Intelligent Play

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The Plan

1. Gaming in the classing – a ***quick*** show and tell of some of my favorite sites, with 5-10 minutes for you to explore. (15-20 minutes)
2. Coding/programming with Scratch – an overview of why coding, then we will begin coding with an xy coordinate plane introductory activity, followed by a transformational geometry activity. (30-35 minutes)
3. Wrap up – resources, questions, comments

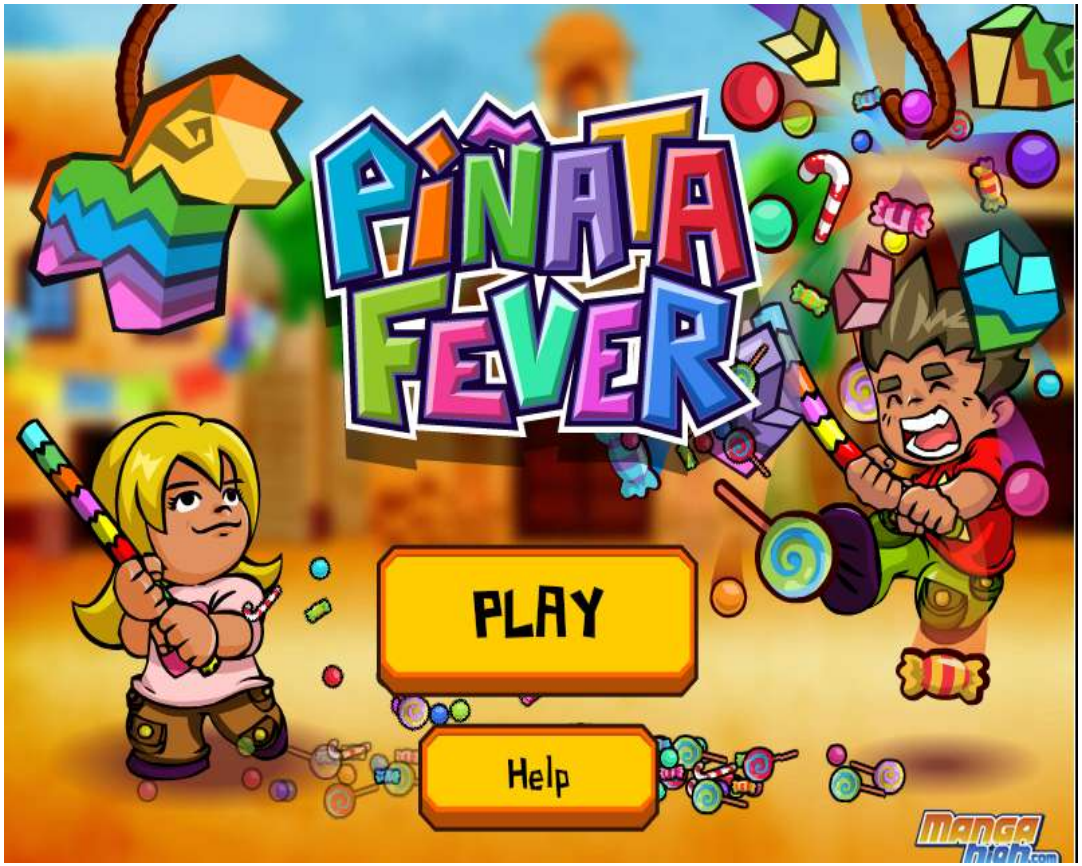
Manga High
www.mangahigh.com

Not only a gaming site, but also includes practice problems matched to the common core. These practice sets are called “prodigies” and are ten questions ranging from easy to “on fire”. Students earn points for solving problems. Points are turned into digital medals.

Has global competitions. Just this year, my students have played other students in the USA, Canada, United Kingdom, Ireland, and Hong Kong.

Manga High Pinata Fever

Adding and subtracting integers; uses numberline, begins easy & progresses



Manga High Flower Power

Ordering decimals, fractions, and percents, in various combinations with problem solving as you try and turn a profit.

