

# Nursing: First Aid Skills and Medical Devices

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**Time Frame** 85 minutes

## Essential Question(s)

- What skill opportunities exist within the field of nursing?

## Summary

What do nurses do? How do they develop their skills? This series of activities will help students understand the knowledge and abilities required for a career in nursing. Students will explore opportunities within nursing, including specializations such as pediatrics, critical care, and community health. They will also gain insight into the life-saving skills nurses use daily. Additionally, students will recognize that nurses are compassionate, detail-oriented problem-solvers who use their expertise to care for patients and promote well-being. Through hands-on activities, students will examine the critical role of nurses, practice essential nursing skills, and consider whether this rewarding career is a good fit for them.

## Learning Goals

- Demonstrate and explain proper CPR techniques, including chest compressions and rescue breaths in emergency situations.
- Identify key components of a physical examination and explain the importance of a nurse/nurse practitioner in relaying accurate information.
- Accurately measure, record, and analyze vital signs to determine normal versus abnormal ranges and discuss their potential health implications.

## Attachments

- Activity Slides—Nursing.pptx
- Adult CPR Instructions—Nursing - Spanish.pdf
- Adult CPR Instructions—Nursing.pdf
- Career Reflection—Nursing.docx
- Career Reflection—Nursing.pdf
- Careers Card Sort Answers—Nursing.docx
- Careers Card Sort Answers—Nursing.pdf
- Careers Card Sort—Nursing - Spanish.docx
- Careers Card Sort—Nursing - Spanish.pdf
- Careers Card Sort—Nursing.docx
- Careers Card Sort—Nursing.pdf
- Infant CPR Instructions—Nursing - Spanish.pdf
- Infant CPR Instructions—Nursing.pdf
- Physical Check-Up Station Cards—Nursing.docx
- Physical Check-Up Station Cards—Nursing.pdf
- Physical Check-Up—Nursing - Spanish.docx
- Physical Check-Up—Nursing - Spanish.pdf
- Physical Check-Up—Nursing.docx
- Physical Check-Up—Nursing.pdf
- Vital Check Station Cards—Nursing.docx
- Vital Check Station Cards—Nursing.pdf
- Vital Check—Nursing - Spanish.docx
- Vital Check—Nursing - Spanish.pdf
- Vital Check—Nursing.docx
- Vital Check—Nursing.pdf

## Materials

- Activity slides (attached)
- Physical Check-Up Station Cards (attached; one per station)
- Step-by-step CPR Card handout (attached; one per student)
- Physical Check-Up handout (attached; one per student)
- Careers Card Sort (attached; one per student)
- Adult CPR mannequins
- Infant CPR mannequins
- Mouth bags for mannequins
- Sphygmomanometer/Blood pressure monitor and cuff
- Thermometers
- Stethoscopes
- Pulse oximeters
- Alcohol wipes (for disinfecting)
- Nursing Career Scenario Cards (linked; optional)

10 minutes

# Preparation

Before beginning the activities you will want to set up five posters around the room with the skills listed below:

- Clinical and technical skills (job related skills needed to take care of patients)
- Communication and interpersonal skills (interaction with others)
- Critical thinking and problem solving
- Emotional and physical stamina
- Leadership and organization skills

In addition, it will be helpful to have the four activity stations for each medical device established before beginning the activities. Each station should have the medical device, room to move around, and the needed **Physical Check-Up Stations** cards. These activities assume access to six of each medical device however, you can use less and adjust the number of stations accordingly. Should you have more (14–16), you can set up stations for each pair of students to use.

5 minutes

# Introduction

Use the attached **Activity Slides** to introduce students to the lesson activities.

Begin on **slide 3**, and take a moment to highlight the healthcare career cluster in the displayed image.

Transition through **slides 4–6**, sharing information about nursing as a career, including the necessary education and salary ranges. Let students know that nursing offers a variety of specializations and career paths, each with different salary expectations. For example, registered nurses (RNs) earn an average salary of $132,680 per year, while nurse anesthetists can earn between $45,670 and $239,200 annually.

