

**Problem-Solving Working Group Report & Recommendations**  
**Math Challenges in Ignite Academy**

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## EXECUTIVE SUMMARY

This report presents the findings and recommendations of the Problem-Solving Working Group (PSWG) convened to address significant challenges in mathematics proficiency at Ignite Academy. Despite dedicated efforts, students struggle to meet provincial standards in mathematics, which is critical for their academic success and future opportunities. The PSWG used human-centered design principles to develop solutions to these challenges. We recommend four key solutions to enhance math education and ensure sustainable improvement. This report outlines the process, findings, and proposed next steps for implementation.

## BACKGROUND

Strong math skills are essential for success in today's world. According to a recent Conference Board of Canada report, 70% of jobs require math skills at a level equivalent to or higher than high school math.<sup>1</sup> This highlights the necessity for solid foundational math skills across various professions. The Organisation for Economic Co-operation and Development (OECD) emphasizes that mathematical literacy is crucial for individual economic success and the overall competitiveness of economies.<sup>2</sup>

Given the broad applicability of math skills in various careers, ensuring that students develop strong math skills from an early age through to their careers is crucial. This is where the cradle-to-career approach becomes vital. By providing continuous and comprehensive support in mathematics education from early childhood to adulthood, we can build a solid foundation that enables students to succeed in various professions.

Ignite Academy is an out-of-school-time program designed to provide additional support in math and literacy for students. Its mission aligns perfectly with the cradle-to-career approach by improving students' competencies in these critical areas. Through targeted interventions and personalized instruction, Ignite Academy helps students build and strengthen their math and literacy skills, ensuring they are well-prepared for future academic and career opportunities. The program's emphasis on math education is significant, as it prepares students to meet the demands of a workforce increasingly reliant on strong numerical and analytical skills.

## Mathematics Challenges in Ignite Academy

Despite the targeted efforts at Ignite Academy, students struggle to meet provincial mathematics standards.

### Key Data & Findings:

- **Diagnostic Assessments:** At the beginning of the program year, the United Way Academy Team (UWAT) conducted diagnostic assessments in math and literacy to establish a baseline and identify gaps in knowledge. These assessments revealed a significant deficit in foundational mathematics skills among Ignite Academy participants. Based on the diagnostic assessments, students were grouped into three categories with academic risk levels: core support (minimal risk), strategic support (some risk), and intensive support (at risk). Approximately 67% (n=110) of students were identified as needing intensive support for mathematics.
- **Focus on Strand B: Number:** Due to the identified skill gaps, the decision was made to focus interventions on Strand B: Number<sup>3</sup>, covering only 20% of the mathematics curriculum. This left

<sup>1</sup> "The Future of Skills: Trends and Challenges," The Conference Board of Canada, 2023. Available at: [Conference Board of Canada](#).

<sup>2</sup> Organisation for Economic Co-operation and Development (OECD). "Skills Matter: Further Results from the Survey of Adult Skills," OECD Publishing, Paris, 2020. Available at: OECD Skills Report.

<sup>3</sup> *Strand B: Number* in the Ontario math curriculum focuses on developing students' understanding and fluency with numbers and operations.

out support for the remaining 80% of the curriculum, further limiting students' overall math development.

- **Intervention Delivery:** Despite 979 math interventions being delivered across six sites between October and May, students' progress has been limited. On average, only 38% of the required curriculum in Strand B was cleared.

### Key Challenges Around Mathematics:

<b>Limited Time</b>	There is insufficient time to cover all the necessary content within the program's schedule.
<b>Staff Limitations</b>	Having more students per session reduces the effectiveness of interventions, as staff struggle to give each student the attention they need.
<b>Staff Turnover</b>	High staff turnover means constantly training new staff and rebuilding relationships and trust with the students.
<b>Finding Qualified Staff</b>	Finding qualified staff willing to commit to a full-year, part-time role is challenging.
<b>Knowledge Gaps</b>	Lead agency staff often lack the knowledge and professional development (PD) opportunities needed to support math programming effectively.
<b>Assistive Technology</b>	Current technology requires one-on-one support, limiting its scalability and effectiveness.
<b>Caregiver Challenges</b>	Many caregivers face language barriers or lack the knowledge to help with homework and skill development.
<b>Inexperienced Volunteers</b>	Student volunteers, who are often inexperienced and have inconsistent schedules, can be unreliable.
<b>Motivation Issues</b>	Relying on incentives and rewards to motivate students can decrease engagement when these rewards are unavailable.
<b>Low Attendance</b>	Priority students often have low attendance rates, reducing their exposure to the program's benefits.
<b>Disengagement from Math</b>	Many students are disengaged from math, with about 34% of Ignite Academy students choosing math as their least favourite subject.

### CONTINUOUS IMPROVEMENT PROCESS

We are committed to continuous improvement to enhance student outcomes at Ignite Academy. When our math Key Performance Indicator (KPI) was not on track, we initiated a structured Continuous Improvement Process (CIP) to address this issue. The team spent approximately 50 hours preparing, implementing, and summarizing the CIP. This process involved three key phases:

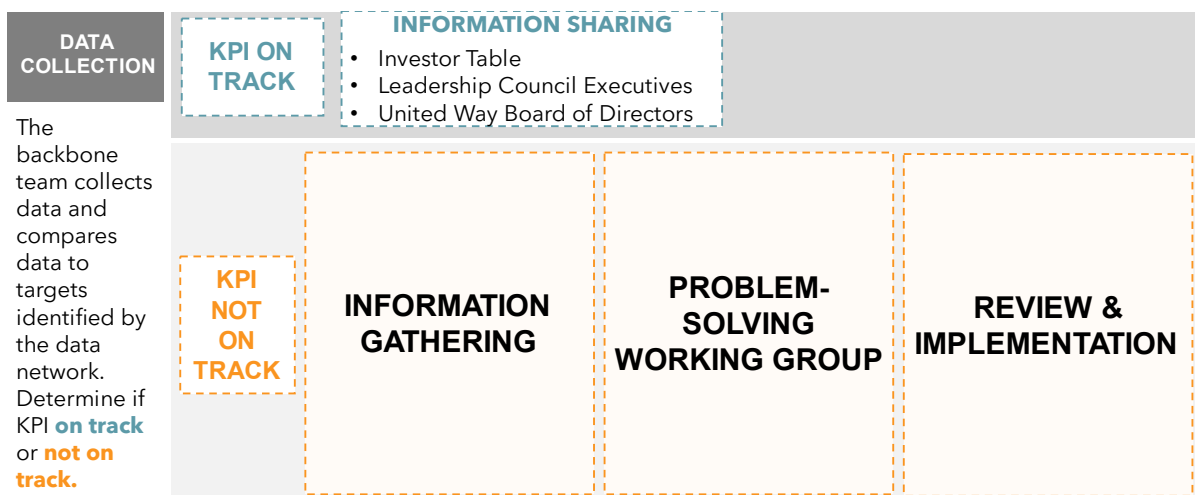
1. **Information Gathering:** The backbone team reviewed data and worked with UWAT staff to understand challenges. A summary of these challenges was created and shared with all participants (see [Appendix A](#)).
2. **Problem-Solving Working Group (PSWG):** We invited a diverse group of stakeholders, including caregivers, staff from implementing partner organizations, members of the ProsperUs Investors Table and Leadership Council, Opportunities United and United Way board members, school board partners, and subject matter experts. Over two 2.5-hour meetings, we defined the problem, co-created solutions based on the design question, and then refined the solutions. We shared a Solution Inspiration document with ideas for how to respond to the math challenges before the meeting to inspire participants to how these challenges could be addressed (see [Appendix B](#)).

