

## FY 2023 BUDGET REQUEST

**About Waterford Upstart:** Waterford Upstart is an in-home kindergarten readiness program that was created by the Utah State 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. Under the program:

- 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 with an emphasis on reading.
- 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 11 years of experience working with families.
  - While the curriculum is in English, families are supported in English and Spanish, with translation services offered for additional languages, as needed.
- Social-emotional learning is modeled in the software learning sequence and developed by parents through off-line activities.
- Computers and Internet service are provided as part of the program if the home does not have them.
- Waterford Upstart is aligned to Montana Early Learning Standards; Head Start Early Learning Outcomes Framework; CASEL Social and Emotional Learning Competencies; and endorsed by the Council of Administrators of Special Education.

**Education Innovation and Research (EIR) Grant:** Waterford.org was awarded a federal EIR expansion grant in late 2018 that is being used to provide Waterford Upstart in Great Plains states that do not provide significant funding for early childhood education, including Idaho, Montana, North Dakota, South Dakota, and Wyoming.

- As part of the grant, Waterford.org convened a TASK (Taking All to Success in Kindergarten) Force with education stakeholders across the state – including representatives from child development centers, the Montana Head Start Association, and the Montana Office of Public Instruction. The purpose of the TASK Force is to introduce Waterford Upstart to early childhood education stakeholders in the state and to seek guidance on program implementation in Montana.
- Waterford.org is providing Waterford Upstart to at least 600 children across Montana over two years with a goal of at least 200 children during the 2020-2021 school year and at least 400 children during the 2021-2022 school year.

## LONGITUDINAL STUDY

Utah State Board of Education finds UPSTART students maintain learning gains through the 4<sup>th</sup> grade

### About UPSTART

UPSTART, a program established by the Utah State Legislature in 2009 and administered by the nonprofit Waterford Institute, uses a home-based education technology approach, with strong parent support and engagement, to develop the school readiness skills of preschool children.

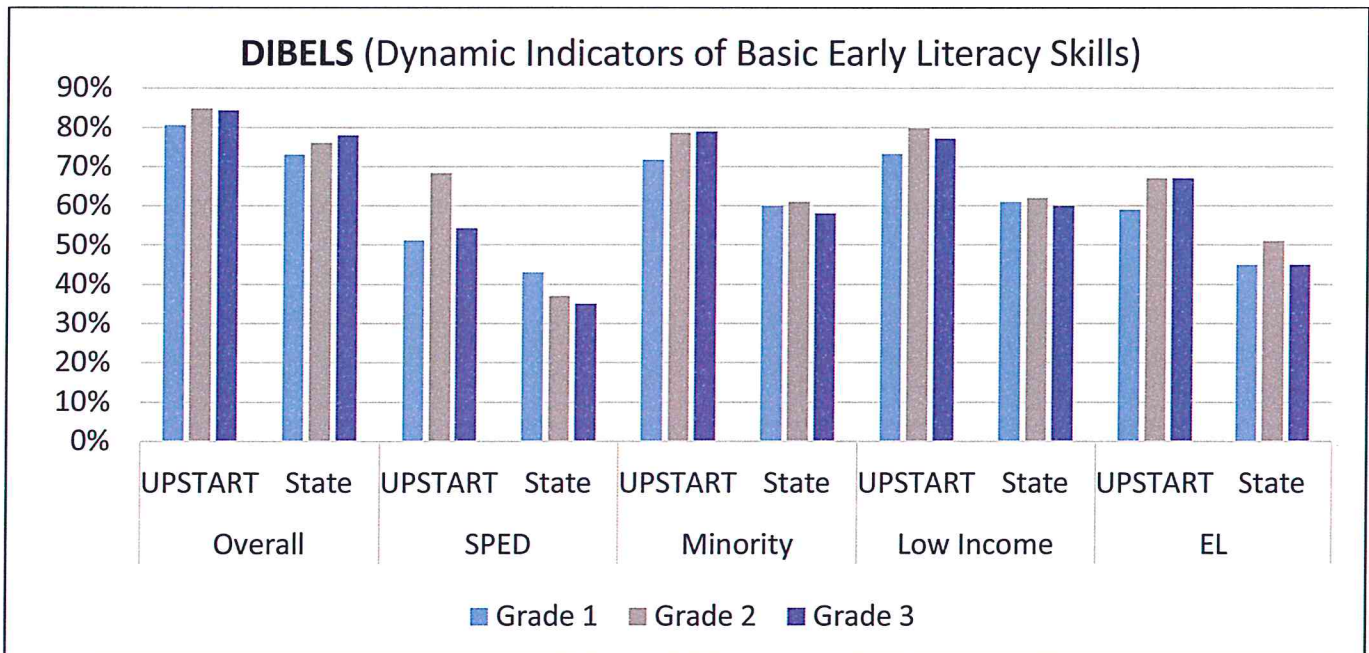
- Preschool-age children (primarily 4 years of age) use the program for 15 minutes a day, five days a week (computers and internet service are provided as part of the program if the home does not have them) and receive an individualized reading, math and science curriculum with an emphasis on reading.

