple and introduce basic concepts. As students progress through the set, the puzzles become more challenging. They learn and apply computational thinking concepts like sequencing, pattern recognition, and automation. At the end of this activity, students understand basic programming concepts like conditional logic, loops, and sequencing. The puzzles emphasize math concepts including distance, speed, changing direction, and acceleration.



Hack the Track (20 Minutes): Design a Racing Game

Students start with a basic track and design their own Hot Wheels racing game. They build the track and customize its look with the Level Editor, then they drag out obstacles, props, widgets, and decorations to make the game more fun. They add cars, program their controls, and upgrade their functionality so that the cars can speed up. When they're done, they can race against a preprogrammed rival car or a friend.

Hour of Code Certificate

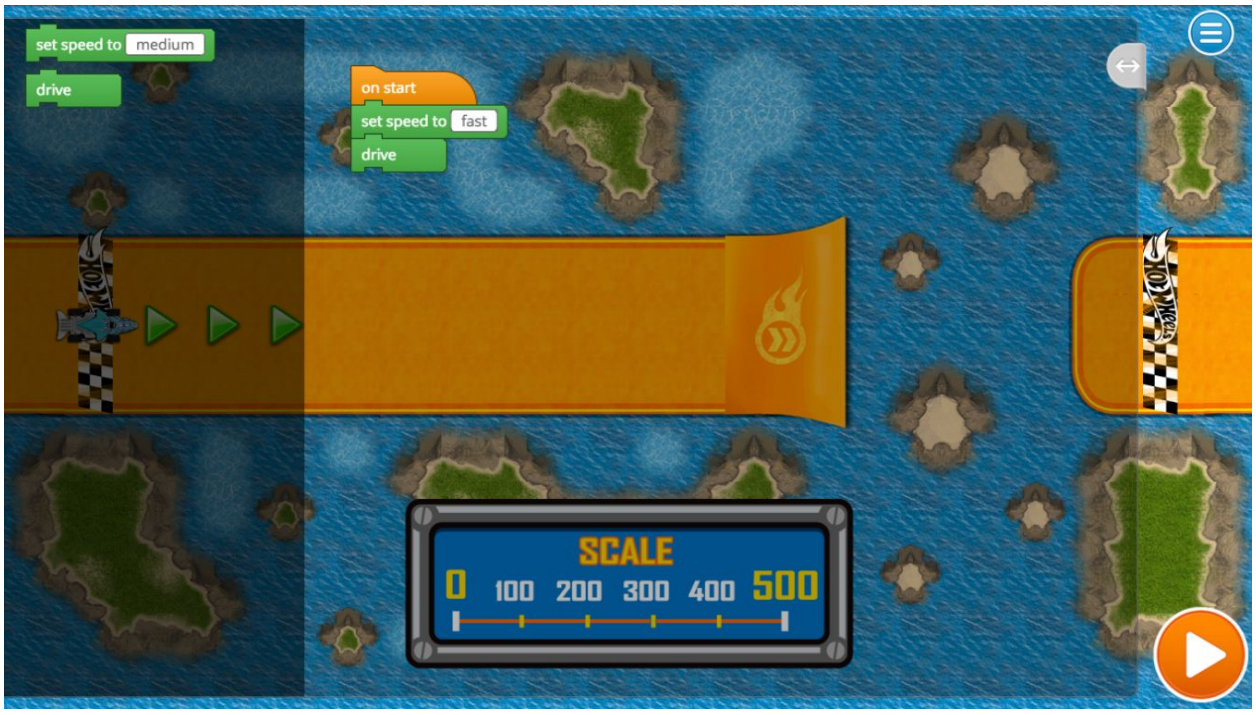
Be sure to download a personalized certificate for your students when they complete this activity.

