

Bachelor of Education (Elementary) & Bachelor of Education (Secondary) STEM/BETT Lesson Plan

Lesson Title: Build a Chair for a Stuffed Animal Lesson # 3 Date: April 17, 2026
 Name: Tanya Blackall Subject: ADST Grade(s): 1

Rationale:

This lesson provides students with an opportunity to deepen their understanding of the design process by creating a functional structure with a clear, relatable purpose. Designing a chair for a stuffed animal is developmentally appropriate for Grade 1 students, as it connects directly to their everyday experiences with furniture, comfort, and play.

Through this hands-on activity, students explore key concepts such as stability, balance, and strength while working with simple materials like popsicle sticks and tape. The constraint of needing the chair to hold the weight of a stuffed animal encourages purposeful problem-solving and helps students understand that successful designs must meet specific criteria.

This lesson builds on prior learning from earlier challenges (e.g., bridge building) by shifting from spanning and weight distribution to upright structures that require balance and support. Students must think critically about how different parts of a chair (legs, seat, back) work together, reinforcing spatial awareness and structural thinking.

Additionally, the use of familiar and engaging materials promotes creativity and experimentation. Students are encouraged to test, fail, and improve their designs, fostering perseverance and resilience. Working collaboratively also supports the development of communication and social skills as students share ideas and make group decisions.

Overall, this lesson strengthens students' ability to apply the ADST design cycle—planning, making, testing, and reflecting—while building confidence in their ability to create functional solutions to real-world-inspired problems.

Core Competencies:

Communication	Thinking	Personal & Social
Collaborating Working Collectively: <ul style="list-style-type: none"> Students combine their efforts with those of others to effectively accomplish learning and tasks. As members of a group, they appreciate interdependence and cooperation, commit to needed roles and responsibilities, and are conscientious about contributing. They also negotiate respectfully and follow through on plans, 		Social Awareness & Responsibility Resolving Problems: Students identify and develop an appreciation for different perspectives on issues. They show empathy, disagree respectfully, and create space for others to use their voices. They generate, use, and evaluate strategies to resolve problems.

strategies, and actions as they share resources, time, and spaces for collaborative projects.		
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Big Ideas (Understand)

Designs grow out of natural curiosity.
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Learning Standards

(DO)	(KNOW)
Learning Standards - Curricular Competencies	Learning Standards - Content
<p>Applied Design</p> <p>Ideating</p> <ul style="list-style-type: none"> • Generate ideas from their experiences and interests • Add to others' ideas • Choose an idea to pursue. <p>Making</p> <ul style="list-style-type: none"> • Make a product using known procedures or through modelling of others • Use trial and error to make changes, solve problems, or incorporate new ideas from self or others <p>Sharing</p> <ul style="list-style-type: none"> • Use personal preferences to evaluate the success of their design solutions • Reflect on their ability to work effectively both as individuals and collaboratively in a group <p>Applied Skills</p> <ul style="list-style-type: none"> • Develop their skills and add new ones through play and collaborative work 	<ul style="list-style-type: none"> • <i>Students are expected to use the learning standards for Curricular Competencies from Applied Design, Skills, and Technologies K-3 in combination with grade-level content from other areas of learning in cross-curricular activities to develop foundational mindsets and skills in design thinking and making.</i>

Instructional Objectives & Assessment

Instructional Objectives (students will be able to...)	Assessment
<p>Students will:</p> <ul style="list-style-type: none"> • Design a chair for a stuffed animal • Build a stable structure • Test if their chair can support weight • Reflect on their design 	<p>Assessment in this unit will focus primarily on observation and participation rather than the final product.</p> <p>Formative Assessment Teacher observations of:</p> <ul style="list-style-type: none"> • Student engagement • Ability to generate ideas • Collaboration with peers • Problem-solving strategies • Willingness to test and revise designs <p>Student Reflection Students will reflect verbally through questions such as:</p> <ul style="list-style-type: none"> • What worked well in your design? • What was challenging?

- What would you change next time?

Prerequisite Concepts and Skills:

Students may benefit from prior experience with:

- Working cooperatively with peers
- Following simple instructions
- Drawing basic pictures to represent ideas
- Taking turns sharing materials

Indigenous Connections/ First Peoples Principles of Learning:

Learning is holistic, reflexive, reflective, experiential, and relational (focused on connectedness, on reciprocal relationships, and a sense of place): When students explore designing chairs for a small stuffed animal in this lesson, they will directly be involved in learning organically as they work together to make a design that will work for the proposed purpose. By experimenting with the materials and testing their designs, they will ultimately be using reflection to improve their designs as they go along.

Learning involves recognizing the consequences of one's actions: As students experiment with their designs to see if they will work for their intended purpose, they will see that their actions have consequences and then they can adjust from there. Recognizing a problem and trying to fix it is essentially how we learn and grow as constant learners.