The UPSTART software uses adaptive lessons, digital books, songs, and activities to deliver early literacy content. Reading skills taught by the curriculum include:

- Phonological Awareness – Phonemic segmenting and blending
- Phonics – Letter name knowledge, letter sound knowledge, and word reading
- Comprehension and Vocabulary – Vocabulary knowledge and oral comprehension
- Language Concepts – Concepts of written language from letters and pictures to basic grammar

### Longitudinal Results

In April 2016, the Utah State Board of Education released a longitudinal study that shows that preschool-age children using UPSTART demonstrated **significantly increased literacy skills – particularly among at-risk populations** and that these gains lasted beyond kindergarten with **participants continuing to outperform state averages and their non-UPSTART peers on standardized tests<sup>1,2</sup> in language arts, mathematics and science through the fourth grade.**



The chart above shows various UPSTART student populations continuing to outperform state averages and their non-UPSTART peers on standardized literacy tests (DIBELS) in grades one, two and three.

<sup>1</sup> The Dynamic Indicators of Basic Early Literacy Skills (DIBELS) are a set of procedures and measures for assessing the acquisition of early literacy skills from kindergarten through sixth grade.

<sup>2</sup> The Student Assessment of Growth and Excellence (SAGE) is Utah's computer adaptive assessment system aligned to the state's core standards.



Waterford

UPSTART

### ***Waterford Assessments of Core Skills***

*Waterford Assessments of Core Skills* (WACS) is a computerized adaptive test of early literacy for students in pre-kindergarten through second grade.

Initial content validity for WACS was established against state and national standards for 11 subsets:

- letter recognition
- letter sound
- initial sound recognition
- blending
- segmenting
- reading real words
- reading nonsense words
- sight words
- reading comprehension
- listening comprehension
- vocabulary

All items were calibrated for item response theory to determine item difficulty.

**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:**

- **Dynamic Indicators of Basic Early Literacy Skills (DIBELS),**
- **Texas Primary Reading Indicator (TPRI),**
- **Idaho Reading Indicator (IRI),**
- **Iowa Tests of Basic Skills (ITBS), and**
- **Stanford Achievement Test Series (SAT 10).**

All correlations between tests are highly significant and additional analyses indicate that WACS is internally coherent and has strong test-retest reliability.

WACS is an adaptive test.

- Pre-kindergarten students such as those in the UPSTART program only see the basic skills unless they perform well, in which case they also see advanced skills.
- When students take WACS for the first time, most of them receive basic skills only. As students use Waterford Early Learning (WEL) and advance their reading abilities, they perform better at the end of the program when taking WACS, and are able to successfully complete basic skills as well as advanced skills.
- Therefore, the number of students receiving advanced skills increases from the beginning of the program to the end of the program.