<b>Design Question:</b> How might we ensure Ignite Academy participants demonstrate foundational mathematics skills so that they perform at or above provincial standards?	
<p style="text-align: center;"><b>Meeting 1: Define &amp; Ideate (June 12)</b></p> <p>Together, we confirmed the problem we were trying to solve and co-created solutions. This session focused on aligning the design question based on our challenges and brainstorming the top 2-3 comprehensive solutions to prototype. We also generated a smaller list of ideas to retain on a Solutions List.</p>	<p style="text-align: center;"><b>Meeting 2: Test (June 20)</b></p> <p>The design team consolidated input and presented four solution prototypes for consideration and feedback. We broke into groups to review and refine the solutions. We sought feedback on the validity of the prototypes, addressing any missing components or challenges. This session was crucial for preparing the solutions for the report and ensuring the group felt heard.</p>

3. **Review & Implementation:** In a follow-up survey with participants, solutions were evaluated based on effectiveness, feasibility, and sustainability. We developed this document based on those scores and the PSWG's feedback. This report contains the recommendations for the Investor Table, Leadership Council Executives, and the Opportunity United and United Way Board of Directors to review. Each party has specific responsibilities:

- **Investors:** Focused on funding implications.
- **Leadership Council Executives:** Focused on organizational impacts.
- **Opportunities United Board of Directors:** Focused on oversight.
- **United Way Board of Directors:** Focused on community investments, funding agreements, risks, and policy changes.

If consensus between the three parties is achieved, the backbone team will work with Ignite Academy implementing partners and UWAT to execute the approved next steps. Solutions' results will be reported and evaluated to assess their impact on addressing math challenges. If no consensus is achieved, the recommendation will be returned to the working group for further problem-solving.



## SOLUTIONS FROM THE PWSG

In the first meeting, the group generated 24 unique ideas grouped into common themes (see [Appendix C](#)). We developed four prototypes from these themes, which were further refined in the second meeting. Below is a summary of the four prototypes. For more details, see [Appendix D](#).

### Prototype 1: Increasing the Number of Staff on UWAT and Development Opportunities

#### Objective:

Increase the number of qualified staff on UWAT to enhance the student-to-staff ratio, thereby providing more individualized and effective academic interventions focusing on mathematics and literacy. This objective addresses the limited time and availability of qualified math instructors, ensuring that every student receives the support they need to succeed academically.

#### Details:

<b>Recruitment</b>	<ul style="list-style-type: none"> <li>• Target qualified candidates from various sources, prioritizing those with strong behaviour management skills and expertise in math and literacy.             <ul style="list-style-type: none"> <li>◦ Recruit from occasional staff lists, retired teachers, and part-time workers.</li> <li>◦ Collaborate with universities and colleges to recruit students and graduates for part-time positions, particularly those with a background in education and mathematics.</li> </ul> </li> <li>• Include caregivers and community representatives on hiring committees to bring diverse perspectives to the selection process.</li> </ul>
<b>Scheduling</b>	<ul style="list-style-type: none"> <li>• Ensure consistent coverage across all Ignite Academy sites to maintain a stable learning environment.</li> </ul>
<b>Training</b>	<ul style="list-style-type: none"> <li>• Implement a training program to ensure new UWAT staff are well-versed in the math curriculum and intervention strategies.</li> <li>• Include sessions on using diagnostic tools and interpreting data.</li> <li>• Utilize Ministry-mandated PD and additional PD for math-identified priority schools.</li> </ul>
<b>School Partnerships</b>	<ul style="list-style-type: none"> <li>• Offer ongoing support and development opportunities for both Ignite Academy and school staff, fostering a collaborative learning environment.</li> <li>• Partner with school board staff to provide PD focused on enhancing math content knowledge and teaching strategies.</li> <li>• Conduct diagnostic assessments in schools before the start of Ignite Academy sessions to identify and address student needs effectively.</li> <li>• Hold monthly coordination meetings between UWAT staff, homeroom teachers, and Ignite Academy staff to ensure alignment and communication.</li> <li>• Implement communication logbooks for regular updates on student progress and staff observations.</li> </ul>
<b>Evaluation</b>	<ul style="list-style-type: none"> <li>• <i>KPIs Development:</i> Develop additional KPIs to measure students' proficiency in foundational math skills, focusing on understanding over procedures.</li> <li>• <i>Feedback Surveys:</i> Conduct surveys to measure staff satisfaction and effectiveness.</li> <li>• <i>Participation Metrics:</i> Track the number of staff recruited and their attendance.</li> <li>• <i>Performance Assessments:</i> Regularly evaluate staff performance and student outcomes.</li> <li>• <i>Progress Monitoring:</i> Use data to refine training programs intervention strategies, and recruitment efforts.</li> </ul>

## Prototype 2: Growing Caregiver Engagement

### Objective:

Equip caregivers with the resources and skills needed to support their children's math learning at home.

### Details:

<b>Engagement Sessions</b>	<ul style="list-style-type: none"> <li>• Conduct regular workshops to educate caregivers on supporting their children’s math learning.</li> <li>• Provide sessions on math strategies, resources, and tools for caregivers.</li> <li>• Adapt sessions to different engagement preferences among parents.</li> <li>• <i>Math Nights:</i> <ul style="list-style-type: none"> <li>• Organize interactive math nights with fun activities for students and caregivers.</li> <li>• Involve caregivers in volunteering and supporting math activities at home.</li> </ul> </li> </ul>
<b>Training in Math &amp; Socio-Emotional Learning (SEL)</b>	<ul style="list-style-type: none"> <li>• Equip caregivers with techniques to foster a positive math mindset and reduce math anxiety in their children.</li> <li>• Offer classes specifically for caregivers to improve their own math skills and confidence.</li> </ul>
<b>1:1 Progress Updates</b>	<ul style="list-style-type: none"> <li>• Schedule regular meetings with caregivers to discuss their child’s progress and develop personalized action plans.</li> </ul>
<b>Resource Kits</b>	<ul style="list-style-type: none"> <li>• Distribute math resource kits containing practice worksheets, manipulatives, and instructions. To reduce duplication, coordinate with the school board to see what is already available.</li> <li>• Translate kits into top languages spoken by the caregivers.</li> </ul>
<b>Communication Channels</b>	<ul style="list-style-type: none"> <li>• Establish a dedicated communication channel (e.g., hotline or app) for caregiver support.</li> <li>• Use settlement workers and AI translator devices for language support.</li> <li>• Utilize email and WhatsApp for better engagement.</li> </ul>
<b>Evaluation</b>	<ul style="list-style-type: none"> <li>• <i>KPIs Development:</i> Develop additional KPIs to measure students' proficiency in foundational math skills, focusing on understanding over procedures.</li> <li>• <i>Engagement Surveys:</i> Conduct pre- and post-workshop surveys to assess caregiver confidence and skills.</li> <li>• <i>Participation Metrics:</i> Track attendance at engagement activities.</li> <li>• <i>Impact Assessments:</i> Measure changes in student performance and math anxiety.</li> <li>• <i>Qualitative Feedback:</i> Gather in-depth insights through focus groups.</li> </ul>

## Prototype 3: Add a 5<sup>th</sup> Day of Ignite Academy with a Focus on Math

### Objective:

Provide additional instructional time dedicated solely to math, giving students more opportunities to master concepts.

