

AYRESOPOLY

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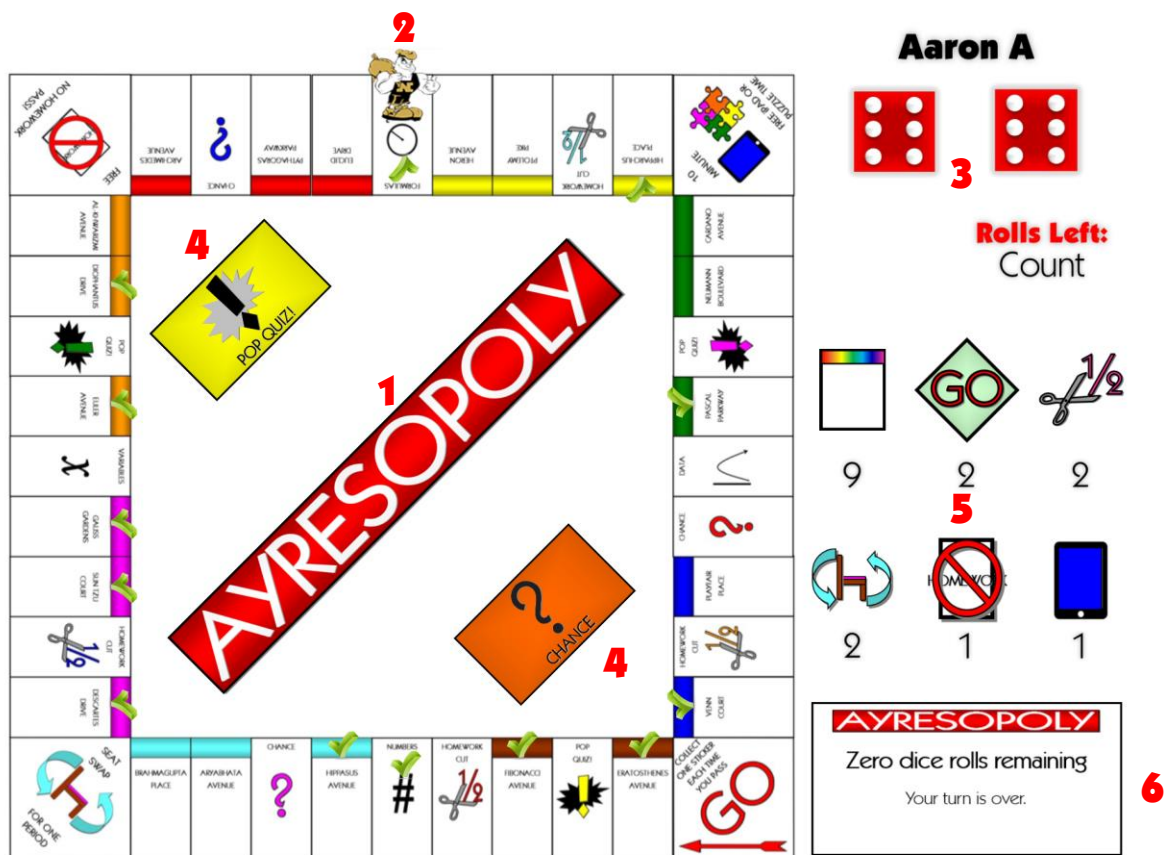
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THE APP SPACE

Below is a screenshot of the Ayresopoly game space with many features identified in the image:



The Game Board (1)

The Ayresopoly game board consists of 40 spaces, similar to a standard Monopoly board. Each space is either property to be collected, a space in which a student earns a reward instantly (such as a Homework Cut coupon or a “Corner Reward”), or a space where a student gains the chance to select a Chance or Pop Quiz card. In the program’s code, each space is numbered 0-39 (Space 0 is “GO”). When the dice are rolled, the amount on the dice is added to the space number of the token’s current location. Using a type of math called *modular arithmetic*, the program determines the space to which the token should move. By utilizing modular arithmetic, the sum of the dice amount and the number of the current space will always remain between 0-39.

