



COLORADO

Department of Early Childhood

Changes to UPK Colorado's Matching Process

February 2023

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INTERNAL ONLY

In This Deck

This training is very dense, so we have split it into two parts.

Part 1

- Phases of matching
- Example students
- How the DAA works

Part 2

- Provider review period
 - Declining a match
 - Family review period
-

Providers vs. Programs

At UPK Colorado, a provider can have many different programs.

Families select and rank programs, not providers.

A family can select multiple programs from one provider. A family can select multiple programs from multiple providers.

How UPK Colorado students are matched to open seats for the 2023-2024 school year

The Matching Process

The matching process is made up of three phases:

1. Running the deferred acceptance algorithm (DAA)
2. Provider review period
3. Family review period

Meet Jaleel

Jaleel is 4 years old and currently enrolled at Z Academy.
His sisters go to Z Academy, too, and their dad also works at Z Academy.
Jaleel's family is above the poverty line.



Program Preferences

1. Z Academy Full Day
2. Z Academy Half Day AM
3. Z Academy Half Day PM
4. Sparkle School Full Day
5. Sparkle School Half Day AM

Meet Daisy & Zinnia

Daisy and Zinnia are **4 year old twins** that just moved to Colorado and are **new English learners**. They do not have any siblings and their parents work outside the education system. Their family is **below the poverty line**.

Program Preferences

1. Canyon Club Full Day
2. Z Academy Full Day
3. Sparkle School Full Day
4. Molly Brown Full Day
5. Snowcap Center Full Day



Phase 1: The DAA

What is the DAA?

DAA stands for **deferred acceptance algorithm**. The DAA is used in school lotteries across the country. It was designed by Nobel economists to be strategy-proof.

The DAA was specifically designed to produce equitable outcomes and remove bias from the matching process.

“Running the DAA” consists of clicking a button that executes a complex algorithmic script across all applicants and available seats in the system.

When a family submits their application:

Three things happen when a family submits their application:

- Child(ren) are assigned a unique lottery number
- Child(ren) are given a weight of 10 or 0
- Child(ren) have a status of “Selected” at each of their ranked programs

Weight of 10 or 0

A child will be assigned a weight of 10 if they answered yes to the following question on their application:

- Child is currently enrolled at one of my ranked programs
- Child's sibling is currently enrolled at one of my ranked programs
- Child's parent is an employee of one of my ranked programs

A child that does not answer yes to that question is assigned a weight of 0.

10 and 0 are the *only* weights a child can have for the 2023-2024 school year.

The assigned weight determines a child's place in line for open seats at their ranked programs.

Unique Lottery Number

Each child is assigned a unique lottery number at the time of submission. **The lottery number determines a child's place in line for open seats at their ranked programs.**

The lottery number has no correlation with the time of submission of the application. A family applying two days before the deadline could have a better lottery number than a family that applied six weeks earlier or vice versa.

Status of “Selected” at each ranked program

When a family submits their application, they are entering a lottery for each of the programs that they rank. **That means that a student has up to five statuses, one for each of their programs.** These statuses change as a student is moved through the matching process (coming up next).

Between submission and the first DAA run after a family submits their application, a student’s enrollment status will always be Selected.

