

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, , 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

BE SAFE IN YOUR MAKERSPACE 



1. Wear safety glasses and hearing protection when tools are being used.

2. No jewellery on hands or wrists, long dangling necklaces must be removed.

3. Long hair must be secured and out of the way.

4. No open-toe footwear. Sturdy shoes with non-slip soles are preferred.

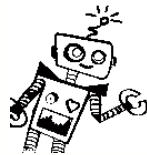


5. No loose-fitting clothing permitted. Long sleeves must be rolled up. Hoodie string must be tucked in.

6. Get instructions before using a tool.

7. Never use a power tool without permission.

8. When in doubt, ask for help.



- **▶▶** 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.

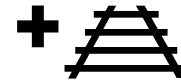
Profile 4 (curriculum.gov.bc.ca)

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.