The Game Board (continued)

There are 26 properties to be collected in nine property groups. Each property is named after a mathematician that has made essential contributions to secondary mathematics. In addition, the properties are arranged on each side of the board such that each side centers on a particular branch of mathematics. Starting at GO and traveling around the board clockwise, the first side focuses on Arithmetic, the second side on Algebra, the third side on Geometry, and the fourth side on Data Analysis and Probability. The center space on each side of the board (or the classic Monopoly railroad spaces) is designated as a “Math Essential Space” and is an important type of mathematical media vital when studying that particular branch of mathematics (Numbers, Variables, Formulas, and Data).

Below is a list of all of the properties on the board (let me know if you’re interested in learning their contributions):

BROWN

Eratosthenes Avenue
Fibonacci Avenue

RED

Archimedes Avenue
Pythagoras Parkway
Euclid Drive

LIGHT BLUE

Brahmagupta Place
Hippasus Avenue
Aryabhata Avenue

YELLOW

Heron Avenue
Ptolemy Pike
Hipparchus Place

PINK

Descartes Drive
Sun Tzu Court
Gauss Gardens

GREEN

Neumann Blvd.
Cardano Avenue
Pascal Parkway

ORANGE

Euler Avenue
Diophantus Drive
Al-Khwarizmi Avenue

DARK BLUE

Playfair Place
Venn Court

MATH ESSENTIALS

Numbers
Variables
Formulas
Data

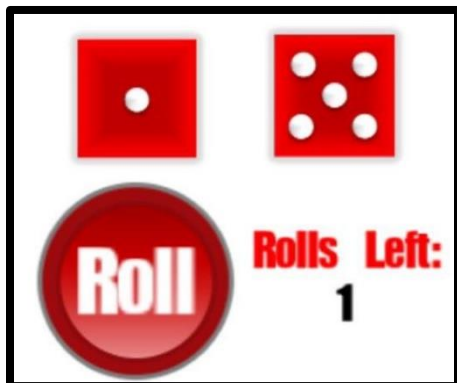
The Token (2)

Instead of a wheelbarrow or thimble, everyone's favorite man in Noblesville is graciously filling-in for the token for each student's game! After the dice are rolled the Miller Man will move to the appropriate space on the board. Furthermore, the Miller Man will move to the next space taking the quickest, linear route possible, even if that means traveling backward (so don't panic if he takes a couple of steps back or takes an awkward path from time-to-time).



The Dice (3)

All dice are controlled by unique programs called *random number generators*. When the dice are rolled, a random number from 1-6 is selected for each die and are added together to determine the total amount of the roll. The dice are activated by tapping the red ROLL button that will remain on the screen as long as the roll count is not zero or a Chance or Pop Quiz card is to be selected. If a particular Chance card requires a free roll of the dice, a new ROLL button and set of dice will appear in the notification area.



The Cards (4)

Two decks of cards are in play. The CHANCE cards direct the user to a particular space on the board or will give the player an opportunity to roll the one or two dice and move a particular amount of spaces. Instead of Community Chest cards, the POP QUIZ cards in play all contain various game rewards the player receives when answering pop-quiz questions pertaining to current class topics correctly.

Similar to the dice, the card decks are controlled by random number generators.



The Counters (5)

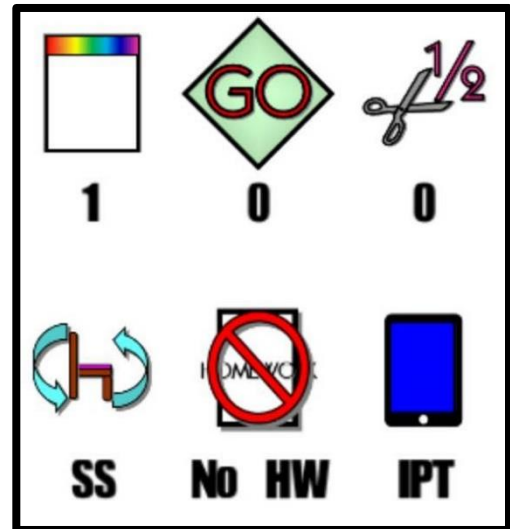
Six counters on the game screen assist in keeping accurate counts of properties and rewards. Below is a figure depicting all six counters in the game as well as a brief description of each counter in the game.