### Details:

<b>Program Structure</b>	<ul style="list-style-type: none"> <li>• Introduce a 5th day dedicated to math, scheduled for Fridays or Saturdays.</li> <li>• Structure the day with focused instruction, hands-on activities, and collaborative projects.</li> <li>• Utilize project-based learning and cross-curricular activities.</li> </ul>
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<b>Staffing</b>	<ul style="list-style-type: none"> <li>• Ensure adequate staffing for individual attention and support.</li> <li>• Partner with local universities and high schools for student-teachers and volunteers.</li> <li>• Leverage community volunteers and retired teachers for specific themed days.</li> </ul>
<b>Incentives &amp; Engagement</b>	<ul style="list-style-type: none"> <li>• Provide incentives like snacks and fun activities.</li> <li>• Organize math competitions and collaborative projects.</li> </ul>
<b>Caregiver Engagement &amp; Communication</b>	<ul style="list-style-type: none"> <li>• Inform caregivers about the goals and benefits of the additional math-focused day.</li> <li>• Offer workshops and resources for caregivers to support their children.</li> </ul>
<b>Evaluation</b>	<ul style="list-style-type: none"> <li>• <i>KPIs Development:</i> Develop additional KPIs to measure students' proficiency in foundational math skills, focusing on understanding over procedures.</li> <li>• <i>Participation Metrics:</i> Track attendance and participation rates for the additional day.</li> <li>• <i>Impact Assessments:</i> Measure changes in student performance before and after the additional day.</li> <li>• <i>Feedback Collection:</i> Gather feedback from caregivers and staff to adjust the program</li> </ul>

### Prototype 4: Enhancement of Math into Core Programming

*Objective:*

Incorporate math learning into all aspects of the Ignite Academy programming, promoting a holistic and continuous approach to math education.

*Details:*

<b>Curriculum</b>	<ul style="list-style-type: none"> <li>• Incorporate math vocabulary and activities into daily programming.</li> <li>• Focus on foundational mathematics, incorporating SEL and the five math proficiencies.</li> <li>• Utilize research-based tools for weekly monitoring and diagnostics.</li> </ul>
<b>Staffing &amp; Roles</b>	<ul style="list-style-type: none"> <li>• Facilitate ongoing collaboration between UWAT staff and program facilitators.</li> <li>• Employ pre-service teachers to work alongside Ignite staff.</li> <li>• Increase staff to manage large groups and provide individual support.</li> </ul>
<b>School Partnerships</b>	<ul style="list-style-type: none"> <li>• Partner with the school board for PD sessions.</li> <li>• Provide resources and support for facilitators to incorporate math.</li> <li>• Collaborate with homeroom teachers to integrate math into core subjects.</li> <li>• Establish a shared resource drive and community of practice meetings.</li> </ul>
<b>Training &amp; Capacity Building</b>	<ul style="list-style-type: none"> <li>• Implement a training program to ensure core programming staff are comfortable with the math curriculum and intervention strategies.</li> <li>• Include capacity building on using diagnostic tools and interpreting data.</li> </ul>
<b>Evaluation</b>	<ul style="list-style-type: none"> <li>• <i>KPIs Development:</i> Develop additional KPIs to measure students' proficiency in foundational math skills, focusing on understanding over procedures.</li> <li>• <i>Performance Metrics &amp; Impact Assessments:</i> Track student progress in math proficiency and measure the overall impact on student learning outcomes.</li> <li>• <i>Qualitative Feedback:</i> Collect feedback from teachers and facilitators on program effectiveness through surveys and focus groups.</li> </ul>



## RECOMMENDATIONS

### Effectiveness, Feasibility, and Sustainability Ratings

After the second meeting, participants completed a survey to rank the four prototypes based on their effectiveness, feasibility, and sustainability. Participants ranked each prototype on a scale from 1 to 4, with 1 indicating the most effective, feasible, or sustainable, and 4 indicating the least.

- **Effectiveness:** How well the prototype addresses the math challenges and achieves the desired outcomes.
- **Feasibility:** How practical and achievable the prototype is, considering available resources, time, and constraints.
- **Sustainability:** The ability to maintain the prototype over the long term, ensuring continued benefits and outcomes.

	Effectiveness	Feasibility	Sustainability	Average
<b>Increasing the Number of Staff on UWAT</b>	3.3	2.2	2.6	<b>2.7</b>
<b>Growing Caregiver Engagement</b>	2.0	2.4	2.7	<b>2.4</b>
<b>Add a 5<sup>th</sup> Day of Ignite Academy with a Focus on Math</b>	1.9	2.2	2.2	<b>2.1</b>
<b>Enhancement of Math into Core Programming</b>	2.8	3.3	2.6	<b>2.9</b>

### Recommendations from the Backbone Team

The survey results provide insight into the best path forward. Each prototype has elements that can be incorporated into the programming to address math challenges. We recommend prioritizing high-impact, feasible prototypes, focusing on "Enhancement of Math into Core Programming" and "Increasing the Number of Staff on UWAT" as primary initiatives. We'll also integrate easy-to-implement aspects from the "Growing Caregiver Engagement" prototype into existing programs.

#### *Enhancement of Math into Core Programming (Average: 2.9)*

**Plan:** This prototype should be implemented first because it has the highest average rating and a strong feasibility score, indicating it can seamlessly integrate with existing resources and staff development.

#### **Resource Considerations: \$\$**

- **Professional Development (PD):** Resources needed include PD sessions, which can be sourced from the school board and the Ignite Academy Community Coordinator. If the IA Community Coordinator spends more time conducting PD sessions, there will need to be a cover for their management responsibilities for Ignite Academy. This might require hiring an additional staff member or adjusting the roles of other team members to ensure smooth operations.
- **Materials and Resources:** Additional materials for integrating math vocabulary and activities will be required, along with establishing a shared drive for resources. Collaboration with school boards can provide further resources and support, helping to enhance the program's effectiveness and sustainability.

Next Steps	Timeline
<b>Collaboration Between UWAT and Core Programming</b> <ul style="list-style-type: none"> <li>Establish tracking and communication of academic progress for each student.</li> <li>Use Community of Practice meetings to coordinate.</li> </ul>	In-Progress
<b>Resource Integration &amp; Professional Development</b> <ul style="list-style-type: none"> <li>Facilitate PD sessions on integrating math into core programming.</li> <li>Integrate math vocabulary and activities into daily programming.</li> <li>Utilize existing resources from the school board (e.g., technology, subscriptions, existing PD/capacity building).</li> <li>Establish a shared drive for resources, lesson plans, and best practices.</li> </ul>	Fall 2024
<b>Collaboration</b> <ul style="list-style-type: none"> <li>Regularly collaborate with homeroom teachers.</li> <li>Conduct regular assessments and update resources.</li> </ul>	Fall 2024
<b>Evaluation</b> <ul style="list-style-type: none"> <li>Develop additional KPIs. Gather qualitative feedback and conduct performance metrics and impact assessments. Monitor progress and make adjustments (e.g., updates to curriculum).</li> </ul>	Ongoing

### *Increasing the Number of Staff on UWAT (Average: 2.7)*

**Plan:** This prototype is recommended as it balances effectiveness and sustainability, addressing the critical need for more individualized attention for students. While the recruitment and training efforts are significant, a phased approach will help manage the financial and resource implications.