Manga High

Tangled Web

Find missing angle measures, work with parallel lines and transversals, polygons, and circles

Manga High Pyramid Panic

Perimeter, Area

Circumference, Pythagorean Theorem, and trigonometry

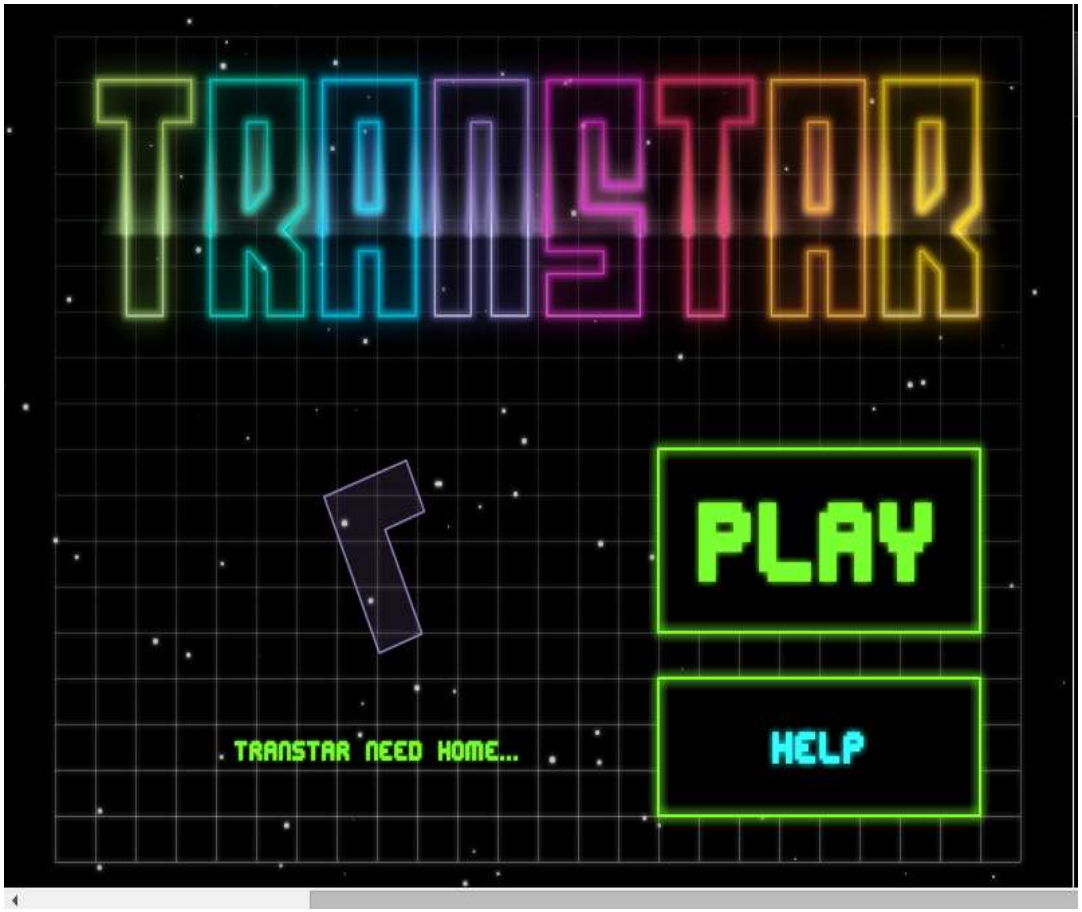
Manga High

One step equations, function machine, multi-step equations, and linear equations

Algebra Meltdown

Manga High Transtar

Reflections, rotations, dilations, translations, and all combinations



Calculation Nation

http://calculationnation.nctm.org

*All of the games in Calculation Nation are organized around content from upper elementary through middle grade curriculum. These are strategy games focusing on fractions, factors, multiples, symmetry, area, and more.