## Montana EIR Upstart Pilot – 2020-2021 School Year

*First Quarter Progress Report*

November 23, 2020

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- 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 or math and science.**
  - To **allow for evaluation under the Education Innovation and Research (EIR) grant**, half of the children are using Waterford.org's **Early Reading Program** and half of the children are using the **Early Math and Science Program.**
- **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 11 years of experience working with families.
  - While the curriculum is in English, **families are supported in English and Spanish, with translation services offered for additional languages**, as needed.
- **Social-emotional learning** is modeled in the software learning sequence and developed by parents through off-line activities.
- **Computers are provided** as part of the program and **Internet service is included** if the home does not have it.
- **Waterford Upstart is aligned to Montana Early Learning Standards**; Head Start Early Learning Outcomes Framework; CASEL Social and Emotional Learning Competencies; and endorsed by the Council of Administrators of Special Education.

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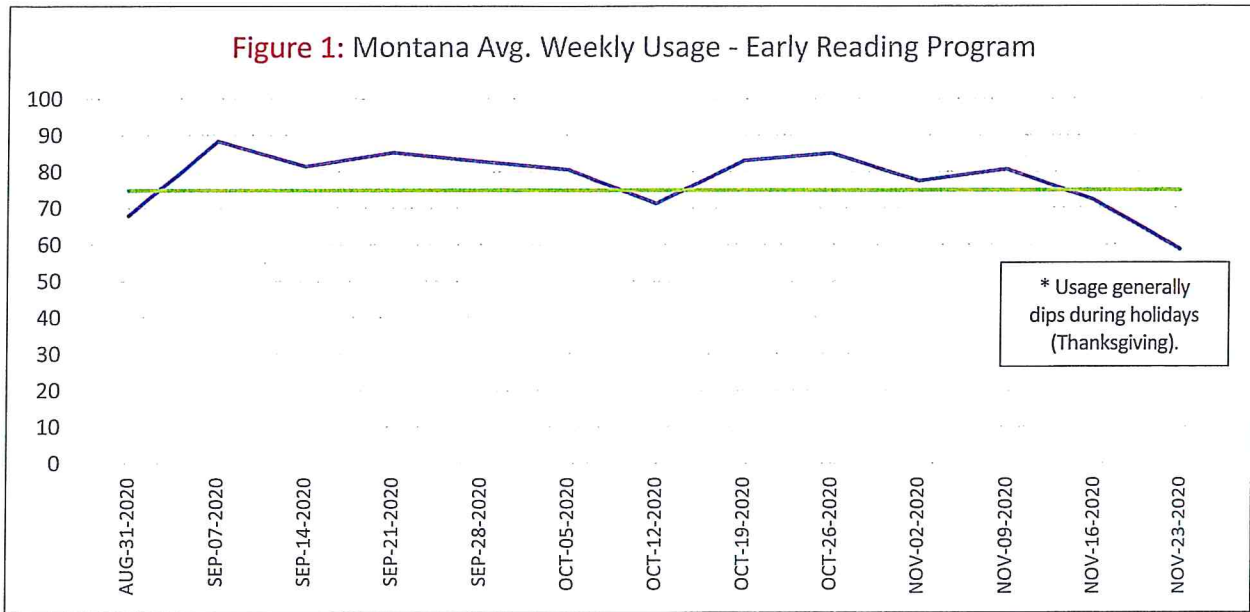
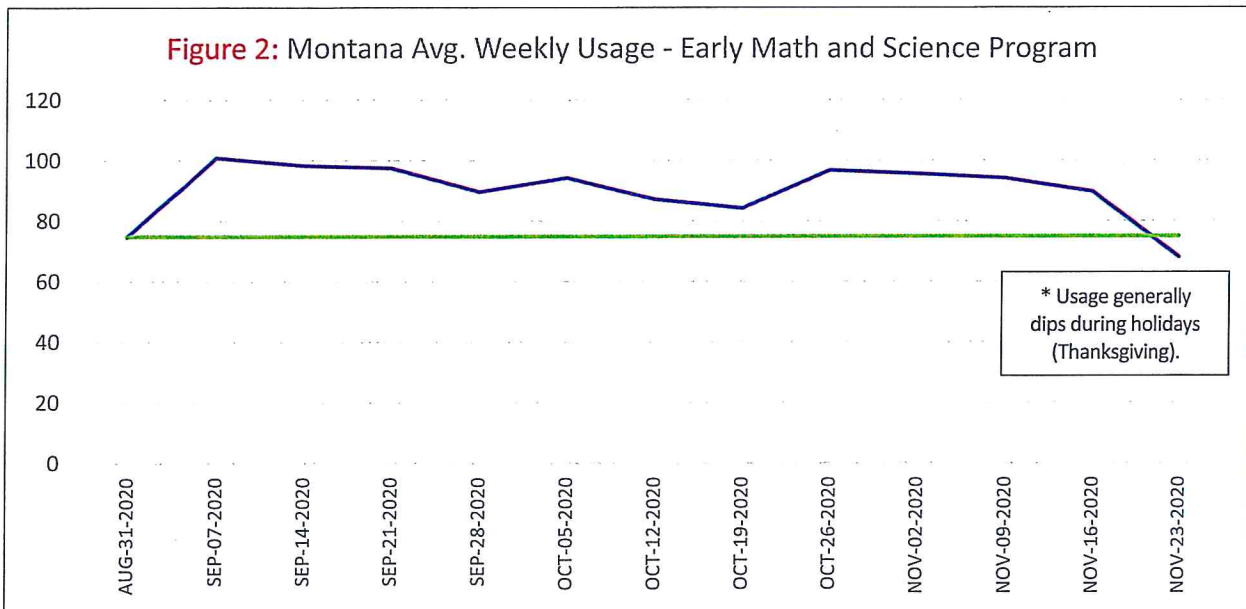
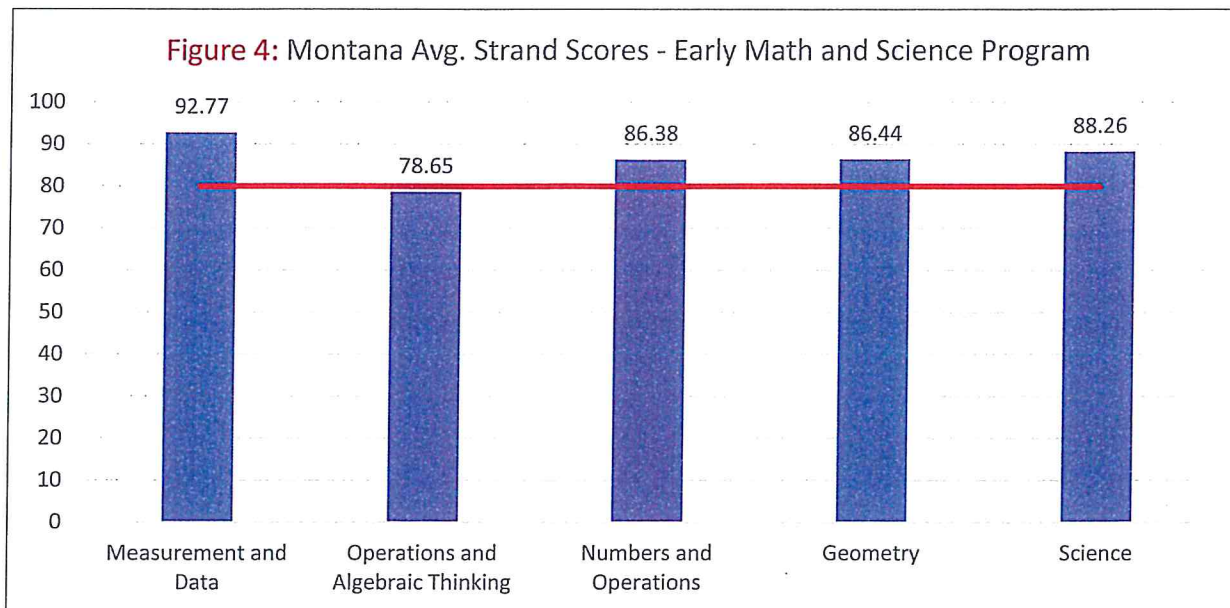


Figure 2 shows Montana participants' average math and science usage on a weekly basis, as shown by the blue line. The green line indicates the recommended usage criterion of 75 minutes per week.

