

2021-2022 Montana EIR Upstart Program – Final Outcomes

June 2022

About Waterford Upstart: Waterford Upstart is an **in-home kindergarten readiness program** that was created by the Utah legislature in 2009. The program is implemented by Waterford.org and helps children develop the cognitive and social-emotional skills they need for school success.

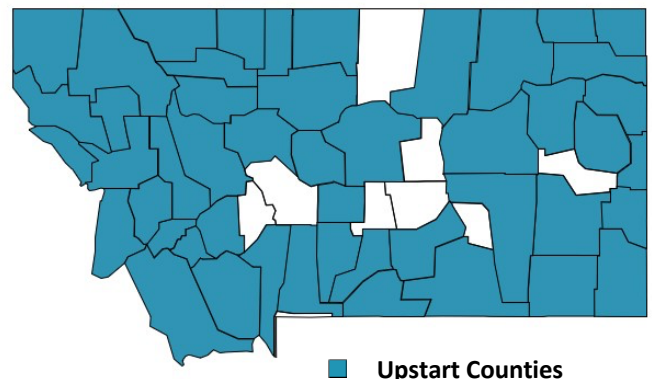
- Preschool-age children use **Waterford Upstart software in the home for 15-20 minutes a day**, five days a week.
 - The usage model falls **well within the American Academy of Pediatrics (AAP) recommendation of no more than one hour of screen time per day for 4-year-old-children**.
- Children receive a **personalized curriculum in reading, math, and science**.
- **Each family receives coaching to ensure strong parental engagement**. Waterford Upstart empowers parents in the education of their young children through a parent engagement curriculum developed over the program’s 12 years of experience working with families.
 - While the curriculum is in English, **families are supported in English and Spanish, with translation services offered in additional languages**, as needed.
- **Social-emotional learning** is modeled in the curriculum and developed by parents through off-line activities.
- **All participants receive computers** and **Internet service is included as part of the program** if the home does not have connectivity.

Evidence of Effectiveness: Upstart’s evidence of effectiveness has been thoroughly vetted in the most rigorous contexts and was a critical factor in recent **federal Education, Innovation and Research (EIR) Expansion Grant** and **TED Audacious Project** awards.

- The program meets **What Works Clearinghouse standings without reservations** and **ESSA Tier 1 Strong Evidence** standards.
- Upstart’s **third-party randomized controlled trial (RCT) study for the U.S. Department of Education produced significant and sizable positive effect sizes**: 0.42 standard deviations of improvement in literacy for the reading group relative to the math group, and 0.38 in math for the math group relative to the reading group.
- Similarly, over **eleven years of external evaluations** in Utah show Upstart children achieve 2X-3X the learning of non-Upstart children and those **learning gains are maintained through the 4th grade**.

Montana EIR Upstart Program – Cohort 2: Waterford was awarded a **federal EIR Expansion Grant** that is being used to provide Waterford Upstart in the Great Plains states that historically have not provided significant funding for early childhood education, including Idaho, Montana, North Dakota, South Dakota, and Wyoming. **Over the past three school years, Waterford Upstart has been provided to approximately 600 preschool-age children across Montana**.

- Waterford Upstart is **aligned to Montana Early Learning Standards** and Head Start Early Learning Outcomes Framework; meets WIDA standards for language development; is a Certified Autism Resource; and is endorsed by the Council of Administrators of Special Education (CASE).
- Statewide, approximately **400 children from 97 municipalities across 48 counties** participated in Cohort 3 of the EIR Upstart program during the 2021-2022 school year.
 - **87.79% were rural** participants and **56.74% were ≤185% of the Federal Poverty Level**.



2021-2022 EIR Upstart Program Registrations by County

County	Count
Beaverhead	2
Big Horn	2
Carbon	2
Carter	2
Cascade	75
Chouteau	1
Custer	4
Daniels	1
Dawson	5
Deer Lodge	1
Gallon	3
Fergus	5
Flathead	19

County	Count
Gallatin	22
Garfield	1
Glacier	10
Granite	2
Hill	2
Jefferson	7
Judith Basin	1
Lake	7
Lewis & Clark	14
Liberty	1
Lincoln	3
Madison	1
McCone	1

County	Count
Mineral	4
Missoula	20
Park	1
Phillips	2
Pondera	7
Powder River	4
Powell	2
Ravalli	15
Richland	6
Roosevelt	3
Rosebud	3
Sanders	5
Sheridan	4

County	Count
Silver Bow	4
Stillwater	9
Sweet Grass	1
Teton	1
Toole	5
Valley	3
Wheatland	1
Wibaux	5
Yellowstone	94
TOTAL	393