*You can play against the computer, or challenge someone located anywhere in the USA

*You can “level up” as you win more games.

*Registration is free but it requires an email address, but it can be a fake one like mathgeek@none.com

DiRT Dash

Traverse terrains to try to take the top time. DiRT is the trick: Distance = Rate × Time.

Learn More »

neXtu

Next to nothing is more fun than capturing your enemy's pieces! Strategically place geometric pieces with point values on the game board to collect more shapes and points than your opponent.

Learn More »

Square Off

Perimeter, area, and alien spaceships — oh, my! The more ships you capture and area you cover, the more you score.

Learn More »

Factor Dazzle

It's dazzle-icious! Find all the factors of a number to earn points. Then, choose a number for which your opponent must find the factors.

Learn More »

Fraction Feud

Prepare to battle in this game of fraction action! In each joust, earn points by creating a larger (or smaller) fraction than your opponent.

Learn More »

Times Square
Exercise your skill with factors and multiples! Try to get four squares in a row vertically, horizontally, or diagonally.
Learn More »

Slam Ball
Hit tokens, collect points! Slam the ball into the sides of the game board, and use your knowledge of angles, symmetry, and reflections to choose the best path.
Learn More »

Dig It
Let's get dirty! Create and locate fractions on a number line to tell your shovel where to dig. Earn points for the amount of dirt you collect and the number of jewels you discover.
Learn More »

Drop Zone
Make sums of 1 and prevent your opponent from making sums of 1.
Learn More »

Ker-Splash
Dive into math fun as you grab tokens, combine terms, and use your algebra skills! Increase the coefficients to maximize your score when the secret values of the variables are revealed.
Learn More »

PrimeTime
Take a random walk on the wild side! Roll dice, spin a spinner, or flip coins to determine your next move — but which one will give you the best chance of landing on a prime number or bonus space?
Learn More »

Flip-n-Slide
Flip, slide, and turn your way to victory. Transform your triangle on the coordinate plane to capture the most points.
Learn More »

TenMarks

www.tenmarks.com

Not a gaming site, but a good resource matched to Common Core, with ability to differentiate and enrich from first grade through Algebra 2 and Geometry.

Amazon purchased TenMarks and has just released free App for Kindle Fire.

Includes video lessons, math practice and real-time tutoring.

I use the basic, free version; paid subscription offers more features.

Okay – Your time to play

- I would like you to choose one (or more) of the sites just mentioned, and if you do not have an account, make one, then play a game, try a prodigy, or just explore.
- **You've got 5-10 minutes**, then it is on to Scratch.