To start the first activity, go to **slide 7** and Introduce the **Five Corners** activity—this is a modification of the Four Corners instructional strategy, adapted to include five essential skill categories relevant to nursing. Evenly distribute students to five designated corners of the room, each representing a key skill nurses need:

- Clinical and technical skills (job related skills needed to take care of patients)
- Communication and interpersonal skills (interaction with others)
- Critical thinking and problem solving
- Emotional and physical stamina
- Leadership and organization skills

While in their assigned corners, have students generate three ideas of why that skill would be important for a nurse to have in their profession. Ask each group to select a spokesperson to share their three reasons with the class. After all groups have shared, have students return to their seats. Transition through **slides 8–9** and review any additional reasons for each skill that students may not have considered.

Display **slide 10**, and inform students about the steps they can take while they are in middle and high school to prepare for a career in nursing. Encourage them to focus on science and mathematics courses—especially biology and chemistry. If opportunities are available, students can gain hands-on experience by volunteering at clinics, hospitals, or nursing homes while in high school. One essential skill they can start developing now is first aid and cardiopulmonary resuscitation (CPR).

20 minutes

# Activity 1: Cardiopulmonary Resuscitation (CPR)

Cardiopulmonary resuscitation (CPR) is a life-saving procedure used by many health care workers. It is a combination of chest compression and breathing to help get the heart pumping again and return oxygen flow throughout the body.

Display **slide 11**. Begin by reviewing the the steps of CPR using the *Adult CPR Steps* by the American Red Cross.

Move to **slide 12** and play the American Heart Association's *2010 Guidelines for CPR* video. As the video plays, have students mimic the demonstrated steps.

**Embedded video**
https://youtube.com/watch?v=O9T25SMyz3A

### Teacher's Note: Optional Video

You may also consider showing the American Heart Association's *How to Give CPR to a Child* video on **slide 13**, which provides additional guidance on CPR techniques for younger patients.

Review the steps of Child & Baby CPR outlined by the American Red Cross. Move to **slide 14** and play Cincinatti's Children's CPR for Infants (Newborn to 1 Year) video. Again, have students follow along and practice the steps.

**Embedded video**
https://youtube.com/watch?v=n65HW1iJUuY

Go to **slide 15**. Review with students that the C.A.B. acronym is often used to remember the steps of CPR:

1. ***C – Compressions****: Start with* ***30 chest compressions****, pushing hard and fast in the center of the chest at a rate of 100-120 per minute.*
2. ***A – Airway****: Tilt the head back slightly to open the airway.*
3. ***B – Breathing****: Give* ***2 rescue breaths****, ensuring the chest rises.*

Proceed to **slide 16**, and provide students with the **Step-by-Step CPR Card** for adults and infants. Inform students that they will be given a scenario and will need to determine the correct steps to do based on the prompt that is shared.

Share one of the following scenarios for students to decide the steps to take for CPR:

**Scenario 1:** You're at home watching TV when you hear a loud crash in the garage. When you rush in, you find your dad, Tim the Toolman Taylor, collapsed on the floor. At first, you think he may have just slipped, but when you check on him, he's unresponsive and not breathing.

**Scenario 2:** You're babysitting your nine-month-old cousin, Tommy Pickles, when you notice him putting a small toy in his mouth. Before you can stop him, he suddenly starts coughing, then goes silent and struggles to breathe. His face turns red, and he appears distressed.

Follow along to see if the students are completing the correct CPR protocols for each scenario.

20 minutes

# Activity 2: Physical Check-Up

**Teacher's Note: Preparation**

Before beginning this activity, set up four stations, each featuring a different medical device.

Introduce the activity by showing **slide 17**. Display **slide 18**, and explain to students that when they visit a doctor one of the first things that will happen is a nurse will collect your "vitals" or vital signs. Inform students that these measurements provide important signals about a patient's overall health and help a doctor determine to if medical attention is needed.