#### **Resource Considerations: \$\$\$**

- Staffing Costs:** Implementing this solution will involve additional costs, particularly in hiring new staff. In Year 2 of Ignite Academy, a part-time UWAT staff member received \$25/hour. Ensuring adequate staffing, ideally with one UWAT staff member per school by October 1, is a priority. However, given the financial implications, a thorough discussion on budget allocation is necessary. Starting with a smaller initial staff allocation may be prudent to manage costs while still addressing immediate needs. This phased approach will allow us to monitor and evaluate the program's impact, helping us better understand the specific requirements and make informed decisions about future staffing increases as resources allow.

Next Steps	Timeline
<b>Recruitment</b> <ul style="list-style-type: none"> <li>Contact local universities and colleges for student volunteer/internship opportunities.</li> <li>Reach out to retired teachers and occasional staff lists for part-time recruitment.</li> </ul>	Fall 2024
<b>Training</b> <ul style="list-style-type: none"> <li>Develop a comprehensive training program covering the math curriculum, intervention strategies, and equitable teaching practices.</li> <li>Schedule training sessions for new hires.</li> </ul>	Fall 2024
<b>Scheduling and Integration</b> <ul style="list-style-type: none"> <li>Assign new staff to specific Ignite Academy sites based on need.</li> <li>Implement monthly coordination meetings and communication logbooks.</li> </ul>	Fall 2024
<b>Evaluation</b> <ul style="list-style-type: none"> <li>Develop additional KPIs. Gather participation metrics and feedback surveys. Conduct performance assessments. Monitor progress and make adjustments.</li> </ul>	Ongoing

**Growing Caregiver Engagement (Average: 2.4)**

**Plan:** Implement aspects of this prototype, particularly those that are low-cost and easy to integrate, recognizing that caregiver engagement is crucial for supporting students' learning at home. While caregiver engagement may not be the primary focus, it is essential for enhancing the overall educational experience.

**Resource Considerations: \$**

- **Initial Workshops and Communication Channels:** Setting up WhatsApp groups and email lists requires minimal financial investment, mainly involving time and coordination efforts.
- **Resource Kits:** Developing and distributing resource kits will require a budget for materials and translation services. These costs can be managed efficiently with careful planning. Leveraging existing resources available through the school board and volunteer assistance in organizing and distributing kits can further reduce costs. These resource kits are generally low-cost, making them a practical option.

Interactive math nights and regular updates will necessitate ongoing staff time and planning but are essential for maintaining caregiver involvement and support. The emphasis will be on leveraging existing resources and seeking community partnerships to maximize the impact of these initiatives. By coordinating efforts with the school board and involving community volunteers, we can efficiently implement these strategies while minimizing costs.

Next Steps	Timeline
<b>Initial Workshops</b> <ul style="list-style-type: none"> <li>• Schedule and conduct initial workshops in community spaces.</li> <li>• Establish communication channels (WhatsApp groups, emails).</li> </ul>	Fall 2024
<b>Resource Kits Distribution</b> <ul style="list-style-type: none"> <li>• Develop and distribute math resource kits.</li> <li>• Translate materials into top languages.</li> </ul>	Winter 2025
<b>Math Nights and Progress Updates</b> <ul style="list-style-type: none"> <li>• Organize interactive math nights.</li> <li>• Schedule regular 1:1 progress updates with caregivers.</li> </ul>	Winter & Spring 2025
<b>Continuous Engagement</b> <ul style="list-style-type: none"> <li>• Regularly assess and adapt engagement strategies.</li> <li>• Build strong relationships with caregivers.</li> </ul>	Ongoing
<b>Evaluation</b> <ul style="list-style-type: none"> <li>• Develop additional KPIs. Gather qualitative feedback, participation metrics, and engagement surveys. Conduct impact assessments. Monitor progress and make adjustments.</li> </ul>	Ongoing

**Add a 5th Day of Ignite Academy with a Focus on Math (Average: 2.1)**

**Plan:** Conduct a small-scale pilot of this prototype to address feasibility and sustainability challenges. The pilot will help determine the most effective and sustainable approach for expanding the program.

**Resource Considerations: \$\$\$**

- **Curriculum Development:** Time and expertise are needed to create a specialized math curriculum, possibly involving collaboration with school boards and community partners.
- **Incentives and Materials:** Providing incentives for participation, such as prizes for competitions and materials for the additional day, including textbooks, worksheets, and educational tools.

- **Funding and Support:** The program's sustainability may depend on securing additional funding or in-kind support. This could include material donations, financial contributions, or sponsorships for specific events or activities. Allocating funding to cover staff salaries is also essential, as staff must be compensated for the additional working day. While community volunteers and student teachers can provide valuable support, they will not replace the need for paid staff.

Next Steps	Timeline
<p><b>Planning and Recruitment</b></p> <ul style="list-style-type: none"> <li>• Survey caregivers to determine how the 5th day would assist with childcare costs or scheduling.</li> <li>• Engage community volunteers and student-teachers for the additional day.</li> <li>• Plan and develop the specialized curriculum for the 5th day.</li> </ul>	<p>Winter &amp; Spring 2025</p>
<p><b>Pilot Program</b></p> <ul style="list-style-type: none"> <li>• Launch the 5th-day program on a trial basis.</li> <li>• Offer incentives and organize math competitions.</li> </ul>	<p>Winter &amp; Spring 2025</p>
<p><b>Expansion</b></p> <ul style="list-style-type: none"> <li>• Expand the program to include more students.</li> <li>• Secure additional funding if necessary.</li> </ul>	<p>Winter &amp; Spring 2025</p>
<p><b>Evaluation</b></p> <ul style="list-style-type: none"> <li>• Develop additional KPIs. Gather qualitative feedback (e.g., focus groups), participation metrics, and pilot surveys. Conduct impact assessments. Monitor progress and make adjustments.</li> </ul>	<p>Ongoing</p>

**NEXT STEPS – REVIEW, APPROVAL, & IMPLEMENTATION:**

We will ensure our evaluation methods cover the implemented prototype to track its effectiveness. Regular feedback from students, staff, and caregivers through surveys and assessments will identify strengths and areas for improvement. Monthly updates will enable data analysis and necessary adjustments, ensuring initiatives remain effective and sustainable.

*Review and Approval Process*

Recommendations will be submitted to the Investor Table, Leadership Council Executives, and United Way Board of Directors for review. Each group will focus on specific areas:

- **Investors:** Focused on funding implications.
- **Leadership Council Executives:** Focused on organizational impacts.
- **Opportunities United Board of Directors:** Focused on oversight.
- **United Way Board of Directors:** Focused on community investments, funding agreements, risks, and policy changes.

If consensus is achieved, implementation will begin in Fall 2024. If no consensus is reached, the recommendation will be returned to the working group for further problem-solving.

## APPENDIX A: BARRIER SUMMARY

### Summary Mathematics Challenges in Ignite Academy

#### Background:

In today's world, strong math skills are more essential than ever. A basic knowledge of math is required for most careers, including business, nursing, construction and various trades, while advanced math knowledge is required for fields such as medicine, engineering, economics and careers in science. Despite this, reports indicate that students across Canada, including Ontario, are [struggling in math](#). The Education Quality and Accountability Office (EQAO) [data](#) for 2022-2023 showed that only about 59.7% of Grade 3 students and 49.5% of Grade 6 students met or exceeded provincial standards when it came to mathematics across Ontario. According to the EQAO data, 55% of Grade 3 and 6 students were below the provincial standard in math for the 2022-2023 school year in the three ProsperUs priority neighbourhoods (West Windsor, Downtown Windsor, and Leamington).

