Explore, Code, and Learn!

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DEN Summer Institute

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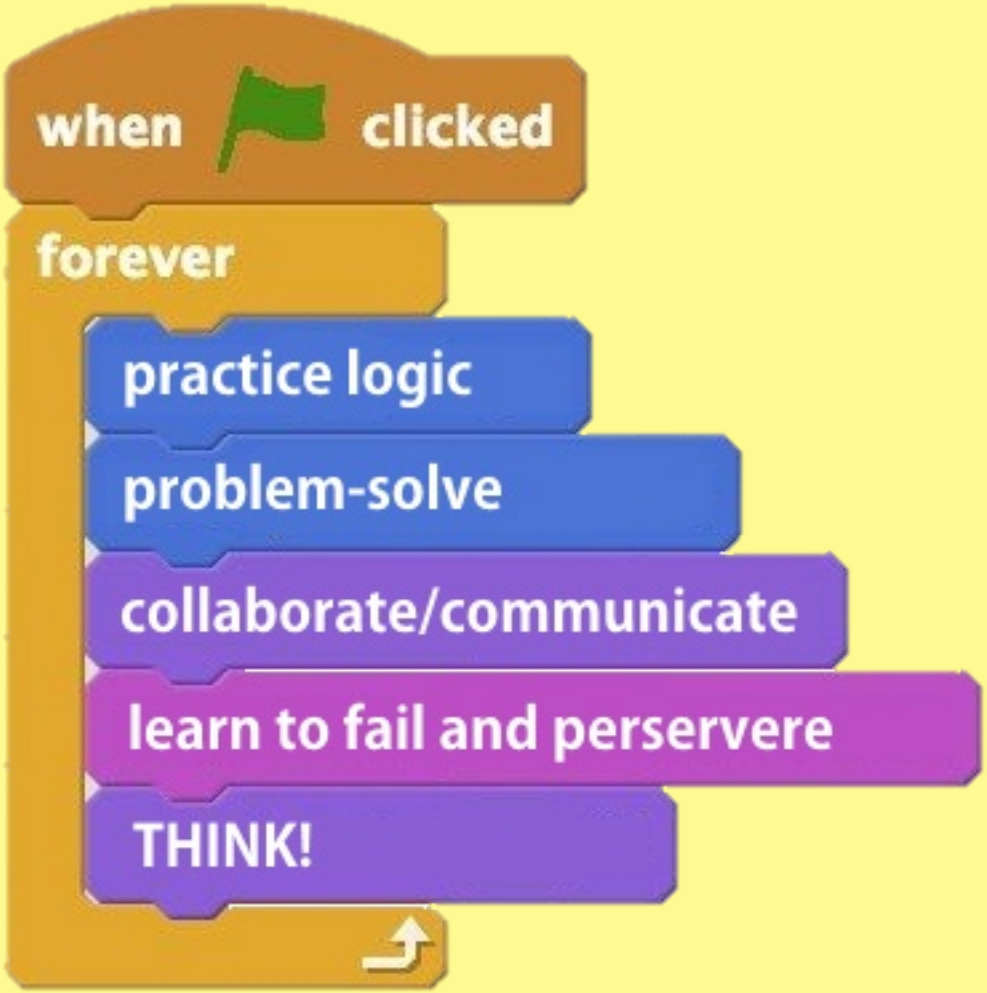
Coding?

Coding is using step-by-step commands to tell a computer what to do!