Standards Mapping

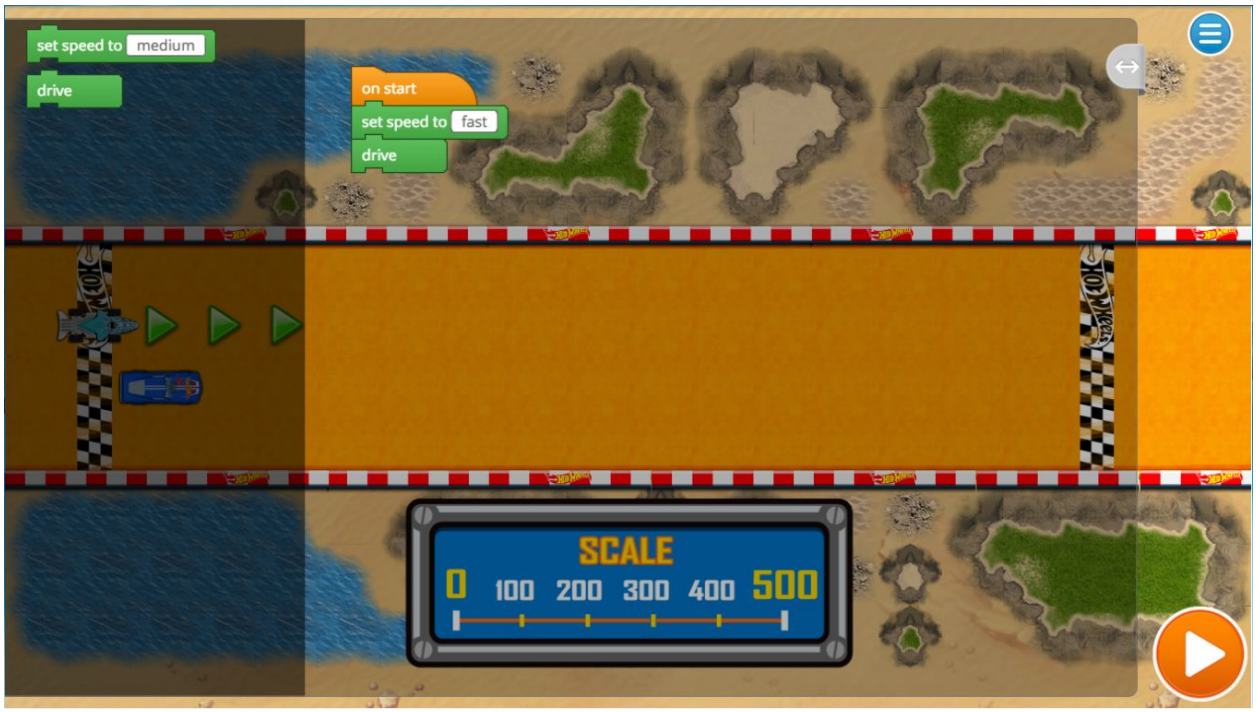
CCSS ELA: RI.3.3, W.3.6, RI.4.5, RI.4.3, RI.5.10, RST.6-8.4, RST.6-8.7, RST.9-10.5, RST.11-12.3
CCSS Math: MP.3.2, MP.3.8, MD.4.5, NF.4.7
CSTA: L1:6.CT.1, L1:6.CPP.5, L1:6.CPP.6, L2:9.CT.1, L2:9.CT.3, L2:9.CT.5, L2:9.CT.12, L2:9.CPP.3, L2:9.CPP.5