Ignite Academy is the first community-designed [Cradle to Career](#) solution from ProsperUs. Aimed to bolster literacy and math competencies, the program operates after school four days a week, targeting students from grades 2-7. The participating schools are in priority neighbourhoods with the highest rates of childhood poverty: West Windsor, Downtown Windsor, and Leamington.

#### Mathematics Challenges in Ignite Academy

The United Way Academic Team (UWAT) has been delivering targeted academic support to students in Ignite Academy to improve literacy and Math proficiency. Between Oct and May, UWAT delivered 979 Math interventions across the six Ignite Academy sites/schools. The availability of UWAT staff at specific sites affected the dosage of academic interventions across the Ignite Academy sites.

At the beginning of the program year, math and literacy diagnostic assessments were conducted to find a baseline skill level and identify any gaps in knowledge content in literacy and mathematics among the students. These assessments informed the design of targeted interventions tailored to address student needs in literacy and math.

#### Defining the Problem

Ignite Academy participants, on average, are demonstrating a deficit of foundational mathematics skills. This deficit was noted during diagnostic assessments in Fall 2023, and as a result, it was decided to focus on only one strand of the mathematics curriculum and conduct interventions from an equitable lens. This meant that Ignite participants were only receiving support for Strand B: Number. And we are omitting support for the other 80% of the mathematics curriculum. Based on the Math diagnostic assessment conducted at the beginning of the program year, students were grouped into three categories with academic risk levels: core support (minimal risk), strategic support (some risk), and intensive support (at risk). Each student was assessed at the beginning of the year on the curriculum they should have covered in their previous year. About 67% (n=110) of students were identified as needing intensive support for mathematics. UWAT covers only one strand of mathematics, 1/5 or 20% of the curriculum this year. Progress for mathematics is calculated in terms of curriculum points "cleared" per month. On average, students needed to clear 69% of the required curriculum. UWAT aimed for students to clear at least 50% of their required curriculum in Strand B: Number, but the average proportion cleared from October to May was 38%. When examining this by site, the highest proportion achieved was 55%, while the lowest was 23%.

Although this outcome falls short of the desired target, it represents a significant improvement, as the average proportion of curriculum cleared from October to February was only 15%. The addition of two more staff members in March likely contributed to this progress.

#### How are students assessed?

Ignite Academy students are assessed on their prior grade's mathematics curriculum for Strand B: Number. This covers number sense and operational mathematics -- foundational to other strands. For example, as a student enters grade 3, they are assessed on what they should have retained from grade 2. For each curriculum point that a student is unable to demonstrate competence, they are assigned that topic for targeted academic interventions.

#### How do mathematics academic interventions work?

The targeted academic interventions are individualized to meet the needs of each student. That means that sometimes a student may need a refresher to assist with retention of that skill, and sometimes a student may need multiple sessions to

learn the skill at all. United Way Academic Team (UWAT) determines when a skill or curriculum point has been **cleared**. The student must be able to demonstrate independent competence on that skill or curriculum point for it to be considered cleared.

Academic interventions are also consistently applied from an equitable lens. The students that need the most support are considered UWAT's priorities. Many of the Ignite Academy participants need to work on the entirety of their Strand B: Number mathematics curriculum. That can be anywhere from 13-18 separate curriculum points. Some others only have a few points to clear and we take them when the opportunity arises and priority students are unavailable.

### Challenges Identified

Several challenges have been identified by the United Way Academic Team that contribute to the math score deficit:

1. Limited time to cover content within Ignite Academy programming.
2. Limited staff capabilities, as more students per session reduce the effectiveness of interventions (e.g., retention of skills).
3. Staff retention, with turnover necessitating the training of new staff and rebuilding relationships and trust with vulnerable youth.
4. Difficulty in finding qualified staff willing to commit to a full-year part-time role.
5. Lead agency staff lacking content-specific knowledge to support interventions.
6. Limited assistive technology, still requiring one-to-one support.
7. Caregivers are often at a disadvantage in supporting homework and skill development due to language barriers or limited content knowledge.
8. Student volunteers are often inexperienced and inconsistent due to their schedules.
9. Motivating students through incentives and rewards is a temporary solution, leading to reduced engagement when rewards are not involved.
10. Low attendance among priority students.
11. High levels of disengagement from math, with many students reporting it as their least favourite subject. Approximately 68% of students reported having a subject they don't enjoy, with roughly half of those students identifying math as the subject they find unenjoyable. Feedback from the program quality survey indicated that the majority of students expressed math as their least favourite aspect of Ignite Academy. (Sources: IA SEL Survey 2023, IA Program Quality Survey 2023)

### Moving Forward

Recognizing these challenges, our goal is to collaborate as educators, caregivers, and staff to address them. By leveraging our collective strengths, we aim to develop solutions that are stronger than what any one perspective could offer alone. The solutions co-created by the group will be recommended to ProsperUs and the United Way Board of Directors for decision-making. Those that receive full endorsement will be presented to the ProsperUs Investors Table for funding.

## APPENDIX B: SOLUTION INSPIRATION

### Problem Solving Working Group for Ignite Academy Solution Primer

The solution primer is a document that is used to inspire your thinking about solution ideas during our Problem-Solving Working Group process. The primer outlines a few strategies aimed at improving student math outcomes at Ignite Academy and is in no way exhaustive of all available solutions, but is meant to be a starting point to help us think big. We welcome additional ideas, regardless of their scale, during the sessions and encourage innovative thinking to adapt solutions to Ignite Academy.

#### 1. Professional Development of Ignite Academy Program Staff

The professional development of program staff could be a strategy to scale up math interventions in Ignite Academy. By investing in training and professional development activities focused on math, these staff members, who may not be math experts or see themselves as math experts, could enhance their confidence and abilities to teach mathematical concepts to the students, regardless of their initial expertise. Partnerships with organizations that offer such training (e.g. [Jump Math](#)) or even leveraging the expertise of the United Way Academic Team (UWAT) could be considered.

#### 2. Integration of Math into Core Programming

Integrating math into all program activities can be achieved through simple, fun, and practical approaches. The goal is to make math learning more engaging and relevant for students in the program beyond just one-to-one academic sessions.

Incorporating math into the Ignite Academy core programming activities doesn't mean eliminating other program activities. Instead, it involves infusing every activity with math elements. For instance, when dividing students for a group activity, facilitators could ask them how many groups they'll make if they split into groups of four. Such practice fosters mathematical thinking in a practical context. Further discussion is needed to explore how to expand math integration in a structured way across the program rather than limiting it to one-to-one sessions and homework help.

### 3. Prioritize Math Over Other Activities

As Ignite Academy's primary focus is on academic outcomes, reallocating time from recreational activities to prioritize math could be a practical strategy to address the current underperformance of math indicators. While it may not be a preferred solution, especially among students, this shift can be made enjoyable for students through math games, math projects, 'math talk', or other engaging math-related activities. Various freely available online toolkits and resources, such as [The Afterschool Training Toolkit](#), can aid program staff in implementing these activities effectively within the program.

### 4. Use of Technology

Utilizing technology offers a promising solution, particularly in programs faced with high staff turnover. Moreover, existing scientific literature supports the efficacy of computer-based tools in OST programs. For example, a study<sup>4</sup> found that using a computer-based program called ALEKS in after-school sessions helped struggling students in Math as much as working with expert teachers. The students using ALEKS needed less help compared to those taught by teachers. However, one of the primary challenges lies in financial constraints, as integrating interactive software, resources, or educational applications typically entails significant associated costs.

