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**Lesson Plan (Revised 2020)**

**Applied Design Skills Technology**

**Zachary Forster, February 14, 2020**

**Grade 1**

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| **Name:** | **Zachary Forster** |

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| **Grade** | 1 | **Topic** | ADST – *Lego Towers* |  |
| **Date** | Friday, February 14, 2020 | **Allotted Time** | 40 minutes |  |
| **STAGE 1: Desired Results****Cite sources used to develop this plan:**  |
| BC Ministry of Education Grade 1 Applied Design Skills Technology Curriculum |

**Rationale**: *How is this lesson relevant at this time with these students? Why is it important?*

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| BC curriculum for Grade 1 includes ADST. Solving a practical problem is tied into our current study in the *Think Like a Scientist* unit.  |

**Core Competencies:** <https://curriculum.gov.bc.ca/competencies> (refer to “profiles” for some ideas)

*Which sub-core competencies will be the focus of this lesson? Briefly describe how and why:*

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| **Communication*** **Communicating**
* **Collaborating**
 | **Thinking*** **Creative Thinking**
* **Critical & Reflective Thinking**
 | **Personal and Social*** Personal Awareness & Responsibility
* Positive Personal & Cultural Identity
* **Social Awareness & Responsibility**
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| Students will be working collaboratively to solve the Lego Tower challenge.Completed structure will be shared with the class and development processes shared. | Students will be building a tower structure in response to a particular challenge. They will need to be creative and to reflect critically throughout this building process. | Because students are working collaboratively, they will need to be aware of the social situation and will have to take responsibility for their part in completing the task. |

**First Peoples Principles of Learning (FPPL):**

*How will Indigenous perspectives, knowledge & ways of knowing be acknowledged, honoured or integrated into this learning experience?* (Jo Chrona’s Blog: <https://firstpeoplesprinciplesoflearning.wordpress.com/>)

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| **FPPL to be included in this lesson:** | **How will the FPPL be embedded in lesson:** |
| * *Learning is holistic, reflexive, reflective, experiential, and relational*
* *Learning involves recognizing the consequences of one’s actions*
* *Learning involves patience and time*
 | * Students are involved in the experience of building with Lego in a collaborative way
* They will be reflecting on whether or not building in a certain way helps meet the challenge
* This building challenge requires patience to complete successfully
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**Curriculum Connections:** <https://curriculum.gov.bc.ca/> (Curriculum)

*What Big Ideas (Understand), Curricular Competencies (Do), Content (Know) does this lesson develop?*

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| ***Understand***Big Idea(s):Designs grow out of natural curiosity. Skills can be developed through play.*Essential or Guiding Question(s):****How can we build a Lego tower that is both tall and strong?*** |
| ***Do***Curricular Competencies (Learning Standards):**Applied Design:** ***Ideating*** •Choose an idea to pursue Making • Use trial and error to make changes, solve problems, or incorporate new ideas from self or others ***Sharing*** • Demonstrate their product, tell the story of designing and making their product**Applied Skills:** • Develop their skills and add new ones through play and collaborative work  |
| ***Know***Content (Learning Standards):* The design of a Lego Tower affects its potential height and strength.
 |

**STAGE 2: Assessment Plan**

FORMATIVE ASSESSMENT: (Assessment as Learning; Assessment for Learning)

Teacher observation of students:

* Choosing an idea and pursuing Making
* Using trial and error to make changes, solve problems, or incorporate new ideas from self or others
* Demonstrating their product, telling the story of designing and making their product
* Developing their skills and add new ones through play and collaborative work

SUMMATIVE ASSESSMENT: (Assessment of Learning)

* Student completion of a Lego Tower that meets the challenge
* Students completing the exit ticket

We can make our Lego tower higher and stronger by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

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| **The Learning Intention:** *What will students learn in this lesson? (i.e. Learning Standards)* | ***Students will build Lego towers and learn how to make them higher and stronger by testing their designs.***  |
| **Evidence of Learning:** *How will students demonstrate their learning? What does it look like?* | Students will:* Choose an idea and pursuing Making
* Use trial and error to make changes, solve problems, or incorporate new ideas from self or others
* Demonstrate their product, telling the story of designing and making their product
* Develop their skills and add new ones through play and collaborative work
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| Criteria:*What do students need to do to meet or achieve the learning intention?* | * Student completion of a Lego Tower that meets the challenge
* Students completing the exit ticket

Name:We can make our Lego tower higher and stronger by**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**. |