Puzzle Solutions

Puzzle 3

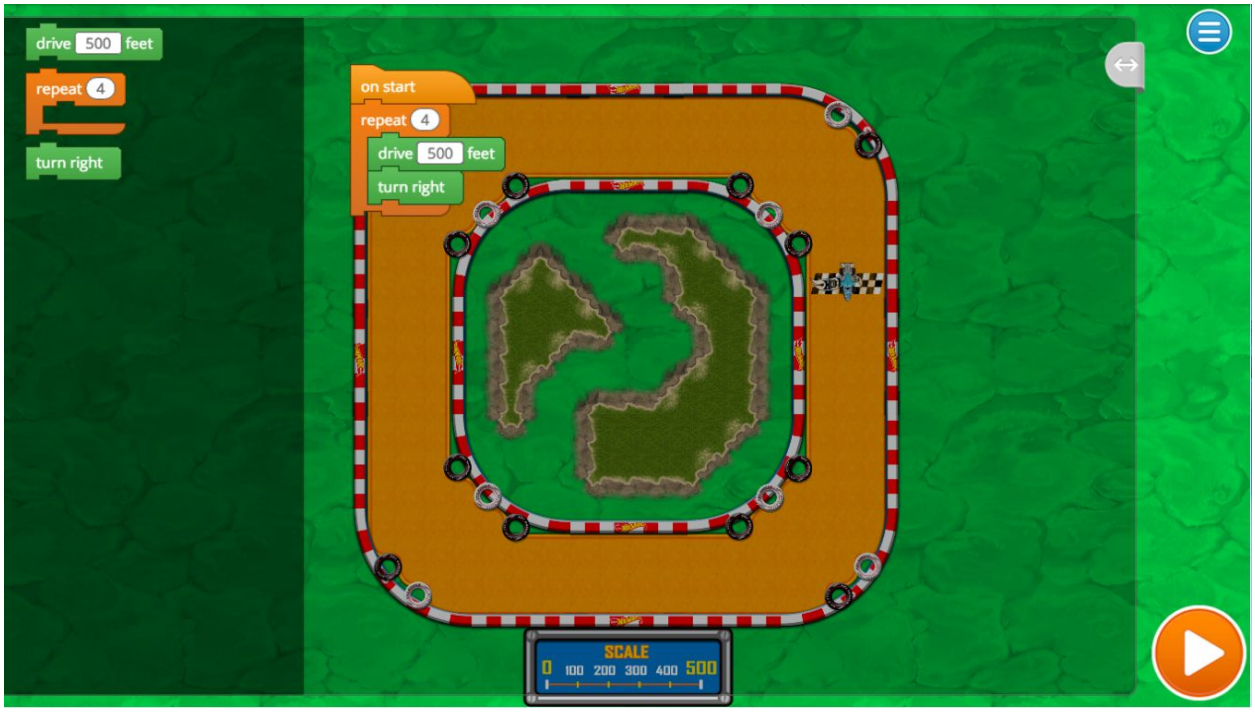


Puzzle 4

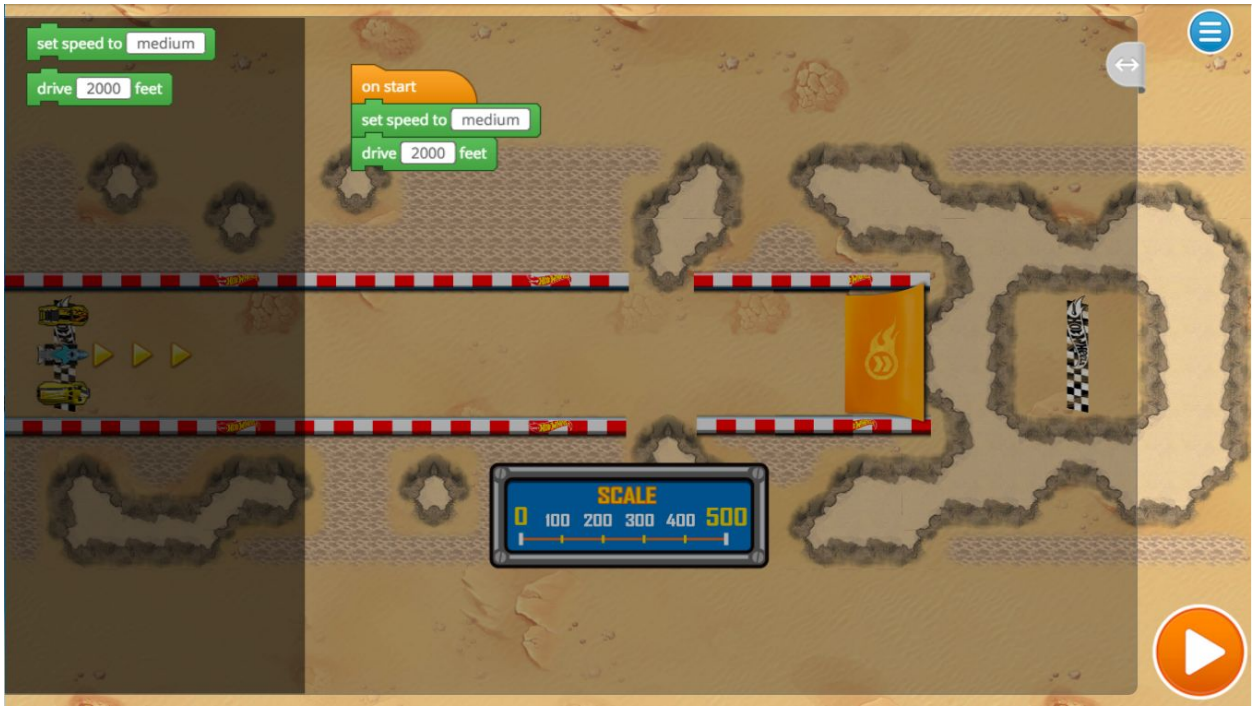


Puzzle 5

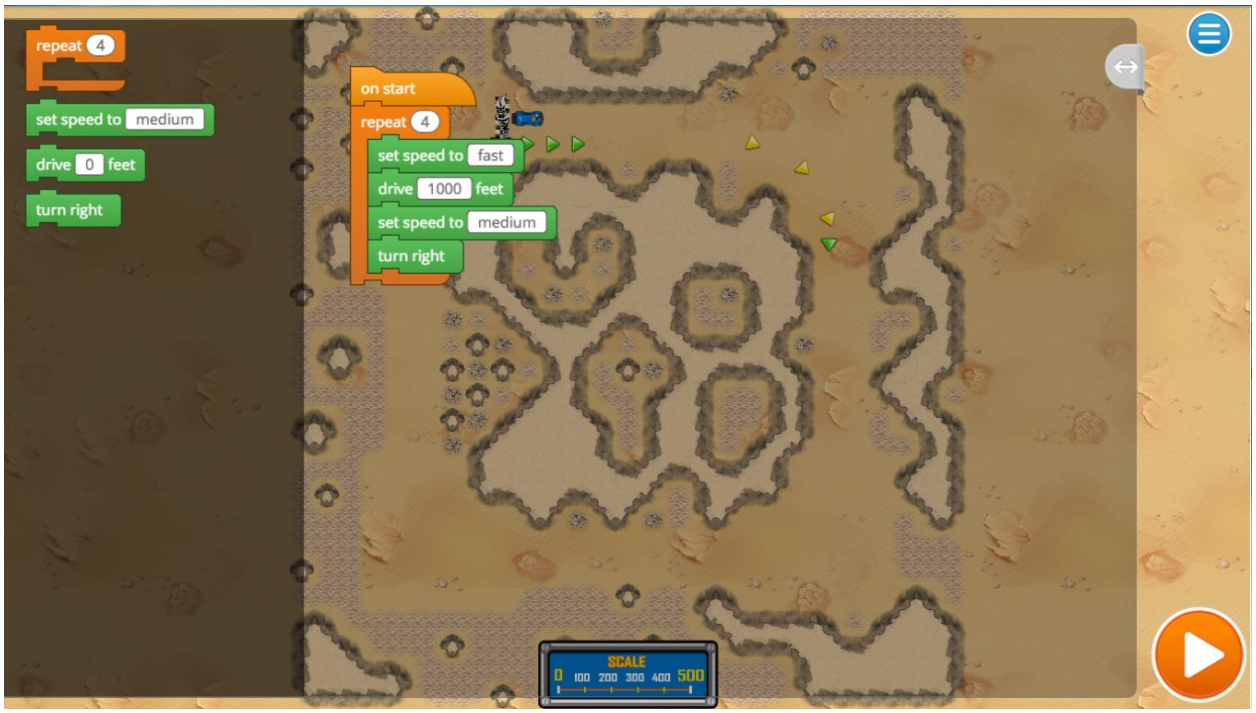
Puzzle 6



Puzzle 8

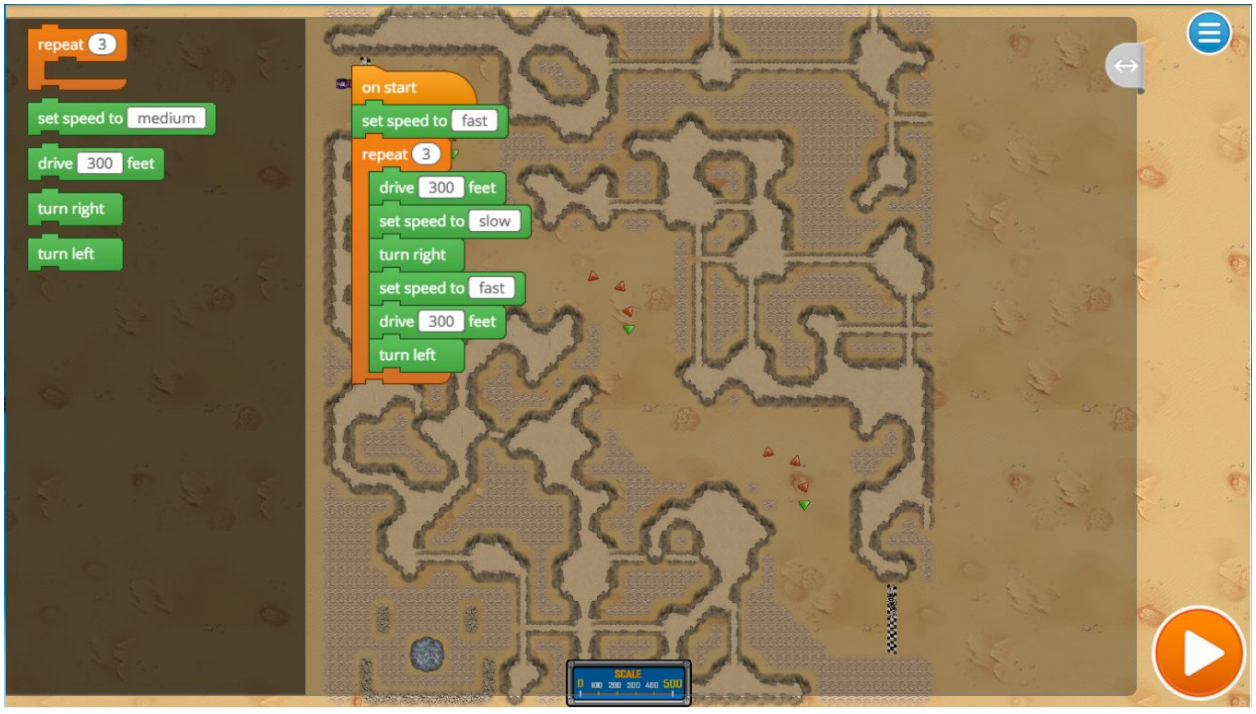


Puzzle 9

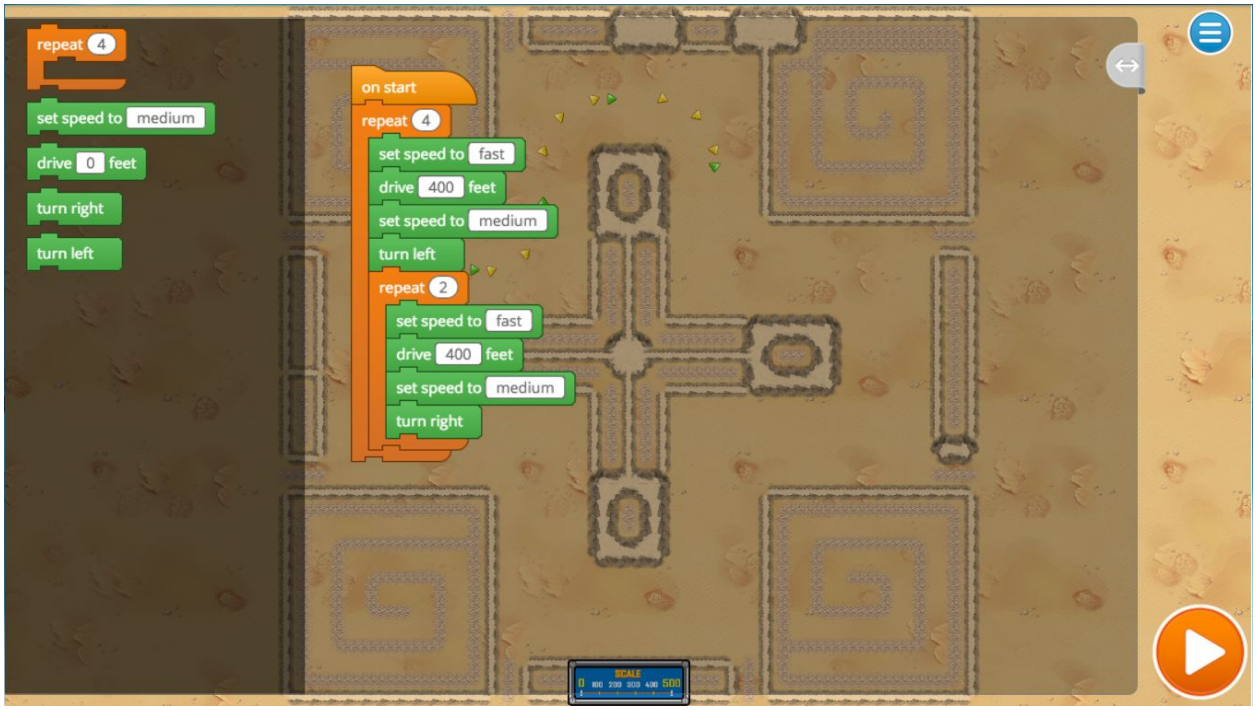


Puzzle 10

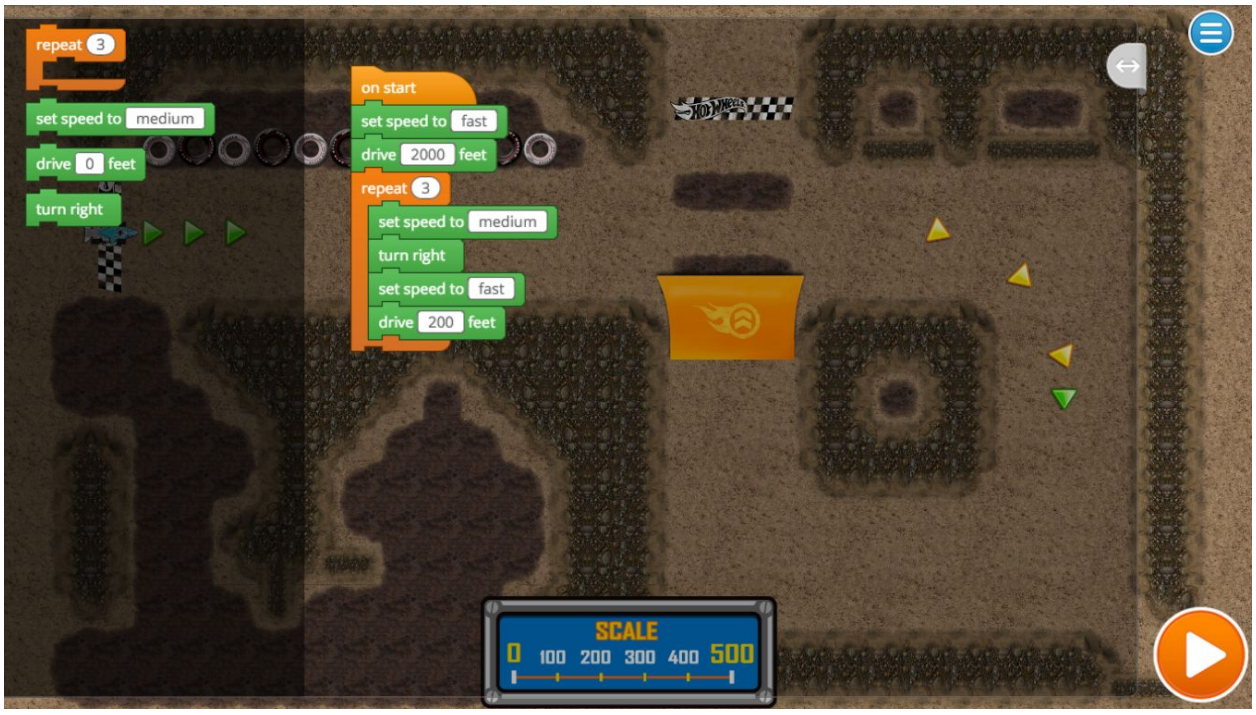
Puzzle 11



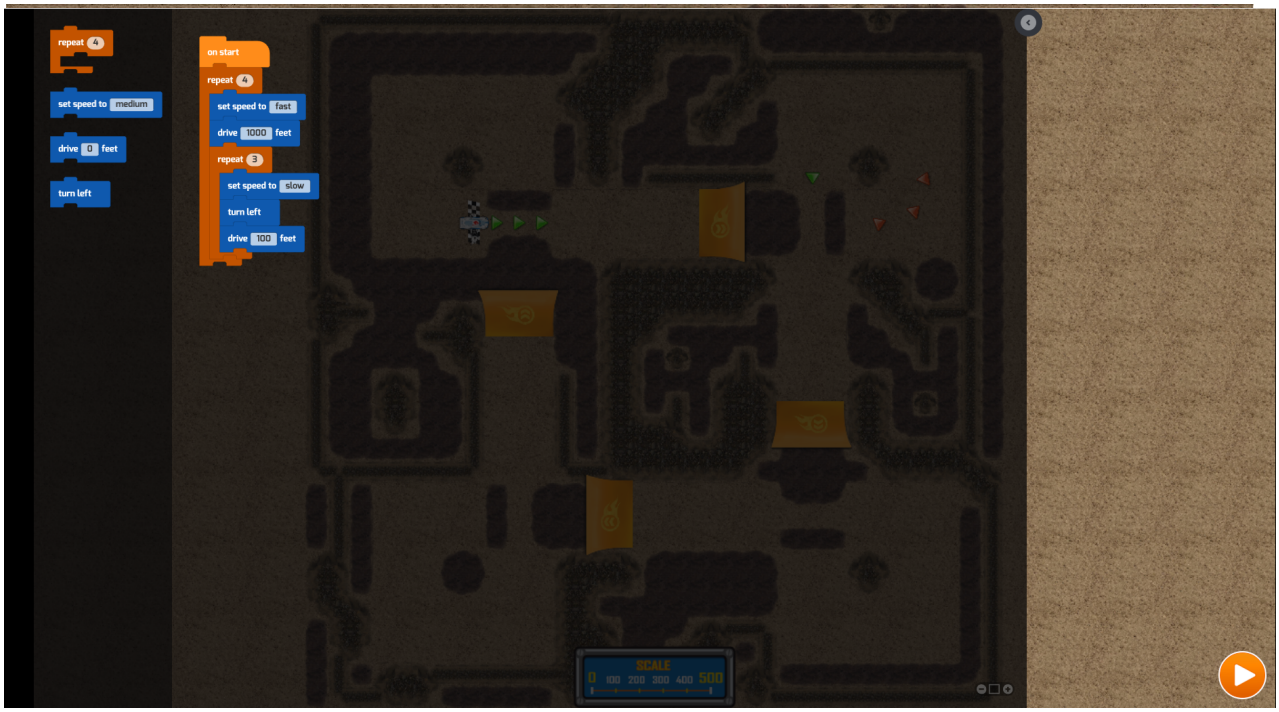
Puzzle 12



Puzzle 14

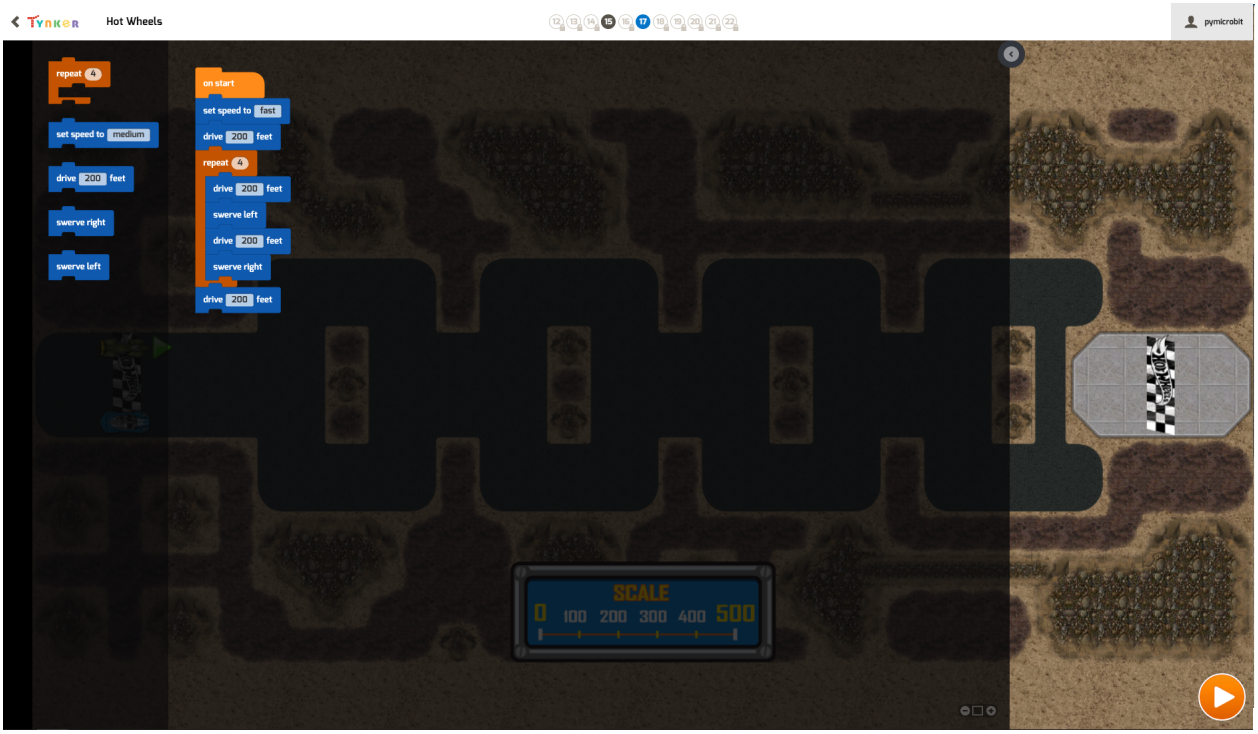


Puzzle 15

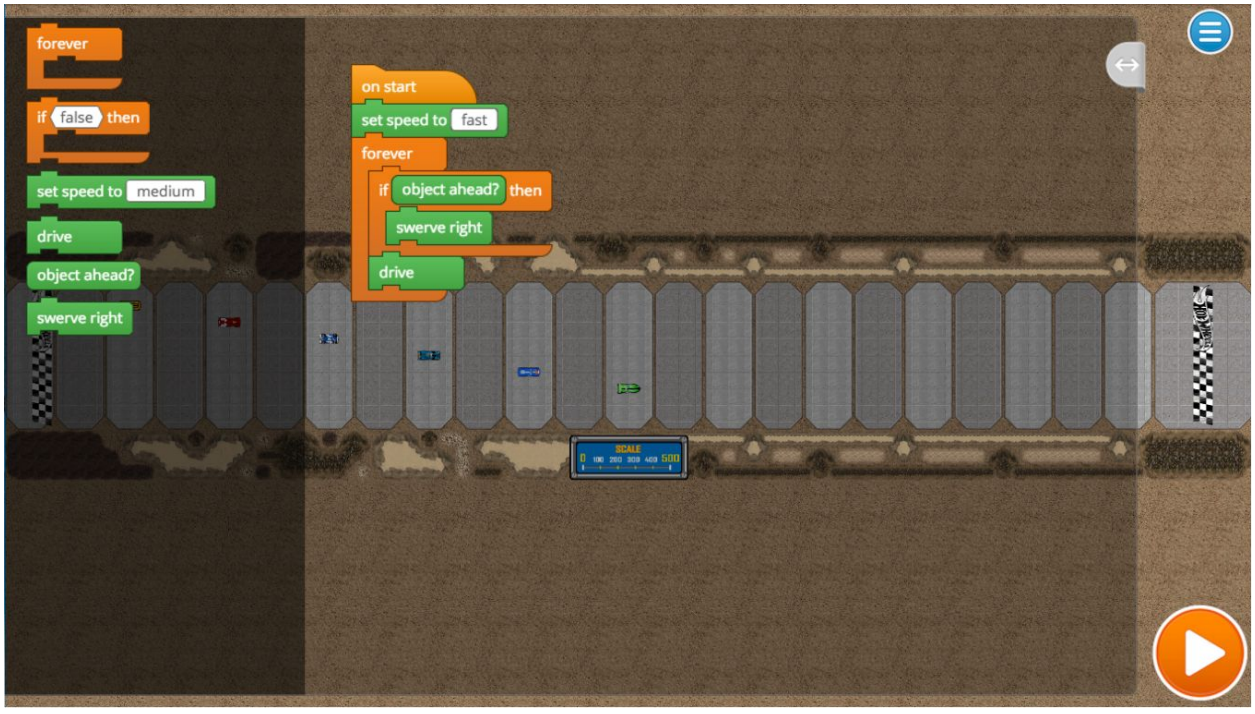


Puzzle 16

Puzzle 17