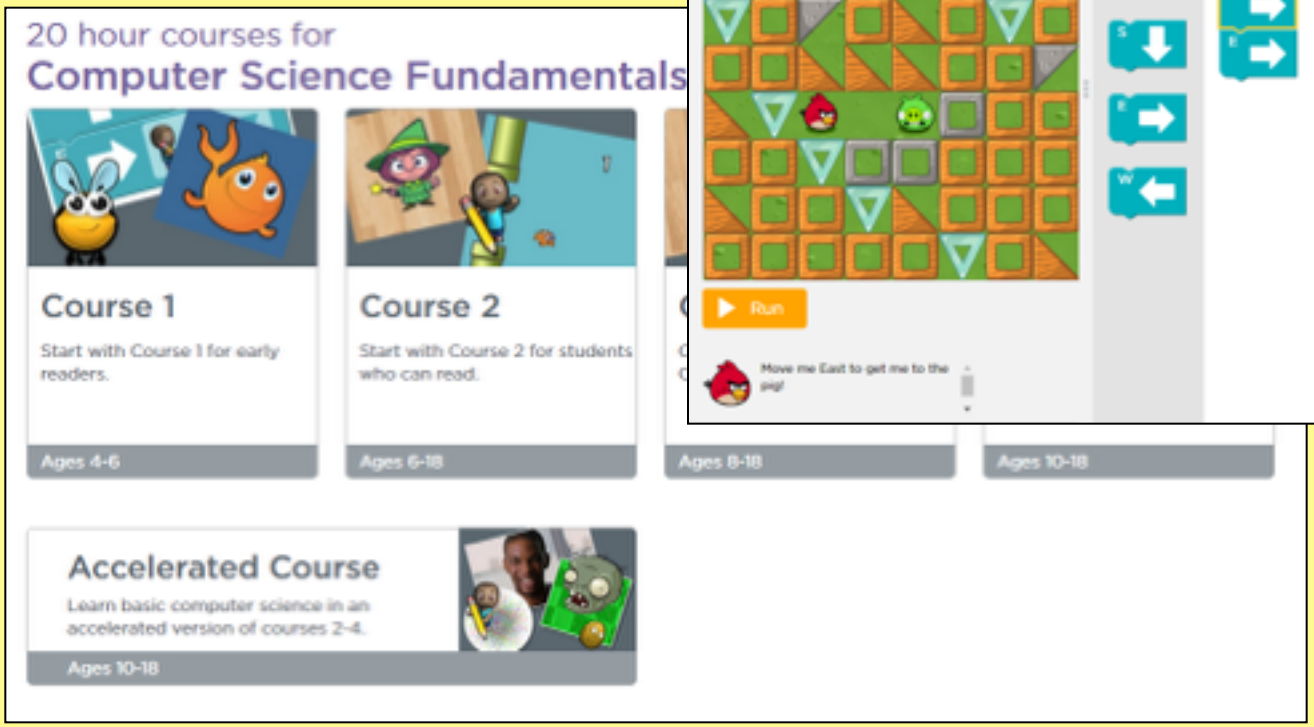
Why?



Coding with Students?

Start with block coding.

studio.code.org



Coding with Students?

Start with logic and simple commands.