After Submission



Weight

10

0

0

Lottery #

599

320

161

DAA Step 1

Create a line of students for
every program in the system

Creating a line of students for a program

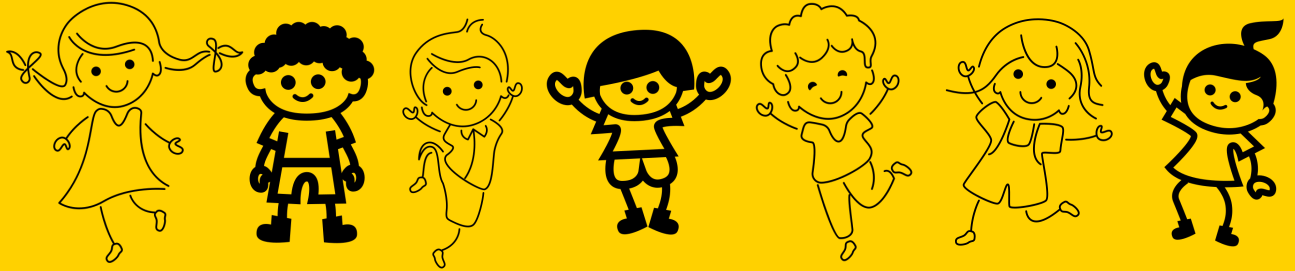
First, students are separated into two groups by weights. Students with a weight of 10 are moved into the first group, and students with a weight of 0 are moved into the second group.

Then, the two groups are lined up by lottery number. The lower a student's lottery number is, the closer they are to the front of the line.

Line for One Program



Z Academy Full Day



Weight of 10

Weight of 0

Pairing and locking siblings together

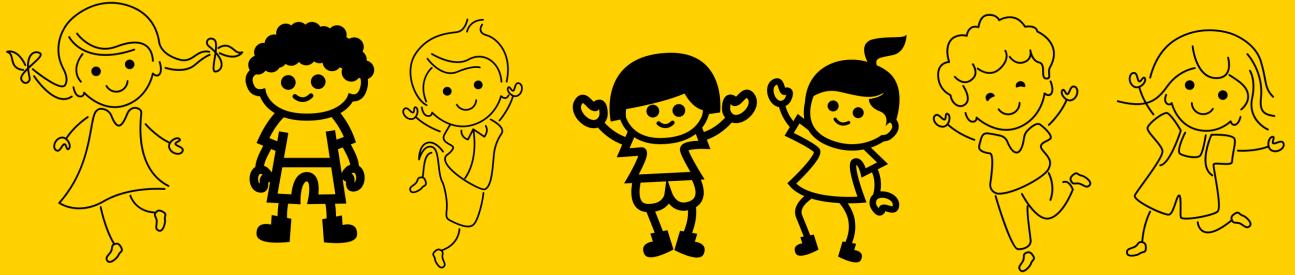
When siblings apply and rank the same programs in the same order - they must be exactly the same - they are paired and locked together as they move through the matching process.

The sibling(s) will be moved up the line to the sibling with the best lottery number and locked together there.

Siblings Locked Together



Z Academy Full Day

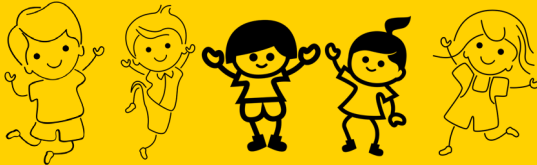
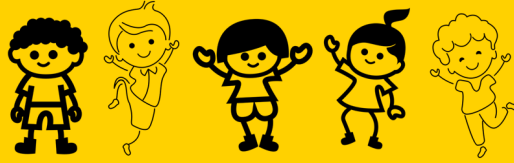
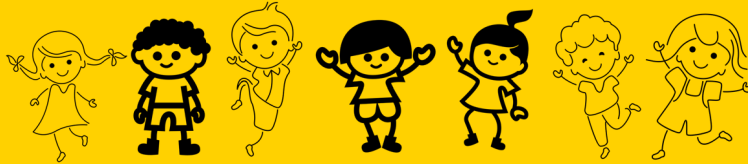
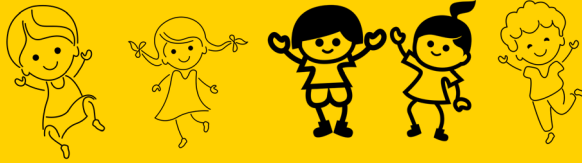


Weight of 10

Weight of 0

A line for every program

At the end of step 1 of the DAA, there is a line for every program and the line is prioritized by weight and lottery number.



**Every program
has a line of
students**

DAA Step 2

Fill open seats from the
prioritized line of students

Filling the seats from the line

Now that the line for each program is in order of priority, the system is ready to fill the open seats at each program.