Universal Design for Learning (UDL):

Multiple Means of Representation (no modeling):

- Provide visual examples of different types of chairs (real-life photos, not build demonstrations) so students can notice features like legs, seats, and backs without being shown how to build
- Use simple vocabulary with visuals (e.g., "strong," "balance," "hold," "seat") to support understanding of the task
- Give clear, step-by-step verbal instructions and repeat them as needed (Bowen, Silas, & Baldev)
- Allow students to handle and explore materials first to understand their properties before designing

Multiple Means of Engagement:

- Frame the task as a real-world problem: "Your stuffed animal needs a place to sit."
- Offer choice in the chair design to encourage creativity and ownership
- Keep the challenge open-ended so students can create unique solutions
- Encourage a trial-and-error mindset by normalizing that designs may not work the first time
- Use a gentle challenge prompt: "Can your chair hold the stuffie without tipping?"

Multiple Means of Expression:

- Students can show their thinking through drawing, building, and explaining verbally (Baldev, Bowen, Silas, Harrison, Kurt, Emma K.)
- Allow students to demonstrate success by testing rather than explaining in writing
- Provide opportunities for peer sharing to describe their design and thinking

Differentiate Instruction (DI):

For students needing extra support (Bowen, Baldev, Emma K., Devina, Silas):

- Provide **guided question prompts** instead of modeling, such as:
 - "Where will your stuffed animal sit?"
 - "What will stop it from falling?"
 - "How will your chair stay standing?"
- Pair students for **peer support and idea-sharing**.
- Break the task into **smaller steps** (plan → build base → add seat → test).
- Allow extra time and check-ins during building.

<ul style="list-style-type: none"> • Students will combine their ideas & come up with a plan of design together • Students will then construct their chairs using available materials (tape & popsicle sticks) <p>The teacher will support students by asking questions such as:</p> <ul style="list-style-type: none"> • <i>"How will your chair stay upright?"</i> • <i>"Where will the animal sit?"</i> <ul style="list-style-type: none"> • Students will test their chair by placing their stuffed animal on the chair • If it collapses, students will try to improve their design <u>together</u> 	<ul style="list-style-type: none"> • Students will talk about their design and start filling out their "My Design Plan" graphic organizer • Students will attempt to build their plan once they have discussed and drawn their design out <ul style="list-style-type: none"> • Students will test their chair with a small stuffed animal to see if it holds with the weight • Students will fill out whether their design worked, sort of worked, or did not work yet • If it did not work, students will work to redesign and draw their improved idea on their plan 	
<p>Closure: Reflecting & Sharing The teacher will discuss:</p> <ul style="list-style-type: none"> • <i>"What helped your chair stay up?"</i> • <i>"What was challenging?"</i> • Emphasize that designers often improve their designs after testing. <p>Clean Up Time!</p>	<ul style="list-style-type: none"> • Students will listen to the teacher • Students will raise their hand if they want to answer any questions • Students will clean up the classroom 	<p>10 min</p>

Organizational Strategies:

<ul style="list-style-type: none"> • Materials Prepared in Advance: All materials (popsicle sticks, tape, & stuffed animals) will be pre-sorted into bins for each group to ensure quick and fair distribution • Clear Workspace Setup: Students will work at designated tables with enough space to build and test to avoid crowding and distractions • Structured Lesson Flow: The lesson will follow a clear sequence: plan → build → test → reflect. This predictable routine helps students stay focused and understand expectations. • Time Management: A visual timer will be used for each stage of the lesson to help students manage their time and stay on task • Partner Organization: Students will be placed in small (pairs), teacher-selected groups to support collaboration • Material Use Expectations: Clear expectations will be established before distributing materials (e.g., how much tape to use, sharing materials)

Proactive, Positive Classroom Learning Environment Strategies:

<ul style="list-style-type: none"> • Establish Clear Expectations: Before beginning, the teacher will review expectations for respectful collaboration, sharing materials, and staying on task. • Normalize Mistakes and Risk-Taking: The teacher will emphasize that designs may not work the first time and that "mistakes help us learn," creating a safe environment for experimentation. • Use Positive Reinforcement: Specific praise will be used to highlight positive behaviors such as teamwork, creativity, and perseverance (e.g., "I like how your group kept trying different ideas").
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- **Encourage Collaborative Talk:** Students will be prompted to listen to each other, take turns sharing ideas, and respectfully build on peer contributions.
- **Active Teacher Circulation:** The teacher will move around the room to support students, ask guiding questions, and redirect behavior as needed before issues escalate.
- **Provide Clear, Simple Directions:** Instructions will be short, clear, and given step-by-step to support understanding and reduce confusion.
- **Support Self-Regulation:** Students will be reminded of strategies such as taking turns, using calm voices, and asking for help when needed.
- **Create a Sense of Ownership:** Students will be encouraged to take pride in their designs and share their thinking, fostering confidence and engagement.
- **Use Attention Signals:** Consistent signals (e.g., clapping pattern, countdown) will be used to regain attention quickly and maintain flow during transitions.

Extensions:

- Make it stronger (hold a heavier stuffie)
- Make it more stable (won't tip when gently pushed)
- Students compare which designs hold the most.
- "No Tape" or "Limited Tape" Challenge
- Must include a backrest
- Must include armrests

Reflections (if necessary, continue on separate sheet):