**Planning for Diversity:**

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| **Learning Target:** *In what ways does the lesson meet the needs of diverse learners?* *How will you plan for students who have learning/behaviour difficulties or require enrichment?* |
| Students need to/must do* Actively participate
* Choose an idea and pursuing Making
* Use trial and error to make changes, solve problems, or incorporate new ideas from self or others with support
* Develop their skills and add new ones through play and collaborative work
* Student completion of a Lego Tower that approaches meeting the challenge
* Demonstrate their product, telling the story of designing and making their product with support
* Students completing the exit ticket with support

Access/All | Students can do* Actively participate
* Choose an idea and pursuing Making
* Use trial and error to make changes, solve problems, or incorporate new ideas from self or others
* Develop their skills and add new ones through play and collaborative work
* Student completion of a Lego Tower that meets the challenge
* Demonstrate their product, telling the story of designing and making their product with support
* Students completing the exit ticket

Most | Students could do/try to* Actively participate
* Choose an idea and pursuing Making
* Use trial and error to make changes, solve problems, or incorporate new ideas from self or others
* Develop their skills and add new ones through play and collaborative work
* Student completion of a Lego Tower that meets the challenge
* Complete a second tower using a new design but still meeting the challenge
* Demonstrate their product, telling the story of designing and making their product with support
* Students completing the exit ticket

Few/Challenge |

**STAGE 3: Learning Plan**

**Resources, Material and Preparation:** *What resources, materials and preparation are required?*

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| Class set of Legos in bins ready for table group workSufficient Maker spaceDesign Challenge PosterLearning Intention PosterExit Ticket PosterExit TicketsPencils |

**Organizational/Management Strategies:** *(anything special to consider?)*

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| Transitions to and from the Library Maker spaceClassroom set upPoster preparation/ plan for display in the Library |

**Lesson Development:**

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| **Connect:** *How will you introduce this lesson in a manner that engages students and activates their thinking? Activate or build background knowledge, capture interest, share learning intention.* | Pacing |
| **Teacher will** * Invite students to line up at the door using coloured clothing technique
* Say “Poof! You are now all invisible. Nobody will ever know we are walking in the hall.”
* Ask students to stop at the Library door.
* Invite children to join me on the carpet.
* Discuss what we did with last week’s design challenge
* Display todays learning intention and discuss:

***Students will build Lego towers and learn how to make them higher and stronger by testing their designs.*** * Display and present today’s new challenge

***How can we build a Lego tower that is both tall and strong?*** ***Our challenge today is to work in groups to build a tower that is as tall as is possible while still being able to hold this small stuffed animal.*** * Organizes groups strategically using silent hand number technique
* Groups are assigned to tables and instructed that as a group they will design and build one structure
 | **Students will** * Line up at the door as indicated
* Listen for the game instructions
* Follow game instructions by remaining quiet while walking to the library
* Stop at the Library door
* Join the teacher on the carpet
* Participate in the discussion
* Consider today’s challenge
* Form groups as instructed
* Move to the assigned table
 | 10 minutes |

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| **Process:** *What steps and activities are you going to use to help students interact with new ideas, build understanding, acquire and practice knowledge, skills* *and/or attitudes? In what ways have you built in guided practice?*  | Pacing |
| **Teacher will** * Circulate to tables supporting as necessary
* Observe students using checklist
* Use freeze and hands on head technique to share successful ideas and structures with class
 | **Students will** * Work collaboratively
* Communicate with each other
* Choose an idea and pursuing Making
* Use trial and error to make changes, solve problems, or incorporate new ideas from self or others
* Develop their skills and add new ones through play and collaborative work
 | 15 minutes |

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| **Transform:** *How will students apply or practice their learning? Can they show or represent their learning in personalized ways? What are the choices for student task?* | Pacing |
| **Teacher will** * Observe students using checklist
* Use freeze and hands on head technique to share successful ideas and structures with class
* Orchestrate final tests
 | **Students will** * Complete a Lego Tower that meets the challenge through testing
* Demonstrate their product, telling the story of designing and making their product
* Early finishers can create a different design that also meets the challenge
 | 10 minutes |

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| **Closure:** *How will you solidify the learning that has taken place and deepen the learning process?* *Refer back to the learning intention, connect to next learning.* | Pacing |
| **Teacher will** * Draw attention to the Exit Ticket poster
* Distribute Exit Tickets
* Support where needed
* Collect Exit Tickets
 | **Students will** * Complete the exit ticket
* Hand in the Exit Ticket
 | 5minutes |

**Reflection** *What was successful in this lesson? If taught again, what would you change to make this lesson even more successful and inclusive for diverse and exceptional students?*

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| The lesson proved to be highly engaging and I will use this Building Challenges with Lego unit again in ADST. I was fortunate to have Lego available at Beaverly School. In the future, I hope to expand this unit to include pair and individual ADST challenges. This will mean having access to more Lego as the class works. I also want to focus more on the design phase of the process. I will build this into my next ADST lesson. |