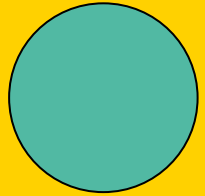
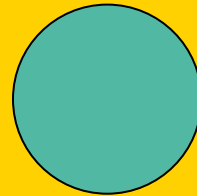
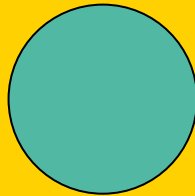
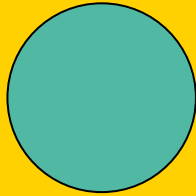
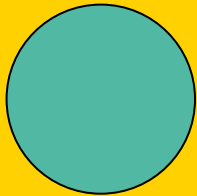
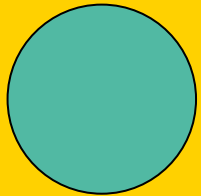
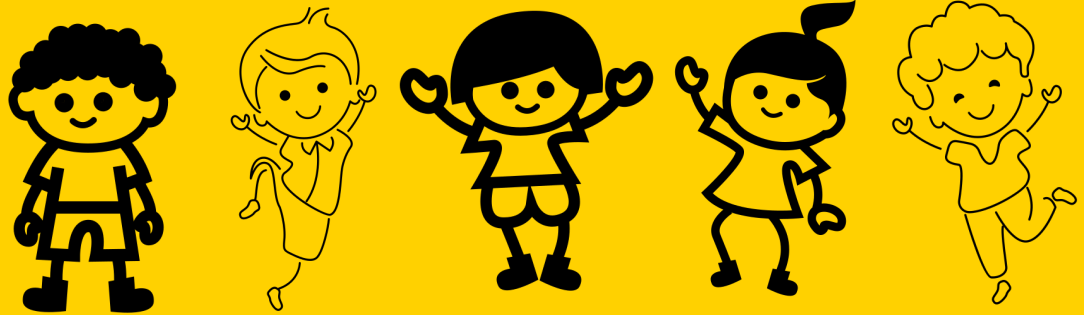
The system will fill the highest number of open seats at a program that is possible given the size of the line for those seats. In many cases, all of the program's open seats will be filled and there will be students still left in line. This is a waitlist.

If there are fewer students in line than the number of open seats in the program, all of the students will be placed there.

Sparkle School Full Day has six open seats...



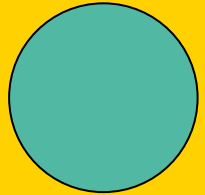
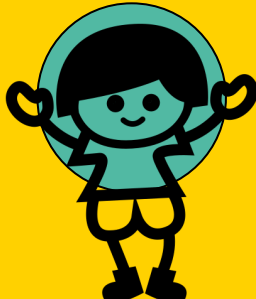
Sparkle School Full Day



...so all five students in line are placed.



Sparkle School Full Day



Siblings are always placed together

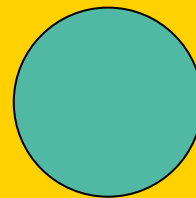
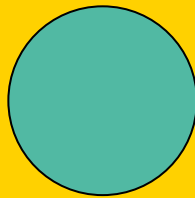
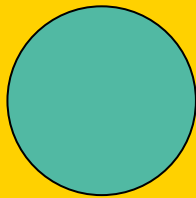
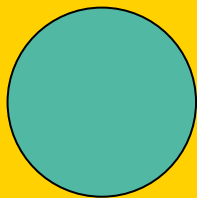
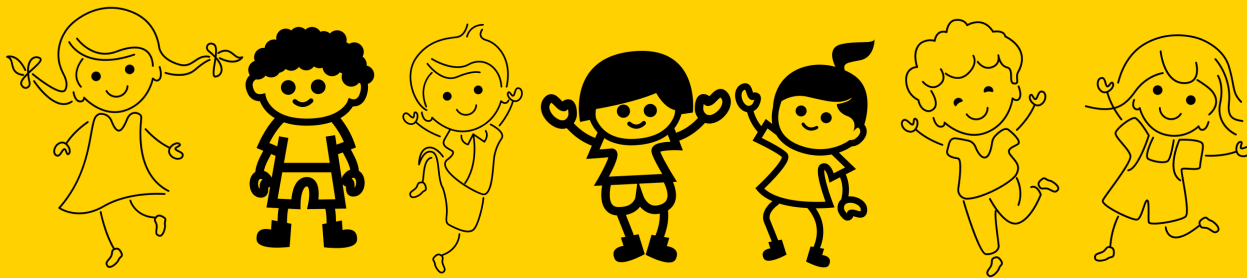
If there are not enough available seats for the locked siblings to be placed together, the siblings will not be placed there.

