

Block Bots

© SD60 Peace River North



Guiding Questions

How are communities **organized**? How do they **change**? How do they **interrelate**? And how do we **communicate** about, within, and across our communities?

How do Applied Design Skills and Technology (ADST) projects that embrace **Design Thinking** foster **growth mindset**, **creativity**, **innovation** and **problem-solving**?

Know: (content)	Understand: (Big Ideas)	Do: (Core and Curricular Competencies)
<p>Applied Design <i>Define:</i> ID constraints & create Designs <i>Ideate:</i> Choose a design to pursue <i>Prototype:</i> Outline plan & acquire tools <i>Test:</i> & gather peer feedback</p> <p>Applied Skills Use materials, tools, and technologies in a safe manner, and with an awareness of the safety of others, in both physical and digital environments</p> <p>Applied Technologies Demonstrate a willingness to learn new technologies as needed</p>	<p>Skills are developed through practice, effort, and action. The choice of technology and tools depends on the task.</p>	<p>Creating and innovating: Students get creative ideas that are novel and have value.</p> <p>Evaluating and developing Students reflect on their creative ideas in order to decide which ones to develop.</p> <p>Generating and incubating Students may generate creative ideas through free play, engagement with other's ideas, or consideration of a problem or constraint, and/or because of their interests and passions.</p>



INSTRUCTIONAL MODEL (5E)



Engage: *(interest piqued, prior knowledge assessed)*

Read/Show [Roxaboxen](#) (Alice McLerran) & discuss what your imaginary village would contain.

➡ [Watch Moneca's Block Bots Video, here!](#)

Tasks:

FIRST Use tools and technologies to imagine and create a prototype AI (Artificial Intelligence) Block Bot that could help your ideal village, much like [ASIMO](#) or [SOPHIA](#).

THEN use that experience as a springboard to create your ideal & futuristic "Roxaboxen" village.

Block Bots

© SD60 Peace River North



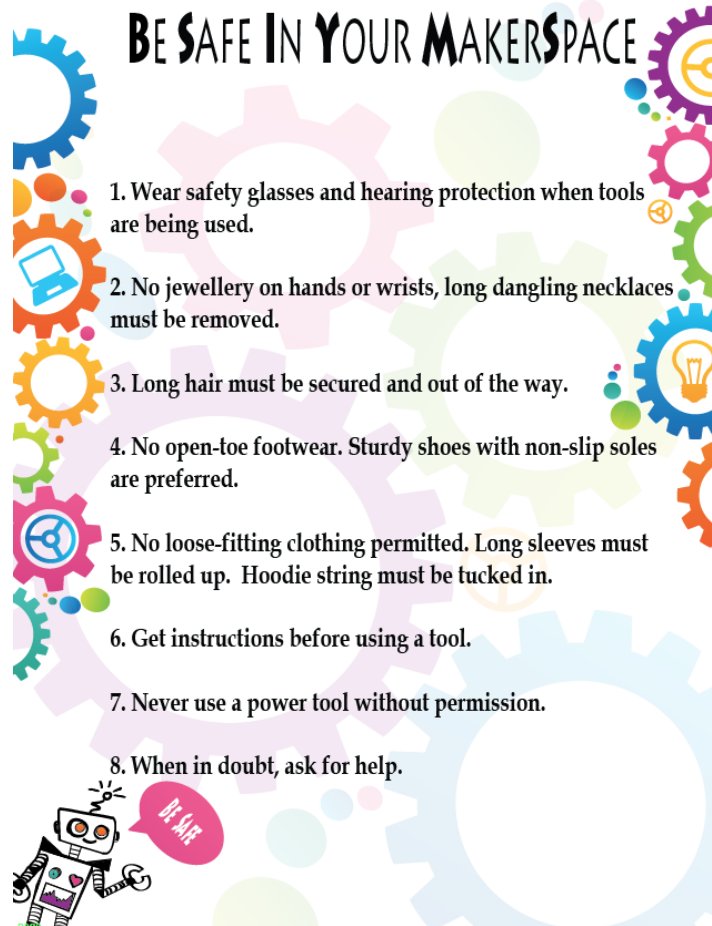
Your group will need to plan and build an “ideal community” that includes AI.

Instructional Model = Constructivism.

Explore: (*inquiry-based activity*)

SAFETY

- **Introduce** expected behaviours poster for hand tools



- ➡ This is a fun [YouTube](#) about shop safety.

TOOLS

- Hammer, saw, screwdriver, ratchet-set, nails, bolts, screws

PROCEDURE

- **IN PAIRS**, Create Block Bots as per [Moneca's video](#).



Block Bots



© SD60 Peace River North

Explain: *(students communicate what they have learned).*

Core Competency reflections: Assign one or more to individuals or groups. Reflections could take the form of a checklist, a recorded reflection, a written paragraph, etc.



Creative Thinking Competency Discussion/Writing Prompt:

Tell me about how you got your idea for your Block Bot.

I can get new ideas or build on or combine other people's ideas to create new things within the constraints of a form, a problem, or materials.