Daisy the Dinosaur

Cargo Bot

The Foos

Hopscotch

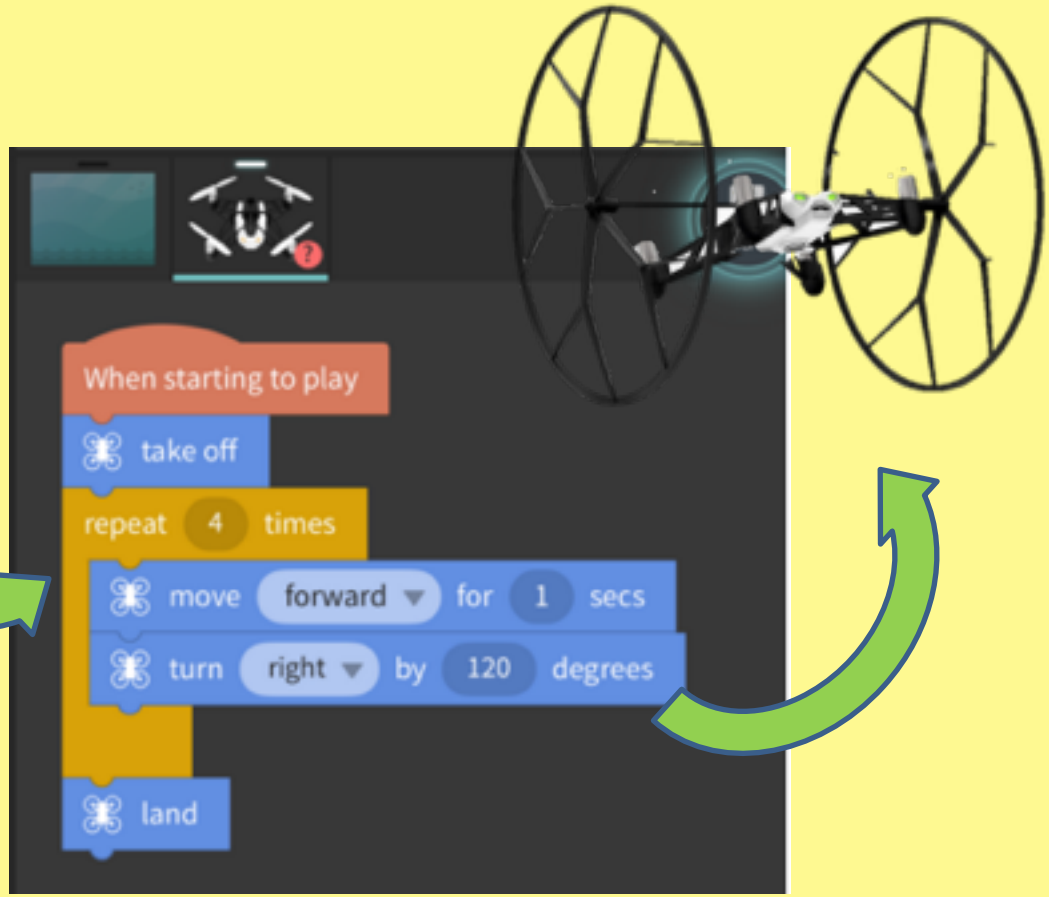
Scratch Jr.

Kodable

Coding with Students?

Apply what they have learned to authentic situations with hands-on resources!

Tickle App



Coding with Students?

Apply what they have learned to authentic situations with hands-on resources!