If there is only one seat available but both siblings are in the line, the students will not be placed in that program.

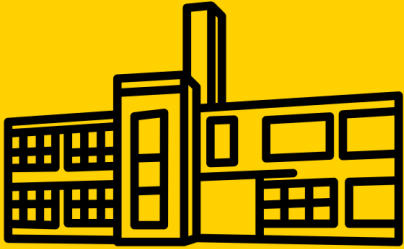
**Z Academy Full Day has four open seats.
Will Daisy and Zinnia be placed there?**



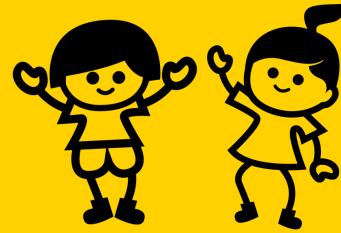
Z Academy Full Day



- No, because there isn't room for both of them. The next student in line gets the spot instead.



Z Academy Full Day



Multiple programs, multiple matches

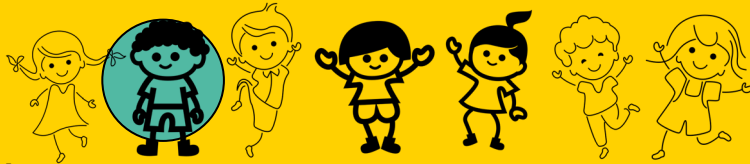
In its first and second steps, the DAA makes a line and fills seats for *every* program in the system simultaneously. This means that one student could end up matched to more than one of their ranked programs due to their weight and lottery number.

In the third step of the DAA, those multiple matches are deconflicted based on the preferences in the student application.

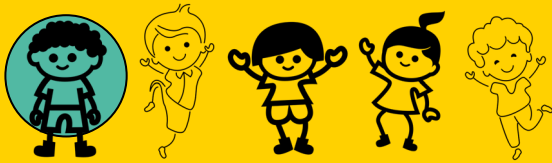
Jaleel's Multiple Matches



Z Academy Full Day



Sparkle School Full Day



During steps 1 and 2 of the DAA, Jaleel was matched into an open seat at more than one program because he was close to the front of the line for both.

DAA Step 3

Deconflict multiple placements
based on student's preference

Deconflicting multiple placements

The last step of the DAA is to make sure each student has no more than one seat in the system.

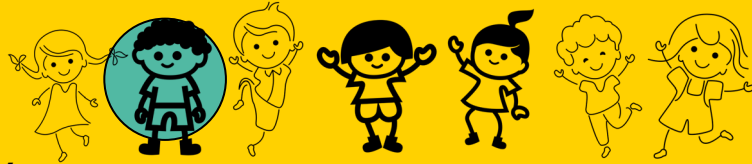
If a child is matched to several open seats, the system will permanently match them to the seat at their highest ranked provider.

The child's other seats are then released for the next student in line to take.

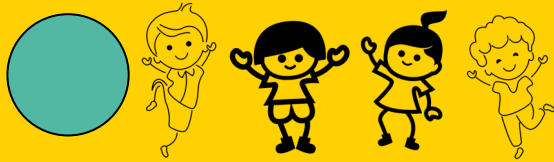
Where does Jaleel end up?