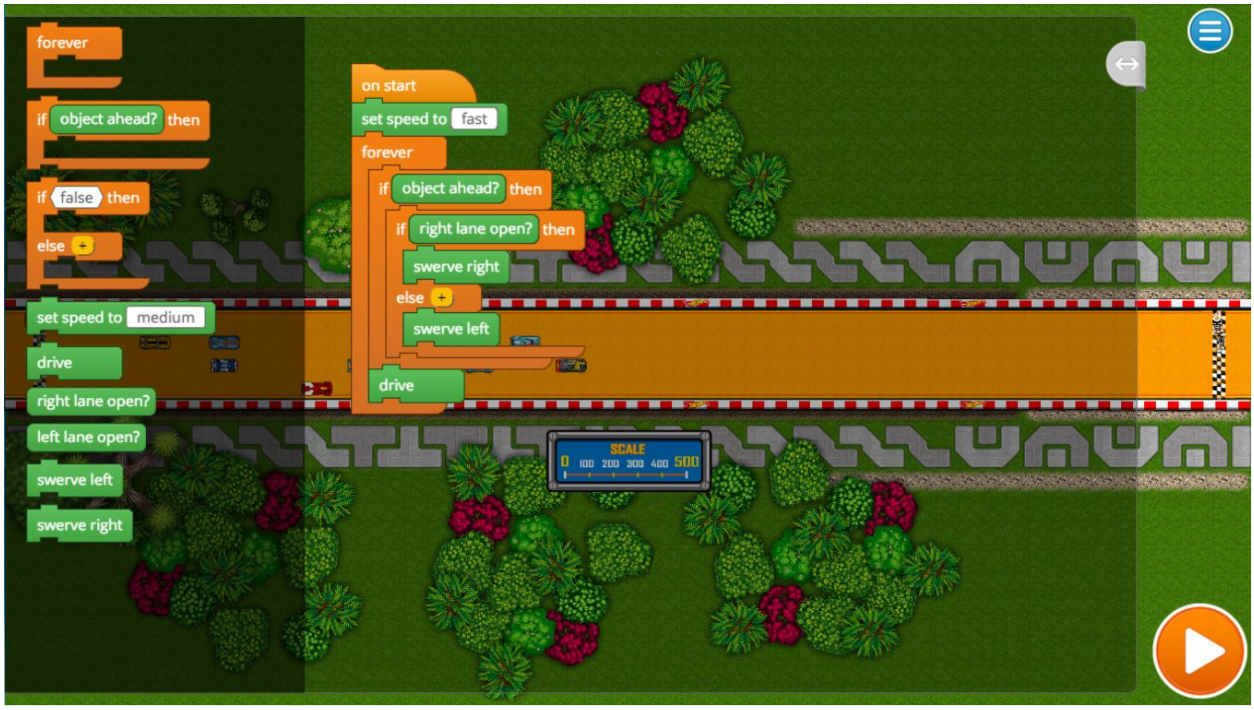


Puzzle 18



Puzzle 20

Puzzle 21



Puzzle 22

Puzzle 23

Puzzle 24


Tynker
Hot Wheels
pymicrobit
forever
if right turn ahead? then
else
if left turn ahead? then
if object ahead? then
if right lane open? then
else
set speed to medium
drive
turn right
turn left
swerve right
swerve left
on start
forever
if right turn ahead? then
set speed to medium
turn right
else
if left turn ahead? then
set speed to medium
turn left
if object ahead? then
if right lane open? then
swerve right
else
swerve left