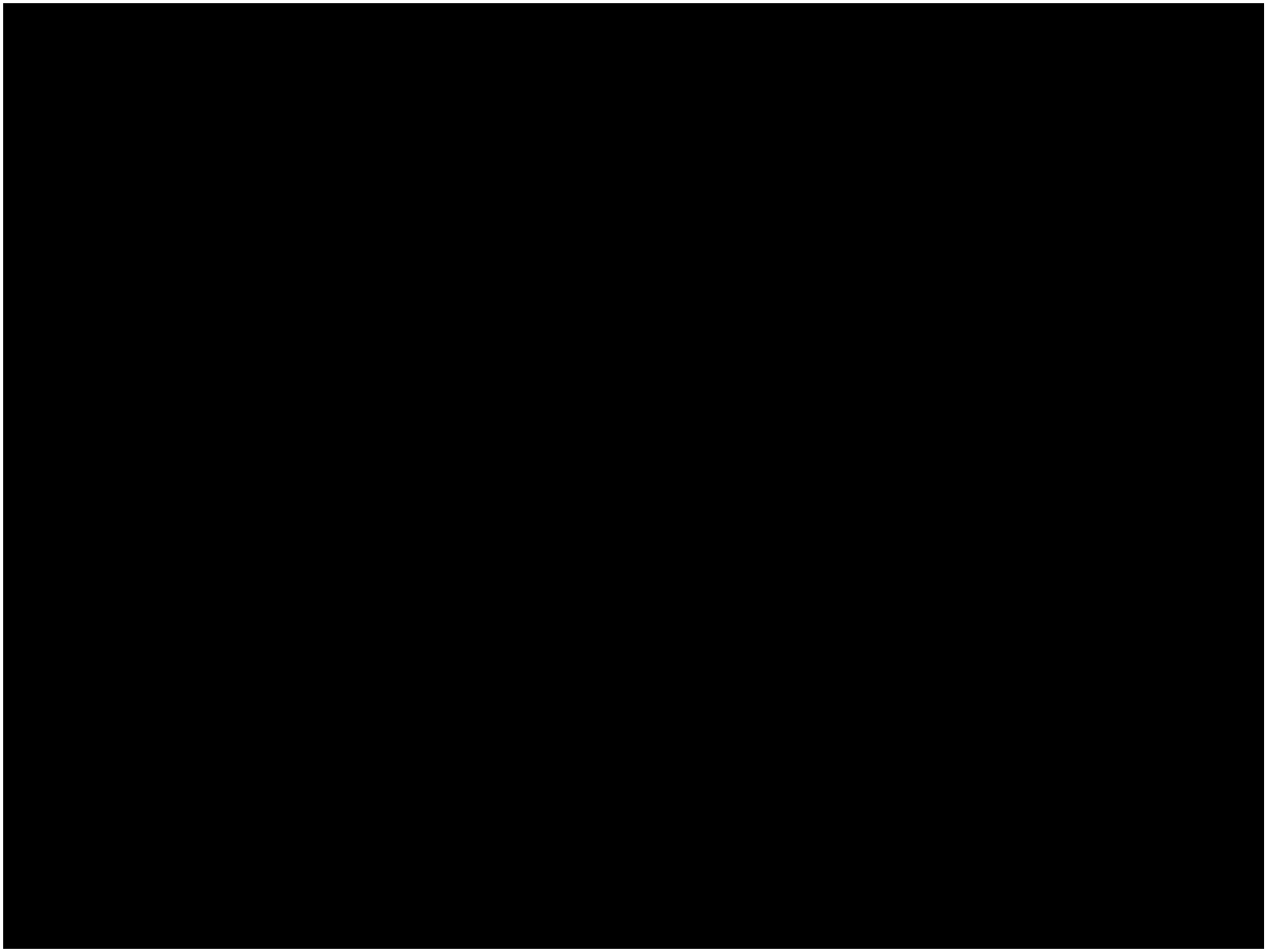
Scratch

http://scratch.mit.edu

Scratch is a programming language that makes it easy to create interactive art, stories, simulations, games and of course, math, plus you have ability to share those creations online.

Scratch is a building block program and is a great tool for STEM/STEAM programs.