Z Academy Full Day



Sparkle School Full Day



In step 3 of the DAA, Jaleel will be permanently matched at Z Academy because he ranked it higher than Sparkle School. His seat at Sparkle School will then be released for the next student in line.

Student statuses after DAA run

After the DAA is run, the student will be in one of the following statuses for each of their ranked programs:

- **Proposed**- The student is proposed to be placed in the program
- **Waitlisted** - The student is in line for an open seat
- **Withdrawn** - The student has left the line for an open seat because they were placed in a higher-ranked program

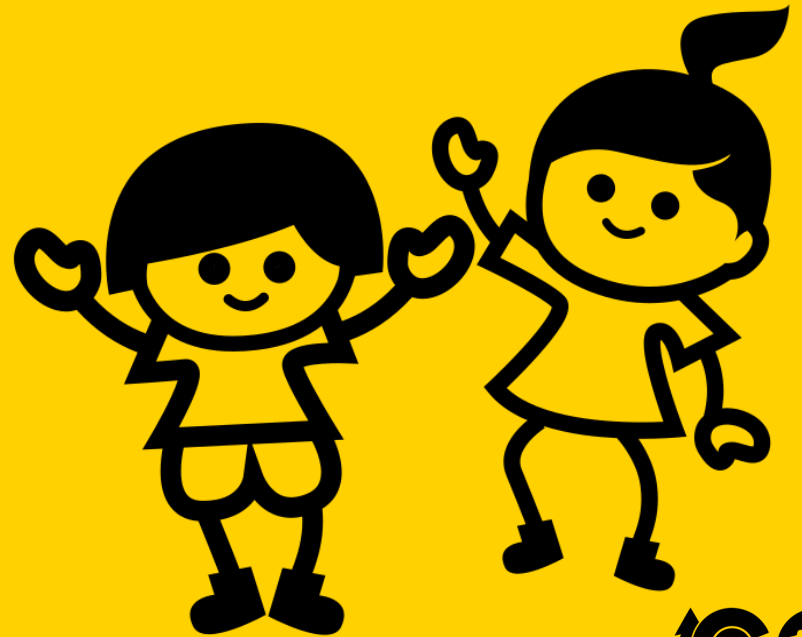
Jaleel's statuses after the DAA



1. Z Academy Full Day - **Proposed**
2. Z Academy Half Day AM - **Withdrawn**
3. Z Academy Half Day PM - **Withdrawn**
4. Sparkle School Full Day - **Withdrawn**
5. Sparkle School Half Day AM - **Withdrawn**

Daisy & Zinnia's statuses after the DAA

1. Canyon Club Full Day - Waitlisted
2. Z Academy Full Day - Waitlisted
3. Sparkle School Full Day - Proposed
4. Molly Brown Full Day - Withdrawn
5. Snowcap Center Full Day - Withdrawn



End of Part 1

Questions?

Begin Part 2

Where'd we leave off?