### 5. Caregiver Engagement

Engaging caregivers and families can be an effective way to improve the math skills of students. Existing literature also supports that children's performance increases when parents/caregivers discuss math with their children and have positive attitudes about their children's abilities to succeed in math. Caregivers can be engaged using different approaches such as providing resources, hosting workshops, informational sessions, caregiver-teacher conferences, family math sessions, communicating student progress, etc. These activities also contribute to creating a supportive learning environment at home as well.<sup>5</sup>

The scaling up of caregiver engagement activities has been under discussion for the upcoming Ignite Academy school year. Therefore, this strategy presents an opportunity that may simultaneously serve two purposes.

### 6. Peer Tutoring and Student Volunteers:

Peer tutoring involves students helping each other learn and understand subjects. At Ignite Academy, introducing peer tutoring focused on Math could be beneficial. One approach is to pair students in the older cohort (grades 6-7) who excel in math with students in the younger cohort (grades 2-5) who need extra support. However, there is mixed evidence regarding the effectiveness of peer tutoring for school students.

A similar strategy would be seeking student volunteers from the school, college, or university locally who can provide additional math support to the students.

### 7. Incentives Program

Implementing incentive programs to motivate students to engage in math learning activities can contribute to improving math indicators for Ignite Academy. Students can be incentivized to actively participate in math-related activities by offering rewards such as certificates, prizes, or recognition for achieving specific math milestones or improvement or mastery of specific math skills. Such incentive programs can also serve as a tool to foster a positive attitude towards math and encourage students to take ownership of their learning journey. A few research studies have also suggested the effectiveness of rewards in improving student learning outcomes in Math<sup>6</sup>.

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<sup>4</sup> Craig, S. D., Hu, X., Graesser, A. C., Bargagliotti, A. E., Sterbinsky, A., Cheney, K. R., & Okwumabua, T. (2013). The impact of a technology-based mathematics after-school program using ALEKS on student's knowledge and behaviors. *Computers & Education*, 68, 495-504.

<sup>5</sup> <https://education.ohio.gov/getattachment/Topics/Other-Resources/Family-and-Community-Engagement/Framework-for-Building-Partnerships-Among-Schools/Math.pdf.aspx>

<sup>6</sup> Situmorang, H. (2022). Improving Learning Outcomes in Mathematics Classes via Rewards and Punishments: an Action Research. *Journal of Innovation and Research in Primary Education*, 1(1), 7-11.

## 8. Staff Retention

*“Teacher turnover is disruptive for student academic attainment.”<sup>7</sup>.*

Despite numerous studies and research articles suggesting the importance of staff retention in student academic achievement, hiring and retaining staff remains a long-standing issue for OST programs, including Ignite Academy. Evidence suggests that a combination of compensation, professional development opportunities, and improved work conditions creates a basis for job satisfaction and increases confidence among the staff, which can lead to higher staff retention and lower staff turnover.

It could also be worth exploring the possibility of hiring school teachers and college students studying education to support Ignite Academy's academic intervention component.

## 9. Math Facilitators and Targeted Support

Hamilton's public schools are intensifying their focus and allocating additional resources to address persisting challenges in math education, particularly reflected in student performance. Nearly half of these schools are receiving additional math support, including the deployment of math facilitators mandated by the ministry. A recently published [news article](#)<sup>8</sup> stated that 26 math facilitators are working in Hamilton's public elementary and secondary schools through a provincially funded program to help get students where they need to be in math. The math facilitators work alongside teachers in the classroom and provide direct support to students in the classroom to make math more accessible and engaging for students.

## APPENDIX C: LIST OF ALL SOLUTIONS

### Program Expansion & Structure

1. Expand programming to include additional days, such as Fridays or Saturdays.
  - Establish a weekend program in publicly available spaces.
2. Implement an in-school Ignite program for math interventions.
  - Provide in-school opportunities for targeted math interventions during the school day.
3. Offer summer programming to prevent learning loss and reinforce math skills.
4. Add early year grades - focus on early years with a prevention-focused approach.

### Staffing and Roles

5. Increase and enhance UWAT staff positions.
  - Establish full-time UWAT positions.
  - Assign 2 UWAT staff per school (1 math, 1 literacy).
  - Increase the number of staff for 1:1 support
  - Allow more time for 1:1 support.
6. Leverage volunteers and student placements.
  - Partner with the UWindsor staff.
  - Create student-teacher placements with SCC and UWindsor to support math interventions, establishing a pipeline.
  - Facilitate student placements (university students, high school students, volunteers)
  - Employ pre-service teachers to work alongside Ignite staff and UWAT.
  - Align the PDS model with student-teacher placements (e.g., a pilot at Brock and Begley).
7. Collaborate with external organizations.
  - Utilize groups that require students with strong math skills (e.g., MBA students, accounting firms, skilled trades/Liuna, retirees).
  - Connect with Build a Dream to bring in female role models.
  - Introduce math role models and mentors.

### Professional Development

<sup>7</sup>Gibbons, S., Scrutino, V., & Telhaj, S. (2021). Teacher turnover: Effects, mechanisms and organisational responses. *Labour Economics*, 73, 102079.

<sup>8</sup> [https://www.thespec.com/news/hamilton-region/making-math-add-up-for-struggling-hamilton-students/article\\_65c381c2-193d-5250-8512-847ae636a38a.html](https://www.thespec.com/news/hamilton-region/making-math-add-up-for-struggling-hamilton-students/article_65c381c2-193d-5250-8512-847ae636a38a.html)



8. Collaborate with school board staff for professional development for Ignite staff
  - More collaboration between school boards, faculty, Ignite staff, and UWAT on content knowledge, pedagogy, and resources.
  - Integrate and align existing resources from schools such as pathology, Knowledge Hook, Leaps and Bounds, PR1ME-diagnostic

### School Partnerships

9. Increase understanding about Ignite Academy with teachers and schools
10. Increase collaboration with homeroom teachers.
  - Hold monthly meetings between homeroom teachers, Ignite staff, and UWAT to share updates and goals.
  - Use a communication logbook with homeroom teachers to communicate regarding homework and struggles.

### Teaching Methods and Curriculum

11. Focus on foundational mathematics and proficiency.
  - Emphasize proficiency over procedures.
  - Include SEL and the five math proficiencies from the National Council of Teachers of Mathematics (NCTM).
  - Develop a KPI for proficiency.
  - Establish a universal/standard math curriculum across Ignite sites.
12. Identify gaps and provide tier 2/3 interventions.
  - Use high-impact strategies and prioritize curriculum expectations.
  - Focus on mastery of skills.
13. Incorporate project-based and cross-curricular learning.
  - Implement small group project-based learning.
  - Incorporate cross-curricular activities to integrate math into other subjects.
14. Utilize progress monitoring tools (evidence-based, research-based).
  - Incorporate EQAO practice questions.
15. Design activities for multiple levels that are interesting to students (e.g., Kagam)
16. Introduce math journals for students to track their activities and progress

### Student Support and Enrichment

17. Implement peer buddy systems and exchange learning across grades.
  - Facilitate exchange learning by bringing different sites together across grades.
  - Implement math competitions among sites.
  - Divide students into smaller groups based on skill level to learn from one another.
18. Provide extra support and accommodations.
  - Use a strength-based, individual approach to integrate math with students' skills or areas of interest (e.g., arts, visual).
  - Incentivize math days with food, snacks, and fun activities.
  - Link SEL with math (e.g., through arts)
19. Develop ways to make math engaging, considering students are often tired after school. Focus on promoting the idea that "Math is fun."
20. Relate math to students' interests, hobbies, and future careers (e.g., YouTubers, marketing trends).
21. Learning mediums: Use different learning mediums to accommodate various learning styles (e.g., technology, everyday objects).
  - Balance the use of paper/pen and technology in teaching methods.
  - Utilize technology and digital tools for math learning. Provide tools and resources to enhance learning.