Let students know that today they will practice using various medical devices to measure vital signs, just as nurses do during a routine check-up. As you transition through the following slides, consider demonstrating how each device is used.

- **Slide 19:** Introduce the type of thermometer being used and explain its operation. If using a non-contact thermometer, let students know that they may need to get close to use the thermometer but that they shouldn't touch it to the forehead.
- **Slide 20:** Explain that a stethoscope is a medical device that allows healthcare professionals to listen to internal sounds, particularly those of the cardiovascular (heart) and respiratory (breathing) systems.
- **Slide 21:** Introduce the sphygmomanometer (commonly known as a blood pressure monitor and cuff), which is a device used to measure the blood pressure of patients. Explain that a normal blood pressure reading is generally less than 120 systolic (top number) and less than 80 diastolic (bottom number). To reduce anxiety or worry, reassure students that a single high or low reading is not necessarily a cause for concern—blood pressure is best evaluated over time.
- **Slide 22:** Explain that a pulse oximeter is a device that measures the oxygen level in the blood and helps assess how well oxygen is being absorbed and circulated throughout the body.

Once all devices have been introduced, divide students into groups of three or four. Distribute the **Physical Check-Up** handout to each student. Students will use this handout to fill in their group members vital signs, as well as their own, while they move from station to station.

Each station should take 5–10 minutes, allowing enough time for students to collect and analyze their readings.

20 minutes

# Activity 3: What's in a Vital Sign?

**Teacher's Note: Preparation**

Set up four stations with the **Vital Check Station** cards that include step-by-step instructions, a pair of each piece of nursing equipment, and alcohol wipes at each station. Each station allows pairs of students to rotate through different physical activities. As one pair completes a step, the next pair should begin. Provide each student with a copy of the **Vital Check** handout to record their measurements as they move through the stations. Adjust the number of stations based on available space and number of devices you have.

Begin by explaining to students that heart disease is the leading cause of death in the United States and worldwide. The heart's job is to regulate the movement of oxygenated blood, ensuring vital organs receive the oxygen they need to function properly. Many factors can impact heart health, including high blood pressure, high cholesterol, smoking, poor diet, and lack of exercise. Regular physical activity is one way to maintain heart health by preventing cholesterol buildup in the arteries. Invite students to do a couple of activities to see what happens to the oxygen in our blood over time when we become active.

Move to **slide 24** and review the steps and normal vital readings that students will collect for each activity. Be sure to reduce anxiety by letting student know that there are many reasons they may get a reading out of these zones, and they may all not mean health issues.

Display **slide 25** and review the steps that each pair of students will complete before they begin:

- **Station 1:** Allow your body to rest for 1 minute. After the minute, measure and record vital signs at your table.
- **Station 2:** Walk around the room for 1 minute. After the minute, measure and record vital signs at your table.
- **Station 3:** Jog or run in place for 1 minute. After the minute, measure and record vital signs at your table.
- **Station 4:** Reflect on the following questions with a partner and record responses:
    - If exercise helps prevent heart conditions like strokes, why does blood pressure rise during physical activity?
    - Is it possible to exercise too much?
    - What factors contributed to the increase in blood pressure during exercise? What is the name of this process?
    - Why is it concerning if blood pressure is high even at rest?

Conclude the activity with a class discussion, encouraging students to share their observations and insights from the exercise.

# Research Rationale

Research demonstrates that early development of occupational knowledge through school career education programs supports students in building an understanding of the world of work and available career opportunities (Ginevra et al., 2024; Godbey & Gordon, 2019; James, 2024; Kim & Lee, 2023). The middle and high school years are fundamental for students to explore careers and develop transferable skills to help them succeed in high school and beyond (James, 2024; Kim & Lee, 2023). Where career exploration programs involve experiential learning, student engagement is increased, improving graduation rates, and college and career readiness (Godbey & Gordon, 2019; James, 2024; Kim & Lee, 2023).

## Resources


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