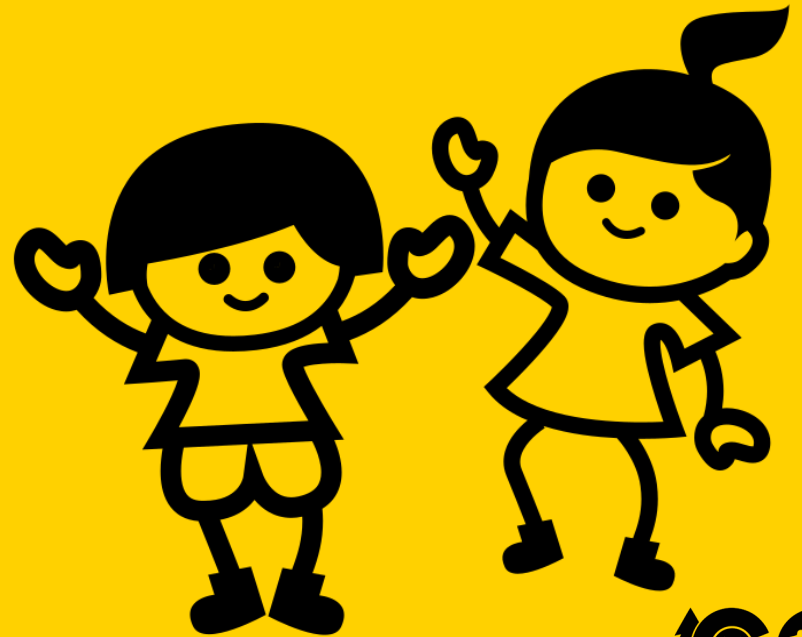
Jaleel's statuses after the DAA



1. Z Academy Full Day - **Proposed**
2. Z Academy Half Day AM - **Withdrawn**
3. Z Academy Half Day PM - **Withdrawn**
4. Sparkle School Full Day - **Withdrawn**
5. Sparkle School Half Day AM - **Withdrawn**

Daisy & Zinnia's statuses after the DAA

1. Canyon Club Full Day - Waitlisted
2. Z Academy Full Day - Waitlisted
3. Sparkle School Full Day - Proposed
4. Molly Brown Full Day - Withdrawn
5. Snowcap Center Full Day - Withdrawn



Publish Results to Providers

Student statuses after published to providers

When matches are published to providers, the status Proposed changes to Placed. This student has now officially been placed in the seat by the DAA.

Now that the student is placed, they can only be declined. There is no concept of “accepting” a match in the UPK Colorado system.

For any program the student ranked higher than their match, their status will be Waitlisted. For any program the student ranked lower than their match, their status will be Withdrawn.

Reviewing matches

When matches are published to providers, providers will receive a notification that their matches are ready for review. Providers will log into the provider portal to see the students that have been matched into an open seat in their program(s).

Providers will *only* see the students that have matched with their program.

Providers will not see the students on the waitlist, nor the size of the waitlist, for their program(s).

Phase 2: Provider Review Period

What is the provider review period?

The provider review period is a set amount of time for providers to review the students that the DAA placed in the open seats at their programs.

There is no concept of “accepting” matches in BridgeCare, only declining them. A student is matched to the program unless the program explicitly declines them.

Providers who identified that they have an exception at the time of registration can decline students during this time based on the approved list of decline reasons.

Declining a match

When a provider declines a match, they will have to sign the following attestation:

Please enter the reason why you are declining placement for this child:

A child can only be declined for an exception reason that you explicitly stated when you registered for UPK and only by providers with exception approval from CDEC. All declines will be reviewed by UPK administrators and the child may be placed again at your location. If you attempt to decline a child for an unapproved reason you may be removed as a UPK provider participant.

Families will not receive a decline notification but they will see that you have declined their enrollment on the family dashboard.

Approved Reasons to Decline a Match

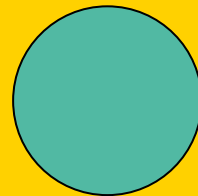
UPK Colorado understands that there are one-off situations that will need to be addressed. In these situations, providers must submit their decline reason for approval by CDEC staff.

The form to submit a one-off exception can be found here:
<https://docs.google.com/forms/d/e/1FAIpQLSeoueD6XiD-puGwPLxXz7qYoPJPg6wFpvhqjw0lhcXOUwTwA/viewform>



Sparkle School Full Day

**Sparkle School decline Daisy
& Zinnia's placement for an
approved reason.**



Status of Declined

When a provider declines a match the system has made, that student's status changes to Declined for that program.

The Declined status ensures that the student will never be matched with that program again.

The student now has four options to be matched with instead of five.

The declined student's seat is not automatically filled with a new student. The student's seat is now open for the next DAA run.

Quick Note

Because families rank *programs* not providers, and the DAA places students into *programs* not providers, it is possible that a student can be matched to the same *provider* in multiple matching rounds and will need to be declined multiple times.