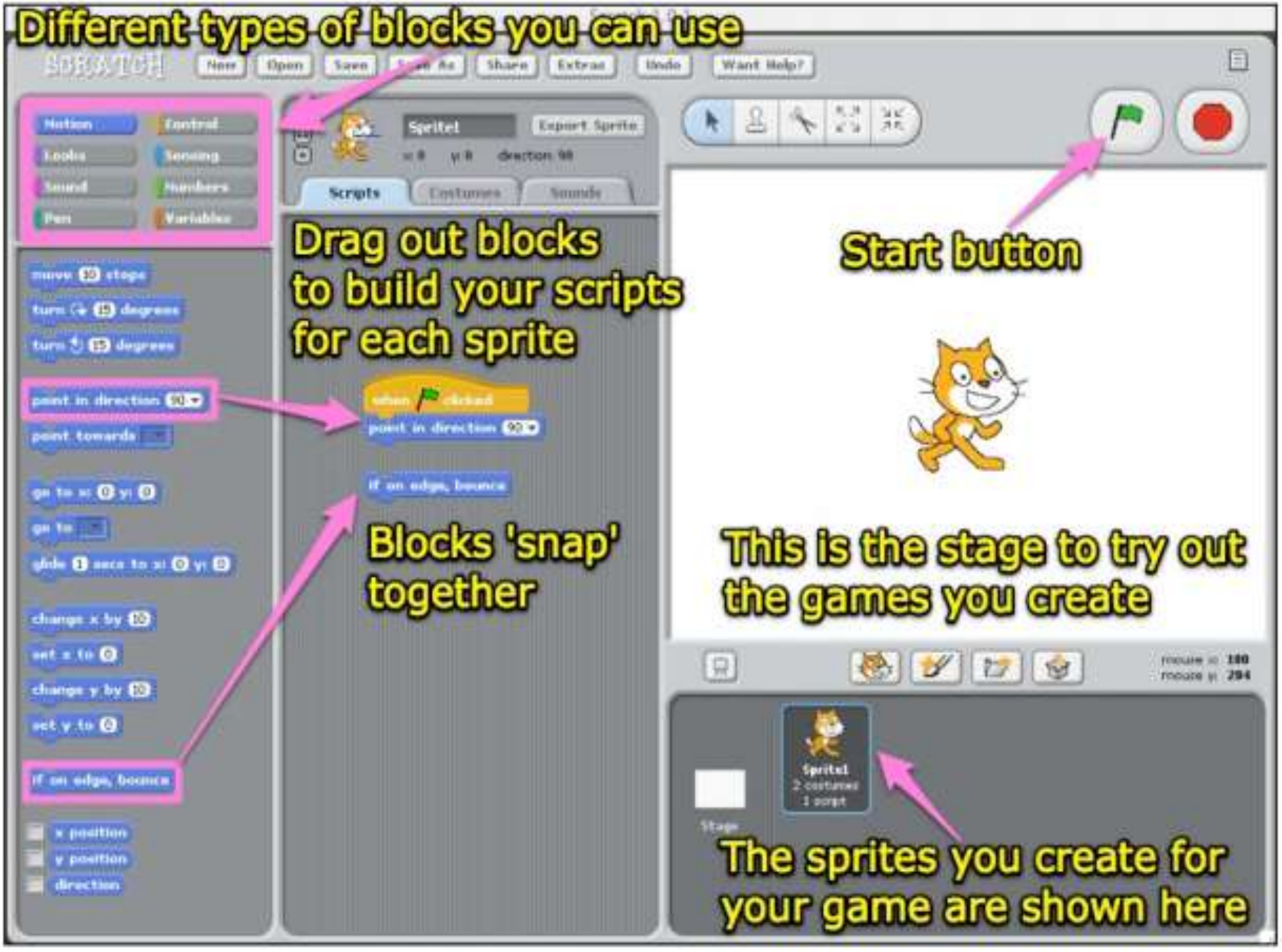
A brief intro to Scratch



Available in two ways

- Scratch 2.0 is the newest, web version (requires flash)
- Can also download a stand alone version

*I chose to have the stand alone version available for download to my students' computers. This eliminated the "no internet available at home" issues, and eliminated COPPA compliance issues.


Different types of blocks you can use
Drag out blocks to build your scripts for each sprite
Start button
Blocks 'snap' together
This is the stage to try out the games you create
The sprites you create for your game are shown here

Time to code!

- Launch Scratch – either from your stand alone program or from the web
- The first project we will do is an xy coordinate activity
- The second project is a polygon-angle activity – like a spirograph

Resources

- **scratch**.mit.edu/ (the obvious first choice)
- http://www.scratch.ie/resources (Resources from University of Limerick, Ireland)
- http://www.smsn.vic.edu.au/ictguy/index.php/scratch-resources/ (nice compliation from variety of sources)
- http://learnscratch.org/ (has video lessons)

Interesting reads on coding

- New York Times
- theedublogger: change how you teach math
- Close the gap; 20 resources to learn to code
- Benefits of teaching kids to code (with embedded video to a TED talk)