

Beat the Clock: A Practical Guide to Tourniquet Application

Materials Needed:

- 1 Commercial Application Tourniquet (C-A-T or similar recommended model)
- 1 Training mannequin leg or a sturdy, dense pool noodle
- A collection of everyday items for improvisation: a triangular bandage or bandana, a t-shirt, a leather belt
- A rigid, strong object to act as a windlass (e.g., a large permanent marker, a carabiner, a strong stick, a metal multi-tool)
- A permanent marker
- A stopwatch or timer (phone is fine)
- (Optional) Ketchup or red-colored water in a squeeze bottle for simulated bleeding

Subject: First Aid / Emergency Response

Target Learner: Adult Homeschool Student (Age 30)

Time Allotment: 60 Minutes

1. Learning Objectives

By the end of this lesson, the student will be able to:

- Verbally identify the signs of a life-threatening limb hemorrhage.
- Correctly apply a commercial C-A-T tourniquet to a simulated limb in under 60 seconds.
- Demonstrate how to create and properly apply an effective improvised tourniquet using common materials.
- Explain the three most critical actions to take immediately after a tourniquet is applied.

2. Alignment with Standards

This lesson is aligned with the principles and guidelines set forth by national trauma care initiatives, such as the "**Stop the Bleed®**" campaign by the American College of Surgeons and Hartford Consensus, which emphasizes empowering bystanders to act as immediate responders in bleeding emergencies.

3. Lesson Procedure & Instructional Strategies

Part 1: The "Why" - Hook & Introduction (10 minutes)

- **Activity: Discussion & Myth-Busting.** Start with a direct question: "In what real-world scenarios, from a kitchen accident to a car crash, might this skill be the single most important thing someone can do?"
- **Direct Instruction:** Briefly explain the physiology of catastrophic bleeding. Differentiate between minor cuts (venous) and life-threatening arterial bleeding (pulsating or steady flow of bright red blood).
- **Debunk a Common Myth:** Address the fear that applying a tourniquet automatically means the limb will be lost. Explain that modern medical care makes this extremely rare, and it's a

"life over limb" decision.

Part 2: The "How" - Commercial Tourniquet Mastery (20 minutes)

- **Instructional Strategy: "I Do, We Do, You Do"**

1. **"I Do" (Demonstration):** Take the C-A-T and walk through its parts: the self-adhering band, the windlass rod, the windlass clip, and the time strap. Slowly and deliberately apply the tourniquet to the training limb/pool noodle, narrating each step:
 - "Place it high and tight on the limb."
 - "Pull the band through the buckle and secure it back on itself tightly."
 - "Twist the windlass until the bleeding stops." (If using the ketchup bottle, this is when you stop squeezing it).
 - "Secure the windlass in the clip."
 - "Secure the time strap and write the time."
2. **"We Do" (Guided Practice):** Have the student perform the application on the training limb while you provide real-time feedback and correction. Focus on technique, not speed. Ask probing questions: "Is that tight enough to stop the bleed?" "Where would you place it if the injury was near the knee?" (Answer: a few inches above the joint, never on it).
3. **"You Do" (Independent Practice):** The student practices applying the tourniquet to their own upper thigh. This is crucial as it allows them to feel the necessary pressure and build confidence. Have them practice one-handed application as well, as they may need to apply it to themselves.

Part 3: The "Improv Challenge" - Creative Application (15 minutes)

- **Instructional Strategy: Problem-Based Learning**
- **Setup:** Present the student with the pile of everyday items (bandana, t-shirt, marker, etc.).
- **The Challenge:** "Your commercial tourniquet isn't available. A person has a severe leg wound. Use these items to build and apply an improvised tourniquet that works. Go!"
- **Guidance:** Guide them toward the correct principles:
 - Use a wide band of cloth (at least 1-2 inches) to avoid cutting into the skin (e.g., folded bandana or strip of t-shirt). A belt is often too stiff to create enough pressure.
 - Use the rigid object as a windlass to twist and create tension.
 - Find a way to secure the windlass once tight (e.g., tucking it into the wrap).
- **Follow-Up:** Discuss the pros and cons. Emphasize that a commercial tourniquet is always superior, but a well-made improvised one is better than nothing.

4. Assessment & Closure

Part 4: The Final Scenario - "Beat the Clock" (15 minutes)

- **Summative Assessment:** This is a timed, practical test.
 1. Say, "You've just witnessed an accident. This person (the training limb) has a severe arterial bleed."
 2. Start the timer. The student must retrieve the commercial tourniquet, correctly apply it, and stop the simulated bleed. Goal time: Under 60 seconds.
 3. Once the tourniquet is applied, ask: "What are the three most important things you do now?"
 - **Expected Answer 1:** Call 911 (or have someone else call).
 - **Expected Answer 2:** Note the time of application on the tourniquet (or forehead).
 - **Expected Answer 3:** Keep the person calm and warm. Do not remove the tourniquet.
- **Debrief and Feedback:** Review the performance using the checklist below. Discuss what went well and areas for improvement. End the lesson by reinforcing that this skill, while hopefully never needed, makes them a capable and valuable asset in an emergency.

5. Differentiation and Inclusivity

- **Support:** For a student struggling with the motor skills, spend more time on the guided "We Do" phase and break down the steps further. Focus first on getting the steps right, then on speed.
- **Challenge/Extension:** For a student who masters the skill quickly, introduce more complex scenarios: applying the tourniquet in an awkward position (e.g., under a table), applying it one-handed to themselves, or having to manage a distracting element while working.
- **Inclusivity:** The language and scenarios are designed to be neutral and universally applicable. The hands-on nature accommodates kinesthetic learning, while the discussion and demonstration cater to auditory and visual learners.

6. Assessment Checklist

Skill/Knowledge Point	Met	Needs Improvement	Notes
Identifies a life-threatening bleed correctly.			
Places tourniquet "high and tight" on the limb.			
Twists windlass until pressure is sufficient.			
Secures windlass and strap correctly.			
Completes C-A-T application in under 60 seconds.			
Successfully creates a functional improvised tourniquet.			
States the 3 critical follow-up actions (Call 911, Note Time, Keep Calm).			