### Integration of Math into Core Programming

22. Provide more math support during core programming.
  - Increase communication between UWAT and program facilitators to understand gaps and support during core programming. Enhance communication with staff about the curriculum.
  - Include math vocabulary in programming.
  - Provide PD and resources for facilitators on incorporating math.

- Develop and share ideas for math games with Ignite staff.

### Caregiver Engagement and Communication

23. Increase communication between caregivers and staff
  - Provide 1:1 progress updates.
  - Offer resources on how to support children.
24. Increase caregiver engagement
  - Conduct caregiver engagement sessions for math education.
  - Create opportunities for caregivers to sit in on sessions.
  - Conduct PD on math and social-emotional learning (SEL).
  - Hold math help classes for parents at least twice a year.
  - Engage caregivers with math to assist their children at home.
  - Implement math nights to engage students and caregivers in fun, interactive math activities
  - Connect the emotional/family stability/newcomer belonging component with math performance.
  - Engage caregivers as facilitators

## APPENDIX D: PROTOTYPES WITH MEETING 2 FEEDBACK

### Increasing the Number of United Way Academic Team Staff

#### OBJECTIVE

To enhance the student-to-staff ratio, allowing for more individualized and effective academic interventions.

#### DETAILS

##### Recruitment:

- Collaborate with universities and colleges to recruit qualified students and graduates for part-time positions.
- Engage retired teachers for part-time or full-time roles to leverage their experience and expertise.

##### Scheduling:

- Ensure consistent coverage across all Ignite Academy sites, especially during peak intervention times.

##### Training:

- Implement a training program to ensure new staff are well-versed in the math curriculum, intervention strategies, and equitable teaching practices. Sessions on using diagnostic tools and interpreting data to tailor interventions effectively should be included.

##### School Partnerships:

- **Ongoing Support:** Provide continuous support and development opportunities for both Ignite Academy and school staff.
- **Collaborative Training:** Partner with school board staff to offer professional development on math content knowledge, pedagogy, and effective teaching strategies.
- **Curriculum Alignment:** Ensure that all math-focused activities and interventions are aligned with the existing school curriculum and align with resources from schools when possible.
- **Diagnostics During School Hours:** Conduct diagnostic assessments in schools before the start of Ignite Academy to identify student needs and tailor interventions accordingly.
- **Monthly Coordination Meetings:** Hold monthly meetings between UWAT staff, homeroom teachers, and Ignite Academy staff to discuss student progress and share goals. Use these meetings to align interventions with classroom activities and address any challenges collaboratively.
- **Communication Logbooks:** Implement communication logbooks to facilitate regular updates between UWAT staff and homeroom teachers. Use logbooks to track student progress, share homework struggles, and coordinate support strategies.

##### Evaluation:

- Develop KPIs to measure proficiency and mastery of foundational math skills. Use these KPIs to regularly monitor staff performance and student progress.

- Conduct regular assessments to identify areas for improvement in both staff performance and student outcomes.

### **MEETING 2 THEMES**

#### **Recruitment Strategies:**

- *Recruit from occasional staff lists, retired teachers, and part-time workers.*
- *Ensure candidates have behaviour management skills and specialize in math and literacy.*
- *Consider unionized environment issues.*
- *Include caregivers in hiring committees.*
- *Connect with university and college cohorts to attract students.*

#### **Retention Strategies:**

- *Increase full-time staff positions and provide more hours and benefits.*
- *Develop a highly organized program structure and universal curriculum across sites.*
- *Focus on staff who love children and are patient.*
- *Screen for commitment during the interview process.*
- *Consider recruiting university students carefully due to their changing schedules.*

#### **Professional Development:**

- *Utilize Ministry-mandated PD and additional PD for math-identified priority schools.*
- *Implement job-embedded PD approaches, such as co-planning and co-teaching – bring in I UWAT and Ignite Staff to existing days*
- *Increase the confidence of both teachers and students in math.*
- *Leverage existing math specialists (e.g., Kelsey) and resources effectively.*

#### **Additional Notes:**

- *Address high turnover rates with a strong support structure.*
- *Ensure clear communication and expectations for staff.*
- *Utilize both electronic and hardcopy resources for PD and support.*

## **Growing Caregiver Engagement**

### **OBJECTIVE**

To equip caregivers with the resources and skills needed to support their children's math learning at home.

### **DETAILS**

- **Engagement Sessions:**
  - Conduct regular workshops to educate caregivers on supporting their children's math learning.
  - Provide sessions on math strategies, resources, and tools that caregivers can use.
  - Training on Math and SEL: Equip caregivers with techniques to foster a positive math mindset and reduce math anxiety in their children.
- **Math Help Classes:** Offer classes specifically for caregivers to improve their own math skills and confidence. Focus on practical applications and ways to assist with homework.
- **1:1 Progress Updates:** Schedule regular meetings with caregivers to discuss their child's progress, challenges, and successes. Develop personalized action plans in collaboration with caregivers to support students at home.
- **Resource Kits:** Distribute math resource kits containing practice worksheets, manipulatives, and instructions on how to use them effectively. Ensure kits are tailored to different age groups and skill levels.
- **Communication Channels:** Establish a dedicated communication channel (e.g., a hotline or app) for caregivers to ask questions and receive support from UWAT staff. Ensure timely responses and continuous support.
- **Math Nights:** Organize interactive math nights where students and caregivers engage in fun math activities together. Include games, competitions, and hands-on activities to make math enjoyable.
- **Relating Math to Interests:** Develop activities that connect math to students' interests, hobbies, and future careers. Use real-world examples to demonstrate the relevance of math.

### **MEETING 2 THEMES**

#### **Engagement Strategies:**

- *Recognize that different parents want to engage differently.*
- *Use settlement workers and AI translator devices for language support.*
- *Include UWAT representatives during caregiver intake to share information.*
- *Avoid condescending questions about educational levels; ask about mindset instead.*
- *Messaging to Parents: Emphasize that the support is geared to help them help their child, not to replace the teacher.*

**Participation Strategies:**

- *Provide more opportunities for caregivers to observe and participate in Ignite Academy activities.*
- *Offer incentives such as gift cards and childcare during sessions.*
- *Utilize texting apps for after-hours questions with clear response time expectations.*
- *Build trust and relationships through consistent communication and feedback.*
- *Ensure parents are familiar with the curriculum and connected to the classroom to avoid the feeling of "this is not exactly what I'm doing at school."*
- *Consider office hours for parents, especially for those who prefer face-to-face interaction over apps.*

**Resource Utilization:**

- *Provide printed materials and resource kits translated into top languages.*
- *Offer virtual, hybrid, and flexible workshops.*
- *Ensure resources are not overwhelming and are relevant to parents' needs.*
- *Align with existing resources from school boards and community organizations (e.g., borrowing manipulatives, games, replicating take-home packages).*
- *Promote and manage existing resources effectively, such as leveraging TVO's live chats for tutoring support or utilizing UW volunteers to replicate school board resources.*

**Communication Channels:**

- *Prefer email and WhatsApp over calls and texts.*
- *Utilize Google Classroom for math nights and other activities.*
- *Engage parents in volunteering and supporting math activities at home.*
- *Promote existing communication channels and consider additional options like leveraging the talent pool from caregivers for support.*

**Existing Resources:**

- *School Boards: Borrow manipulatives and games, align with their parent nights and resources (MRA).*
- *Communication Channels: Promote existing resources like TVO's live chats for tutoring support.*
- *Consider increasing staff to offer office hours for parents and opportunities for parent-teacher interactions.*

## **Adding a 5th Day of Ignite Academy with a Focus on Math**

**OBJECTIVE**

To provide additional instructional time dedicated solely to math, giving students more opportunities to master concepts.