Tickle App

Dash and Dot

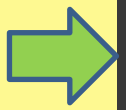
www.makewonder.com

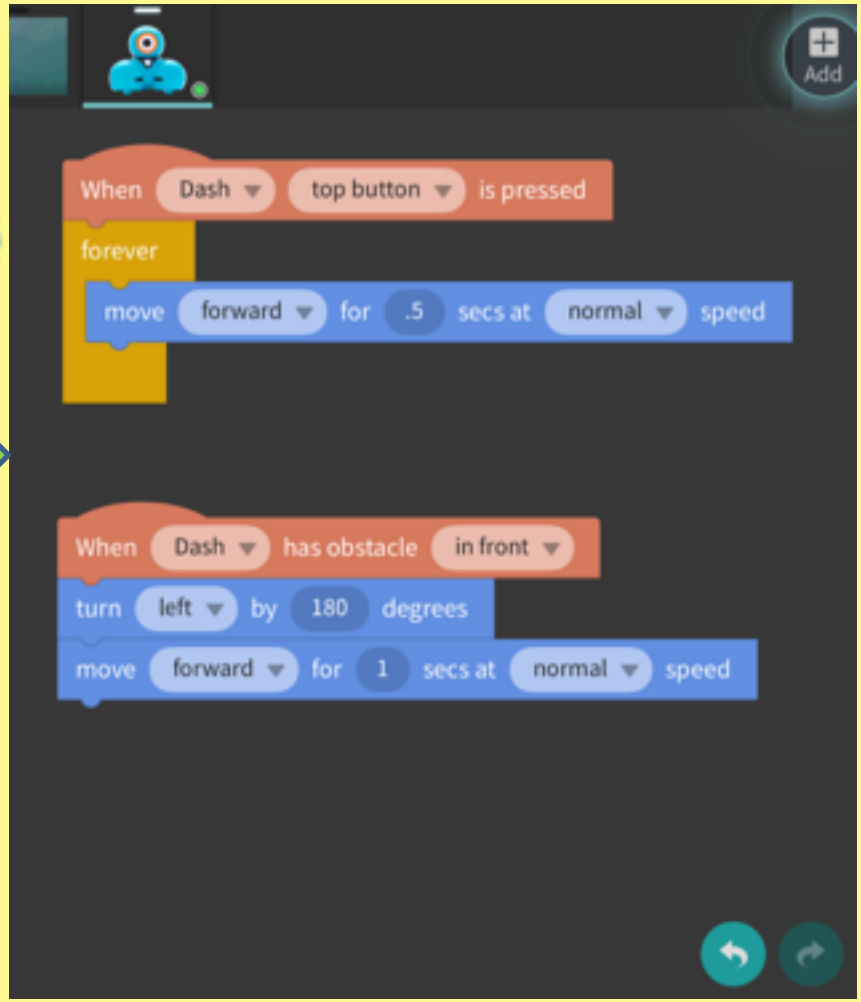
Tickle

Wonder

Blockly

Go



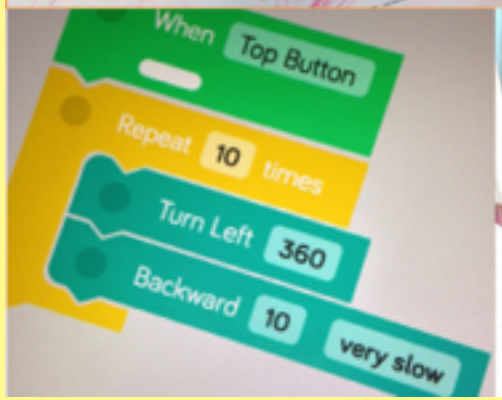


Dash and Dot

Dash Can Draw! (Math and Art)

Use Lego connectors to attach drawing tools.

Program dash to draw a circle.



http://4code.dk/wp-content/uploads/2015/01/wonder_magazine_001.pdf

Dash and Dot

Dash Travels! (Social Studies)

This teacher used a large vinyl map and coded Dash to visit each country.

My 1st grade GT students are learning about different countries around the world. Before digging into that research, I wanted to make sure they understood the difference between countries and continents, and had a general understanding of their locations. We have a giant map of the world on our wall, but I thought Dash and might be able to help us by taking their own virtual trip around globe. I ordered this vinyl map for the floor from Amazon.

https://engagetheirminds.com/tag/dash-and-dot/

Dash and Dot

Dash Reads! (ELA)

K students drive Dash to the correct sight word.

http://thekindergartenguy.blogspot.com/2015/02/dash-dot-rule-my-classroom-my.html