2021-2022 EIR Upstart Program Registrations by Municipality

Municipality	Count
Alberton	1
Anaconda	1
Augusta	1
Baker	3
Belgrade	9
Big Arm	1
Big Timber	1
Billings	84
Black Eagle	1
Bloomfield	1
Boulder	4
Boyes	2
Bozeman	10
Broadus	4
Brockton	1
Browning	2
Brusett	1
Butte	4
Cascade	1
Chester	1
Circe	1
Clancy	2
Colstrip	1
Columbia Falls	3
Columbus	4

Municipality	Count
Conner	1
Conrad	6
Corvallis	2
Crow Agency	1
Culbertson	1
Cut Bank	8
Deer Lodge	1
Dillon	2
Dixon	1
Drummond	1
East Helena	2
Elliston	1
Florence	1
Forsyth	2
Frenchtown	3
Garryowen	1
Glasgow	2
Glendive	4
Grass Range	1
Great Falls	71
Hall	1
Hamilton	4
Havre	2
Helena	10
Highwood	1

Municipality	Count
Hilger	1
Huntley	3
Huson	1
Kalispell	12
Lambert	2
Laurel	1
Lewistown	3
Libby	2
Lincoln	1
Lolo	2
Malta	2
Manhattan	2
Marion	2
McAllister	1
Missoula	10
Moccasin	1
Pablo	1
Park City	5
Plentywood	3
Polson	3
Power	1
Pray	1
Rexford	1
Roberts	2
Ronan	2

Municipality	Count
Saint Marie	1
Scobey	1
Seeley Lake	4
Shawmut	1
Shelby	5
Shepherd	6
Sidney	4
Simms	1
Somers	1
Stevensville	6
Superior	3
Thompson Falls	4
Valier	1
Vaughn	1
Victor	1
Volborg	4
W. Yellowstone	1
Westby	1
Whitefish	1
Whitehall	1
Wibaux	5
Wolf Point	1
TOTAL	393

2021-2022 EIR Upstart Program Demographic Information

Ethnicity/Race	Count	Percent
Caucasian	293	74.55%
Native American/Alaska Native	41	10.43%
Latino/a	21	5.34%
Other	20	5.10%
African American	7	1.78%
Decline to Answer	6	1.53%
Asian/Pacific Islander	5	1.27%

Equipment Provided	Count	Percent
Received Computer	405	100.00%
Received Internet Service	56	14.25%

Rurality & SES	Count	Percent
Rural	345	87.79%
≤185% Federal Poverty Level	223	56.74%

Average Curriculum Usage: The **average total reading usage** for participants was **1,884.42 minutes** and the **average total math and science usage** for participants was **2,091.37 minutes** over the course of the program.

Reading Program Outcomes: The **Waterford Assessment of Core Skills (WACS) is a computerized adaptive test of early literacy for students in Pre-Kindergarten through second grade** with initial content validity established against state and national standards. To establish concurrent validity and predictive validity, **student performance on WACS was compared to performance on five commonly-used standardized tests** also measuring early reading skills, including **DIBELS** (Dynamic Indicators of Basic Early Literacy Skills), **IRI** (Idaho Reading Indicator), **ITBS** (Iowa Tests of Basic Skills), **SAT 10** (Stanford Achievement Test Series), and **TPRI** (Texas Primary Reading Inventory).

WACS Grade Equivalent Difficulty Ranges: The following table provides **question difficulty ranges for the Waterford Assessment of Core Skills (WACS) by grade level**. Each grade level is divided into thirds: Kindergarten Beginning, Kindergarten Intermediate, and Kindergarten Advanced.

Grade	Beginning	Intermediate	Advanced
Preschool	1001 - 1333	1334 - 1666	1667 - 2000
Kindergarten	2001 - 2333	2334 - 2666	2667 - 3000
First	3001 - 3333	3334 - 3666	3667 - 4000
Second	4001 - 4333	4334 - 4666	4667 - 5000

Average final scores for children that completed WACS showed the following **notable outcomes**:

- **Children’s outcomes averaged at the “Kindergarten Advanced” level** (with an average final WACS score of **2814.92**) where most children score at near the end of the Kindergarten year.
- **92.13% of children scored at “Kindergarten Beginning” or above**, demonstrating strong school readiness outcomes.

The following table provides results on assessed skills and shows average final **WACS subtest scores and their grade equivalents** for the program.

