UNIT: FIRST AID

ACT-Based Science: Infection Risk Assessment

### 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 evaluate factors that increase infection risk in untreated wounds.

MATERIALS NEEDED:

* Case study scenarios
* Infection risk checklist

student directions:

**Goal:**

You will analyze case studies of untreated wounds to identify factors that increase infection risk and recommend first aid steps to prevent complications.

**Step 1: Read and Understand Each Case Study**

* Carefully read the details of each case study describing an untreated wound and its progression over several days.
* Pay close attention to the symptoms and changes that indicate infection, such as redness, swelling, pain, pus, or fever.

**Step 2: Identify Infection Risk Factors**

* Using your infection risk checklist, analyze each case and **list specific factors that likely contributed to the infection** developing.
* Examples of risk factors might include:
  + Wound left uncovered or uncleaned
  + Failure to seek medical or adult help
  + Exposure to dirt or bacteria
  + Delay in treatment
  + Not properly protecting the wound

**Step 3: Suggest First Aid Interventions**

* For each case, suggest **at least two first aid steps that could have prevented the infection** or helped treat the wound early on.
* Consider basic wound care such as cleaning with water, applying antiseptic, covering with a sterile bandage, or seeing a healthcare professional.

**Step 4: Reflect and Discuss**

* Write a short paragraph explaining why timely and proper first aid care is essential in preventing infections.
* Think about how small actions can impact wound healing and overall health.

**Case Study: John's Untreated Cut**

**Name: John  
Age: 12**

**What happened:**

John was helping his dad in the garden when he accidentally cut his hand on a sharp rock. It was a small cut, so he just wiped it with his shirt and didn’t tell anyone.

**After a few days:**

* The cut became red and swollen.
* It started to hurt more and had yellow pus.
* John had a slight fever and didn’t feel well.

**Case Study: Emma’s Blister Turned Bad**

**Name:** **Emma**  
**Age:** **11**

### **What happened:** Emma got a new pair of shoes and wore them to school. By the end of the day, she had a blister on her heel. It hurt a little, but she didn’t want to stop wearing her new shoes. She didn’t tell anyone or cover the blister.

### **After a few days:**

### The blister popped on its own and turned into an open sore.

### The area around it became red and swollen.

### It started to hurt more and had some yellow fluid coming out.

## ACT-Style Question:

## Which factor is **most** likely to increase infection risk in a wound?

## Keeping the wound uncovered

## Washing the wound with clean water

## Applying antibiotic ointment

## Changing the dressing daily

## **⚡ 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.