TOP ROW

Left - Property Count: This number should increase each time a new property is collected. The highest number this count should ever reach is 26.

Center - Sticker Count: This number keeps track of all of the stickers collected during the game. Students earn a sticker each time they pass GO and have the opportunity to earn additional stickers each time they select a Chance or Pop Quiz card.

Right- Homework Cut Count: This number should increase each time a player earns a Homework Cut coupon by landing on one of the four spaces on the board or by a Chance or Pop Quiz card.



BOTTOM ROW

Left- Seat Swap Count: This number should increase each time a player earns a Seat Swap by landing on the corner space on the board or by selecting a Pop Quiz card.

Center- No Homework Coupon Count: This number should increase each time a player earns a No Homework Coupon by landing on the corner space on the board or by selecting a Pop Quiz card. (In case you're wondering, a No Homework Coupon allows the student to earn full credit for an assignment without completing any problems while a Homework Cut coupon allows the student to earn full credit only having to complete half of the problems.)

Right- 10-Minute iPad/Puzzle Time Count: This number should increase each time a player earns 10 free Minutes of iPad or Puzzle Time by landing on the corner space on the board or by selecting a Pop Quiz card.

The Notifications (6)

Finally, the space on the bottom-right corner of the app screen is reserved for game notifications, such as the one seen at the right.

For each player's turn at least one notification should appear. Players should receive notifications for collecting properties, collecting monopolies, landing on Chance or Pop Quiz, or receiving an instant reward, among other things. Notifications can be removed from the screen by simply tapping on the notification.



Now that we have taken the full Ayresopoly tour, it's time to start playing!