**DETAILS**

**Program Structure:**

- *Introduce a 5th day dedicated to math, scheduled for Fridays or Saturdays.*
- *Structure the day with a mix of focused instruction, hands-on activities, and collaborative projects.*
- *Offer the 5th day as an optional program to encourage voluntary participation, targeting students needing the most support.*

**Staffing:**

- *Ensure adequate staffing to provide individual attention and support.*
- *Secure additional funding to hire more UWAT staff to manage the extra day.*
- *Partner with local universities and high schools to bring in student-teachers and volunteers.*

**Curriculum:**

- **Specialized Curriculum:** Develop a specialized curriculum for the fifth day that focuses on interactive and engaging math activities that reinforce core concepts.
- **Project-Based Learning:** Incorporate project-based and cross-curricular learning activities to make math engaging and relevant. Design projects that require the application of math skills in real-world contexts.
- **Engaging Activities:** Plan activities that are fun and interactive, such as math games, competitions, and hands-on tasks. Use technology and digital tools to enhance learning experiences.

**Incentives and Engagement:**

- Provide incentives like snacks and fun activities to encourage attendance and participation.
- Organize math competitions and collaborative projects to foster a positive learning environment.

**Caregiver Engagement and Communication:**

- **Communication with Caregivers:** Inform caregivers about the goals and benefits of the additional math-focused day and provide regular updates on student progress and ways caregivers can support learning at home.
- Offer workshops and resources for caregivers to help them support their children’s math learning.

**Evaluation:**

- Conduct pre- and post-program assessments to measure the impact of the additional instructional time on student performance.

**MEETING 2 THEMES**

**Attendance Strategies:**

- *Consider Fridays for the 5th day to avoid conflicts with school sports and extracurricular activities.*
- *Engage caregivers by inviting them to participate once a month.*
- **Mandatory vs. Optional:**
  - *Ensure the 5th day is optional and does not intrude on weekend activities.*
  - *Make attendance mandatory for at least three out of five days a week to ensure consistency.*
- *Collect data on the need for the 5th day and share it with stakeholders for funding support. Better understand who might not be attending because Ignite Academy isn’t a full week.*

**Program Structure:**

- **Utilize project-based learning:**
  - *Multi-week projects with a focus on knowledge during the week and projects on the 5th day.*
  - *Projects can continue without all kids being present every week.*
  - *Examples include the “Game of Life”, Math Olympics and STEAM projects (e.g., music & math, robotics).*
  - *Emphasize SEL (social-emotional learning) and cross-age groups.*
- *Idea - Focus on younger grades initially, with an option for grade 1.*

**Resource Utilization:**

- *Leverage community volunteers and retired teachers for specific themed days.*
- *Tap schools boards and FacofEd for existing resources (e.g. Math Olympics) and high school students to help (e.g., robotics).*

**Parent Engagement:**

- *Incorporate growing parent engagement strategies into the 5th day programming.*
- *Engage parents by inviting them to participate and contribute to projects.*
- *Ensure parents feel motivated to contribute and understand the importance of their involvement.*

**Additional Considerations:**

- *Ensure that the 5th day is about the project, not just math, to keep students motivated.*
- *Consider the impact of Saturday programming on staff recruitment.*
- *Incentivize attendance to make optional participation more appealing.*
- *Address the potential challenges of relying on volunteers by leveraging them effectively.*
- *Increase the amount of mandatory data collection to understand the impact and need for the 5th day.*

## Enhancement of Math in Core Programming

### OBJECTIVE

To incorporate math learning into all aspects of the Ignite Academy programming, promoting a holistic and continuous approach to math education.

### DETAILS

#### Enhancement of Math in Core Programming:

- Incorporate math vocabulary and activities into daily programming.
- Ensure that math is a consistent part of all subjects and activities.

#### Staffing and Roles:

- Facilitate ongoing collaboration between UWAT staff and program facilitators.
- Employ pre-service teachers/student teachers to work alongside Ignite staff and UWAT, providing additional support.

#### Curriculum:

- **Foundational Mathematics:** Focus on foundational mathematics, incorporating SEL and the five math proficiencies
- **Cross-Curricular Learning:** Design activities that integrate math with other subjects, making it relevant and engaging. Use project-based learning to apply math skills in various contexts.
- **Engaging Activities:** Plan activities that are interesting for students and cater to different learning styles. Use technology and hands-on tasks to enhance engagement. Incorporate educational software and online resources into the curriculum.
- **Shared Resources:** Develop a repository of shared resources, including lesson plans, assessments, and best practices, accessible to both Ignite Academy staff and school teachers. Based on feedback and new insights, regularly update and improve the repository.

#### School Partnerships:

- **Professional Development & Training for Facilitators:**
  - Partner with the school board to provide ongoing professional development sessions on integrating math into core programming and SEL
  - Provide resources and support for facilitators to effectively incorporate math.
- **Ongoing Support:** Provide continuous support and development opportunities for both Ignite Academy and school staff.
- **Collaboration with Teachers:** Regularly collaborate with homeroom teachers to integrate math into core subjects. Use communication logbooks to share progress and strategies.
- **Regular Check-ins:** Schedule regular check-ins with teachers to align interventions with classroom learning and ensure consistency.

#### Evaluation:

- Develop KPIs to measure proficiency and mastery of foundational math skills. Use these KPIs to regularly monitor staff performance and student progress.
- Conduct regular assessments to identify areas for improvement in both staff performance and student outcomes.

### MEETING 2 THEMES

#### Professional Development:

- *Assess staff math abilities and provide necessary professional development.*
- *Provide math instruction for all Ignite Academy staff, including volunteers, facilitated by the school board.*
- *Offer additional capacity-building on classroom management.*

#### Diagnostics & Existing Tools:

- *Use research-based tools for weekly monitoring and diagnostics, ensuring students hit different benchmarks.*
  - *Utilize school board resources and consider training Ignite staff in these tools (e.g., learning support teachers from WECDSB).*
  - *Train Ignite staff in research-based tools like Dooba math (WECDSB) and Knowledge Hook (GECDSB).*
- *If Ignite Academy cannot use school board tools, explore the possibility of schools sharing diagnostic snapshots.*

**Resource Utilization:**

- *Focus on aligning math activities with the school curriculum.*
- *Leverage resources from school boards, such as manipulatives and games.*
- *Ensure resources are available in both electronic and hardcopy formats and are not overwhelming.*
- *Offer opportunities to school teachers, such as occasional teaching positions, to enhance staffing and recruitment.*

**Classroom Management:**

- *Increase staff to manage large groups and provide individual support.*
- *Utilize special guests and senior IB high school students for diverse activities.*
- *Establish a shared resource drive and community of practice meetings.*

**Collaboration:**

- *Set monthly meetings with teachers and school administrators to discuss strategies and updates.*
- *Increase teacher awareness of Ignite Academy through presentations and newsletters. Ensure teachers understand the goals and methods of Ignite Academy.*
- *Incorporate Ignite Academy into school culture through parent-teacher nights and other events.*