If the student selected multiple programs at one provider, and the provider declines the student's match into one of their programs, the student may still be matched into the other selected programs in subsequent matching rounds.

Monitoring & Overriding Match Declines

During the provider review period, the UPK Colorado team will be monitoring the usage of match declines by type and by volume. This is to spot misuse and help UPK Colorado understand how the matching process is performing.

When CDEC sees that a provider is declining matches based on a reason they are not approved to use, that decline will be investigated and possibly overridden by the program.

Student statuses after the provider review period

When a provider declines a match, that student's other statuses change back to Selected so that the student can be rematched in the next DAA run.

Declined students are not automatically matched into a new program. They are returned to the bucket of applicants to be matched in the next DAA run.

Remember that the DAA can be run multiple times during the provider review period.

Daisy & Zinnia's statuses after provider declines them

1. Canyon Club Full Day - **Selected**
2. Z Academy Full Day - **Selected**
3. Sparkle School Full Day - **Declined**
4. Molly Brown Full Day - **Selected**
5. Snowcap Center Full Day - **Selected**



Running the DAA multiple times during the provider review period

Unless we run the DAA multiple times during the provider review period, every declined student like Daisy and Zinnia will not have a match for round one's family match review period.

We will use a specific metric to determine when it is appropriate to “push the button again” and that metric will be determined in conjunction with LCOs.

New Changes to the Matching Process as of 2/24

The system no longer tries for a higher placement on already-matched students

In our last session, I spoke about how a student's status is always Waitlisted at any higher-ranked programs than the one they are matched with. This allowed them to go through the DAA again and possibly get a more preferable match while holding on to their currently-matched seat.

The decision has been made to change this process. **Now, once a student has been matched by the system, *all* of their other statuses will change to Withdrawn and they will not be run through the DAA again unless they decline their placement.**

What if a student wants to try for a higher-ranked placement?

If a student is placed anywhere and wants to be considered for a different placement by the system, the student must give up the seat they were matched into by the system.

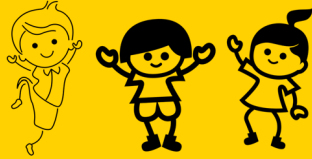
It is possible but not guaranteed that the student can be rematched into the seat that they give up.

The lines are now only made up of applications submitted by the round deadline

In our last session, I explained that the lines are always made up of whoever has applied up until the time that the DAA button is pushed.

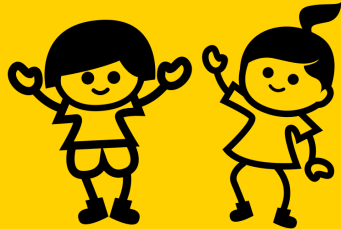
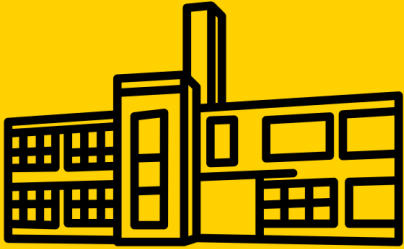
The decision has been made, and the technology now allows for, the DAA to only run across applications that have been submitted by a specific date.

All DAA runs during the first round of matching (March 1-29) will consist *only* of applications submitted by February 24.

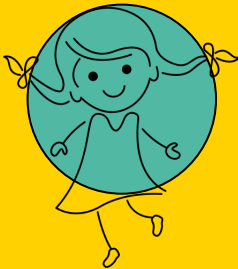


The DAA runs again and new lines for the remaining seats are made up of the students that were declined by their previous match and those that were not matched anywhere in the previous DAA runs

Z Academy Full Day declined two of their matches after the first DAA run, so they have two open seats at their program.



Z Academy Full Day



Everyone ahead of Daisy and Zinnia in the first DAA run was either placed there or declined by Z Academy and removed from future lines.

Now Daisy and Zinnia are first in line and there are enough seats for both of them, so they are placed at Z Academy Full Day.