- For 11 out of 13 weeks, average weekly usage exceeded the recommended usage requirement of 75 minutes per week, indicating significant parental engagement through the first 13 weeks of the Montana EIR Upstart pilot.

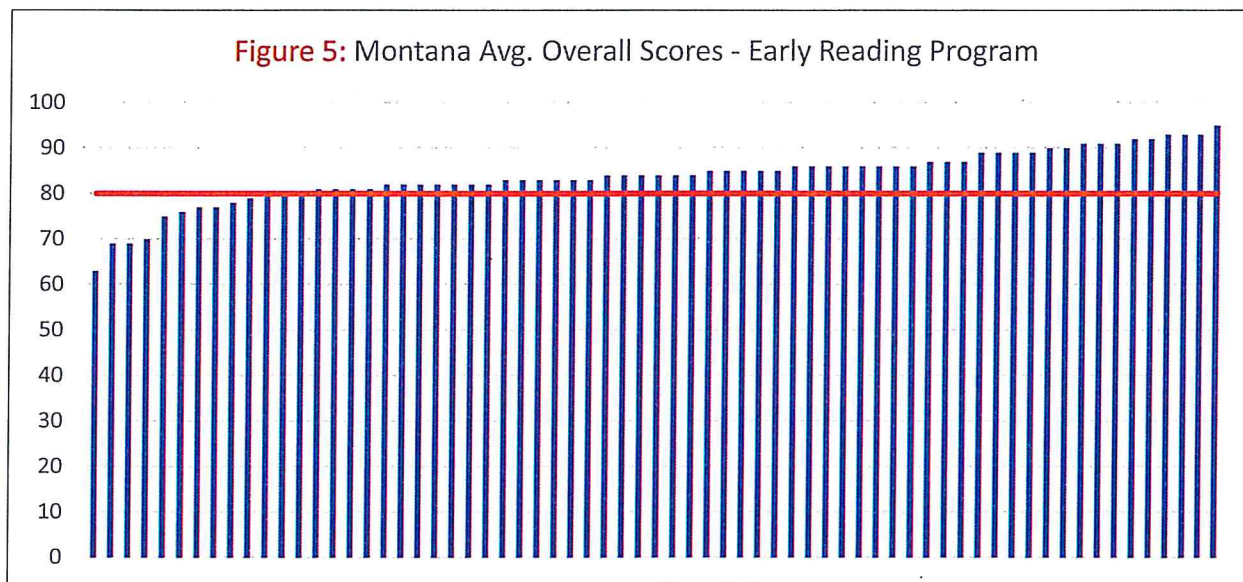


\* *Note:* While average weekly usage generally dips during holidays, it tends to spike after the holiday season when families return to a more regular routine. For example, under Cohort 1 (2019-2020 school year) of the Idaho, North Dakota, and Wyoming EIR Upstart pilots, average weekly usage exceeded the recommended usage requirement of 75 minutes per week for 37 out of 40 weeks (on average) over the course of the year.



**Average Overall Scores:** Figure 5 depicts the average overall score per student for the **Waterford Early Reading Program**. The orange line emphasizes the expected average overall score, 80, which represents “mastery.” Each blue bar represents the score of an individual student. This chart highlights the achievement level of students.

- **85.07% of students had an overall reading score of 80 or higher; the average overall score was 83.79** through the first 13 weeks of the Montana EIR Upstart pilot.



**Figure 6** depicts the average overall score per student for the **Waterford Early Math and Science Program**. The orange line emphasizes the expected average overall score, 80, which represents “mastery.” Each blue bar represents the score of an individual student. This chart highlights the achievement level of students.

- **84.51% of students had an overall math and science score of 80 or higher; the average overall score was 86.25** through the first 13 weeks of the Montana EIR Upstart pilot.