Sphero or Ollie

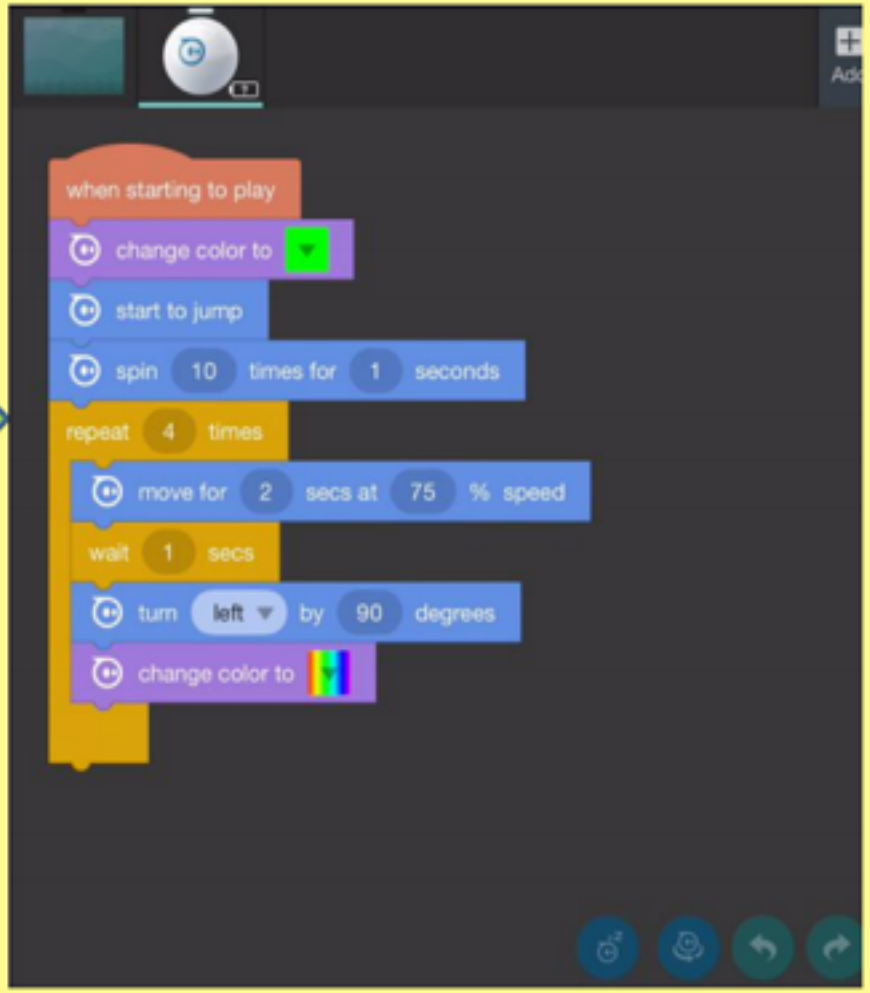
www.sphero.com

Tickle

Sphero

Draw N' Drive

Ollie



Sphero or Ollie

Paint with Sphero! (Art)

Put a nubbie cover on Sphero and drive it through paint for your own modern art.

https://medium.com/sphero-sprk/steam-carnival-code-explore-create-dad79e0bb935#.laszpt7ia

Sphero or Ollie

Bridge Challenge (Science and Math)

Can your bridge hold a sphero?

Vary the materials.

Vary the number of robots.

https://engagetheirminds.com/2015/04/14/sphero-bridge-building/

Sphero or Ollie

Changing Colors! (Science and Math)

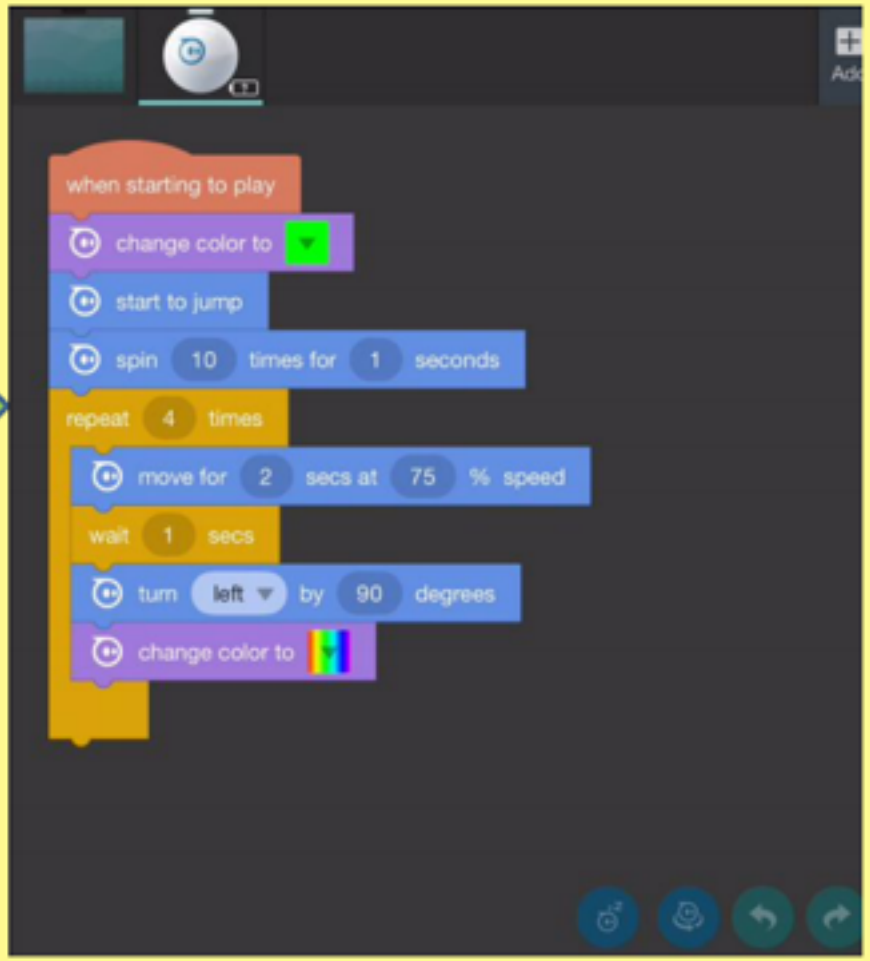
Can you program Ollie to change to a different color- Every 2 seconds? Every 5 seconds? Using primary colors?