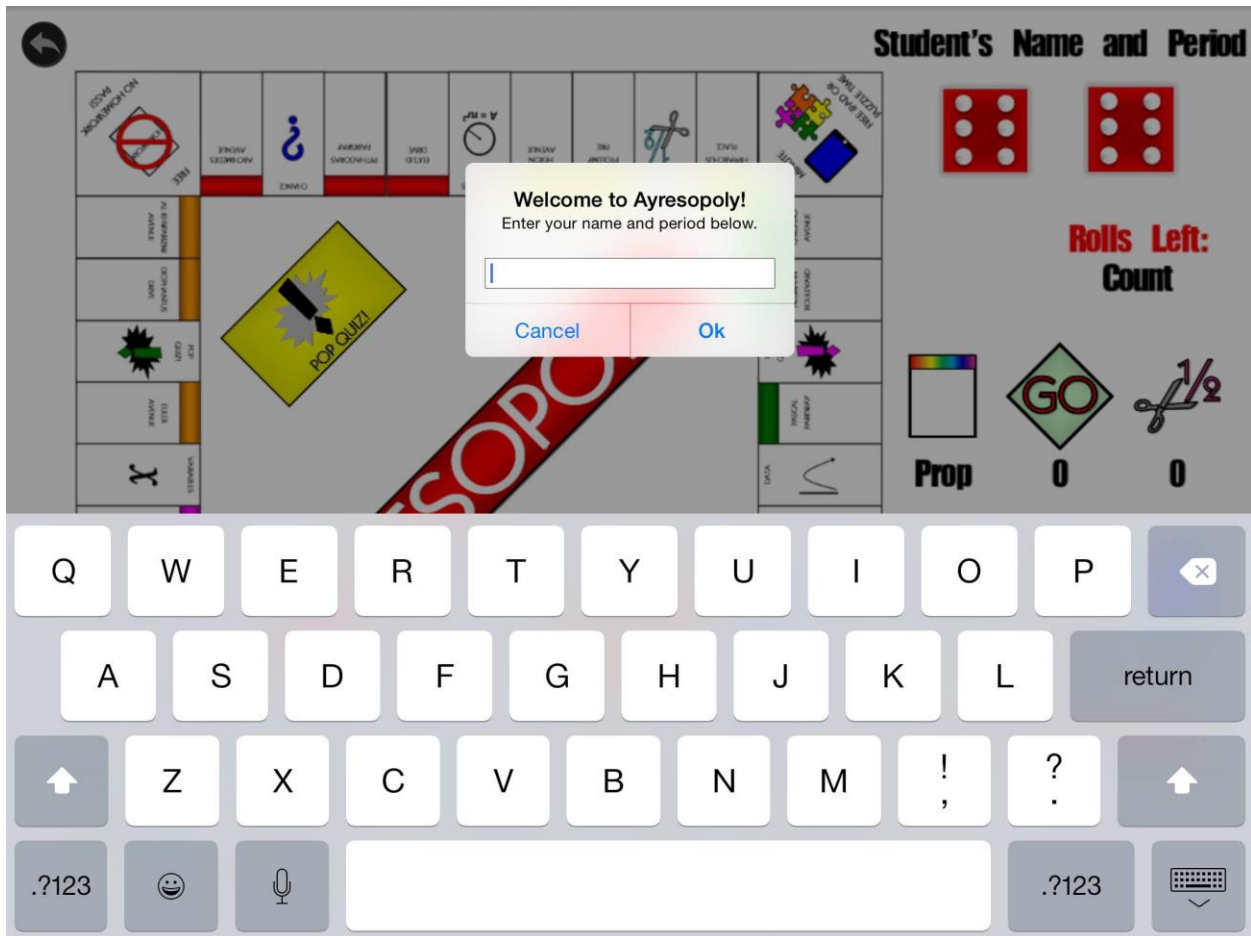
THE APP PLAY

On Your Mark...Get Set...



Personalization

When the game opens for the first time, players will see the screen below.




Students will be asked to type their name and period into the pop-up box and after tapping the OK button or pressing RETURN, their personal information will be stored at the top-right side of the game screen.

Rolling the Dice

To roll the dice, tap on the ROLL button. The dice will indicate the amount of the roll and then the token should advance that number of spaces around the board. Mr. A will manually add rolls into each student's game when they are earned during class.

Collecting Properties

When the token lands on a property for the first time, students add that property to their collection. In order to indicate a property is collected, a green check mark  appears on the property and the property counter should add an additional property to the count. (Note: Green check marks will not appear on instant reward squares.)

Earning Monopolies

When all of the properties of a color group (or all of the Math Essential properties) are collected, the student has collected a monopoly and earns rewards in class. The text **Redeem Ayresopoly** will display on the screen in the color associated with the monopoly earned. Students should see Mr. A when they have collected a monopoly and earn that reward.

Instant Rewards

The following spaces on the board are considered "Instant Reward Spaces":

Homework Cut
GO
Seat Swap
No Homework Pass
10-Minute iPad/Puzzle Time

When a student lands on these spaces, Mr. A will document the reward earned and the appropriate count should increase accordingly. The counters should also increase if students earn one of these rewards as a result of selecting an appropriate Chance or Pop Quiz card.

Chance Cards

There are 12 Chance Cards in the game deck. When a student lands on a Chance space, the words TAP THE DECK will appear underneath the Chance deck on the game board. In addition, a notification will appear requesting the student to select a CHANCE card. After a Chance card has been played, the player needs to tap any notifications in the notification area in order for them to be removed. Once the player taps the Chance Card it will disappear and the original ROLL button will appear once again (as long as the ROLL COUNT is not zero).

Pop Quiz Cards

There are 12 Pop Quiz Cards in the game deck. When a student lands on a Pop Quiz space, the words TAP THE DECK will appear underneath the Pop Quiz deck on the game board. In addition, a notification will appear requesting the student to select a Pop Quiz card. After a Pop Quiz card has been played, the player needs to tap any notifications in the notification area in order for them to be removed. Once the player taps the Pop Quiz Card it will disappear and the original ROLL button will appear once again (as long as the ROLL COUNT is not zero).

Loading Saved Data

As students play the game, the counters, collected properties, and token space are automatically saved each time these values change during gameplay so that players may continue the game the next time they earn a roll of the dice. To continue a game, students need to tap on the **LOAD SAVED DATA** text located the bottom of the notification area before tapping anywhere else on the screen each time the game starts. The game will then ask two questions about loading saved data and the last known location of the token – answering **Yes** to both questions will allow all saved data to load correctly before additional dice rolls are added for play. Note: The LOAD SAVED DATA text will only appear after the student's initial turn of the game, and the answer **Yes** to both questions is case-sensitive.