- I can get new ideas to create new things or solve straightforward problems.
- My ideas are fun, entertaining, or useful to me and my peers, and I have a sense of accomplishment.
- I can use my imagination to get new ideas of my own, or build on other's ideas, or combine other people's ideas in new ways.
- I can usually make my ideas work within the constraints of a given form, problem, or materials if I keep playing with them.

Profile 2 (curriculum.gov.bc.ca)



Critical Thinking Competency Discussion/Writing Prompt:

Tell me about any skills that made you S-T-R-E-T-C-H today. What was new/challenging?

I can ask questions and consider options. I can use my observations, experience, and imagination to draw conclusions and make judgments.

- I can ask open-ended questions, explore, and gather information.
- I experiment purposefully to develop options.
- I can contribute to and use criteria.
- I use observation, experience, and imagination to draw conclusions, make judgments, and ask new questions.
- I can describe my thinking and how it is changing.
- I can establish goals individually and with others.
- I can connect my learning with my experiences, efforts, and goals.
- I give and receive constructive feedback.

Profile 3 (curriculum.gov.bc.ca)

Block Bots



© SD60 Peace River North



Collaboration Competency Discussion/Writing Prompt:

Tell me about the way you and your partner shared resources, ideas and jobs.

I contribute during group activities with peers and share roles and responsibilities to achieve goals.

- I take on different roles & tasks. I work respectfully & safely in our shared space.
- I express my ideas & help others feel comfortable to share theirs so that all voices are included.
- I work with others to achieve a common goal & can evaluate group processes and results.

Profile 3 (curriculum.gov.bc.ca)



Communication Competency Discussion/Writing Prompt:

Tell me about the different ways you communicated with each other. Did you talk? Model? Draw? Listen? Question? Who did what?

I communicate purposefully, using forms and strategies I have practiced.

- I participate in conversations for a variety of purposes (e.g., to connect, help, be friendly, learn and share).
- I listen and respond to others.
- I can consider my purpose when I am choosing a form and content.
- I can communicate clearly about topics I know and understand well, using forms and strategies I have practiced.

Profile 3 (curriculum.gov.bc.ca)

Block Bots

© SD60 Peace River North



Personal Awareness Competency Discussion/Writing Prompt:

Tell me about what (if anything) was stressful and how you coped with that

I can make choices that help me meet my wants and needs and increase my feelings of well-being. I take responsibility for my actions.

- I can take action toward meeting my own wants and needs and finding joy and satisfaction and work toward a goal or solving a problem.
- I can use strategies that increase my feeling of well-being and help me manage my feelings and emotions.
- I can connect my actions with both positive and negative consequences and try to make adjustments; I accept feedback.
- I make decisions about my activities and take some responsibility for my physical and emotional well-being.

Profile 3 (curriculum.gov.bc.ca)



Social Awareness & Responsibility Competency

Discussion/Writing Prompt:

Tell me about a time that you helped someone or someone helped you.

I can take purposeful action to support others.

- I can build relationships and be a thoughtful and supportive friend.
- I can identify ways my actions and the actions of others affect my community and the natural environment.
- I look for ways to make my classroom, school, community, or natural world a better place and identify small things I can do that could make a difference.
- I demonstrate respectful and inclusive behaviour in a variety of settings, and I recognize that everyone has something to offer.

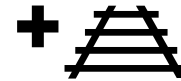
Profile 4 (curriculum.gov.bc.ca)

Block Bots



© SD60 Peace River North

Extend: *(transfer knowledge to other concepts)*



Cross-Curricular &/or **Connectivist Extension Activities:**

- Kids could make their own safety posters or **Youtubes** for safe use of PPE (Personal Protective Equipment) hammer, handsaw, screwdrivers & general shop safety (clothing, walking feet, the signal for shutting down tools and listening immediately).
- Offer the [Scrap Bin Challenge](#) as a follow-up activity and share pictures of their finished work **via Instagram, MyBluePrint, SnapStories or other digital portfolio.**
- Build your own class [Roxaboxen](#) Village out of tape ([like Tapigami](#)), cardboard, or another medium. **Host an Art Gallery Night at your school and have each group curate their section of the community:**
 - Communicate why you chose to build your section of the village like this
 - Talk about how AI and/or robotics play a role in your community.
 - **You could also curate your community creations remotely using 4-D 360-degree high definition videos via Ricoh Theta, google hangouts or Zoom.**
- Accept the [Cover Story Design Thinking Challenge](#). You've created a Community so futuristic and amazing it lands you on the cover of a magazine. **Then invite a real community journalist to your classroom and share your ideal community with the local news.**

Evaluate: *(assess student understanding)*

[Share this link](#) with students if you wish to assess their ADST development.

Alternatively/additionally, students can self-assess their current state of being by highlighting any applicable statements on the **Core Competencies**, above.

Questions? *Connect with Elaine McEachern for support or to collaborate on how we can combine classrooms & harness the power of collaboration.*

Template Downloaded from curriculum.gov.bc.ca (Used with permission from Sarah McQuillan. Excerpted from Masters Thesis: Instructional Tools to Support the Implementation of BC's Redesigned Curriculum)

Here is a visual that summarizes the lesson:



Question → connect to text → Youtube → make it → reflect on competencies → extend thinking.