Rolling Spider Drone

Tickle

Free Flight

Tynker



Rolling Spider Drone

Points of View (ELA)

Take a picture from the drone. Write about the image from the drone's point of view.

Rolling Spider Drone

Supply and Demand (Social Studies)

Provide a scenario where teams need to pick up and deliver different supplies from one spot to another to meet demand within a given time constraint.

Picture from: http://www.tampabay.com/news/education/k12/drones-in-woodland-elementary-classroom-soar-flip-and-teach/2260352

Rolling Spider Drone

Flight Skills (Math)

Challenge teams to create a code that flies the drone over an obstacle and lands in an exact spot. Who can do it in the fewest moves? In the least amount of time? With the most accuracy?

Picture from: http://stager.tv/blog/?tag=tickle-app

Ozobots

Follow color-based codes on lines that you draw.

Ozobot Bit

Use Block coding with OzoBlockly.

Ozobots

Ozobot City (Social Studies and Art)

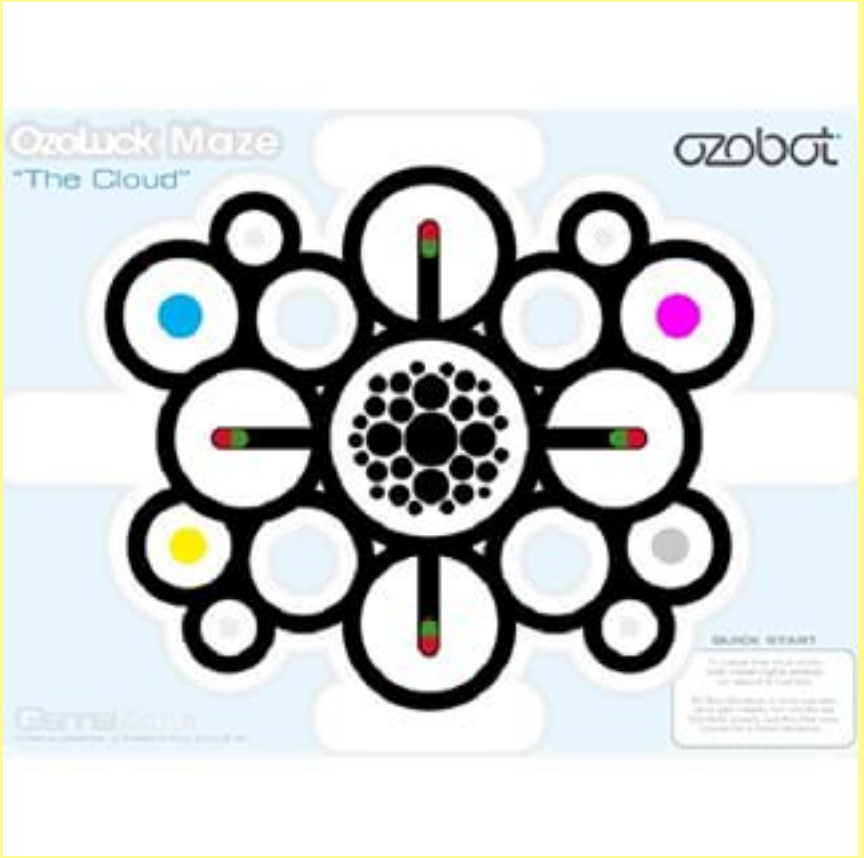
Students create a city (with important community resources) for the Ozobots to live in or visit.