set speed to fast
drive

Teacher Guide to Tynker Hour of Code

Tynker's activities combine structured and open-ended components to support multiple learning styles. This experience emphasizes that programming requires not only knowledge of how to use a language, but also creativity and critical thinking to figure out how to build projects. Tynker is offering a wide variety of activities appropriate for all grades and experience levels.

What Tynker Provides

- Self-contained, game-based activities that students can complete with minimal support
- A combination of structured and open-ended activities that teach and allow students to create
- Puzzle solutions for all of our puzzles so you can give hints to any students who get stuck
- Common Core alignment for all activities
- A customized Hour of Code certificate for each activity that will show up in the student dashboard when a student completes an hour of programming

Why Children Love Tynker

- Tynker puzzles use game-based learning to teach programming and computational thinking concepts in a fun way
- Tynker tutorials guide students through all the steps to create storytelling projects, games, animations, and much more
- The Tynker Workshop allows students to create anything they can imagine with code
- Tynker's built-in Physics Engine makes it easy to create exciting projects
- Tynker's high quality media assets give students tons of creative options

Recommended Setup and Logistics

- Ideal environment: a computer lab, library, or classroom with your class
- Students can work individually or in pairs
- Students should have headphones if possible, but if not, you can turn the computer volume down
- Set up a free teacher account on tynker.com prior to the activity and add your students so you can track their progress and share a class showcase—and so students can continue working at home! (Note: Creating a teacher account is optional. You can complete your Hour of Code with Tynker without creating an account.)

We hope you take a look at all of our Hour of Code activities to figure out which one is right for your class. Join the global movement and host your Hour of Code with Tynker!