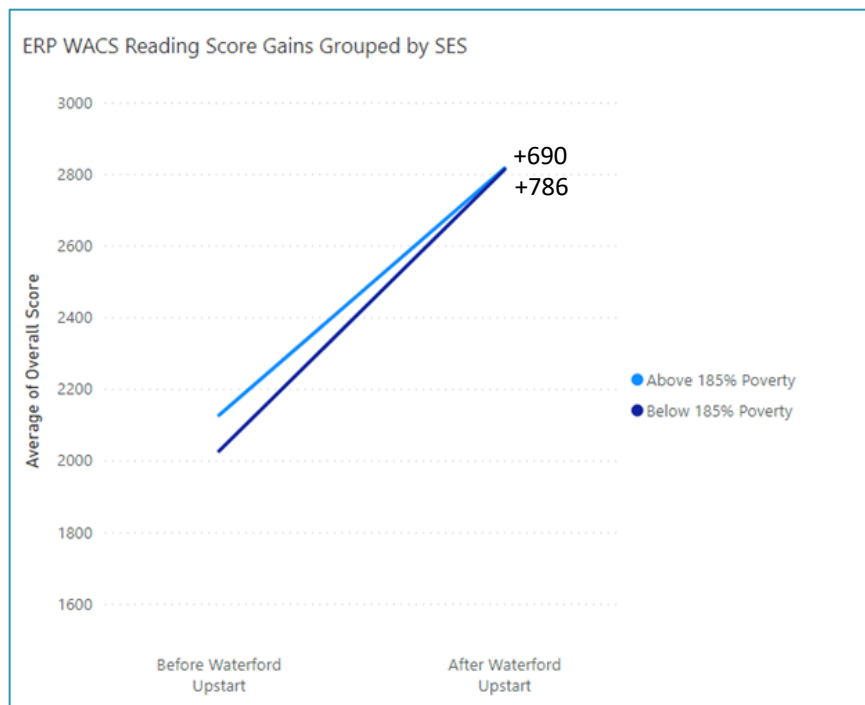
Measured Skill	Average Final WACS Score	Grade Equivalent of Average Final WACS Score
Letter Recognition	2053	Kindergarten Beginning*
Letter Sound	2685	Kindergarten Advanced
Initial Sound	2623	Kindergarten Intermediate
Blending	2900	Kindergarten Advanced
Listening Comprehension	2731	Kindergarten Advanced
Non Words	3282	1 st Grade Beginning
Sight Words	3100	1 st Grade Beginning
Real Words	3343	1 st Grade Intermediate
Reading Comprehension	3528	1 st Grade Intermediate
Vocabulary	3106	1 st Grade Beginning

* Note that “Kindergarten Beginning” is highest possible achievement level for the “Letter Recognition” skill.

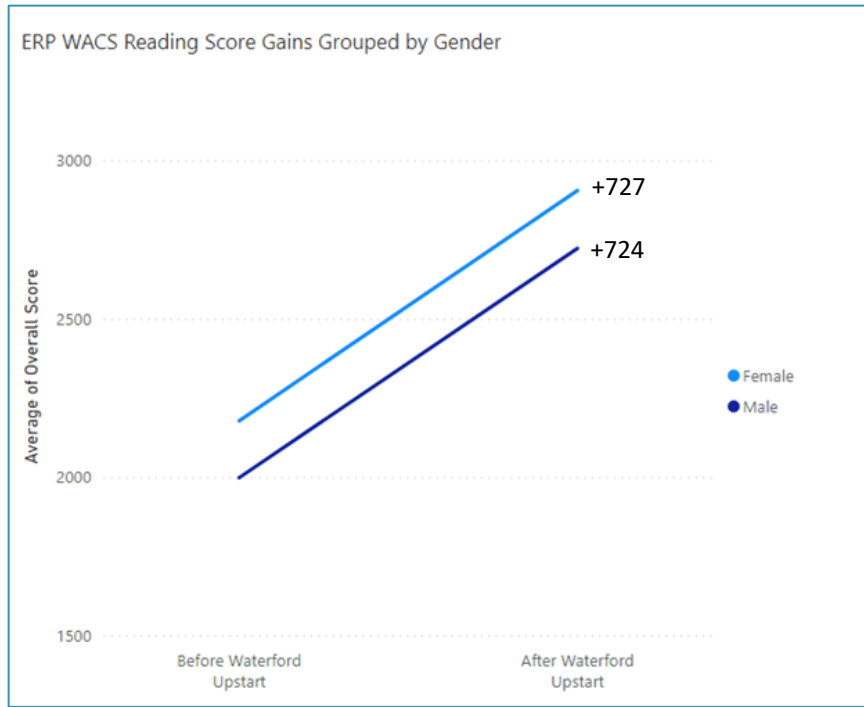
The following graphs show **WACS reading score gains grouped by reported ethnicity/race, socio-economic status (SES), and gender** for the 2021-2022 EIR Upstart program. The numbers within the graph indicate point score gains from pretest to posttest.