https://artisaneducation.com/category/work-is-play/

Ozobots

Ozobot Probability (Math)

Print the Ozobot Cloud Maze from [ozobot.com](http://www.ozobot.com). Students can label the outputs with names, numbers or other info and collect data on the number of exits the Ozobots make.

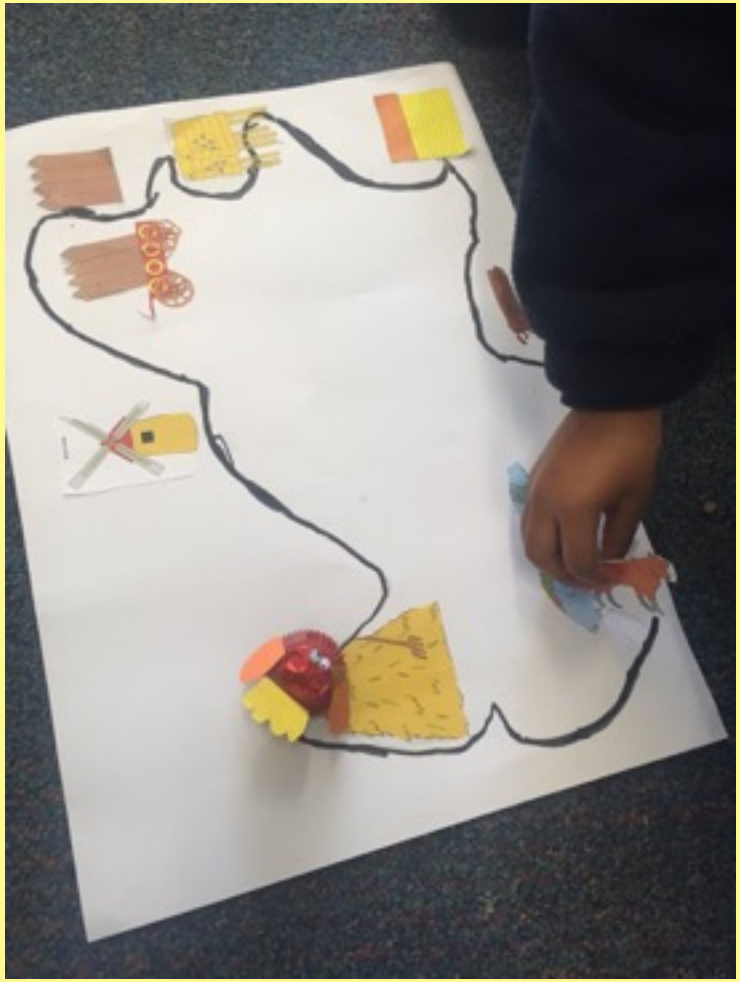


http://www.ozobot.com

Ozobots

Ozobot Charaters (ELA)

Students retell a story with the Ozobot(s) as the character(s). The path sets the timeline and scene of the story.



https://twitter.com/erinmcnamara20

Coding with Students?

So what do you think now?

Questions?

Challenge!

See which team can complete the task first:

Dash:

Program Dash to:

-Travel in a square

-Then spin 360 degrees

-Then say “yippe”

Drone:

Program Drone to:

-Start in a designated area

-Fly up and flip

-Land in a designated area

Ollie:

Program Ollie to:

-Change color 4 times while traveling in any direction

-Ollie cannot hit anything

Ozobot:

Have an Ozobot race using the Ozobot code cards.

Each team can choose 12 cards for their track.