FAB Lab in Methacton



Mission: The Methacton FAB Lab makerspace supports a culture of authentic learning by engaging emergent technologies with curriculum content and career ready skills. At the FAB Lab makerspace, students, teachers, and community members develop agency and technological confidence while cultivating maker dispositions as lifelong learners.



Educate, Innovate and Invent



What Can You Make In A FAB Lab?













Engineering Launchpad

Curriculum Integration & Pedagogical Framework

- Design Thinking Process: Empathize > Define > Ideate > Prototype > Test. This anchors project-based learning with realworld relevance.
- **STEAM Alignment**: Projects should align with science, math, tech, and arts standards—this is not free play.
- Scaffolded Skill Progression: Intro to tools, safety, and digital literacy in Grade 5; deeper design autonomy and interdisciplinary projects in Grade 6.
- Integrated ELA & SEL Connections: Reflection journals, presentation of learning, peer feedback loops.

Core Infrastructure & Equipment

- **3D Printers & Filament**: Entry-level but reliable models (e.g., Prusa Mini, Bambu) for rapid prototyping and design thinking exercises.
- Laser Cutter/Engraver: For precision fabrication with cardboard, wood, and acrylic—ideally enclosed and kid-safe.
- **Vinyl Cutter**: For creating stickers, decals, and introductory design-to-production lessons.
- **Microcontrollers & Kits**: Arduino, Micro:bit, or Makey Makey to build basic circuits and logic thinking.
- Hand Tools & Safety Gear: Saws, clamps, files, goggles—real tools for real work, under supervision.
- **Computers/Tablets**: CAD, coding, and design software (e.g., Tinkercad, Scratch, Inkscape, Fusion 360—student edition).

Engineering Launchpad

Instructional Strategy

- Fail Forward Culture: Celebrate prototyping and iteration—this is R&D, not perfection.
- Mentorship & Peer Coaching: Train "Fab Lab Captains" or ambassadors to support peers.
- Teacher as Facilitator, Not Tech Support: Upskill your educators to guide inquiry, not just fix broken printers.

Purpose-Driven Projects

- Community-Centric Design: Solve actual school/community problems— school signage, etc.
- **Sustainability Mindset**: Upcycle materials, integrate eco-literacy.
- Showcase & Celebration: Capstone expos, parent demo nights, or digital portfolios.

Skyview Project Ideas for 5th & 6th Grades

5th Grade

- Scratch to create stories, games and animations – 7 Days
- Measurement 3 Days
- Custom Cricut Stickers 5 Days
- Lego Robotics & Board Game Development– 15 days

• 6th Grade

- Robot catapults Micro:bit Hummingbird 15 days
- Key Chain Tinkercad, 3D Printer 7 Days
- Acrylic Room Label Canva, laser engraver – 7days

Skyview School Wide Project Ideas

1. Personalized School Merchandise

- **Technology Ed:** Design and fabricate custom keychains, T-shirts, or stickers using laser cutters, vinyl cutters, or 3D printers.
- **Computer Literacy:** Use graphic design software (Canva, Photoshop, or Inkscape) to create digital designs.
- Library: Research marketing strategies, write product descriptions, and create promotional materials.
- 2. Digital Storytelling with Augmented Reality (AR)
- **3. 3D-Printed Historical Artifacts Exhibit**

4. Eco-Friendly School Innovation

• **Technology Ed:** Design and build solar-powered phone chargers.

5. Escape Room Challenge (STEM & Literature Themes)

• **Technology Ed:** Build physical puzzle components like locks, secret compartments, or laser-cut clues

6. Assistive Tech Devices for Students with Disabilities

• **Technology Ed:** Develop simple assistive devices like 3D-printed adaptive grips or Braille nameplates.





Budget

Equipment	\$63 <i>,</i> 590.00
Furniture	\$23,167.62
One Time Purchases	\$4,100.00
Annual Supplies	\$2,014.00
Materials	\$5 <i>,</i> 368.00
Total	\$98 <i>,</i> 239.62

- Equipment, Furniture, 1X
 Purchases and Materials will
 be covered through a donation
 from the Methacton Education
 Foundation
- Annual Supplies are covered under the Skyview building budget

FABx Event - Worldwide Collaboration Opportunity



Thank You