Z Academy Full Day



Daisy & Zinnia's statuses after DAA is run again

1. Canyon Club Full Day - **Withdrawn**
2. Z Academy Full Day - **Placed**
3. Sparkle School Full Day - **Declined**
4. Molly Brown Full Day - **Withdrawn**
5. Snowcap Center Full Day - **Withdrawn**



This whole time...



Jaleel has been hanging out in his open seat at Z Academy Full Day with a status of Proposed. All of his other statuses were changed to Withdrawn when he was matched to Z Academy by the DAA the first time, so he was not run through the DAA again.

Phase 3: Family Review Period

Results are published to the family portal

At the end of the provider review period, the results of the matching process thus far will be published to families.

They will be notified by email or text depending on their preference to log in to the UPK family portal (upk.colorado.gov) and view their results.

Families will be able to see their status at all of the programs that they selected.

Family accepts the placement

If the family chooses to accept the child's placement, the student's status is changed to Accepted and they are referred on to the provider to complete the enrollment process.

Once a family accepts a placement, they will not be included in any subsequent DAA runs.

Family declines the placement

The family may choose to decline the placement.

The student's status at that program will be changed to Declined, and the student will not be able to be matched with that program again.

The student's remaining statuses will change back to Selected and they will be included in the next DAA run.

If a student declines their placement from round 1, they will have to wait all the way until the round 2 publish date to see their new match.

Family does not respond to placement

If the family does not respond to their placement during the family review period, their match will be released and the student will be returned to the pool for the next DAA run.

The student's status will change back to Selected and the DAA will be able to match them to this program again.

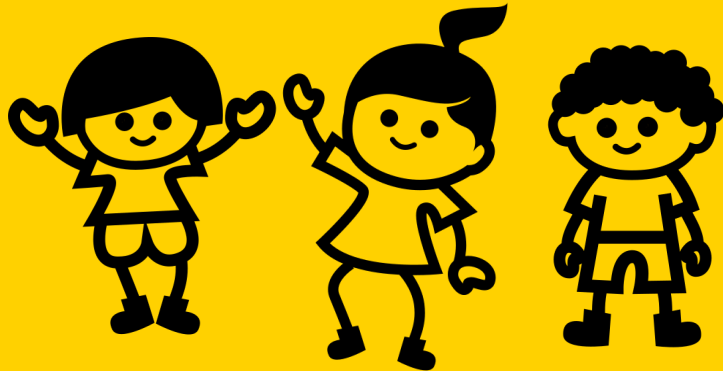
It is not guaranteed that they will be rematched to the program, because new applicants may have better lottery numbers and weights.

Jaleel's family accept his placement at Z Academy Full Day...



...and so do Daisy and Zinnia's!

On to enrollment!



From here, Daisy, Zinnia,
and Jaleel are all
referred to Z Academy to
complete the enrollment
process.

Questions?

If you're not confused you might be a genius.

Sources & Credits

Illustrations of children care of [Sachin Mogdekar](#) and [farra nugraha](#) via The Noun Project. Schoolhouse illustrations care of The Noun Project.

All content and depictions care of Mina Farzad, HCD lead for UPK Colorado at the [Colorado Digital Service](#).

Special thanks to Hollie Stoyles of BridgeCare for providing detailed system-level descriptions as source material.

Icon Legend



Molly Brown



Canyon Club



Z Academy



Sparkle
School



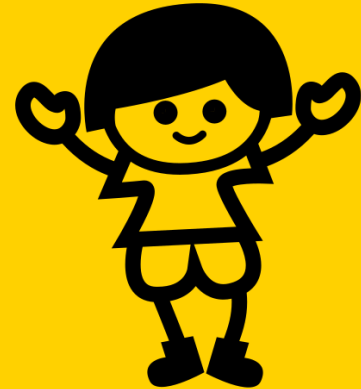
Snowcap
Center



Jaleel



Zinnia



Daisy