UNIT: FIRST AID

ACT-Based Science: Wound Healing Process Investigation

### Here are ACT-aligned science activities for First Aid Kits that help students explore human body systems, wound healing, and the effectiveness of emergency treatments through observation, analysis, and real-world application.

### Objective:

Students will analyze the body's natural healing stages.

MATERIALS NEEDED:

* Diagrams of skin layers
* Wound healing timeline chart

STUDENT DIRECTIONS:

**Goal:**

You will explore and analyze the natural stages of the body’s wound healing process, connect specific symptoms to each stage, and predict healing times for various injuries.

**Step 1: Study the Four Stages of Wound Healing**

Carefully review the descriptions and diagrams of the four main stages of wound healing:

* 1. **Hemostasis** (blood clotting stops bleeding)
  2. **Inflammatory phase** (body sends cells to fight infection and clear debris)
  3. **Proliferative phase** (new tissue and blood vessels form)
  4. **Maturation (Remodeling) phase** (wound strengthens and tissue rebuilds)

Use the diagrams to understand how the skin layers are involved during these stages.

**Step 2: Match Symptoms to Each Healing Stage**

* Review a list of common symptoms or signs (redness, swelling, scabbing, new tissue growth, scar formation, etc.).
* Match each symptom to the appropriate stage of wound healing based on your understanding and the timeline chart.
* Write down your matches with explanations for why each symptom fits that stage.

**Step 3: Predict Healing Times for Different Injuries**

* Using the wound healing timeline chart and your knowledge of each stage, predict approximately how long various injuries (minor cuts, burns, deeper wounds) might take to heal.
* Consider factors that might speed up or slow down healing, such as wound size, infection, or patient health.

**Step 4: Reflect and Summarize**

* Write a short summary explaining the importance of each healing phase and how understanding this process helps with effective first aid treatment.
* Consider how first aid can support or interfere with the natural healing process.

## ACT-Style Question:

## Which of the following is the **first** stage in wound healing?

## Inflammatory phase

## Proliferative phase

## Maturation phase

## Remodeling phase

## **⚡ Why These Activities and Questions Matter**

By engaging with ACT-aligned science activities using the First Aid Kit, students:

✅ Apply biological and medical concepts to real-life emergency scenarios.  
✅ Strengthen data analysis and experimental skills—core to ACT Science success.  
✅ Develop critical thinking by evaluating treatment effectiveness and predicting health outcomes.

These skills mirror the ACT Writing requirements—helping students become confident, effective communicators prepared for college and STEM careers.