Ethnicity/Race	Percent of Cohort	Average Final WACS Score	Grade Equivalent of Final WACS Score
Caucasian	74.55%	2799.48	Kindergarten Advanced
Other (non-Caucasian)	25.45%	2897.64	Kindergarten Advanced



Socio economic status (SES)	Percent of Cohort	Average Final WACS Score	Grade Equivalent of Final WACS Score
>185% Federal Poverty Level	56.74%	2816.36	Kindergarten Advanced
≤185% Federal Poverty Level	43.26%	2812.48	Kindergarten Advanced

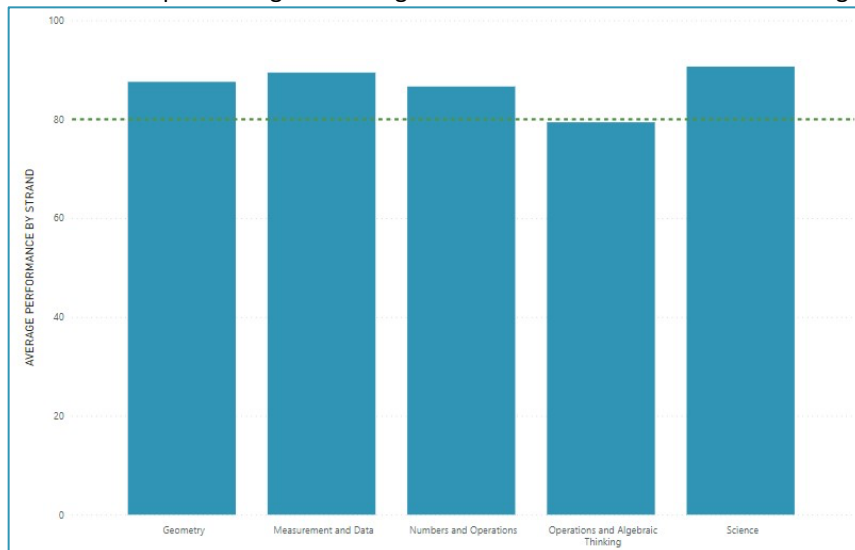


Gender	Percent of Cohort	Average Final WACS Score	Grade Equivalent of Final WACS Score
Female	46.56%	2905.20	Kindergarten Advanced
Male	53.44%	2722.59	Kindergarten Advanced

Math and Science Program Outcomes: Math and science strand scores are scores for subskills as a percentage of 100. A score of 80 or higher within the Waterford Early Math and Science Program represents mastery, which is the goal of the cognitively based Waterford Upstart program. The sequencer, within the software, individualizes instruction to provide remediation until a child achieves mastery.

The following figure shows the average score, organized by strand, for all students who scored on a given strand for math and science. The green line represents the expected average score, 80. After participating in the 2021-2022 EIR Upstart program, the average score for all five of the math and science strands was above 80.

2021-2022 EIR Upstart Program Average Strand Scores – Math and Science Program



Parent Satisfaction: Parents/guardians participating in the program completed a comprehensive survey to provide feedback related to their, and their child’s, experience in the program.

Survey Responses

% Agree	Respondents’ experiences with the Waterford Upstart program
91% YES	I like that the program expects our family to create a daily routine for using it.
93% YES	The program helped prepare my child for kindergarten.
81% YES	The program helped prepare ME to help my child in school next year.
79% YES	The program helped me realize the importance of participating in my child's learning.
65% YES	The program made me feel equipped to engage with my child's teacher next year.
95% YES	I feel confident that I can help my child transition from PreK to kindergarten.
81% YES	When using the program, my child experienced higher quality experiences, compared to other apps or TV programs.
85% YES	The program was engaging to my child.
81% YES	My child is now better able to work independently.

% Agree	Respondents’ experiences with Waterford Upstart representatives
95% YES	A representative gave me what I needed to effectively support my child.
96% YES	A representative helped solve the issues I had.
100% YES	A representative was friendly and polite when we communicated.
97% YES	A representative was knowledgeable about the program and software.

% Agree	Respondents’ evaluation of the Waterford Upstart program
90% YES	Reading Program: In general, did your child enjoy using the program?
98% YES	Reading Program: Do you think the program was age appropriate?
95% YES	Reading Program: Do you feel the weekly usage requirements were appropriate?
83% YES	Math and Science Program: In general, did your child enjoy using the program?
100% YES	Math and Science Program: Do you think the program was age appropriate?
95% YES	Math and Science Program: Do you feel the weekly usage requirements were appropriate?

Average Response	Respondents’ satisfaction with the Waterford Upstart program
9.04	On a scale of 0 to 10, how likely are you to recommend Waterford Upstart to a friend or colleague?
8.83	On a scale of 0 to 10, overall, how satisfied are you with your and your child’s experience using the Waterford Upstart program?